

RARE BOOKS LIB.

~~8~~

1-8-2007



**BIODIVERSITY-RELATED TRADITIONAL KNOWLEDGE IN
THAILAND: INTELLECTUAL PROPERTY RELATIONS AND
GEOGRAPHIES OF KNOWLEDGE REGULATION**

DANIEL FRANCIS ROBINSON

**A thesis submitted in fulfilment
Of the requirements for the degree of
Doctor of Philosophy (Human Geography)**

**School of Geosciences, Faculty of Science
The University of Sydney**

March 2007

Statement of Authorship

This thesis remains a copyrighted work of the author, Daniel Francis Robinson, and The University of Sydney. Any errors or omissions contained within are the responsibility of the author.

This work has not previously been submitted for a degree or diploma in any other university. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person except where due reference is made in the thesis itself. All sources have been appropriately acknowledged.

The material in this thesis has not been formally published elsewhere by me, with the exception of materials in Appendix 1, where due acknowledgement has been made.

Human Research Ethics approval was granted for the thesis prior to commencing fieldwork, while I was a PhD candidate at the University of New South Wales (Faculty of Built Environment), before transferring to the University of Sydney in the final stages of candidature.

Daniel Francis Robinson

Dedication

This thesis is dedicated to the many individuals and communities in Thailand who, despite an array of disruptive forces, persist with local practices that contribute to the conservation and continued use of genetic resources, including local plant varieties, medicinal herbs, and crops for their own utilitarian purposes, broader benefits to humankind and for ecological integrity.

TABLE OF CONTENTS

<i>Statement of Authorship</i>	ii
<i>Dedication</i>	iii
<i>Table of Contents</i>	iv
<i>List of Tables, Figures and Boxes</i>	vi
<i>Abbreviations and Acronyms</i>	vii
<i>Acknowledgements</i>	ix
Abstract.....	x
Opening Narrative (Preface).....	xvi
PART I - INTRODUCTORY CHAPTERS: KNOWLEDGE CONTEXTS	1
1. Introduction and Aims.....	2
2. Literature Review and Background.....	9
2.1 <i>Theoretical Underpinnings</i>	10
2.2 <i>A Geo-Politics of Intellectual Property</i>	17
2.3 <i>Discussion and Discourse of Traditional Knowledge</i>	55
3. Methodology and Fieldwork.....	69
PART II - INTERNATIONAL DIMENSIONS	91
4. International Regulation and Knowledge Politics.....	92
4.1 <i>Historical Contexts: International Developments and Laws</i>	94
4.2 <i>The Convention on Biological Diversity</i>	101
4.3 <i>US Pressures and Interventions</i>	111
4.4 <i>The Agreement on Trade Related Aspects of Intellectual Property Rights</i>	114
4.5 <i>The World Intellectual Property Organisation</i>	122
4.6 <i>Bilateralism and Regionalism</i>	126
4.7 <i>International Treaty on Plant Genetic Resources for Food and Agriculture</i>	131
4.8 <i>International Human Rights Law and International Laws on Indigenous Peoples</i>	134
4.9 <i>Summary</i>	139
PART III – THAILAND: NATIONAL REGULATIONS, DISCOURSES AND NORMS	141
5. Thai Traditional Knowledge.....	144
6. Bioprospecting, Misappropriations and Biopiracy Episodes.....	154
6.1 <i>Bioprospecting Events and Trends</i>	155
6.2 <i>The Jasmati Case</i>	161
6.3 <i>Stepwise Programme for the Improvement of Jasmine Rice</i>	164
6.4 <i>Marine Fungi: the Biotec – University of Portsmouth Case</i>	167
6.5 <i>Thai and US Patents on Kwao Krua (Pueraria mifca)</i>	170
6.6 <i>Japanese Patents on Plao Noi (Croton sublyratus)</i>	175
6.7 <i>Other Cases</i>	180
6.8 <i>Summary</i>	182

7.	Laws, Regulations and Geography.....	186
7.1	<i>The Thai Legal System, Legal History, Customs and Norms</i>	188
7.2	<i>Legal Protection in Science and Technology</i>	193
7.3	<i>The Constitution of the Kingdom of Thailand</i>	199
7.4	<i>Intellectual Property Laws</i>	203
7.5	<i>Plant Varieties Protection Act</i>	208
7.6	<i>Act on Protection and Promotion of Traditional Thai Medicinal Intelligence</i>	218
7.7	<i>Community Forests Bill</i>	222
7.8	<i>Other Relevant Policies and Approaches</i>	227
7.9	<i>The Role of Civil Society, NGOs and Academics</i>	230
7.10	<i>Summary</i>	234
8.	Biological Diversity Regulation and Knowledge Relations.....	237
8.1	<i>Ex Situ Biological Resources, Government Policy and Access</i>	238
8.2	<i>Access to In Situ Biological Resources</i>	241
8.3	<i>Resource Relations to Knowledge Domains</i>	246
8.4	<i>Summary</i>	252
PART IV - LOCAL KNOWLEDGE DOMAINS		255
9.	Traditional Knowledge Systems, Local Practice and Customary Structures: Local Case Studies.....	256
9.1	<i>Baan Mae Ka Pu, Samoeng</i>	257
9.2	<i>Baan Soplan, Mae Lan Kham, Samoeng</i>	266
9.3	<i>Baan Khun Khlang, Jom Thong</i>	275
9.4	<i>Khao Khwan and Farming Communities around Suphan Buri</i>	278
9.5	<i>Ku Ka Singha Indigenous Seed Fair, Roi Et</i>	282
9.6	<i>Recognising Knowledge Domains and Customary Norms</i>	286
9.7	<i>Summary</i>	290
10.	Reflections on Research Ethics.....	293
PART V / CHAPTER 11 - CONCLUSIONS		303
REFERENCES		310
APPENDICES		338
Appendix 1 – Comparison of Sui Generis Plant Variety Protection and Traditional Knowledge Laws in Asia.....		339
Appendix 2 – List of Interviewees.....		344
Appendix 3 – Draft Model Prior Informed Consent Guidelines.....		347
Appendix 4 – International Treaty on Plant Genetic Resources for Food and Agriculture Recommendations.....		357
Appendix 5 – Traditional Knowledge-Folklore Survey Results.....		359
Appendix 6 – Threats to Local Communities of Northern Thailand.....		366
Appendix 7 – Chronology of the Community Forests Bill.....		367
Appendix 8 – Documentation of Useful Plants in Thailand.....		368
Appendix 9 – Annotated Photographs from Village Case Studies.....		369

List of Tables, Figures and Boxes

Table 1:	Cases of Alleged Biopiracy from Various Countries.	40
Table 2:	Fieldwork and Methodological Elements in Thailand.	70
Table 3:	Fieldwork and Methodological Elements in Geneva, Switzerland.	72
Table 4:	Approximate chronology of international laws on intellectual property rights, traditional knowledge and genetic resources.	94
Table 5:	Development and Operation of the Plant Varieties Protection Act and the Act on Protection and Promotion of Thai Traditional Medicinal Intelligence.	210
Table 6:	Community Forest Classification and Customary Laws.	263
Figure 1:	Thesis Flow Chart Highlighting Content of Thesis Parts and Connections.	7
Figure 2:	Structure of the Literature Review: Intellectual Property Debates Feeding into Discourses of Traditional Knowledge and Biodiversity Regulation.	10
Figure 3:	Map of Thailand, Highlighting Case Study Provinces.	84
Figure 4:	Knowledge Domains and Knowledge Flows Operating Under Different Regulatory Systems.	247
Box 1:	Thailand's Submissions to the TRIPS Council and the Trade Negotiations Committee.	118
Box 2:	US Patent on Kwao Krua by a Japanese Company.	173
Box 3:	Relevant Provisions in the Thai Constitution.	201
Box 4:	Methods of Karen Pest and Weed Control and Use of Local Agricultural Techniques.	259

Abbreviations and Acronyms

AAN	Alternative Agriculture Network, Thailand
ABIA	American Bio-Industry Alliance
ABS	Access and benefit sharing
ASEAN	Association of South East Asian Nations
BRT	Biodiversity Research and Training Program, Thailand
CBD	Convention on Biological Diversity
CFB	Community Forests Bill (lapsed), Thailand
CGIAR	Consultative Group on International Agricultural Research
DOA	Department of Agriculture, Thailand
DPH	Department of Public Health, Thailand
FAO	Food and Agriculture Organisation
FL	Folklore
FTA	Free trade agreement
GATT	General Agreement on Trade and Tariffs
GATS	General Agreement on Trade and Services
GI	Geographical indications
GMO	Genetically modified organism
GR	Genetic resource
GRAIN	Genetic Resources Action International
GSP	Generalised System of Preferences
GURTS	Genetic-use restriction technologies
HIV/AIDS	Human immunodeficiency virus / acquired immunodeficiency syndrome
HYVs	High yielding varieties
IARC	International Agricultural Research Centres
ICTSD	International Centre for Trade and Sustainable Development
IGC	Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore, WIPO
ILO	International Labour Office of the United Nations
IP	Intellectual property
IPRs	Intellectual property rights
IRRI	International Rice Research Institute
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for the Conservation of Nature and Natural Resources
IUPGR	International Undertaking on Plant Genetic Resources for Food and Agriculture
MTA	Material transfer agreement
NDF	Northern Development Foundation, Chiang Mai, Thailand
NHRC	National Human Rights Commission of Thailand
NGO	Non-government organisation
OTOP	One Tambon, One Product initiative, Thailand
PBRs	Plant breeders' rights
PeBRs	Indian Peoples' Biodiversity Registers
PCT	Patent Cooperation Treaty
PIC	Prior informed consent
PGR	Plant genetic resource
PVP	Plant variety protection
QUNO	Quaker United Nations Office

R&D	Research and development/design
RAFI	Rural Advancement Foundation International
RFD	Royal Forests Department, Thailand
SPLT	Substantive Patent Law Treaty, WIPO
TDRI	Thailand Development Research Institute
TFCA	Tropical Forests Conservation Act, United States of America
TK	Traditional knowledge
TTMI Act	Act on Protection and Promotion of Thai Traditional Medicinal Intelligence, Thailand
TRIPS	Agreement on Trade Related Aspects of Intellectual Property Rights, WTO
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNPFII	United Nations Permanent Forum on Indigenous Issues
UPOV	International Union for the Protection of New Varieties of Plants
USPTO	United States Patent and Trademark Office
USTR	United States Trade Representative
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation

Acknowledgements

I would like to thank my supervisor, Associate Professor Philip Hirsch, and my associate supervisor Dr Bob Fisher for taking me on late in the thesis, for their always quick advice and support. I wish to thank my initial supervisor Dr Chris Gibson who was always open, supportive and encouraging.

I would like to thank Ajaan Jakkrit Kuanpoth, without whose friendship and assistance this would be a much poorer study.

I would like to thank the National Human Rights Commission of Thailand (NHRC) for so kindly allowing me to intern at their offices, for supporting me in various ways and for taking an interest in this research. I must thank the Chairman Ajaan Saneh Chamarik for allowing me my time at the NHRC, and for welcoming me warmly. Buntoon Srethasirote deserves a huge bout of thanks for supervising me, answering endless obscure questions and respecting my opinions. Thanks to Pii Saa (Chanisa Klomtong) and Pii M (Charatphorn Raksakaew) for all their organisational support above and beyond my expectations, and always with a smile.

I would like to thank the International Centre for Trade and Sustainable Development for allowing me to act as a visiting researcher and assistant to the project on Intellectual Property and Sustainable Development. Particularly I would like to thank Pedro Roffe, David Vivas-Eugui and Johanna Von Braun for their interest in this research and support of my work.

I wish to thank my funding and support bodies, including the University of Sydney, the Intellectual Property Research Institute of Australia (IPRIA) at the University of Melbourne, the Australian Postgraduate Award program of the Commonwealth Government of Australia, and the Challenges of the Agrarian Transition in South East Asia (ChATSEA) project, Montreal.

I should also thank the people who have acted as *Paasaa* Thai teachers, research assistants and translators at various times: Ae (Appassorn), Eew (Lakhana), Tatt, Adnan, Anne (Parinya), Tip (Tivani) and other friends. I would like to thank Witoon Lianchamroon for helping me organise field trips to some local communities, for sharing his expertise, advice and suggestions.

I would like to thank all my friends going through the PhD process for all their friendship, welcome distractions, and support. These include: Anne, Danielle, Ed, Karen, Nat, Rae, Therese, and also Lloyd, and at Sydney University, Kate, Lindsay, Paula, Salette, Daniel, Nathan, Belinda and everyone else who helped me settle in to Sydney.

On a personal note I want to thank my partner Rachel for her love, support, understanding (proofing and editing assistance) during this research. I also can't thank my family enough for everything.

ABSTRACT

This thesis identifies and analyses the intellectual property relations, state and non-state regulation, of biodiversity-related traditional knowledge in Thailand. The thesis demonstrates the different situated knowledge systems which have underpinned and shaped the often contentious ownership, exchange and regulation of the traditional knowledge of biological resources.

Historically, medicinal herbs, plant varieties, local conservation techniques, crop protection mechanisms and other objects of local knowledge and resources have been expropriated by outsiders for their own benefits. Little concern for the rights of those who generate this knowledge was raised or heard in public debate and media. The ethical, legal, conceptual and proprietary treatment of these issues has, however, taken on a different light in recent years.

During the past two decades the intellectual property (predominantly the patent) system has become “globalised” by international agreements, prompted in part by a global boom in biotechnological inventions. The international IP system has expanded as companies have sought patent protection and remuneration for their products. This assertion of “rights” through patents has recently come to be challenged on the grounds that it improperly or unethically utilises the knowledge or resources of developing countries, indigenous and local communities. The term “biopiracy” has been developed to describe the above actions and, along with “traditional knowledge,” has become a dominant discourse in new fora.

Regulatory systems reflecting European and North American interests, epistemologies and values have been imposed upon the majority of the world. Trade leverage and coercion have led to the inclusion of “trade-related intellectual property rights” (the TRIPS Agreement) in the World Trade Organization accords, and trends of bilateralism and regionalism (free trade agreements) have furthered the IP agenda. In fora which regulate biodiversity in all or some of its aspects – the Convention on Biological Diversity (CBD) and International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) – the exclusive and reductionist approaches applied to knowledge have also been applied to nature, typified as “genetic resources.” In WTO and CBD fora, the parties have been attempting to balance seemingly conflicting interests (private property rights and rights of exploitation, sovereign control over biodiversity, and the protection of traditional knowledge in the public domain, or

in local knowledge domains). Thailand is one of a number of resistant developing countries, making numerous submissions in support of reform of TRIPS in the WTO that reflects their alternate values and concerns.

Many of Thailand's complaints have been based on cases of perceived "biopiracy" or misappropriations of traditional knowledge and biological resources. Each of the cases analyzed in this thesis is unique, indicating that there is a set of issues that goes beyond just "patent examination problems."

The jasmine rice (*khao hom mali*) cases reflect different interpretations of how far intellectual property should be extended (in the trademark case), as well as culturally informed reactions to the extraction and experimentation on jasmine rice which were not authorized by the Thai state. These also reflect competitiveness concerns, a result of which has seen developing countries seeking geographical indications of agricultural varieties – something that the US and some developed countries have so far denied. These cases have led to considerable Thai public protest based on conflicting value and knowledge systems between Thai and US stakeholders.

Other examples worth looking at are the *plao noi* and *kwao krua* cases. Both of these involve the use of public domain Thai traditional knowledge as the basis for further research, with the eventual commercialization of the results into medicinal products. These cases raise questions about the difference between innovation and discovery, the breadth of prior art (already created or invented items) sources that patent examiners should use, the extent to which derivatives or isolates can be considered novel and patentable, when and how to share benefits with providers of the materials (whether they are state bodies or local communities), who from and how consent should be obtained. The incidents make a particularly strong case for more formalized systems of prior informed consent and benefit sharing. The *kwao krua* case also highlights the fact that intellectual property (in plant varieties or patents) may create excessive demands leading to over-cultivation of a plant.

The marine fungi case between the University of Portsmouth and Biotec, highlights the fact that a transfer of biological materials may cause a loss of sovereign control over that resource. Given the mobile nature of these materials it raises questions about the ability to restrict transfers through formal regulations without stifling potential research collaborations and

technology transfer. The case also highlights that often these controversies may stem from the unethical actions of only one or a few individuals, and that personal politics may play a role in the rectification (or, more accurately, non-resolution) of a transaction dispute.

The aforementioned cases all involve the extraction of biological resources beyond state boundaries. This is not, however, the only scenario. The Chiang Mai School of Pharmaceuticals bioprospecting incident in Samoeng highlights the fact that individuals from domestic institutions in Thailand may also be culpable of extracting resources and knowledge without adequate consideration of the consent of locals and respect for their customary protocols. This sort of activity is fairly common, and is likely to alter the local knowledge domains associated with different plants.

Knowledge in Thailand is regulated in various ways that continually adapt and evolve over time and throughout the regions. The formal legal and technical mechanisms in Thailand are derived largely from international concepts already described. They are in many ways reactive and imported forms of regulation, despite their “*sui generis*” label. Truly self-generating and unique systems already exist, but are made up of more complex culturally derived norms and practices, often influenced by religion (i.e. Buddhism and Animism) and historically derived value systems.

Traditional knowledge in Thailand exists in two main forms: public domain and “folk knowledge” forms.¹ While public domain knowledge (including traditional knowledge) is open and accessible, there are components of it becoming increasingly regulated by imported western legal forms (intellectual property, confidentiality, and consent). There has been public resentment of this change and it was evident in the reactions of people when I approached them for interviews. People were often wary of consent forms and legal formalities. On the other hand, forms of regulation like geographical indications protection – a European-derived system that values the contribution of entire geographic communities rather than just individuals – is gaining support amidst policymakers in Thailand.

¹ Notably these forms are also politicized. They may be utilized to support political aims in either case. Generic “traditional Thai knowledge” claims are often made with regards to the need for a “self-supporting economy,” whilst some local communities emphasize the inalienability of their traditional knowledge systems to assert community rights.

Thailand has developed a number of unique legal provisions and mechanisms for the regulation of biodiversity and related traditional knowledge. These laws are unparalleled in other countries and present useful examples for like-minded nations to follow. The laws received considerable input in their development from farmers' groups, NGOs, academics and related stakeholders. Although Thai authorities prefer to only directly recognize the generic nationalist forms of "Thai traditional knowledge" (e.g. in national reports to the CBD), rather than more locally culturally and environmentally specific forms, their laws do allow provisions which could benefit local communities (e.g. local, domestic and wild plant variety protection).

However, it is important to note that the formalization of regulatory measures for ownership rights over replicable quantities of plants and associated knowledge, seems at odds with past and present customary norms of Thai farmers and many traditional local communities. Moreover, there is a widespread distrust of the centralized Thai bureaucracy, which is particularly prominent in rural areas, in regional NGO rhetoric, and in mass demonstrations like those by the Assembly of the Poor or the Coalition of People Living with AIDS. All of these factors have slowed down the implementation of specific Thai laws like the Plant Variety Protection Act and Act on Protection and Promotion of Thai Traditional Medicinal Intelligence. Certain regulatory aspects still remain unclear, such as whether authorities will actually abide by their policies of requiring prior informed consent where access transactions involve local communities, and how potential benefits (if or when they arise) will be shared from the funds administered under the Acts.

On the other hand, "Folk knowledge" or the traditional knowledge domains of local communities, is typically regarded as inalienable from local customary protocols and practices. There are often spiritual and ideological bases which underpin the use, application, sharing, taboo and secrecy that may surround knowledge of plants used in medicines and agriculture. These will affect the distribution of this knowledge, how the knowledge is used, and may in some cases (where knowledge is communally held or secret) also affect the distribution of the associated biological resources.

In order to conceptualise these variable parameters, I have suggested the term "knowledge domains" as useful for describing and distinguishing the overlap of physical and intangible realms of situated knowledge systems. Customary or local knowledge domains exist where

knowledge is applied in observance with customary practices, and are underpinned by different value systems and ways of seeing the world. Customary or local knowledge domains may be quite separate (essentially, conceptually and politically) from public domain knowledge, and again from the knowledge domains of epistemic communities including reductionist researchers (e.g. functional-gene isolating biotechnologists or active compound isolating bio-pharmaceutical researchers), or the most dominant kind of intellectual property proponents – proprietarians.

This depiction of knowledge domains encourages us to envisage other scales of regulation besides the common jurisdictional scales (e.g. local, national, international) regulating knowledge and biological resources. There is a need to accept other ways of seeing scale that go beyond these normative structures, to others much more intimate (embodied, personified and internal) and infinite (afterlife/re-birth). To date, the dominant international and national regulatory structures have made little, if any, acknowledgement of these other regulatory forms. Their non-recognition may lead to exploitations of the sort that have been seen throughout history, and continue – as evident in the bioprospecting and biopiracy case studies. Gradually, forums such as the CBD 8(j) Working Group on traditional knowledge, the UN Permanent Forum on Indigenous Issues, some actions by WIPO, and indigenous rights movements are building these necessary recognitions. The recognition of these domains, as distinct from just knowledges, also encourages a rights-based response to the broader threats (i.e. persecution, eviction from lands, resource-based exclusion) facing these local groups, without which their traditional knowledge would and practices might ultimately be lost.

Although this research was able to investigate customary knowledge domains in a number of communities in Thailand, this represents only an indicative fraction of what might be encountered in different locales. Further research on the customary protocols surrounding knowledge sharing and traditional practice needs to be undertaken in Thailand, on a broader scale throughout Asia and beyond. This needs to be approached carefully, such that it does not offend local communities, but rather empowers them. Ideally it is a task best carried out by these communities themselves, but at the very least, outside researchers must closely consult with the communities and, above all, respect their customs and wishes. It also needs to be recognized that these customary norms are not fixed and formal codified rules. They may at times be variable and adaptive to their environments and imposed conditions. Therefore

conclusions based on a study of these norms cannot be applied in a generic manner, or viewed as a definitive guide.

As a final note, I extend a challenge to the academic research community to heed the findings of this thesis in regards to the development of ethical regulatory standards. Given that many of the controversies discussed in this thesis resulted from the unfair or inequitable extraction of knowledge and biodiversity from *in situ* locations and knowledge domains, the reductionism, potential inappropriateness, and shortcomings of ethical research guidelines need to be addressed. In academic ethics specifically, there is an urgent need to address the investigative treatment of knowledge, legitimate authority to provide consent, approaches for cultures of law avoidance, to consider alternate perspectives on plant research, and the situatedness of ethics committee knowledge. The academic community, as well as industry, need to adopt different “ways of seeing and thinking” in order to achieve truly ethical “ways of doing” in biodiversity-related traditional knowledge research.²

² I am citing Howitt’s (2001) approaches for rethinking resource management here.

OPENING NARRATIVE (PREFACE)

In September 1997, the U.S. Patent and Trademarks Office granted Patent No. 5,663,484 on “basmati rice lines and grains” to the Texas-based company named RiceTec. Shortly thereafter a number of international non-government organisations (NGOs) and Indian NGOs stated their alarm that a US company could secure a patent with such generic claims over the rice crop. The claims that the “invention” covered “novel rice lines” were met with considerable scepticism by Indian and Pakistani farmers, activists and members of the mass public. Furthermore, the patent appeared to contradict some of the principles enshrined in the 1992 Convention on Biological Diversity: “the equitable sharing of benefits arising out of the utilization of genetic resources”... “subject to prior informed consent of the Contracting Party providing such resources” (CBD, 1992). More generally, the public in these countries was outraged that a company could make monopolistic claims over a product with a distinctly regional character, close cultural associations with local livelihoods, and which had been improved and refined through generations of selection and breeding. Basmati rice had been shared with organisations such as the International Agricultural Research Centres (IARCs) under the ideal that plant germplasm was the “common heritage of (hu-)mankind” and that it would be of benefit to primarily developing countries. Visibly, the South Asian farmers felt duped and cheated, and various groups responded by heavily lobbying US agencies and making a number of challenges on the patent in the following years.³

Thai farmers groups, NGO organisations and activists followed these events with considerable alarm. It seemed that Thailand, a country which prides itself on its agricultural heritage and which holds the position of the largest rice exporter in the world, could be next. Thailand already had some first-hand experience with the expropriation of a well-known domestic plant variety – *Plao noi* – which a foreign company had obtained from Thailand and subsequently patented and commercialised with few resulting benefits for Thailand or its people.

In 1998 an international network of NGOs informed the Thai NGO BioThai that a US company had registered Jasmine rice under the US intellectual property system. Scrutiny of the claims revealed that the same US company - Ricetec, Inc., had made several attempts to

³ According to GRAIN (2 Nov. 2000), pressure from the Indian government and people’s protests saw a number of the claims in the patent withdrawn by the company. Further activist pursuit for repeal of the entire patent has reputedly been unsuccessful.

trademark the name “Jasmati” or some similar derivation of the word “Jasmine” for a rice product, and had been successful in 1993.⁴

Initially the Thai media reported the incident with only limited accuracy, causing considerable confusion. It was claimed by some newspapers that there was a *patent* on Jasmine, while others cited the *trademark*. As a consequence, a group of approximately 500 Thai farmers descended upon Bangkok and protested outside the US embassy. This was a clear sign that many Thai farmers felt similar distress and concern to their South Asian neighbours.⁵

Not only did this Jasmati trademark mobilise Thai farmers, it mobilised the bureaucracy to develop new laws to attempt to limit such instances. In 1999 the Thai Department of Public Health and the Department of Agriculture developed laws which sought to address the misappropriation of biological resources and associated knowledge. Soon after, another incident flared up in the press. Yet another Jasmine rice controversy, it concerned reference to the “Stepwise Programme for the Improvement of Jasmine Rice for the US” a programme established by the US Department of Agriculture and a research project in the University of Florida. This case involved transfer of Jasmine rice germplasm from the International Rice Research Institute (an IARC body) to the US for experimentation and breeding. Press coverage and NGO discussions highlighted concerns about the use of tangible and intangible resources associated with Jasmine rice and competitiveness concerns.⁶

As a consequence, in a world that seems very distant from the rice fields of Thailand, a range of bureaucrats have been elaborating on the technicalities of amendments to the international patent system, and developing a regime for controlling access to biodiversity. Negotiators strategise, legislate, debate, move, stall, exclude, pressure and coerce in the main halls or the side rooms of the Hong Kong Ministerial of the WTO, or the Conference of the Parties to the CBD in Curitiba, Brazil. The jargon is at times overwhelming, capacities vary, coercion leverages previously firm stances, and at the end of the event, just maybe, a law is engineered. Acting as observers to these events, NGOs representing diverse and often conflicting interests

⁴ The Jasmati trademark can be found on the USPTO website in its Trademarks Electronic Search System (TESS) at <http://tess2.uspto.gov/>. It has registration number 1807817 and serial number 74372314.

⁵ See for example Jade (2003).

⁶ An in depth analysis of these Jasmine Rice cases in Chapter 7 reveals that there is a great deal more to them than NGOs and the mainstream press typically let on.

– the seed or pharmaceutical industry, human rights, environment, and those with hybrid agendas – often shape or cloud the debate with persuasive arguments, or vague complaints.

These incidents, although not isolated, outline the evolution of a series of intertwined issues related to the conservation, use, research on, ownership of and intellectual property control over biological materials and associated knowledge. These issues have become highly politicised, with debates running from the meeting rooms of the UN, WTO and other “global” bodies in Geneva, through government bureaus, to local custodian communities who conserve and harbour knowledge of plants and other biological resources. At the heart of the issue is the situatedness of the actors involved. In a debate about knowledge, it is the very *situation* of the knowledge systems of those debating, their distinctness and variance spatially and conceptually, which is hampering any consensual solutions. Specific intellectual property epistemologies have prevailed in asserting rigid regulatory controls and thus shape many of the terms of debate – but what are the alternatives? Whilst some actors would like to downplay the existence of “biopiracy” issues, other policy-makers have used the issues as negotiating leverage, and for many traditional knowledge holders there has been concern, distress or disappointment.

One thing seems clear – the issue is not solving itself. As further evidence that there are ongoing predicaments, a well-known Thai medicinal herb (*Kwao krua*), which has a long history of household use has been patented by Thai researchers in Thailand. The “invention” has also been sold by the same researchers to a Korean company and patented in the US. Meanwhile rampant use of the herb by commercial operations in Thailand has meant that the Department of Health has recently established conservation zones which will restrict its collection and harvesting. This would seem prudent, but local communities which have traditionally used the herb are concerned they may be excluded too.

This opening narrative should be read as exactly that – a narrative. It presents a static, dramatised view of events amidst many ways of viewing the polemics surrounding biodiversity-related traditional knowledge in the intellectual property context. It is intended to highlight the concerns and controversies surrounding extraction, use and intellectual property control of biological resources and traditional knowledge from indigenous peoples and developing countries – as they are often presented. These acts have received various labels – namely “biopiracy,” “misappropriations” and “bioprospecting.” It posits one snap-shot of the

issue up-front: that of some potential misappropriations in Asia and specifically Thailand. This provides a useful starting point, in as much as it must be understood as just one representation of the issues to be discussed. The narrative catches the documented concerns of the Asian farmers and the Thai public.

Spurred by these controversies I have undertaken an analysis of “biopiracy” and bioprospecting controversies in Thailand, with the hope of ensuring local traditional knowledge is not exploited, and that local cultures are respected. I have also been motivated by the perception that some key actors have generated a new inequality through the “top-down” or global imposition of intellectual property discourse and regulation. Therefore, with the prevailing local through global “politics of scale” in mind, I have undertaken a study which seeks to erase the importance of “scale,” for an understanding of knowledge and discourse as situated in specific (local) contexts.

**Part I - Introductory Chapters:
Knowledge Contexts**

1. INTRODUCTION AND AIMS

This thesis analyses the regulation of knowledge and intellectual objects, particularly “traditional knowledge.” The thesis explores the situated knowledges that underpin regulatory forms of intellectual property, biodiversity and traditional knowledge protections and controls. This is undertaken in local, national, and international settings. The situation of knowledge at each scale is analysed and used as a critique of the importance of scale in determining legitimacy and jurisdiction in the regulation of knowledge. This also provides impetus for recognition of the distribution, relations and attachments of knowledge (knowledge domains), and for the protection of potentially threatened traditional knowledge.

The links between intellectual property, traditional knowledge and biodiversity have drawn increasing attention across the globe from a variety of stakeholders and concerned groups. Ecological concerns over the loss of biodiversity, concerns over the loss of plant genetic resources that represent the basis of the world’s food and medicines, rapid advances in science and technology, and the emergence of an increasingly “global” knowledge-based economy, have become rapidly intertwined in international law and politics.

Of relevance to this thesis, four key challenges have been debated by academics and international policymakers in recent decades with escalating intensity. They can be identified as:

- Biodiversity loss;
- Adequate supply of food and medicines;
- Developments in science and technology;
- The changing allocation of legal rights to tangible and intellectual property.

The protection of traditional knowledge of local and indigenous peoples holds a precarious position amidst these four challenges. As the caretakers of a vast array of traditional agricultural varieties and medicines, as well as areas of high biodiversity, there has been an increase in international focus on their role. Yet local and indigenous people are still subject to extremes of poverty and debt, health issues, cultural suppression, environment-based exclusion, and political

marginalisation. Progressively though, local and indigenous groups have also generated political momentum for many of their causes, and are linked into global advocacy movements and NGO activities.

As Dutfield (2006) has highlighted, the difficulty with studying traditional knowledge and biopiracy issues, is that there is no fixed basis for attempting such a study. There are anthropological, legal, economic, environmental, cultural and political questions amongst others. When there is little consensus over the actual existence of an issue,⁸ then the research approaches employed must take this into account. Even the breadth or discreteness of “a debate” is open to question.⁹ This, arguably, lends itself to a *poststructuralist* approach and an implicit critique of universalising “truth” claims about the range of pertinent issues.¹⁰ Being a thesis in geography, the approach of this thesis focuses particularly on space and scale, nature (biodiversity), and societies, but also merges into adjacent disciplines: law, politics, and cultural studies. What it sets out to achieve is a recognition of the *relations* between people and things as spatially, temporally, and culturally contingent. A contextualisation and relativisation is made of the predominant laws (intellectual property, biodiversity, *sui generis*), the spaces and scales through which they are envisaged, the micro-level politics surrounding them, and the epistemological setting of decision-makers and stakeholders. Ultimately, this thesis argues that *knowledge is always situated* in contexts with more or less resonance across scales (see Haraway, 1991; and Thrift, 1996). This is used to argue for more nuanced approaches for understanding and protecting traditional knowledge, to critique intellectual property agendas, and refine ethical research access practices.

Although historical contexts of intellectual property politics and traditional knowledge are generally noted in this document, they are well-explored by authors such as Drahos (1997), Braithwaite and Drahos (2000), Dutfield (2003, 2004), Dutfield and Suthersanen (2005), and Posey (with Dutfield, 1996, 1999) particularly in the international context. Therefore the approach of the thesis engages primarily with current developments of intellectual property

⁸ See Chen, J. (2005) ‘There is no such thing as biopiracy... and it’s a good thing too.’ in *McGeorge Law Review*.

⁹ For example, the “biopiracy issue,” may be seen as just one area of concern for “traditional knowledge”; farmers’ rights concerns are closely linked to these debates in the intellectual property context, but may be seen as a separate issue.

¹⁰ But, as Murdoch (2006) notes, poststructuralist writing (and even approaches), may exclude or lose some readers because of its tendency to apply complex metaphors. With this in mind, this thesis has been written in an attempt to finely balance the relativisation of “things,” with the need for practical and readable arguments.

politics and traditional knowledge across scales, from local through to global. These engagements are made with a demonstration of the situated context of the actors, fora and discourses. Particularly important is recognition that researchers (i.e. academic, commercial, and independent) also bring with them their own “positionality” and situatedness, which I have sought to reflexively write into the text. This allows additional important reflection on my own role and experiences.

The thesis seeks to examine formal regulatory systems, but also to uncover lesser known rules and norms. The thesis demonstrates the existence of different regulatory forms for knowledge treatment (e.g. sharing, owning, and secrecy) at each scale, and in different locales, varying from formal international treaties, formal national laws, technical regulatory measures, uncodified norms and customs, and local customary protocols. Within these regulatory systems, our understanding of scale is also a construct of regulatory governance or imposition, and therefore the politico-legal creation of scale is alluded to throughout the thesis.

Additionally, the research was undertaken in a setting that has been a hot-spot for controversy surrounding “biopiracy” and bioprospecting incidents, and in which interesting regulatory developments have occurred – Thailand. Due to a personal regard for the peoples and cultures of Thailand, out of concern for justice, equity, and respect, I focused my study there. I also established institutional arrangements in Thailand, with the National Human Rights Commission, which assisted greatly in the development of the study.

A detailed national approach was favoured over a country-comparative approach, to allow immersion in the setting and at least partial ethnographic insights. Separate to this thesis, I have done country-comparisons, and some of this information is appended and related to in the text.¹¹ Most importantly, the research was also conducted in many locales, where political positions are generated constituting “local” discourses, through “global,” and representing a diverse array of actor and stakeholder positions.

¹¹ Sui generis laws for plant variety protection and traditional knowledge in Asia are compared in Appendix 1. This material is drawn from an UNCTAD-ICTSD commissioned paper, written by this author.

Aims

The aim of this thesis is to identify and analyse the intellectual property relations and (state and non-state) regulation of biodiversity-related traditional knowledge affecting Thailand. The thesis aims to demonstrate the different situated knowledge systems which have shaped the ownership, exchange and regulation of traditional knowledge of biological resources.

This research responds to five key research questions. These are:

1. What situated knowledge systems operate in the changing intellectual property regime affecting traditional knowledge?
2. How is scale (entailing jurisdiction and legitimacy) and nature (biodiversity) presented in the relevant law and policy making and what are the consequences?
3. How useful are the current dominant regulatory systems and what other regulatory forms need to be recognised?
4. Are current regulatory standards of research ethics appropriate for access to developing countries and traditional local communities?
5. Drawing on insights from the above questions: How can traditional knowledge be protected and promoted in Thailand?

A number of subsequent questions have been developed to directly respond to those above. The questions address practical policy relevant concerns, provide empirical and methodological guidance, critical contextualisation of the issues, and make contributions to relevant academic theories.

- To what extent does traditional knowledge exist in Thailand and how is traditional knowledge threatened?
- Has biopiracy occurred in Thailand? What are the main concerns in these cases?
- What are the moral, cultural, economic and environmental concerns related to intellectual property rights in plants, animals and their components?
- How effective are current laws for the protection of biodiversity and traditional knowledge?

- How does law (intellectual property and otherwise) create and interpret scale, jurisdiction and nature?
- What situated knowledges underpin concepts such as prior informed consent, access and benefit-sharing?
- What alternate regulatory forms exist (e.g. informal norms, law avoidance, local customary protocols) and how can they be better recognised?
- What forms of promotion and protection are the most relevant for traditional knowledge, as well as for science and technology, in the context of Thailand?

Structure of the Thesis

For flow of argument and readability, this thesis it is divided into five parts. These include: Part One – Introductory Chapters; Part Two – International Dimensions; Part Three – Governance in Thailand; Part Four – Local Dimensions; and Part Five –Conclusions. The parts follow a logical order from background, global through local dimensions, and conclusions. It is noted that this order may have the implication of preferencing the position of global over local debates – something extremely pertinent to the politics of international trade, intellectual property and environmental law. It is deliberately structured like this to demonstrate the current “top-down” regulatory dominance, constructed by key actors. As a result, this imbedded politics of scale is heavily critiqued and contextualised throughout the chapters.

In Part One, Chapter Two provides a background to the issues in question and reviews the relevant existing literature from a number of contexts and disciplines. Chapter Three explains the methods used throughout the research and the situation of the researcher within the study.

Figure 1 provides a diagrammatic representation of the different Parts of the thesis (each representing a geographical scale where research was conducted). The main boxes highlight the primary focus of the Parts. The interconnecting arrows indicate the flows of influence between the international, bilateral/regional, national and local scales. The enlarged size of the downward arrows indicates the more forceful “top-down” imposition of laws and concepts in the context of

intellectual property, biodiversity regulation and traditional knowledge. On the left of the diagram, alternate conceptual scales of legitimacy and jurisdiction are highlighted as an outcome of the research, in recognition of the fact that the contexts of actors' knowledge actually create the scales of "local" or "global" significance or impact.

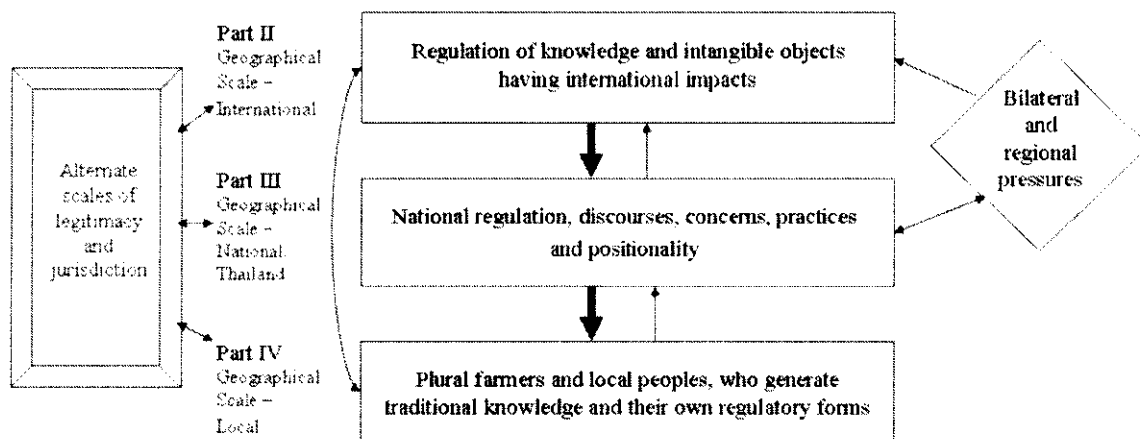


Figure 1: Thesis Flow Chart Highlighting Content of Thesis Parts and Connections.

Part Two (Chapter Four) provides an analysis of the international dimensions. International treaties, agreements and spatial politics are analysed with specific reference to Thailand. Recent trends of regionalism and bilateralism are also discussed. The contexts and underpinnings of these agreements are discussed to highlight their situatedness. The chapter provides insights drawn from field research in Geneva – one of the primary locales generating global discourses on traditional knowledge and intellectual property.

Part Three consists of a number of chapters detailing the governance of traditional knowledge, biodiversity and intellectual property in Thailand. This Part examines national positioning and regulation of knowledge. Chapter Five examines the complex nature of traditional knowledge in Thailand, related politics and ambitions for its protection. Chapter Six explores a number of bioprospecting incidents, misappropriations and biopiracy episodes in Thailand. The chapter draws out the implications of the cases, identifies their heterogeneity, presents critiques and

potential solutions. Chapter Seven details the legal history of Thailand, Thai laws and policies, enforcement and resistance, and customs and norms. Chapter Eight explores the current state of biodiversity regulation in Thailand and discussed related knowledge domains. Throughout Part Three, the actor and stakeholder politics in Thailand are explored based on interviews, meetings and participant observation. The development and effectiveness of regulatory forms over biodiversity and traditional knowledge are examined and critiqued. This critique is mindful that local contexts may conflict with the national bureaucracy's positions and objectives.

Part Four examines the local dimensions of traditional knowledge in Thailand through a series of village case studies. Chapter Nine discusses the traditional knowledge systems, local practice and customary structures of these communities, with an emphasis on identifying their heterogeneity. Chapter Ten acts as a self-reflexive postscript to Chapter Nine, and to the research process more generally. The chapter reflects upon the way the researcher, and this research project, is also situated in a specific knowledge framework. This discussion also highlights the inadequacy of the research ethics framework and approaches brought into local communities, which has direct relevance for the outcomes and aims of this research project. These findings are made with reference to research access, prior informed consent mechanisms, customary norms, and the need to differentiate knowledge domains. Part Five (Chapter Eleven) then presents the conclusions of the research.

2. LITERATURE REVIEW AND BACKGROUND

This Chapter provides a background to the issues and a review of predominantly academic literature.¹² Policy-based literature is dealt with more substantively in subsequent chapters (particularly Chapter Four). The intention of this chapter is to provide some insight into the discursive representation of traditional (or indigenous) knowledge, the recent history and spatial politics of intellectual property, and to establish some of the theoretical underpinnings of the research through past academic studies and examples.

The literature review begins with an explanation of the main theoretical underpinnings of the thesis. This is followed by an overview of the literature from debates on intellectual property rights, relations, reforms and critical or resistant positions, which have led into recent discourses on traditional knowledge and biodiversity regulation (see Figure 2). This provides a background on why the research has been conducted, and explains the situated knowledges that frame how I did this research.

¹² Notably there are very ambiguous lines between academic, activist and policy-based literature in this area of study. Therefore I use these terms, and those of “reform” and “resistance,” with acknowledgement of the similarities in argument between different authors.

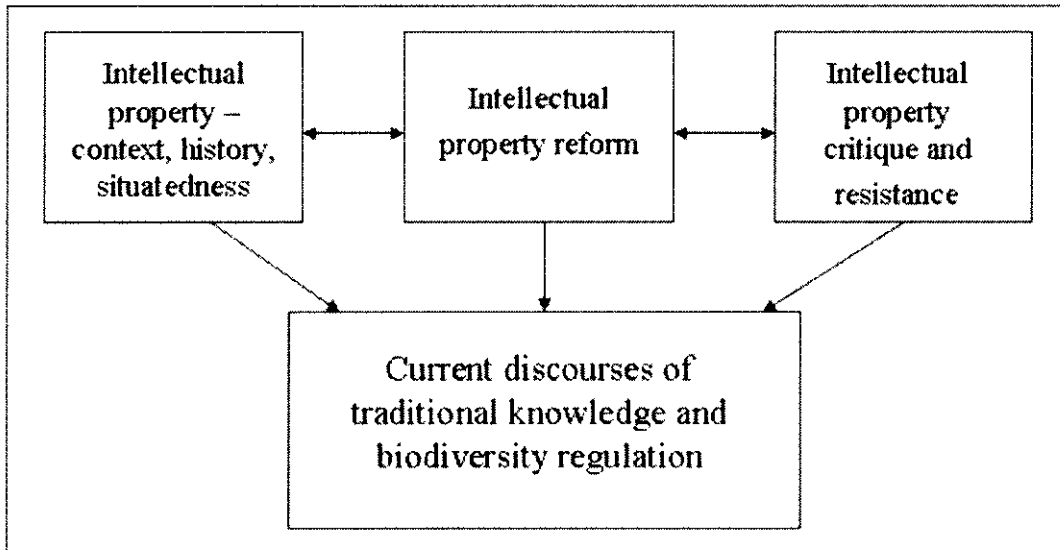


Figure 2: Structure of the Literature Review: Intellectual Property Debates Feeding into Discourses of Traditional Knowledge and Biodiversity Regulation.

2.1 Theoretical Underpinnings

The main theory underpinning this thesis is based on the argument that knowledge is always situated in partial contexts – there is no such thing as global or universal knowledge. The theory is put to use describing and analysing the situated positions and knowledges of actors involved in discussions over traditional knowledge and associated intellectual property relations. The situated knowledge concept is most commonly associated with Haraway (1991) although it has been used in a range of different ways since. Haraway uses concepts from the feminist critique of science to argue that all knowledge is situated and necessarily a partial perspective. This position is intermediate between the claims to absolute objectivity and value-neutrality on the one hand, and pure relativism on the other (Haraway, 1996). This concept allows for recognition of a multitude of different knowledge systems emerging from different cultural, political, environmental, temporal and spatial contexts.

The origins of the concept are poststructuralist concerns with the limited and partial nature of knowledge. The “universal truths” of structuralism have been gradually brought down as a

discursive deception created by those with power (Murdoch, 2006). Authors such as Foucault, in works such as the *Archaeology of Knowledge* and *Discipline and Punish*, have identified the partiality of knowledge – as something that is malleable and variously representable through *discourses*. Indeed Foucault’s use of the term discourse implies a situated context or agenda (Dean, 1999).

Foucault also uses these concepts to highlight the *subjectification* of people and things by regulation (both broadly and narrowly conceived) – in an approach called “governmentality.” Parry (2002) builds upon this concept. She investigates how regulatory systems (systems for codifying knowledge) are devised, enacted, disseminated and received as a useful entry point into the “somewhat opaque and as yet largely neglected geography of the knowledge/regulation agenda.” The regulatory geographies of knowledge are discussed in detail in the following section.

Authors such as Thrift (1996) have highlighted that there are different types of knowledge (idiosyncratic, unconscious, practical, empirical, and philosophical), different availabilities of this knowledge and therefore different distributions and domains of knowledge. Gupta (c2004) explains further, that knowledge can be individually held, communally held (although he notes that community is a fluid and heterogeneous entity) or in the public domain. This thesis explores the distribution of certain knowledges (particularly those which are practical, empirical and philosophical) in terms of their situatedness and connectedness to specific contexts (environments, cultures, and regulatory frameworks).

The “situational pragmatism” (see Castree, 2004a) also used in this research seeks to unpack the rhetorical skew placed on issues of “traditional knowledge protection and promotion.” It may help decolonise this traditional knowledge debate (see Howitt and Stevens, 2005; Brown, 2003), and, if used correctly, may help recognise the positionality of the researcher – something highly relevant to bioprospecting and biopiracy concerns. This situatedness is therefore part of the methodology, the approach, is written into the text, and makes visible the researcher with all their potential flaws. This is something explored more in the methodology (Chapter Three).

Legal Geographies: Spaces of Regulation

At the essence of the questions being analysed is an interrogation of law and regulatory forms, society, and space – or, as it has become known in certain academic circles, “legal geography.” More accurately, it is likely that the research ascribes the theoretical framework of “critical legal geographies” (see Blomley 1994; Blomey *et al.* 2001; Delaney, 2003), given the critical approach being undertaken, the methods and intentions.

So where has academic interest in law and geography been derived from? For a lengthy period comparative law scholars have been interested in the comparison of laws between jurisdictions and scales (spatial political compartments). Similarly there has been some geographic interest in the spatial diversity of laws, with geo-political aspects (the politics of space) seen as an important determining factor. There is also enduring historic academic interest in the inverse relation, which can be generalised as being mostly “impact-studies related to the way law affects space and the environment (see Whittlesey, 1935; Clark, 1989). Blomley (2000) notes that more recently a critical perspective on law and space has attempted to “transcend the unilinear causality of both schools by an exploration of the *complex interrelations of the legal, the spatial and the social.*” But what exactly does that mean for the pursuit of “legal geographies,” and how is it useful? Further definition and explanation is required.

The *Dictionary of Human Geography* (Blomley, in Johnston *et al.* 2000: p435) describes “law, geography of” as:

The relation between the places and spaces of social life, and the enactment, interpretation and contestation of law, both formal and informal.

This provides a useful starting point. An analysis of the geography of law thus is typified by an analysis of the interactions between place/space and the various stages in the “life” of laws. The legal places and spaces of social life could conceivably include anywhere, from the obvious – courts, parliament, government bodies, international organisations, state or federal jurisdictions – to the not so obvious – the media, public demonstrations, open or closed meetings, urban areas,

rural places, local communities, areas of environmental significance, in the social relations of property, in commodity chains and trade. What has typically been studied by legal scholars and geographers in the overlap of these two disciplines have been the obvious places/spaces.

Jurisdiction is perhaps the most commonly understood interaction, with formal laws typically the purview of state or national authorities, even in today's global society. Jurisdiction is the legal creation of units, scales or communities for regulation – this is something highly relevant for getting to the root of many misunderstandings associated with traditional knowledge, customary regulations, and “community” ownership. This regulatory boundary-making may dismiss the heterogeneity of social units, diverse cultures, and alternate regulatory frameworks (Santos, 2002; Chiba, 2002). The other predominant space-law relation is in regards to physical property. Anthropologists have argued that property relations need to be recognised as social relations, not just relations between person and object, or law and persons (Hann, 1998). The added layer of complexity in examining intellectual property extends these object-person-law relations to replicable and intangible objects (Strathern, 1998).

Within the spaces of social life however, there are many sites which can be examined for their varying relations to law, and to regulation. These sites can exist from the putatively local to the spaces which produce global discourses and international laws. Legal relations may refer to the development, ratification, enactment, interpretation, disputation, enforcement, remedy, influence, impact, understanding, rejection and breach of laws. While it is common to analyse the development and legal interpretation of laws, as well as disputes (particularly in a common law system which relies on precedent), it is less common to analyse some of the other factors particularly from the contexts of those individuals and groups beyond professional legal practice. Even when analysing the “culture of law” researchers and authors are often drawn to ethnographies of dispute settlement in courts (such as in Blomley, 1994; chapters in Starr and Goodale, 2002) rather than broader legal relations such as legal culture and statute implementation politics (a major focus of Chapter Seven of this thesis), as well as alternate systems of regulation (discussed particularly in Chapter Nine).

Looking beyond court precedents, important information about the public interpretation and practice (or non-practice) of laws can be found in social practices, norms or customs (see Chiba, 2000; Nelken, 1997; and Goldberg *et al.*, 2001 on law, culture and legal cultures). Common practices or customs provide the embryo for many laws, unless laws are imposed forcefully, manipulatively, or coercively (an example of the coercive imposition of laws includes the raising of intellectual property laws internationally – discussed in the following subsection). In this sense law can be seen as a norm-setting process where “certain meanings and social relations become fixed and naturalised, either in oppressive or potentially empowering ways” (Blomley, 2000). Many may ask “Why is this important?” Whatmore (2003) notes that “such conversations refuse to take either the letter of the law or the boundaries it subscribes as self-evident configurations of justice or space, insisting instead on their historical and cultural situatedness.” This is central to the core thesis arguments.

The legal geographies critique thus provides a mechanism from which a discursive resistance can be made to established norms which are oppressive in various ways. As Santos (2002) notes, regulation can have oppressive or emancipatory potential – it depends for who it is put into operation. An example can be made of property, in which the term for a set of legal rights has come to be socially conditioned to represent the actual tangible object rather than the associated legal framing. Furthermore, in the developed world property has come to be commonly associated with *private property*, but private property is actually just one of a number of ownership domains (Braithwaite and Drahos, 2000). This has implications for understanding cultures which persist with communal property forms in fora which only provide legal protection for private property rights.

This association with private property extends to intellectual property. Drahos (1996: 202) has noted, policymakers have continued to unproblematically embrace “proprietaryism,” which he explains as “a creed which says that the possessor should take all, that ownership privileges should trump community interests and that the world and its contents are open to ownership.” Broken down, Drahos (1996:201,202) describes that the proprietary creed is based on three core beliefs:

1. a belief in the moral priority of property rights over other rights and interests;

2. a belief in the first connection principle – the first person connected to an object that has economic value or with an activity that produces economic value is entitled to a property right in that object or activity (an extraction right);
3. a belief in “negative community” – that is, in their first instance things are not owned, but that ownership is open to any one individual.

These beliefs pose problematic challenges for traditional knowledge of biodiversity. The prominence of this ideology or approach has meant that traditional knowledge has been recognized only in a reductionist manner, and that alternate values in nature (biodiversity), such as cultural and spiritual values, have been placed as a lesser concern to property rights. *Sui generis* approaches so far have also attempted to utilize property (systems of ownership rights) and liability regimes (use-now-pay later systems), which impose similar reductionist values on biodiversity and knowledge. Only recently have policy-makers sought to engage with customary law systems, but even this engagement has been problematic due to the plurality of customary regimes and rules (Dutfield, 2006). A closer analysis of these problematic beliefs and their implications for traditional knowledge is provided in later sections of this chapter.

Although Drahos (1996) does not quantify the proprietarian effect, his later research provides a more detailed examination of the global effects of intellectual property standard raising and coercions (Braithwaite and Drahos, 2000). Thus “legal geographies” could provide useful critical insights which allow a resistance to what Drahos and Braithwaite (2002:198) call “the new inequality” relating to intellectual property control.

Although not an entirely consolidated academic project, these sorts of critical legal geographies, drawing upon postmodernist influences, have included a number of relevant areas of enquiry to date. Drawing upon Blomley (2000:pp436-437) these include:

1. *The analysis of the manner in which legal action and interpretation produces certain spaces* (with a particular focus on the local context of legal interpretation).
2. *The situated nature of legal interpretation, it being argued that legal practice and interpretation is often bound up in the (spatial or epistemic) locale in which it occurs.*

This includes relevant constructions of community and hierarchy, as well as the analysis of local legal cultures.

3. *The study of the geographic claims and representations contained within legal discourse, including struggles over the meanings of ownership and property rights (both tangible and intangible).*
4. *The politics of the law-space relation.* While laws are often perceived as somehow separated, “pre-political” or “natural,” critical legal scholarship has sought to identify the political actors and influences which have shaped or constructed laws. Santos (1995), for example, notes that the spatial scale at which law is analysed – local, national and supra-national – is not ‘innocent’, but has profound implications for social life.

The comment by Santos (1995) is pertinent – scale and law are not “innocent,” natural or predetermined. Howitt (2002) raises the important issue of scale and difference. He notes that depictions of scale abstract a universalised notion of “place”, “body and “self.” In this thesis I note that the universalised notion of scale and jurisdiction (linked to legitimate authority and representation) has problematic ramifications across different cultural landscapes. The IUCN Inter-Commission Task Force on Indigenous Peoples makes this point forcefully:

Although Indigenous Knowledge is highly pragmatic and practical, Indigenous Peoples generally view this knowledge as emanating from a spiritual base: all Creation is sacred, the sacred and secular are inseparable, spirituality is the highest form of consciousness, and spiritual consciousness is the highest form of awareness. In this sense, a dimension of Indigenous Knowledge is not local knowledge, but knowledge of the universal as expressed in the local.

(1997:37, original emphasis of the authors)

As Santos (2002:85) notes elsewhere, the legal field “is a constellation of different legalities (and illegalities) operating in local, national and global time-spaces.” These heterogeneous spaces and scales are actually shaped by the regulatory discourses and actions of an array of connected actors. As Santos (2002:85) further explains, the way law’s potential evolves, “whether towards [potentially repressive] regulation or emancipation, has nothing to do with the autonomy or self-reflexivity of the law, but rather with the political mobilisation of competing social forces.”

Therefore, recognition of the situatedness of those actors mobilising these forces allows insight into regulatory potential.

Each of the above areas of investigation set out by Blomley are useful to this study, however the second, third and fourth points provide particularly important impetus for investigation, in the context of the evolving intellectual property regime, biodiversity access, and respect of the knowledge and rights of local groups. The next section identifies the context and geo-politics of these laws. This provides an indication of the situated nature of legal construction and regulatory interpretation. As a response, this research will argue the need for improved recognition, consultation and representation of local contexts that should be developed from the ground-up. The thesis also argues for situational pragmatism in representations, as well as more direct representation of indigenous and marginalised peoples where possible. As we shall see from the following sections, the dominant regulatory forms regulating knowledge and intangible objects have been imposed in ways that are perceived as repressive, unjust, inequitable, or inappropriate by large sectors of global society – particularly indigenous peoples and people from developing countries.

2.2 A Geo-Politics of Intellectual Property: Context for Discourses of Traditional Knowledge and Biodiversity Regulation

Intellectual property discourses and regulation are contextualised in this section through a discussion of the origins, philosophy and history of intellectual property. Recent developments in intellectual property politics, resulting in binding international obligations for most of the world, are raised as a major concern. These have led to demands, particularly from developing countries, for reform of the intellectual property system, and for additions to international laws that relate to biodiversity and traditional knowledge. These demands for reform have been made in order to better reflect the needs of developing countries. Stronger resistances and critiques of the intellectual property system have also been raised. These resistant individuals and groups (also often from developing countries, indigenous and local peoples) have demanded abolition of life-

form patentability, as well as significant demands for biodiversity-related traditional knowledge protection.

All of these arguments have shaped discourses of traditional knowledge protection and related biodiversity regulations (i.e. access, benefit sharing, and prior informed consent mechanisms) from their own contexts and perspectives. From this basis, the concerns and positions of the Thai state and Thai peoples can be compared, and conflicts between regulatory forms can be examined.

Intellectual Property Context: Origins, Philosophy, History and Situation of Intellectual Property

Intellectual property is an inherently Western concept, its early formative origins articulated as monopoly privileges. The Oxford English Dictionary (10th edition, 2002) defines privilege as “a special right, advantage, or immunity for a particular person – a special benefit or honour”, having the historical use “a grant of special rights or immunities, especially in the form of a franchise or monopoly”. The word has its Middle English origins, via old French, from the Latin *Privilegium* “Bill or laws affecting an individual,” from *privus* “private” and *lex, leg-* “law.” The term has its origins in Latin as does some of the early history of patents and copyright privileges which originated in the Venetian City-State (Venetian Statute of 1474), before migrating through continental Europe, and reaching England.

Early grants of monopoly were often actually inducements for the introduction of new arts to a realm (importation franchises), with little or no concern for originality of invention (Palmer, 1997). During the 1500s it became commonplace for the English Crown to grant monopolies for the design, manufacture or importing of products through official documents known as “letters patent” (from Latin meaning “open letters”) issued at the prerogative of the Crown. As David (1993) notes, the “openness” involved actually has nothing to do with the disclosure of the invention, which is a much later contrivance to stimulate invention. Parliamentary concern about the potential overuse and exploitation of these privileges led to the enactment of the Statute of

Monopolies in 1624 in England, which is the foundation of the modern patent system. Three things to note about early patent law are that they: have always been individual (private) rights; that they were originally used to encourage technology transfer from other domains; and that they operated through an enforceable monopoly in their given jurisdiction.

For the most part, the research interest in intellectual property will focus on patents because they are the primary mode through which inventions are allocated individual rights that have since been claimed to be biopiracy cases. Other forms of intellectual property have relevance too, such as plant variety protection, geographical indications, trademarks, and to a lesser extent trade secrets and copyright. For now it is important to recognise that patents have specific aims and requirements which differ from other forms of IP.¹³ Under the international IP system, for an idea or invention to be patentable it must first satisfy three basic criteria. It must be:

- *New*, and thus not already in the public domain or the subject of a previous patent;
- *Not obvious*, which is to say it is not common sense to any accomplished practitioner in the field when asked to solve a particular practical problem, it should not be a self evident solution using available skills or technologies;
- *Useful, or industrially applicable*, the idea must have a stated function, which has a practical use and could immediately be manufactured to fulfil this function. (Adapted from May, 2000: 8).

The derivative origin for these criteria is the 1624 Statute of Monopolies which specifies that monopoly will only be granted to “a manner of new manufacture,” and limited this to a period of fourteen years – corresponding to two terms of apprenticeship (Bently and Sherman, 2001). It was assumed that the art would then be passed on to two sets of apprentices. This is the likely origin of the modern day principle for disclosure of the invention, allowing technology dissemination to the public. The definitions have of course been refined over the past few centuries; however the original principles have remained intact. Until very recently many countries had different patent periods of 10-15 years. They have recently however been harmonised to 20 years or more under WTO and WIPO regulations.

¹³ A number of NGOs and authors writing on these issues have not sufficiently distinguished between forms of IP in their analysis of related issues such as biopiracy, and thus it has added to confusion.

Intellectual property is commonly justified through three different theories: self-developmental or moral justifications, Lockean “instrumentalist” justifications, and utilitarian justifications. The self-developmental justifications are associated with the work of Georg Hegel (1967[1821]) and provide arguments that the legitimacy of property is ultimately tied to the existence of the free individual, and the recognition of that free individual by others. In other words, property was the way the free individual was recognised and identified amongst others and by virtue of their place in society (May, 2001). It is meant as a liberal means of protection of the individual from the intervention and power of the state.

Lockean justifications are based on the premise that people are entitled to the fruits of their labour (Locke, 1988 [1690]). Locke thinks that until laboured upon, objects have little human value, at one point suggesting that labour creates 99 per cent of their value (Hettinger, 1997).¹⁴ Ownership of property is held against other claimants (individuals) with the deployment of labour establishing a particular individual’s ownership within a particular society.

A number of flaws have been pointed out in these arguments. First, as Hettinger (1997) notes, in our society most patents and other intellectual property are owned by institutions (businesses, universities or governments) in which employees sign over their individual rights as part of the employment contract and in order to use institutional facilities for research. While modern day authors receive recognition of their labour (through moral rights or authorship), patents for example can hardly be justified as providing a means through which individuals are recognised and self-develop. They are certainly not the only way. A similar argument can be made against Lockean justifications, that royalties will typically be filtered through a company before reaching an inventor in terms of a salary or commission. Realistically, IPRs in modern day society are designed to ensure the security and survival of private companies, not individuals. Arguably the IPR system also structurally places private corporate interests before community interests (Drahos with Braithwaite, 2002; Drahos, 1996).

¹⁴ This idea is clearly at odds with the way many indigenous and local peoples place intrinsic values on unlaboured (or laboured) objects of nature (see, for example, Posey [ed] 1999).

It should also be noted that the current system of intellectual property, although often compared to tangible property rights, has a different origin. Property rights were a response to scarcity, whereas intellectual property can be interpreted as the deliberate creation of scarcity through state action (Boyle, 1993). This has important implications for monopolies over inventions such as life-saving drugs, for which tense debates remain in WTO discussions and between states.

This brings us to the strongest and most widely held justification – the utilitarian argument based on providing incentives. It is argued that only by providing incentives can the inputs made by an inventor and associated institution be recuperated. Thus business will continue to progress in terms of science and technology to the benefit of humankind. Frequent appeals are also made to the idea that patent records are then disclosed and available for the dissemination and transfer of technologies.

Patent rights are exclusive rights and this limits their use by others. They may be licensed subject to conditions of use and royalty payments. The intellectual objects which are the subject of patents however are non-exclusive and replicable – that is, they may be many places at one time and are not consumed in their use. This has particular implications for patents which are not adequately reviewed by patent officers, which have unnecessarily broad coverage, or in cases where a patent owner has undertaken devious acts and legal action to inflate the scope of a patent.¹⁵ This could have important repercussions for agricultural products such as in the “Enola Bean case” (Raised in Table 2) with concerns of farmer exclusion, and that unauthorised parties are taking credit for the traditional knowledge of others.

Other complaints are made about the sharing of technology. The patent is often asserted to be a mechanism for the dissemination of technology. In some cases they no doubt provide this role, but in a myriad of other cases, they fail to do so. As de Laet (2000) notes, developing countries often lack the institutional capacity to effectively utilise the patents. This is not helped where the inventor “invariably leaves something crucial out” of the invention description. Drahos (with Braithwaite 2003) details extensively the tactics used by companies and patent drafters in

¹⁵ This has occurred in a number of biopiracy cases including the Yellow Enola Bean case, and the *Kwao krua* case which will be discussed in a later section.

avoiding disclosure of the know-how involved in an invention to avoid free-riders and limit competition. As a dramatic example, he explains how during WWI the German chemical industry held patents in the US to monopolise the industry and deceive potential users of the patent information:

It must be understood that many of these patents are bogus, that is to say, contain deliberate misstatements for the purpose of misleading inquiring minds as to the manner in which important products are manufactured by the firm. In fact, some German patents are drawn for the purpose of discouraging investigation by more practical methods: thus any one who attempted to repeat the method for manufacturing a dye stuff protected by Salzmann and Kruger in the German patent No. 12096 would be pretty certain to kill himself during the operation. (Seward, 1917; cited by Drahos with Braithwaite, 2003: p56).

The rhetoric that intellectual property actually has beneficial effects for technology transfer has been criticised heavily.¹⁶ It is unlikely that there are many stakeholders who actually believe the claims of facilitated technology transfer to be anything but empty, particularly those from the developing world (de Laet, 2000). Instead, more popular has been a discourse of theft and piracy of protected IP based on the appeal of utilitarian and instrumentalist arguments. The argument is that researchers must recoup their investments in R&D through some means – namely patents, just as artists seek royalties in copyright for their contributions. In a global economy increasingly driven by high technology value-added and protected goods (at least in some parts of the world), the rent-seeking, particularly by large technology-based companies, has been pursued with increasing vigour. Yet through this process of globalisation the inequity between the haves and the have-nots seems as extreme as ever.

Authors such as Zerner and Parry (2000) have pointed to implicit issues of distributional justice (as do NGO campaigns such as Oxfam in relation to health – see Drahos and Mayne, eds., 2002). In other words, new technologies that could benefit the developing world are not reaching them because they cannot afford the IP protected products and they are at a comparative disadvantage

¹⁶ For a recent example see Kuanpoth (2006) on technology transfer and pharmaceuticals in Thailand.

institutionally when it comes to researching and manufacturing pharmaceuticals. Traditional medicinal and agricultural treatments have an important role here, but it is evident in the face of diseases such as HIV/AIDS, malaria and water-borne diseases, this will not be enough. They may contribute to the chain of invention or limit symptoms, but often are not sufficiently effective to save the number of lives being lost. This is compounded by issues of poverty, political instability or severe environmental conditions in least-developed countries.

As a result of these and other factors, individuals in developing countries (and also often developed countries) copy IP protected goods frequently. Copying is inherent in human nature as a part of the learning process, and this is reflected in the history of the early patent system as a means for technology transfer. In fact “free-riding” has been taking place since time immemorial.¹⁷ As Braithwaite and Drahos (2000) note, the US was a prime culprit for IP “piracy”¹⁸ during the 18th century while its economy was expanding exponentially. The US was not the only culprit as this UK Hansard extract notes:

Every work by a popular author is almost co-instantaneously reprinted in large numbers both in France, Germany and in America and this is done with much rapidity, and at little expense... All the works of Sir Walter Scott, Lord Byron... and indeed most popular authors are so reprinted and resold...

(Hansard, 1837; Cited by Braithwaite and Drahos, 2000).

That many developed countries utilised the intellectual property of others, and also pillaged the knowledge and resources of developing countries for centuries has been forgotten recently (see Dutfield and Suthersanen, 2005). This exploitation was the norm before intellectual property became a much more rigidly regulated form of legal right internationally. The opportunities for developing and least developed countries to catch up have been insignificant.¹⁹

¹⁷ In ancient Greece, Plato tells us that authors frequently copied each others works and often left their own anonymous – authorial rights were not often sought.

¹⁸ Drahos with Braithwaite, 2003, note that the discourse of IP “piracy” generated by US business lobbyists, have sought to inflate and demonise the act of copying. He notes a considerable disjuncture between the murderous acts of real pirates, and the physically harmless acts of copying IP protected works without paying royalties.

¹⁹ The TRIPS Agreement of the WTO gave developing countries only a few years to implement and update intellectual property laws, to staff intellectual property offices, and to police and enforce the laws.

Drahos (2003) goes further to explain how companies form “knowledge cartels” by establishing patent or intellectual property webs around a product that limit or exclude new or small firms from accessing the product, by requiring payment of several separate royalty streams. Patent evergreening, although usually closely scrutinised by patent offices, is another potential problem, and refers to the inventive repackaging or modification of an invention such that a further monopoly period can be obtained. Anti-competitiveness concerns and anti-trust associated with IPRs are important technical legal issues that continue to be grappled with. Patent engineering however comes in more forms than simply re-working the actual patent documents – it means manipulating the conditions through which the international patent system is implemented and enforced, as we will see in the next subsection (Drahos, 2005a).

It is a relatively recent social construct that the term “intellectual property” and its extension as a form of natural rights or other private rights, “intellectual property rights” has been used in place of privilege or monopoly (Palmer, 1997). As Fritz Machlup and Edith Penrose (1950) wrote, “those who started using the word property in connection with inventions had a very definite purpose in mind: they wanted to substitute a word with a respectable connotation, ‘property,’ for a word that had an unpleasant ring, ‘privilege²⁰.’” The term “intellectual property rights” was an outcome of the establishment of the United International Bureau for the Protection of Intellectual Property (by the French acronym BIRPI) in 1893 based on the Paris Convention (providing protection for patents and industrial property) and the Berne Convention (on copyrights) which will be discussed in the following section. This subsequently became the World Intellectual Property Organisation (WIPO) in 1967. Previously patents were referred to as industrial property, and copyrights, trademarks, trade secrets, and other forms of IP were thought of quite distinctly from patents.

In questioning whether patents and copyright are efficient, the available evidence is largely ambiguous. As Fritz Machlup (1958) concluded in his classic economic study of the patent system:

No economist, on the basis of present knowledge, could possibly state with certainty that the patent system, as it now operates, confers a net benefit or a net loss upon society...If

²⁰ See also Drahos (1996) at p213.

one does not know whether a system 'as a whole' (in contrast to certain features of it) is good or bad, the safest 'policy conclusion' is to 'muddle through' – either with it, if one has lived long with it, or without it, if one has lived without it. If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it. (Machlup, 1958:80)

Machlup here speaks of the US patent system, but his remarks have pertinence for many developing countries, which until recently, did not have patent laws. More recent economists have had similar hesitations about proclaiming the overall effectiveness and efficiency of the patent system, particularly for developing and less developed countries (see Maskus, 2000:235-239). Since the time of Machlup's study, a discourse of "piracy" has been created to vilify the perceived theft of intellectual property, particularly copyright, but also trademarks, patents and other forms. As trade in high input intellectual or creative value-added goods has expanded internationally, enforcement of that intellectual and creative input has been pursued. This has led to the discursive linking of intellectual property as an issue for the international trade community, and the space for alternate systems of knowledge regulation have been pushed aside and diminished.

This history of the intellectual property system indicates that it has evolved into a system with global reach, with relatively little change in the overall structure of the system. Now imposed on developing countries, and with effects reaching local and indigenous communities across the world, old colonialisms of exploitation are being rendered anew. There is a clear need for the intellectual property system to recognise alternate systems of knowledge regulation that it now ignores. The following section examines the recent geo-politics that have emerged.

Recent Intellectual Property Geo-Politics: Imposing the IP System Globally

There have been numerous comments on the broad geopolitical divide between the global North and South relating to IP, biodiversity and traditional knowledge (see Witmeyer, 1997; Laird, 2002; Sell, 1998; and Ong, 2005). Whilst this binary is a very evident phenomenon, there also exists a much more nuanced and complex underlying politics between actors operating in locales which generate local or global discourses. This thesis will focus most specifically on these underlying politics and positionalities, in global decision-making fora, with particular reference to Thailand's national interests, and the interests of local people in Thailand. This section sets the background for later analysis.

Intellectual property has evolved through three distinct periods as outlined by Drahos (1997), Drahos and Braithwaite (2000) and Sell (1998), of which there are obvious spatial-political implications. The first period, already discussed, can be described as the territorial period, with IP protection limited to national jurisdictions and frequent extraterritorial free-riding generally accepted. Drahos (1997) indicates that the international period began in Europe towards the end of the 19th century with several countries agreeing to form the Union for the Protection of Industrial Property (Paris Convention) in 1883, and a similar group agreeing to a Union for the Protection of Literary and Artistic Works (Berne Convention) in 1886. During this period, although still underpinned by the principle of territoriality, states could agree to extend the rights of owners to member countries other than their origin. It was during these periods that countries maintained strong sovereign control over IP lawmaking and considerable free-riding still existed. In the following global period, from the 1980s to the present, the US managed to discursively link trade and intellectual property and consolidate it as an annex to the final act establishing the World Trade Organisation in 1994 (the Marrakech Agreement). This research is predominantly concerned with the global period and how it came to be that way.

The global period has evolved through forms of economic coercion and the pressuring of countries prone to free-riding. For example in the post WWII period India designed its colonially inherited patent laws to help lower the price of drugs and they took a lax stance on copyright. As Braithwaite and Drahos (2000) note, to India this was rational social policy for the educational

and health benefits of its citizens, but to the US this was blatant piracy. From this time, through to today's WTO and WIPO meetings, the ideologies of India and the US have been at odds. Not surprisingly, India²¹, being one of the largest and most outspoken developing countries, has driven much of the resistance to IP standards through individual activist as well as political actions.

The US gradually emerged out of its previous lenient attitude to IPRs enforcement with the growing recognition of its potential importance for industry. Massive US film industry and huge pharmaceutical companies such as Pfizer wanted to protect their investments and pursue production internationally whilst limiting free-riding. Braithwaite and Drahos (2000) indicate that within the lobbying networks that had been organised by these global business entities, an idea began to be considered between a small group of consultants, lobbyists and lawyers (notably individuals such as Eric Smith, Elery Simon and Jacques Gorlin) – that of linking intellectual property to trade. The strategic aim of this was the grouping of IP as just one issue within a broader multilateral trade agreement giving global coverage, and allowing use of the enforcement mechanisms that had been developed for settling trade disputes (providing trade leverage as a coercive tool).

As Drahos and Braithwaite (2000; 2003), and Sell (2003) indicate, the Advisory Committee for Trade Negotiations (ACTN) and a Task Force on Intellectual Property were established to give big business in the US access to the ear of senior trade officials. These authors note that the ACTN had a long-term goal of placing intellectual property protection in the GATT, and so set about using trade leverage tools such as the Generalised System of Preferences (GSP) to trade-preference countries willing to up their IP standards. They also set about finding more coercive means to pressure countries to do the same, and passed the *Omnibus Trade and Competitiveness Act 1988*. This Act had a "Section 301" power which required the Office of the US Trade Representative (USTR) to identify, assess and negotiate with IPR free-rider countries. Failing this process (which regularly happened) the US would remove trade preferences such as the GSP, or to impose trade restrictions on the goods it received from the other country. This was a coercive standard-setting process.

²¹ Brazil, Peru and even Thailand have also been very outspoken in IP issue debates.

By the time parties to the GATT were ready for the Uruguay Round of Trade Negotiations the US had persuaded a number of countries to conform to their new IP-norms, including Japan, Europe, Canada and a number of developing countries. Little resistance was made to the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), and with the Agreement Establishing the WTO, it became binding on all member states and enforceable under the WTO Dispute Settlement Understanding. Drahos (2005b) locates this geography of intellectual property in “cities of planning and cities of non-planning.” Washington, New York, Brussels and Geneva make up the cities of planning – they are where many of the above events were played out, whether in US politics or business, the EU bureaucracy, or the hubs for UN and WTO organisations. Cities of non-planning can be found in many places: Seoul, New Delhi, Brazilia, and Bangkok – the list is extensive.

Since the TRIPS Agreement came into being, countries have continued to receive bilateral coercion under Section 301 and the pursuit of regional free-trade agreements (FTAs), predominantly by the US, but also by other countries seeking beneficial trade deals. The noticeable trend in US FTAs has been a gradual raising of terms and broadening of IP standard conditions. This has been referred to as “TRIPS-plus,” and the bilateral ratchet effect by Drahos (2001; 2005a). With the publication of Drahos’ articles and the activism of NGOs, developing countries have become very aware and critical of the way IPRs became rapidly globalised. Bilateral coercion has ultimately meant a loss of state sovereignty in law-making and the determination of appropriate means for their own development. This is clearly a top-down form of the globalisation of regulation (see Braithwaite and Drahos, 2000, p554). Since that time, activists, NGOs and developing country officials have been trying to reverse this through bottom-up processes to bring new international rules into line with their desires. Adequately enrolling participants into this norm-setting trend has been difficult, and many have been trying to “jump scale” in the establishment of new legal standards (Wright, 2005). Clear divisions seem to have emerged whereby the “colonial” powers of the advanced industrialised countries are being contested by much of the developing world. A recent resistant politics has now emerged.

A Critical and Resistant Politics of Intellectual Property.

To examine the resistant *politics* of intellectual property we must first briefly examine what is meant by using the term. In the simplest sense politics is about the distribution of power and influence (Burnam *et al.* 2004). With the exception of existing realist thought, the predominant means of understanding *how* politics is played out has shifted from that of purely military and economic concerns, to an emphasis on knowledge, ideas, influence and even morals. This is evident in postmodernist accounts such as that of Michel Foucault and Bruno Latour through to more mainstream depictions such as Singer's (2004) writing on the ethics of the George W. Bush presidency. The aforementioned postmodernist authors have also stressed the importance of investigating the specific role of individuals as actors involved in making up the complexities of the meta-politics we see in daily life. Thus, given the shift in our understanding of politics and power as something that is derived from the influence of actors and their ability to enrol others through discourse, a methodological focus is made on actor-discourses.²²

A critical politics of intellectual property (and associated issues) is something that has only recently emerged and is still only in the formative stages of development. In 1997 Boyle wrote of the lack of a politics of IP:

Right now, we have no politics of intellectual property – in the way that we have a politics of the environment or of tax reform. We lack a conceptual map of issues, a rough working model of costs and benefits and a functioning coalition-politics of groups unified by common interest perceived in apparently diverse situations. (Boyle, 1997:2)

A small number of key business actors were responsible for the effective globalisation of intellectual property, with little concern for the consequences this would have upon the developing world. This meant there were no politics, or at least only a very one-sided politics of IP. However Boyle (in 1997) was writing of copyright issues and the internet primarily, which more recently has developed a considerable IP-resistance, similar to those concerned with the impact of IPRs on access to medicines, and on biological resources and traditional knowledge. As Drahos and Braithwaite (2003) note, there are now key resistant voices such as Lawrence Lessig

²² See King and Kendall, 2004, for more detail on Latour and Foucault's theories of power.

(1999; 2004), Richard Stallman, Jamie Love (2002), NGOs such as Oxfam, and NGOs like RAFI,²³ GRAIN²⁴ and outspoken activists including Shiva (1993; 1997, 2001) who have been developing discourses on biopiracy and farmers rights.

Prior to the negotiation of the CBD, and in subsequent years, a number of concerns have been raised about research using biological materials and traditional knowledge, subsequent commercialisation and intellectual property protection (particularly patenting). Although the intellectual property-biodiversity-traditional knowledge issue is dominated by discussions and policy-making related to biopiracy, it is not clearly defined what exactly biopiracy is. Much of the NGO and media speculation about biopiracy actually involves several broader surrounding issues or concerns that have been expressed. These concerns have primarily been raised by NGOs, developing countries and indigenous peoples. These have included:

1. Moral, cultural and economic concerns about the patenting of life forms.
2. Biopiracy-related concerns, including patent quality problems, unfair competition, and misappropriation of tangible property.
3. Technology transfer and appropriate methods for encouraging innovation.
4. Environmental concerns associated with genetic diversity (monoculture and cross-pollination).
5. Food sovereignty concerns (local versus commercial control over agricultural inputs).

One criticism that is made of many international policymakers and the international forum space, is that they have typically attempted to resolve these issues in strictly legal terms and within highly confined legal mandates. In many circumstances it is difficult just to bring up concerns arising under international laws, because such concerns are not explicitly provided for in the word of the laws (such as public health/moral concerns about genetically modified organisms in the WTO). In the case of traditional knowledge, there are several fora which have only limited scope to deal with the issue and it has caused some degree of overlap and confusion. Many actors in the international negotiating community have sought to use this jurisdictional uncertainty and

²³ Note that the Rural Advancement Foundation International (RAFI) is now the ETC Group.

²⁴ GRAIN stands for Genetic Resources Action International.

forum-shifting strategically to stall discussions on traditional knowledge as well as on other intellectual property issues and laws. Before expanding on the micro-politics of these fora in Chapter Four, some of the elements of the above concerns are discussed in detail.

Moral, cultural and economic concerns about the patenting of life forms.

Despite the often-cited *Diamond vs Chakrabarty* case which paved the way for the amendment of the US Patent Act, in the US there is a history of patents on or relating to various life forms going back to the early 1800s. Louis Pasteur received a patent for a process of fermenting beer, and acetic acid fermentation and other food patents date back to the early 1800s (Office of Technology Assessment, US Congress, 1990; Dutfield, 2003). The US also allowed the patent protection of plants under the Plant Patent Act of 1930, for single *varieties* of plants (not species). Ethical considerations over the patenting of plants have not factored into the considerations of US Congress.

A clear precedent for life-form patents was set in 1980 in the US Supreme Court patent law case of *Diamond vs Chakrabarty* – a case over a genetically modified bacterium capable of breaking down multiple components of crude oil. On appeal in the Supreme Court, the judges found that a live, human made micro-organism is patentable subject matter as a manufacture or composition of matter. They also held that the patent statute supported a broad construction that Congress intended patent protection to include “anything under the sun made by man” (Office of Technology Assessment, US Congress, 1990). In developed countries, it gradually became commonplace to have patent laws protecting the rights of biotechnological innovators. Moral exclusion and differentiation in inventions was rapidly pushed aside via legal positivism, in the name of industrial expansion:

The fact that micro-organisms, as distinguished from chemical compounds, are alive is a distinction without legal significance. (Judge Rich, US Court of Customs and Patent Appeals, 1977, Cited by Dutfield 2003)

However, patents and IP law have only a short history in most developing countries, having only been recently imposed upon them (under the TRIPS Agreement). There are two cultural or moral concerns about life-patents: exclusive ownership of plants, animals (and perhaps to a lesser extent, microbes); and genetic modifications to these biological resources.

As an example, the University of Hawaii has decided to relinquish claims to three patents on taro plant varieties in recognition of the cultural significance of the plant to indigenous Hawaiians. Taro is considered to be a sacred ancestor of Hawaiian people. According to Sarah Sullivan of Hawaii Seed “culturally significant plants such as taro should not be owned”, and Molokai activist Walter Ritte Jr. “you can’t change our ancestors without our permission” (cited by ICTSD, 16 June 2006). Not all plants will have the same degree of cultural significance to indigenous or local groups, but there are many examples of expressed concern about commodification, monopolisation and genetic modification of plants and animals (e.g. Posey [ed], 1999; Shiva, 2001 and 1997; Siraporn, 2002; Suvanna, 1989; Brush and Stabinsky [eds], 1996; and the Thammasat Resolution – discusses in section 4.8). In the case of patents, ownership extends to all specimens/products of the patented invention. So, in this taro case the patents covered all cross-bred leaf blight resistant plant varieties. The fact that the variety has been altered is significant for the criterion of invention required in a patent. In the cultural context of the Hawaiian natives, it can be assumed that altered or not, they would not want a form of private monopoly ownership over their ancestors. Furthermore it can be assumed that they would not want some forms of scientific experimentation involving genetic modification, or perhaps even more conventional plant modification techniques. In the WTO, the African Group of nations have expressed similar sentiments, seeking to abolish the patenting of life-forms on moral, cultural and economic grounds (See Chapter Four).

Unease over the patenting of life forms and plant variety protection has typically arisen in developing countries, and is associated with technological development concerns. In many cases these countries have limited domestic scientific or industrial activity in the life sciences. Some authors have argued that allowing the domestic patenting of life forms would therefore only serve to protect trans-national corporations interested in expanding their markets into these countries (see Kuanpoth 2006, on the pharmaceutical industry). Whilst this may serve to increase foreign

direct investment in developing countries, the competition may subsequently stifle emerging home-grown commercial and industrial enterprise. The experience of developed countries has been that a handful of large multinational life science companies have effectively monopolised the market and stifled smaller start-up enterprises by using intellectual property (Drahos with Braithwaite, 2003:150-165). Developing countries may also have reservations about encouraging controversial technologies such as genetically modified organisms on cultural or moral grounds, and on the grounds that it may affect trade with countries or regions (such as the EU) who have restricted market access for genetically modified food products (see ICTSD, 18 Jan 2006).

Biopiracy-Related Concerns

In attempting to cover all the primary issues of concern in relation to intellectual property, biodiversity and traditional knowledge, the broadest applications of biopiracy and misappropriation are used. Unfortunately, those who are synonymous with activism on biopiracy such as Pat Mooney (2000) and Vandana Shiva (1997; 2001), do not clearly or succinctly define the parameters of the term. In fact they are “strategically vague” (attributed to Dutfield, Pers. Comm., 2005). The most useful definition is provided by Dutfield (2004:52), that biopiracy...

...normally refers either to the unauthorised extraction of biological resources and/or associated traditional knowledge from developing countries [and indigenous peoples], or to the patenting [or other intellectual property protection] of spurious ‘inventions’ based on such knowledge or resources without compensation.

In other words, biopiracy is first and foremost associated with patent quality (or patent system) problems, but it is also related to the misappropriation of tangible biological materials. As we will see in following sections, it is further related to perceptions of unfair competition. I have added some additional scope to this definition, based on experience with “biopiracy” rhetoric in Thailand (see Chapter Six) and its implications for a broader understanding.

It is important then to consider the property relations of biological materials (particularly plants). As Correa (1994:3) notes:

Property may be derived from the ownership of the land where plants are located, as a result of the application of the traditional law principle in accordance to which everything adhered or which is destined to be adhered to the land belongs to the landowner. Once separated from the land, the plants (or parts thereof) become subject to their own ownership regime as moveable property, including when they are transported outside the original land or to a different country.

Although sometimes endemic to particular regions or locales, the origins of biological resources may be particularly difficult to determine in modern society. Often commonly grown or cultivated plants are not endemic. Also, because they are mobile, and regularly traded or exchanged, biological resources can occur in many places far from their original ecological origins and environmental adaptations. The “traditional law” principle to which Correa refers, is also misleading. It may be accurate in Western legal traditions, but is more problematic on continents such as Asia and Africa, where land may be held collectively, farmers may be nomads, and property rights may be vaguely defined or operate under complex customary law protocols.

It is worth returning to Drahos’ (1996) discussion of the proprietary creed that has skewed current epistemologies of intellectual property, resulting in inequities and inappropriate impositions for traditional knowledge systems. According to a considerable amount of Southern activism the purported extremity of this creed²⁵ is a major factor underpinning biopiracy. The first main component of the proprietary ideology is “a belief in the moral priority of (particularly private) property rights over other rights and interests.” In the aforementioned quote, Correa – despite being an advocate of intellectual property reform – depicts the basis of dominant legal relations in plants in terms of property (and more recently in terms of intellectual property). This reflects the immovability of these prevailing epistemologies, over say, collective ownership regimes, “commons” depictions of biodiversity, and other rights and interests in the free use, exchange or spiritual connections with plants and nature (holistically conceived).

²⁵ Or otherwise it is presented as colonialism or imperialism by NGOs like Third World Network, BioThai, GRAIN, Vandana Shiva, and others.

The knowledge connections to biodiversity are even more complex than just their ownership considerations. Often in their endemic regions local people have used plant resources for various purposes including medicinal, cosmetic, agricultural, ecological and other applications. Their experience may be short term, or for a prolonged period where innovations and experimentation has occurred to identify potential uses for these resources. This traditional knowledge can be isolated or shared widely along with the distribution of the plant. In other cases the knowledge might be specific to certain ethnic groups, cultures or biogeographic regions. Sometimes plants may be “wild” or undomesticated, but in many cases locals will have at least some knowledge of them (Robinson, 2007).

Knowledge also needs to be viewed as heterogenous, as do the communities and regions in which traditional innovations, knowledges and uses originate. Prior to the industrialisation of agriculture, natural medicines and pharmaceuticals, the sharing of knowledge and biological products in trans-local areas was less problematic – with potential conflicts only having some local or regional implications where customary protocols (where they existed) were breached. The international distribution, isolation, transferred ownership, monopolisation and commercialisation of products have become serious concerns for traditional knowledge holders (see Parry, 2000; Posey and Dutfield, 1996; Yos, 2003a). This metamorphosis has caused a considerable amount of confusion and concern for many local and indigenous communities, and also for larger communities such as developing nations (in cases where there is broad distribution of an endemic plant variety such as Jasmine rice, and as reflected in the comments of the African Group to the WTO in 2003).

The second of Drahos’ (1996) proprietary ideologies is the “belief in the first connection principle” – the first person connected to an object that has economic value or with an activity that produces economic value is entitled to a property right in that object or activity (i.e. an extraction right). This is based on a corruption of Lockean justifications of property rights. In relation to traditional knowledge of plants and biodiversity, this sort of reward and extraction right for the creation of “economically viable” products that has some basis in traditional knowledge downplays the incremental contribution that local people may have played in its development. Intellectual property systems (patent law), to date, do not reward innovations or

knowledge that are not novel and industrially applicable. Fora such as WIPO are only just starting to even recognize these contributions.

This then relates to the third element of Drahos' (1996) proprietarianism: "belief in negative community" – in their first instance things are not owned, but that ownership is open to any one individual. This again reflects the dominance of the moral priority of property and ownership over other systems for regulating knowledge and biodiversity. Ultimately this has meant a significant dismissal of traditional or customary regulatory structures.

The fact that traditional knowledge and innovations are intangible and easily mobile, and that the associated biological resources are also moveable, have seen them spread from their original customary surrounds. Often less formal customs, rules, rituals, local governance structures, and other bundles of informal law or property rights surround these resources, their use, and knowledge sharing, than that which Correa depicts (see Posey and Dutfield, 1996). Locals may consider these customary norms or rights inalienable. When biological resources and associated traditional knowledge are disclosed to the broader public, they often undergo a metamorphosis from embedded object/knowledge to a public domain item (see Strathern, 2004). Obviously there are benefits in having this information disclosed to the public – solutions may be found to health, agricultural or environmental problems. However, the changes that take place may have offensive implications for the original communities. Respecting the customary norms, rules and local governance structures of traditional knowledge holders will help reduce offence caused in the entrance into the public domain.

These elements of a proprietarian creed highlight the epistemological extremes that exist between those that have sought to exploit and monopolise intangible objects and their physical manifestations in biodiversity, and those that generate traditional knowledges. Typically biopiracy incidents, and the discourse itself, have resulted from polarisations of epistemology, regulatory systems and "ways of seeing, thinking and doing" (Howitt, 2001). The remainder of this section explores how the term has come to be used, and some of the conflicting discourses that have emerged. Chapter Six examines Thai biopiracy cases in considerable detail.

The Taro case aforementioned provides an interesting example. Is this a case of biopiracy? In this case the patents seem to be made on legitimate inventions (i.e. the taro plants were cross-bred to develop a new, novel blight-resistant variety), but the original extraction of the plant may have been made without the consent of the indigenous Hawaiians. However, under international law, consultations with indigenous peoples are not explicitly required when accessing biological resources for research, patenting and commercialisation. The CBD requires prior informed consent of “provider parties,” in which it recognises states as sovereign authorities over biodiversity. Unless the authority of indigenous peoples to control biodiversity and traditional knowledge transactions are legitimised by state laws, then they have limited rights. In the above quote *indigenous peoples* has been added because they are commonly the original “owners,” “providers” or “holders” of biodiversity-related traditional knowledge, before it enters the public domain. A narrow legal interpretation would in many cases exclude these groups from seemingly legitimate legal “biopiracy” complaints against the patent owners. In such cases state-minority relations and self-determination of these particular indigenous authorisations are of particular relevance. Thus a common (or deliberate) misconception about biopiracy is that it must involve an international transaction.

At times authors have sought to argue that “there is no such thing as biopiracy” (Chen, 2005) or to downplay the need for some sort of international “disclosure of source and/or origin” patent requirement. These authors have generally been funded or associated with pharmaceutical or biotechnological industry organisations (see for example Oxley, 2005; 2006; Finston, 2005; and ABIA Acc. 24/2/2007) which have a vested interest in the expansion of minimum standards for intellectual property rights. Their discussion of biopiracy in narrow or strictly legal terms is likely to miss the fact that the concerns expressed by many stakeholders are in fact, environmentally, culturally or socially derived. By manipulating terms and language they attempt to create the illusion that many developing country concerns are exaggerated. Those who would like to avoid further international debate about biopiracy have deliberately discussed the issues in narrow terms (US submissions to the TRIPS Council for example).

Other claims suggest that “misuse of intellectual property law is not biopiracy” (Oxley, 2006). But the biopiracy discourse is commonly applied to spurious inventions under patent (or other

intellectual property) protection. It has been suggested by Oxley (2006) that such misuse of the intellectual property system can be challenged, that there are only a few cases and that an international convention is not needed to stop it. However, Oxley has missed the point made by developing countries, that the perceived problem is not necessarily just with patents, but that there are issues with the patent system itself. Considering that they receive few direct benefits from it and considerable concerns, they have good reason to complain. Many countries or indigenous peoples simply cannot afford to make legal challenges on every spurious claim - in many cases diplomatic efforts are employed instead (such as the Jasmine rice cases in Thailand). The exclusivity of the legal system surrounding intellectual property is at issue in both national and international fora. As a result, discussions have continued to centre on whether national systems are sufficient, or an international regime is required because of the number of international bio-resource transactions.

Similar emphases on “benefit sharing” and “green gold” in Oxley (2006) are also only capturing one aspect of the issue. Compensation is sought only in some cases – developing countries are not necessarily expecting some windfall of commercial opportunity, and it is problematic if they do (see Greene, 2004; Coombe, 1999). Rather they may perceive they have been taken advantage of, and most strongly want safeguards to mitigate future cases. Benefit sharing/compensation is largely a secondary issue and a retrospective response due to the fact that a great deal of germplasm has already fallen into the hands of external parties.

Table 1 provides examples of several important claims of patent-related biopiracy, made primarily by NGOs and developing countries. These cases are not fully investigated by neutral parties, and thus the accuracy of these claims should be viewed with some caution. The lack of details in their reporting can often be typified by what could be described as “strategic vagueness” (attributed to Dutfield, Pers. Comm. 2005). However, the sheer number of cases suggests that the IP system has been abused on more than one occasion, and that there could be considerable systemic problems with the international intellectual property regime.

It is worth noting that, although usually related only to patents, there are biopiracy claims relating to other types of intellectual property. Other cases may include trademarks or plant variety

protection (PVP) of biological resources and traditional knowledge. For example, the NGO ETC Group (formerly RAFI) has claimed to have uncovered 147 cases whereby (predominantly) public institutions have sought plant variety protection for varieties acquired from the CGIAR network (see Dutfield, 2004). The trademark on “Jasmati” also inflamed Thai and Indian farmers, who believed that it was deceptive of consumers as to the origins and quality of the product.

These examples indicate that a broader scope may be attached to the biopiracy definition than has been recognised by some of its critics. By deliberately assuming a narrow definition, it has been possible for these authors to provide an analysis that “biopiracy does not exist” or to downplay concerns and the need for international action. This sort of carefully positioned positivistic legal claim is evasive of the politicised and constructed nature of law. This is ironic considering that the internationally binding legal agreements establishing high standards of IP protection have been constructed by some of those that fund this sort of dubious “research” (see Braithwaite and Drahos, 2000: 56-65).

Cases of biopiracy relating to Thailand’s genetic resources and traditional knowledge will be detailed extensively in Chapter Six. A number of other alleged cases have been reported by NGOs, however, the details of these are even vaguer. Therefore it is impossible to identify the exact number of “actual” incidents, and in any case, this depends upon one’s definition.

Table 1: Cases of Alleged Biopiracy from Various Countries.

Biopiracy Case	Brief Details
The 1998 Australian 'biopiracy' episode	Application for plant breeders rights by Australian government agricultural agencies to CGIAR accessed chick pea varieties grown by subsistence farmers in India and Iran.
Blight resistant rice.	A blight resistant strain of rice called <i>Oryza longistaminata</i> was taken to IRRI where the resistant gene was identified. The researcher who identified the gene then filed for a US patent on the gene which was granted. This proved to be quite controversial. The university where the researcher was also based, UC Davis, consequently set up a benefit sharing arrangement.
Enola beans	A US patent was granted to an individual called Larry Proctor of a company called POD-NERS for an invention relating to "a new field bean variety that produces distinctly coloured yellow seed which remain relatively unchanged by season." The company is then believed to have written to all the importers of Mexican beans in the US, requiring royalty payments. POD-NERS has reportedly also brought infringement actions against two companies that were selling Mexican yellow beans in the US. It is not clear where the beans were originally sourced, however it has been asserted that they were "misappropriated" from Mexico. The USPTO is currently determining challenges to this patent.
Basmati rice	The US company RiceTec sells what it calls 'Long grain American basmati', has applied for trademarks on the word 'Jasmati' or some variant, and has received a trademark on the word 'Texmati'. In 1998 it also received a US patent for 'Basmati Lines and Grains' which has caused much anger in India and neighbouring basmati growing countries.
Neem Tree patents	The neem tree (<i>Azadirachta indica</i>) which is endemic to South Asia and has been used as a traditional treatment of various ailments there, has been the subject of more than 40 US patents and at least 150 worldwide. One challenge on a patent in the European Patent Office has resulted in the revocation of the patent on the grounds of a lack of novelty and an inventive step.
Turmeric patents	A range of patents have been granted on the use of turmeric as a wound treatment in various jurisdictions despite the historical use of the plant product by traditional groups in India and South Asia.
Yacon	An Andean plant with anti-diabetic properties was transferred to Japan, where it was researched and protected under plant breeders' rights.
The Hoodia Case	It has been known by the San Bushmen people of Southern Africa that a plant called hoodia can be consumed as an appetite suppressant to stave off hunger during long hunting trips in the desert. The qualities of this plant have become known to a wide range of companies which have sought to profit from potential anti-obesity applications. One case includes the South African Council for Scientific and Industrial Research (CSIR) which patented certain compounds which have appetite suppressant qualities. CSIR subsequently sold its patents to a pair of companies. In response to international criticisms by researchers, activists and NGOs, CSIR has since established a benefit sharing agreement with the San people.
The Quinoa Case	Quinoa is a food crop grown in the Andes region of South America. It has been reported that a US patent has been made on Cytoplasmic Male Sterile Quinoa. A RAFI investigation revealed that the claimed invention was merely a 'discovery' and that the claims of the patent were conspicuously broad. As a consequence of an NGO campaign the patent was abandoned.
Nuna beans	A patent was granted to a US corporation in relation to a "bean-nut popping bean" apparently derived from crosses involving Andean Nuna bean varieties.
Peruvian Maca	Patented in the US for its medicinal Viagra-like qualities.

Sources: Adapted from: Blakeney, M. (2005) 'Bioprospecting and Biopiracy' in Ong, B. (ed) *Intellectual Property and Biological Resources*. Marshall Cavendish Academic, Singapore; and Dutfield, G. (2004) *Intellectual Property, Biogenetic Resources and Traditional Knowledge*. Earthscan, London.

As a consequence of these cases, primarily developing countries have responded by employing diplomatic efforts as well as dispute cases to resolve the issues. These have been made at considerable expense and have caused extensive public concern and confusion – usually as a result of the complicated nature of germplasm ownership, germplasm transfer procedures, and intellectual property laws.

Discussions about protection from biopiracy have led commentators and decision makers to question whether these are just a few bad patents (and trademarks), or whether there are genuinely systemic problems with the patent system (Dutfield, 2004; Blakeney 2005). As the number of documented biopiracy cases rises, and due to the absurdly broad nature of some patents (such as the Neem Patents and the Enola Bean Case) it seems clear that the system is not adequately coping.

In Thailand there have been biopiracy incidents reported in the press, however there have been few detailed analyses of these controversies (Lerson Tanasugarn [1998; 1999] is one of the few authors who has made detailed analyses of cases). Therefore Chapter Six examines a number of prominent cases on the basis of interviews, patent (and trademark) document analyses and surrounding evidence. Activists such as Witoon Lianchamroen (director of the NGO BioThai), has been highly critical of the appropriation of traditional knowledge and biodiversity from Thailand, and was one of the key organisers of the Thamasat Declaration (discussed in Chapter Four). Similarly Pinkaew Luangarumsri (2001), Anan Ganjanapan (2000), Saneh Chamarik (*et al.*, 1993; 2002; 2004), and Yos Santasombat (*et al.*, 1993; 2003), have conducted considerable ethnographic research on the traditional knowledge of local communities, and have highlighted the injustices associated with knowledge and resource appropriation. These authors have become synonymous with discourses of “community rights,” have had a strong impact on policymaking and have shaped public debate in Thailand.

Technology Transfer and Appropriate Methods for Encouraging Innovation.

There is no doubt that certain aspects of intellectual property can protect the goods of developing countries. For example, design copyrights may protect the designs of traditional works such as Central Asian carpet designs, moral rights can protect the authors/creators of creative works, utility model (petty patents) could protect incremental inventions, and geographical indications could be expanded to protect agricultural goods synonymous with regions such as “Darjeeling,” “Indian Basmati” (or Pakistani), “Thai Jasmine rice (*Khao Hom Mali*).” The formality and expense involved with the intellectual property system however, makes it unpopular to all but the largest enterprises in many of these countries. It may also be inappropriate for the predominant types of invention. In Thailand, for example, innovations are often incremental, meaning that they would not sufficiently fulfil the requirements of innovation patents.

Intellectual property, particularly patents, trademarks and trade secrets, are typically used to protect value-added products which have incurred considerable investment costs in research and design, marketing, and product development. Considering that most products from developing countries have low value-added content, it is difficult to see how a strong IP regime could be of benefit, especially in the short term. In many cases developing countries have sought to “catch up” by copying goods from developed countries. Despite the “piracy” rhetoric, this is actually legal unless the patent (or copyright, trademark etc) owner has registered their patent in the country, or as an international patent in WIPO. In fact many of the world’s largest economies have a long history of copying and “piracy” of their own, which has helped them develop into the economic powers that they are today. A former US Register of Copyrights, Barbara Ringer, has argued that until World War 2, the relaxed US approach to international copyright “was marked by intellectual short-sightedness, political isolationism, and narrow economic self-interest” (cited by Drahos with Braithwaite, 2003: 129-130). Virtually the same can be said of the current US position on intellectual property, except that it has now gone completely to the extreme of IP protectionism.

Yet it is frequently claimed that strong intellectual property standards are an important precursor for economic development and technology transfer. What is the justification for this? During the

Uruguay Round, developed countries attempted to convince the developing world that intellectual property would encourage foreign direct investment. In other words, provisions for the protection of foreign intellectual property would mean that foreign countries are more inclined to invest there and to establish commercial operations. It is assumed that this would then have flow on effects for the local economy, including investment in research and development, local employment opportunities, and return cash flows into the local economy for expenses. The likelihood of benefits returning to the developed country, rather than entering the local developing country economy, has left many developing countries sceptical (Khor, 2002).

The WTO has established a Working Group on the Relationship between Trade and Transfer of Technology (WGTTT) (under Para. 37 of the Doha Ministerial Declaration). The main demanders of the Working Group have been developing countries seeking the full implementation of existing transfer of technology (ToT) clauses in all WTO agreements and possibly the development of a new agreement to facilitate ToT (ICTSD, Dec. 2005). Developing countries have tried to force open discussions on provisions relating to ToT in the TRIPS Agreement, amongst other agreements, to the continued stalling of developed countries. A United National Conference on Trade and Development (UNCTAD) official indicated that many developed countries have regarded the work of the WGTTT as a largely academic exercise and appear reluctant to move into discussions that might trigger substantive negotiations (Konde. Interview, Oct. 2005). Behind the scenes some have even called for a close to the Working Group. Although no progress was made in the face of the Hong Kong WTO Ministerial Conference in December 2005, several developing country submissions have helped to reinvigorate discussions somewhat.²⁶

In summary, developing countries have remained sceptical of many of the claimed benefits from raising intellectual property right standards. Where they have seen potential value in the use of IPRs, such as through geographical indications (GI) protection for agricultural products, they have been coerced by some developed countries – especially the US – against the extension of the terms of protection. The US (which preferences trademark protection) has sought to

²⁶ This information is drawn from an ICTSD report that I wrote during internship there.

continually stall WTO discussions on GIs as part of wider trade and IP manoeuvrings, in contrast with strong EU backing for broader scope in GI protection.

Environmental/Genetic Diversity Concerns

There are also concerns that intellectual property rights, particularly patents and plant variety protection, may indirectly result in the erosion of genetic diversity through the encouragement of monocrop agricultural activities. Resistant discourses emerged on this concern as a response to Green Revolution methods, and they have continued with expanded concerns about biotechnology, particularly its legal and technical protection.

Pat Mooney published an influential book called *Seeds of the Earth* in 1979 which took a critical ecological stance on the extension of IPRs into agriculture.²⁷ A later book Kloppenberg (1988) had a similar impact on the “seed wars” debate going on in the Food and Agriculture Organisation (FAO) and regarding the International Agricultural Research Centres (IARCs) and the Consultative Group on International Agricultural Research (CGIAR). This was contributed to by Juma in 1989 with *The Gene Hunters: Biotechnology and the Scramble for Seeds*. These earlier texts were the precursors to the anti-reductionist and anti-gene revolution activism seen in more recent years through NGOs like Genetic Resources Action International (GRAIN), the Rural Advancement Foundation International (RAFI – now the ETC Group), Third World Network, and by Vandana Shiva.

More recently, Reid (1992) has suggested that plant variety protection and the marketing/bundling of protected seed “packages” favours “centralised crop breeding and the creation of uniform environmental conditions, and discourages agro-ecological research or local breeding tailored to local conditions.” As Dutfield (2004:61) notes:

²⁷ Subsequently, Pat Mooney and Cary Fowler were key activist authors publishing articles through the NGO Rural Advancement Foundation International (RAFI). They generated the discourses of “biopiracy” and “farmers’ rights” which have been instrumental in resistance movements to higher IP standards. These have in turn been bolstered by activist Vandana Shiva, who is synonymous with the term “biopiracy.” These activists and discourses are discussed further in Section 3.2.

The biodiversity-erosive effects of this IPR-supported bias towards centralised crop breeding programmes are: decreased crop diversity; decreased spatial genetic diversity; increased temporal genetic diversity due to the need to replace cultivars with new ones every few years; and increased use of external inputs.

Activists argue that the farming of traditional agricultural varieties, often in more biologically diverse agro-ecosystems, is being replaced by fields of single plant varieties with minimal genetic variation. If we consider that protected plant varieties must be homogenous (in UPOV 1978) or be novel, distinct, stable and uniform (in UPOV 1991) to be eligible for plant breeders rights, it is evident that there is a legally enforced bias toward the protection of only homogenous plant varieties. This is something that Rangnekar (2000:1) calls “juridical legitimization to the breeding of genetically uniform varieties.” Granted, farmers may plant separate crops, however PVP protected crops are often also sold as part of seed-agrochemical packages including transgenic crops which have a built-in resistance to their counterpart pesticides/herbicides. These packages may decrease local genetic diversity across an agro-ecosystem as a whole.

More recently, and of a more acute concern, the issue of genetic use restriction technologies (GURTS) has arisen. The aim of these technologies is to restrict the use of germplasm, by controlling the expression of a gene associated with particular traits or with genes that are crucial to plant reproduction.²⁸ This technology may have the effect of rendering plants sterile, requiring continual re-purchase of seed by farmers. For this reason they have been dubbed “terminator technology” by influential NGOs. Obviously this raises concerns that if the technology takes off, farmers will not be able to save these seeds for the following season and will consequently become dependent upon seed manufacturers for their supply of seeds, and therefore their livelihoods. A number of countries have since banned GURTS, and there is currently a CBD de facto moratorium on their use, with most countries banning field trials (ICTSD, BioRes. 3 April, 2006).

²⁸ See Hubicki and Sherman (2005); and Visser *et al.* (c2002) for an overview of GURTS technologies and implications.

Other concerns expressed by NGOs and activists include claims that cross-pollination of genetically modified crops with domesticated or wild cultivars could have deleterious effects on genetic diversity. Although there are clear cases of cross-pollination, most of these cases are not supported by strong evidence of genetic erosion/pollution (Dutfield, 2004).

Food Sovereignty Concerns

Closely linked to the above issues, many developing countries have claimed that their “food sovereignty” has been gradually eroded in the past few decades (Cullet, 2005; Dutfield, 2004). In other words, with the increasing privatisation, centralisation and commercialisation of plant breeding – encouraged at least in part by intellectual property rights – farmers are losing local control of their farm inputs (and to an extent, their outputs) (Srinivasan, 2003). This is not a new phenomenon, and has been a gradual result of the “Green Revolution” (Shiva, 1991) Government incentives, regulation and education, as well as company marketing about the “high-yield” advantages of commercial seed varieties are largely to blame for the shift away from traditional local or domestic cultivars. As mentioned, these are often sold as packages which require seasonal or annual re-purchase due to second generation crop sterility. Farmers in many countries have entered into contracts or gone into debt in order to increase on-farm productivity as promised by many of these “wonder crops.” Environmental factors such as flood or drought affect all crops, but particularly those which are not well adapted to local conditions. In converting from well-adapted local varieties to externally developed seeds, farmers have been left open to potential ruin. Whilst IPRs may have some role in encouraging the privatisation and centralisation of agriculture, some of the other factors discussed above, may have had equally significant impacts on the loss of developing country food sovereignty (Dutfield, 2004; Srinivasan, 2003).

Sub-Section Summary

There are a range of interrelated issues which have been raised in the press by NGOs, activists and other concerned stakeholders. Much of the haziness that has shrouded discussions on

intellectual property, biodiversity and traditional knowledge protection has emerged because of emotional responses and confusion across the intersection of issues. Both sides of the debate have strategically played upon these emotions and have used “strategic vagueness” to their advantage at times. NGOs that release statements on one of these issues usually make comments linking them to the others – similarly business lobby groups have responded in kind. Clearly, further research and empirical evidence is needed to clarify the sources of the problems. In focusing closely on traditional knowledge, this research will discuss biopiracy and moral/cultural concerns in greater detail. However, it is recognised that these other concerns play an important rhetorical role in the complex geo-politics surrounding intellectual property, biodiversity and traditional knowledge.

The following section raises academic and policy-making discussions for intellectual property reform and adjacent biodiversity controls. Spurred by the emerging resistant politics on the one hand, and the imposition of forceful international obligations on the other, these parties have largely sought to widen flexibilities and exceptions in the available policy space of international and national law.

Intellectual Property Reforms and Biodiversity Regulation

One of the main interests of developing countries in the establishment of intellectual property reforms has been in relation to biodiversity and traditional knowledge.²⁹ Activists from the global South have been quick to note that the majority of the world’s biological resources are held in their countries throughout the tropical zone (see Laird, 2002). This means that in identifying medicines for pharmaceutical production and useful agricultural crops for agro-industrial or biotechnological innovations, developed countries often dip into the biological wealth of the developing world. There is a fairly distinct bio-geographical divide, with some notable exceptions.³⁰ Furthermore there is interest in the comparatively “untapped” knowledge of local or indigenous peoples who utilise biological materials, by virtue of this knowledge being less

²⁹ The others are in relation to health and access to medicines; copyright and access to technology/ educational materials.

³⁰ Australia, for example, is a highly biodiverse developed country.

explored than that of colonised or westernised peoples (Cotton, 1997; ten Kate and Laird, 1999). Traditional practice and even shamanistic experimentation with plants, herbs and animals is maintained in developing countries, local and indigenous communities, and is often intertwined with local culture. The identification of “miracle drugs,” cosmetics, agricultural varieties, and even exotic plants for horticulture has allowed a growing interest in bio-prospecting activities until very recently. However, the recent spate of “biopiracy” events has scared off many would-be bioprospectors coming from the developed world (Greene, 2004).³¹

Relating to inequities in recognition and reward for useful (traditional) knowledge and innovation that have arisen with the global expansion of the intellectual property system, developing countries and indigenous groups have sought reform of international intellectual property biodiversity agreements. The main international policy responses have been threefold.

In the WTO, WIPO and the CBD, there has been a push mainly from developing countries for a requirement that patent applicants disclose the source and/or country of origin (or legal provenance) of any biological resources (and potentially also the associated traditional knowledge) used in an invention. This is intended to track the sources of genetic resources that have been passed between different parties. This would likely come in the form of a technical amendment to the international patent system in the WTO (which has a dispute settlement body) or WIPO (which has less clear or enforceable dispute settlement procedures) (Chouchena-Rojas *et al.*, 2005).

For it to be effective, it has been emphasised that a “disclosure requirement” would need to be part of the international system, due to the trans-national nature of many biodiversity transactions. Discussions have centred around the legal status of a disclosure requirement (voluntary or mandatory), whether it should require disclosure of the “source”, “origin” or legal provenance of the materials, whether it applies to materials only or to their “derivatives,” and also whether a requirement should extend to associated traditional knowledge (see Dutfield, 2005a).

³¹ There is considerable anecdotal evidence for this from comments of delegates, observers and researchers at the CBD Ad Hoc meetings on Access and Benefit Sharing, of which I attended the Bangkok meetings in 2005.

Related to a “disclosure requirement,” certificates of origin (transferable permits or passport details of genetic resources) are another way of tracking the source of genetic materials, and this has been discussed in CBD fora (Louafi and Tobin, 2005). Similarly, Material Transfer Agreements (MTAs) are suggested as a way of tracking the transfer of biological materials, particularly in Food and Agriculture fora and relating to International Agricultural Research Centre materials. Submissions calling for a disclosure requirement and transfer documentations have generally been linked to the following two requirements.

The second main policy measure has emerged out of the CBD text – a requirement for benefit sharing (profit or otherwise³²) when researchers access and subsequently commercialise biological materials and associated traditional knowledge. The CBD encourages party countries to “facilitate access” to these resources, but on the proviso that some form of compensation is made to the “providers.” Under the rules of the CBD, state sovereignty over biological materials is recognised. Subject to national laws, benefit sharing may or may not extend to local custodian communities. This measure is particularly important for the retrospective compensation of provider parties.

In terms of the practicalities of benefit-sharing agreements, there is a variety of literature that has critiqued a number of approaches used. A number of case studies on benefit sharing arrangements have found that only rarely have true “benefits” been reaped by provider parties (see for example Siebenhuner *et al.*, 2005), that the transfer, contract and conditions have been controversial, and that there is now an increasing trend away from sourcing biological materials from *in situ* or “indigenous” sources (See Greene, 2004; ten Kate and Laird, 1999). Some cases include:

- the Costa Rica InBio non-profit, non-government bioprospecting activities which have been controversial for failing to provide benefits to local farmers and indigenous groups (Mateo, 2000; Castree, 2003);
- the failed bioprospecting venture of Shaman Pharmaceuticals Inc, which intended to identify traditional medicines, isolate active compounds and commercialise the product

³² The Bonn Guidelines set out a number of different approaches to benefit sharing which may in many cases be more appropriate than profit-sharing, depending upon the circumstances of the provider group – the local custodians, research institutions or the national government.

while also sharing a portion of the benefits (See Dutfield, 2004:19-20; Svarstad, 2000; and Clapp and Crook, 2002);

- the *Oryza longistaminata* gene patent and benefit sharing arrangement (see Gupta, c2004);
- the development of the “Jeevaani” drug from the Kani medicinal plant *ayogyapaacha* in India which could have had broader benefits and more involvement of traditional knowledge holders amongst other issues (see Gupta, c2004);
- a Riche Monde philanthropic project to document the traditional knowledge of the Karen people in Northern Thailand which failed because of a lack of trust and because of public skepticism about their motivations (see Kaosa-ard, 1995);
- The *Hoodia* case involving the San people and the Council for Scientific and Industrial Research of Sough Africa where a failure to obtain PIC initially led to further problems of benefit sharing and San exclusion from deal-making, with subsequent difficulties providing benefits to different communities (Wynberg, 2004).

It is therefore easy to be cynical about the practicalities and reality of benefit sharing, especially where the knowledge of diverse local communities and farmers groups are involved. Ultimately with more experiences and clearer regulatory frameworks benefit sharing agreements may increasingly become effective and useful. There are some cases where benefit sharing agreements have reportedly been relatively successful, for example, the Andean Potato Park in Peru, involving Quechua communities and the International Potato Centre gene bank. The agreement establishes reciprocal access to genetic resources, and benefit sharing is being established on the basis of Andean customary laws of reciprocity (ANDES, *et al.*, 2006).

The third policy measure – prior informed consent (PIC) – may be the most important for the respect of traditional knowledge and practices of original providers, and could help respect the rights of indigenous or local groups. PIC refers to a contract or agreement that is made prior to an activity, on the basis of sufficient information, and provides permission or denial for the proposed activity. Regarding PIC for biological resources, the CBD Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation provide guidance on procedure. PIC should be sought from the relevant competent national authority

(which should be clearly accessible). It may (and should) also be required of different levels of government, provincial or local, as well as from traditional local and farming communities, especially where *in situ* materials and traditional knowledge are involved, or where *ex situ* materials have clearly traceable sources of origin. PIC should be sought sufficiently in advance for all parties to consider the application for access.

Prior informed consent is an ethical tool that has a history of use in the medical field, particularly relating to patient privacy and doctor liability (see Faden, *et al.* 1986). Usefully Oliva and Perrault (2005) discuss the historical use of PIC including its recent use in environmental protection, and in ethical practices for research with humans more generally. They suggest that it is often perceived as problematic by international fora policy-makers due to the difficulty of identifying *who* consent should be sought from, particularly relating to agricultural traditional knowledge (see comments by Smolders, 2005, from an industry perspective). What I suggest from this research is that we (researchers and policy makers) may be applying PIC, a western ethical/liability principle, uncritically in contexts and to people where it may be unsuitable or impractical. Having said this, there are few better alternatives.

In the development of laws to date, many countries (Thailand included) have had difficulty effectively and inclusively applying PIC principles. This is due to the broad distribution of biological materials and traditional knowledge and the difficulty identifying custodians/providers; due to issues of representation in/between custodian communities; and due to issues in relation to retrospectivity given that a great deal of biological material and associated knowledge has already been disclosed.

Beyond these three main policy measures, some important commentators have made additional contributions that target issues beyond the limited scope of patent law or biodiversity access controls. Posey and Dutfield (1996; see also Posey 2004; (ed) 1999) were influential in engaging with traditional knowledge-intellectual property issues. *Beyond Intellectual Property* was written as a guide for indigenous people's groups, activists and policymakers on how to deal with intellectual property, traditional knowledge and biological resource issues. As the title suggests, the authors indicate the need to go beyond approaches based on the logic of intellectual property,

and to focus on other rights. In earlier papers (1990; 1994; 1995 *et al*), Posey develops the concept of traditional resource rights (TRR) to define many bundles of rights that can be used for protection, compensation and conservation of biological and knowledge resources (1996). The inherent discourse underlying this terminology also represents an attempt to shift the emphasis away from IPRs explicitly to *sui generis* (unique, or of their own kind)³³ legal (and informal) systems. Gradually, activists are broadening the meaning of this term *sui generis* for which Posey's articles were probably catalysts. *Sui generis* has come to mean self-generating rights for local communities and farmers (see Yos, 1998; this is discussed in more detail later).

All the above policy-making discussions and critiques have subsequently been engaged by Graham Dutfield in a series of detailed works aimed at a broad audience of policymakers, academics, NGOs and activists. Dutfield has had considerable influence on the international debate through his publications, but also by meeting with, working for, contributing and consulting to NGOs³⁴ and UN bodies in Geneva (see for example 2002; 2003; 2004; 2005a; 2005b; 2006).

Similarly Geoff Tansey has authored numerous articles and has been regularly involved with Quaker United Nations Office activities, with an emphasis on food security and biodiversity issues (1999; 2002). Carlos Correa has contributed substantially with several articles and books (1994; 2000; 2001) focusing on practical policy making and clarifying issues relating to genetic resources, traditional knowledge and IPRs. Others have focused their legal skills on technical solutions and clarification of the set of issues involved in specific regional or technical matters such as Tobin (1997; c2005; 2005 with Louafi), Vivas-Eugui (2002; with Ruiz 2005), and Gupta (2001; c2004) amongst many others. These individuals have played an important role in supporting developing country interests and have been pushing for development-friendly reforms in the WTO. Much of the technical focus has been around potential amendments to the patent

³³ *Sui generis* means "unique", derived from Latin meaning "of its own kind" according to the *Concise Oxford English Dictionary*, 10th edn. It also has a lesser known sociological meaning associated with Emile Durkheim's 1893 *Division of Labour in Society*, that society is *sui generis*, independent or self-generating beyond the individual. Thai authors from the social sciences, such as Yos (1998), have reinvented this sociological understanding of self-generating societal structures, rather than the legal use of *sui generis* in TRIPS.

³⁴ Dutfield was formerly the Academic Director at the International Centre for Trade and Sustainable Development (ICTSD) on the IPRs joint project with the United Nations Conference on Trade and Development (UNCTAD).

system discussed already, but also seeking to develop alternate *sui generis* systems of rights in traditional knowledge, and biodiversity controls.

From Thailand Jakkrit Kuanpoth (2002; 2003a; 2003b; 2004; 2004 *et al.*; 2005a; 2005b; 2006), Tannit Changtavorn (1998), Jaroen Compeerapaap (2003; 2004 *et al.*), Jade Donavanik (2003; *et al.*, 2004; with Buntoon 2005), Pennapa Subcharoen (1999; *et al.* 2001; 2003), Surawit Vanakorod (*et al.*, 2004), and Buntoon Srethasirote (with Chanisa 2005; with Jade 2005) have all focused on the implementation of international laws in Thailand (and the implementation dilemmas Thailand is facing), the development of *sui generis* laws, and critiques of the Thai-US FTA.

Raising the need to respect customary law in the protection of traditional knowledge – a recent international policy consideration – Taubman (2005) has explained the paradox of “globalising jurisprudential diversity holistically” (I discuss customary law further in the following subsection). Taubman’s paper and work at WIPO (under pressure from indigenous groups and NGOs), have introduced considerations of customary protocols and laws more directly into the IPRs and traditional knowledge debate, though notably only those relating to their accord with IP transactions (see Oguamanam, 2004). This “mandate-driven” policy-focus is a substantial limiting factor in WIPO studies (see WIPO, 2001).

This section highlights the fact that considerable literature has emerged seeking to assist reform of the international intellectual property system, and also to develop adjacent systems within international biodiversity frameworks.

Section Summary

The scene of a complex geo-politics of intellectual property, biodiversity and traditional knowledge is set. There are regulatory hubs, key actors and gatekeepers, tools of discourse, economic coercion, norms and counter-norms, all being strategically manipulated at a relatively rapid rate. At issue has been an epistemological divide. The knowledge of some groups was seen

from a proprietary perspective of “negative community” (Drahos, 1996). It was so far removed, primitive, locally and communally held and orally shared, that it could be appropriated without question – if it was not already protected, it was seen to be in the “public domain.”

At the same time the technicalities of legal culture and vernacular coupled with the politics of trade, and the complexities of innovation in advanced technologies have been joined for a new reductionist way of regulating the knowledge of the world – in terms of property. These new alliances managed to slip past a world of “non-planning” in a drive for the protection of exclusive private intangible property rights over ever expanding non-exclusive products. As Wright (2005) notes, a “scale-jump” was achieved by crafting the discourses of (specific local epistemic concepts of) intellectual property as universal and global.

This requires us to do some re-thinking about scale. As has been emphasised by influential geographers such as Doreen Massey (1991, 1992, 2005) and Donna Haraway (1991),³⁵ what we find in the local is not necessarily something parochial and limited, but rather *local is everywhere* and it is evermore globally connected. In the context of this discussion it is important to recognise that the actors which operate in these varied localities do so through *situated knowledges*. These actors then reinforce their position as shapers of the politically and rhetorically global, national or local.

The contention of this thesis is that knowledge actually was already regulated by societies in developing countries and indigenous peoples, in less positivistic or codified ways. These traditional systems have since been pushed aside. The “scale-jump” that was achieved should be combated by a respondent critique of the situatedness of the knowledge that underpins intellectual property discourses, and their inappropriateness in alternate contexts. Consequently, a resistant politics has emerged, as well as a reform agenda, attempting to rectify the perceived imposition and inequity relating to traditional knowledge, and related biodiversity regulation. The following section focuses specifically on the discourses and representation of traditional knowledge.

³⁵ See also anthropologist critiques of the way we envisage the parochial “local” scale, versus a more encompassing view of connected locales with more or less global influence. E.g. in Ingold and others in Strathern (ed, 1995).

2.3 Discussion and Discourse of Traditional Knowledge.

It is not possible to isolate the origins of academic interest in local, traditional or indigenous knowledge save to say that only in recent decades has a genuine *critical* debate emerged. At present, a vibrant series of debates has emerged across various disciplines. The nature of traditional knowledge and associated issues has meant that an assortment of perspectives can be found with many cross-cutting themes; however no one specific disciplinary framework exists through which it can be completely studied. By its very nature and due to the assortment of practical issues surrounding it, effective study of traditional knowledge must be interdisciplinary. This section considers its use from a number of perspectives

Until this point, the term “traditional knowledge” has been used in an unproblematic way. Therefore some historical context is provided, as well as discussions of definitions, critique of the use of “tradition,” as well as ethical considerations in light of the concerns for traditional knowledge that have already been discussed.

History, Definitions and Representations

In the past few centuries the knowledge of indigenous and local peoples was regarded with interest by explorers, anthropologists, scientists, and ethnobotanists as an aspect of the study of culture and society and as a means to identify useful biological products. Although “ethnobotany” has a history going back to 1895 – the term was coined by Harshberger (see Harshberger 1896) – there are precedents. Cotton (1996) notes that in 1492 Christopher Columbus collected a number of useful plants from what is now Cuba (including their discovery of tobacco) based on the observation of local practices. The Royal Forests Department of Thailand (Acc. July 2006), Forest Herbarium also notes collections going back to 1778, with a number of these early collections based on the observation of local practices.

The field of ethno-botany rapidly expanded in the early 1900s, particularly in the US. The work of prominent ethnologists and cultural ecologists (as these fields emerged) broadened studies into

the development of understandings of the cultural context of plant use (see Gilmore, 1919; 1932; and Rappaport 1968 on cultural ecology). Cotton (1996) notes that the middle of the twentieth century saw changing attitudes towards traditional peoples. “Ethnoecology” emerged from the work of Conklin, famous for his 1954 thesis *The Relation of the Hanunuo Culture to the Plant World* (see also Conklin, 1961 on shifting agricultural systems). These scholars showed that these societies had ways of thinking that differed from Western thought and sciences, but were just as valid. This helped dispel notions of indigenous knowledge as simple, naïve or ignorant. Following this scholarly attention was seen as part of an “anthropological rescue operation” with emerging concern that the world’s indigenous peoples and their societies were about to disappear (Cotton, 1996).

The post World War II period saw the development of the United Nations, geopolitical recalibrations, and the eventual emergence of a global protest movement involving indigenous and colonised peoples. As the human rights movement also took hold, the rights of ethnic minorities and indigenous people came to be more broadly recognised. As Coates (2005), notes the United Nations Declaration on Human Rights challenged the cultural assumptions of the past – particularly the assertion that one culture, race, or ethnicity was superior to another. An emphasis was placed on anti-discrimination in the activities of the new international organisations. The International Labour Office (ILO) consolidated this with ILO Convention 107 (1957) which sought to allow for indigenous or tribal people to “... benefit fully from the rights and advantages enjoyed by the other elements of the population...” amongst other important statements on territory/land, employment and economic development.³⁶ Furthermore, as the former colonies gained independence and the dualism of the cold-war period subsided; politics and economic opportunities of trade with the “third world” took on a new importance. Indigenous populations as well as the former colonies began to be recognised with a newfound legitimacy and interest.

In the late 1980s and early 1990s a considerable amount of academic anthropological literature also emerged on indigenous knowledge, particularly from postcolonial perspectives and

³⁶ The international legal treatment of indigenous and local groups will be discussed in more detail in Section 5.12.

settings.³⁷ The journal *Indigenous Knowledge and Development Monitor* was established in 1992 as part of an IK-Network which has been a joint venture of various organisations. In 1992 Johnson used the term “traditional *ecological* knowledge,” explaining it as:

A body of knowledge built by a group of people through generations living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use (Johnson, 1992: pp3-4).

Academic and policy-related discussions of indigenous or “traditional knowledge” were typified by a focus on the ecological or biological aspects and this has continued through current literature. As Dutfield notes:

Traditional knowledge commonly refers to knowledge associated with the environment rather than knowledge related to, for example, artworks, handicrafts and other cultural works and expressions (which tend to be considered as elements of folklore) (Dutfield, 2004: p91).

The narrowed reference for traditional knowledge is worth some consideration. It is unclear exactly how the division has been made, but it has become typical to separate traditional knowledge (as practical biodiversity-related knowledge) from qualitative knowledges and expressions (like folklore, cultural expressions, ritual and customary knowledge). The division seems to have been made on the basis of anthropological and academic interests, but has more recently been compounded by the divisions made by organisations like WIPO.

For WIPO, traditional knowledge is technical, focused on uses of know-how, innovations and skills and relates to “agricultural, environmental or medicinal knowledge.” Folklore and cultural expressions are “songs, dances, chants, narratives, motifs or designs” (WIPO, c2005:4). Although noting their linkages, the division also reflects the division of interests in an intellectual property

³⁷ See for example the collected essays of Geertz, C. in *Local Knowledge* (1989), Geertz (1973) *The Interpretation of Cultures*, Clifford (1988) *The Predicament of Culture*, and Said (1976) *Orientalism* for a critical analysis of the way anthropological thought changed through the 1970s and 1980s via the development of more “relativist” approaches.

forum like WIPO, where industrial property (i.e. patents) reflects the protection of a technical equivalent of traditional knowledge, and copyright reflects the protection of equivalents to cultural expressions (see Janke, 1999). Of course, for local communities, folklore and cultural expressions will likely have inextricable links to the more technical traditional knowledges. These links, and the heterogeneity of indigenous and local cultures, should not be downplayed or forgotten.

The policy-making and academic trend of harmonising notions and definitions of indigenous or local culture and knowledge has been called “strategic essentialism” (Cowan *et al.*, 2001). This term is used to describe the unifying categorisation of communities, their culture, knowledge and rights to fit into categories of national or international legal regimes. Cowan (*et al.*, 2001:21) note that “we need to be more cognisant of the role played by law in essentialising categories and fixing identities, as a concomitant of the task of developing principles to include, ideally, all possible cases.” Antons (2005:37-38) notes that “as a result, the international concepts of community rights to culture and heritage in the form of traditional knowledge or folklore protection begin to look more unified than they actually are.” My thesis already faces this dilemma, and it is difficult to resolve. While I have continued to use the ubiquitous universalising terminology of “traditional knowledge,” I do so with caution and continual reminders of its politicisation and heterogeneity. By comparing the discourses of traditional knowledge (and its regulation) between the rhetorically global, national and local, I am in fact critiquing this universalising trend throughout (see also Gibson, 1999; and Castree, 2004a who employ similar writing strategies).

Thus an essentialist discourse of traditional knowledge has emerged as a means of recognising the important contributions that have been made by indigenous and local groups to ecological conservation. Specifically, authors identified conservation and sustainable use implications for unique environments such as arid zones, mountain ecosystems, tropical environments and artic regions. Some research of note includes the edited volume by Brokensha *et al.*, (1980), Freeman (1985), Freeman and Carbyn (eds: 1988), Gupta (1989), Hausler (1993), Nakashima (1990), Ruddle and Johannes (1990), Waldram (1986), Warren and Rajasekaran (1993), Williams and Hunn (eds: 1982), and in anthropology journal special editions (see for example *Northern*

Perspectives Vol.20(1), 1992, on Indigenous Knowledge). These authors and others raised the profile of traditional knowledge as a useful and important tool for the management of the environment. Richards' (1985) *Indigenous Agricultural Revolution*, for example, demonstrated the success and value of traditional agricultural knowledge in Western Africa in contradiction to the hyped benefits of the Green Revolution imposed by western scientists and policy-makers.

The formal legal recognition of traditional knowledge as part of the CBD at the Rio Earth Summit in 1992 has been of crucial importance and ever since there has been a flood of articles on traditional knowledge and biodiversity conservation seeking to recognise the value of traditional knowledge. Articles include Alcorn (1993), Becker and Ghimire (2003), Brush (1993), Brush and Stabinsky (eds. 1996), Cunningham (1996), Erdelen *et al.* (1999), Myer (1998), Orlove and Brush (1996). There has also been interest in agricultural applications and crop protection (see Abubakar *et al.*, 2001; Kraemer-Bayer, 1999; Shu-min, 2005; and in Twarog and Kapoor, 2004) as well as medicinal knowledge (see Brett, 1998; in Chadwick and Marsh eds., 1994; Erdelen *et al.*, 1999; Janes, 1999; Maikhuri *et al.*, 2000; and in Twarog and Kapoor, 2004). Interest in traditional knowledge extends to livestock (see for example Farooquee and Nautiyal, 1999; Islam and Kashem, 1999; Kohler-Rollefson, 2001; Rowlands, 1995), pedology and soils (see for example Barrera-Bassols and Zinck in the ethnopedology special issue of *Geoderma*, 2003), species conservation (see Foale, 1999 on Solomon Island land crab ecology; and Huntington, 1999 on whale ecology) and desertification (see UNCCD, 2005). These articles have been chosen as just a small selection of many which identify useful applications of traditional knowledge.

These articles also highlight the breadth of traditional knowledge applications and the increasing recognition of its value. The field has become so diverse as to be divisible from authors referring to traditional knowledge in the broadest sense, or to traditional "agricultural," "ecological," "medicinal" and many other more specific knowledges. In many cases these authors have disseminated the specific traditional knowledge of various groups as unproblematic, but in other cases (e.g. Brush and Stabinsky eds. 1996) the authors have highlighted the politicisation of this knowledge.

Given the potential breadth of traditional knowledge applications, it is pertinent here to provide further consideration of the use of “tradition.” Warren (1996), who was one of the original proponents of the expression “traditional ecological knowledge,” has sought to identify alternatives to the term “traditional,” because it had connotations of “19th-century attitudes of simple, savage and static.” Berkes (1999) has argued that this should be rejected for the positive associations that such knowledge is “time-tested and wise,” but also adaptive. He cites Hunn (1993) as saying

New ideas and techniques may be incorporated into a given tradition, but only if they fit into the complex of existing traditional practices and understandings. Thus traditions are enduring adaptations to specific places... Traditions are the products of generations of intelligent reflection tested in the rigorous laboratory of survival

Thus traditional knowledge has recently come to be understood by its researchers as adaptive, dynamic, but also situated in specific environmental, cultural and geographic settings. But on its broader use, Hirsch and Strathern (2004:2) have criticised the now “ubiquitous international language of (ancestral) tradition.” They note that:

Whether or not others appropriate that tradition as tradition (their own particular tradition, generalised national tradition) will depend on context. The reverse may be taken as even more problematic, that is, when tradition is erased in so far as what is taken is being valued for quite different properties from those it originally encapsulated and thus not for connection to (anyone’s) ancestral values at all.

This raises the fact that the word “tradition” is broadly used, often with political or economic motivation, for a range of contexts in which it may be more or less disconnected from ancestral values. This disconnection may occur any number of ways, for example, in government economic policy that appeals to traditionalist sentiments (discussed with reference to Thailand in Chapter Five). Again, this discursive trap is difficult to avoid, and this thesis continually recognises the politicised nature of tradition, as it may be created or reinvented.

Upon examination of Johnson's definition, one could reasonably assume that her traditional ecological knowledge could exist in all societies no matter how modern or developed. As Dutfield (2005b) notes "the urbanisation and westernisation processes that have transformed many of the world's societies are unlikely to have resulted in the complete eradication of traditional knowledge even in those countries that have experienced these phenomena the most comprehensively." Thus forms of traditional knowledge exist in modern society, and in cities, and can be exchanged orally or documented. It is likely that the "traditionality" could however be eroded by not practicing or innovating, by statically capturing it as a document (in which case it may or may not come to be reinvented), and by the plethora of other contexts which may devalue or revalue it. In many respects, traditional knowledge and culture of indigenous or local peoples continues to exist in their relationships, negotiations and processes between these groups and governments, NGOs, and corporations (as argued by Greene, 2004). It remains somehow fixed to its ancestry (if it still *is* tradition), but tradition is more fluid and hybrid than commonly presented.³⁸

The CBD definition tries to balance such ideas, referring to "knowledge, *innovations* and *practices* of indigenous and local communities." The description goes on to describe it as "developed from experience gained over centuries and *adapted* to the local culture and environment... transmitted orally... collectively owned and may take the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices" and "is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture and forestry" (CBD Secretariat – emphasis added). The CBD secretariat understanding of traditional knowledge emphasises its situatedness, as well as adaptation, innovation and practice as a means to promote the persistence and continuance of such knowledge.

The CBD definition also specifies that it is referring to indigenous or local communities. As for "local communities" it is typically, but not necessarily, applied to developing countries. In the case of Thailand traditional knowledge could thus refer to tribal or ethnic minority groups if narrowly defined. Broadly defined, it could also refer to the general populace which have an

³⁸ As indicated by Hirsch and Strathern (2004).

abundance of traditional knowledges of medicine, agriculture and environment, which may be generally associated with rurality, but are also retained in urban areas or even promoted as part of tourism (eg traditional Thai massage and spa therapies) – such is the potential elasticity of the term “tradition.” Nevertheless, “traditional knowledge” has been used in this study to reflect the ambiguity and politicisation of categories of indigenous identity in Thailand, as in other parts of Asia (Barnes *et al.* 1995).

In summary, the embroilment of traditional knowledge in “ubiquitous international” IP debates is problematic because of the way it may revalue and place static boundaries around this knowledge – much like early conceptualisations of indigenous or “third world” culture, traditions and knowledge. What needs to be recognised is that both “tradition” and “knowledge” are fluid entities, may often be uncritically employed for economic and political gain, but must be originally rooted in specific contexts and values to be legitimate. These entities are much more *particular, negotiable* and *hybrid* than often portrayed. But claims to their *inalienability* from local values need to be heeded if their cultures are to be respected.

Traditional Knowledge in the IP Context: Transactions, Ethics, and Critiques.

The dominance of intellectual property reform agendas, whilst important, may be obscuring underlying questions of the substitution of values implicit in compensatory regimes as well as the transactability of traditional knowledge and bio-resources. Notable critiques of the orientation of traditional knowledge discourses in the intellectual property context have come from the disciplines of anthropology and human geography.

Whatmore (2002) considers at length the hybrid geographies of nature commodification in the context of IPRs and biotechnology, as do Castree and Braun (2001), and McAfee (1997; 2003) drawing on science and technology studies. They, along with a range of anthropologists, raise the argument that both objects and things are becoming infinitely divisible by both law and science. These are criticisms of scientific and discursive reductionism. In the context of this thesis this

means that there are broader attributes to knowledge or to “genetic resources” than isolated kinds of ownership.

De Laet (2000) provides a unique insight into the ethnographic “travel” of patents from their production place in western techno-science to developing countries. She frames the patent both as a changeable object and an object of change, indicating that it is a different thing in different places. Once removed from its surrounding institutional structures (patent offices), she describes how the patent takes on a different life, evolving its role and shedding some of its confines. This provides a powerful critique of the spatial impact on the differentiation of regulation, in the way it is interpreted, understood, and enforced. Coombe (1998) provides an important analysis of the *Cultural life of Intellectual Property* to similar effect, although focusing on copyright and creative products rather than inventions. She argues that the epistemologies underpinning the IP regime have little conceptual space for alternate perspectives. Similarly, Parry (2002), Wright (2005) and others such as Whatmore (1999) have sought to critique the spaces or geographies of *knowledge systems* as they are embroiled in debates around intellectual property, biological resources and traditional knowledge.

Through science and technology studies, which has influenced post-modern geography and anthropology considerably, Strathern (1999) has used actor-network theory to interrogate the relationship between IPRs, the CBD and indigenous knowledge or creativity, with reference to events in Papua New Guinea. The article provides useful description of the inherent differences between groups involved in the debate:

...the debate is constituted around apparently axiomatic polarities (frequent candidates are commodity transactions versus sharing, individual interests versus collective ones, companies versus communities, nation-states versus first nations) ...One world has knowledge made effective through 'technology'; another world has society made effective by community. (Strathern, 1999: pp163, 164).

The article goes further to interrogate the compensatory mechanisms involved as a compromise within the international debate by policy-makers:

If it is agreed that indigenous collective claims are the starting terms of the debate, then the question becomes how to allocate property rights to social identities (seniors versus juniors, women versus men, clans versus villages)?... Thus does the hybrid lead to new practices of purification? (Strathern, 1999: p163).

By “purification,” Strathern is concerned with a new kind of reductionism brought on by the new hybrid categories that property rights and compensation impose. The article provides a rare critique of the homogenisation, bundling up, and “flattening out” of “communities” in policy concepts of concession and compensation. This thesis also pursues this line of investigation in Thailand using similar techniques of actor identification and considerations of representation, legitimate authority and jurisdiction. As Strathern (1999: p166) has noted, “the concept of compensation travels by its own means of evaluation.” While it is recognised that compensation may seem appropriate where biological resources and traditional knowledge have already been expropriated, the original provider groups (where they are indigenous and local communities), may have special needs. For example, monetary compensation may be at odds with community customs related to remedies and injuries, and it may be inappropriate or offensive. In other cases it might be very welcome. In the case of a “theft” of herbal plants such as biopiracy (which extends to improper use of a plant), a local Hmong healer (Mee Leng, Interview. 2006) indicated that they would need to try to find the thief, to visit a seer, and to perform rituals to avoid physical illness imposed spiritually because of the separation of healer and medicinal herb. This illustrates that if compensation is an option, it needs to be creative, practical and adapted to local customs and circumstance – something that national bodies and international fora have had difficulty grappling with.

Strathern (2004) produces a useful discussion on the use of “transactions” to render “data” about values across contexts and scales (discussed in the following sub-section). The CBD forum focus on “benefit sharing” represents specific epistemological ideas about conservation, compensation and the treatment of indigenous and local knowledge which have received insufficient critical treatment. These agendas also only recognise traditional knowledge insofar as it is “useful” and therefore transactable (see Greaves 1996). As such, a significant portion of this research also

seeks to “unpack” some of the epistemological baggage underlying benefit sharing through case studies and fieldwork.

The discussion in this thesis does not seek to play down the importance of this technical and policy-related literature. Rather, I want to highlight some of the assumptions and perspectives underpinning it, from which problems may arise. For example, Greaves (1996:27) notes:

Not surprisingly, the chief domains of IPR [debates] came to reflect the professional and cultural outlook of these non-indigenous individuals: collecting biological materials, compensation arrangements, contracts, applications of legal instruments such as patents and copyrights, international conventions and ethics.

This is changing, however, with indigenous and developing country voices now increasingly prevalent (with the efforts of Daes, 2003, on human rights aspects; Prominent Indian authors such as Gupta, Shiva, Dhar [2002], Swaminathan; United Nations Permanent Forum on Indigenous Issues actions and articles; Langton and Ma Rhea, [2000] on traditional knowledge in Asia, amongst many others). Greene (2004) also provides a useful discussion of this indigenous engagement with and against the politicisation and privatisation of indigenous culture, knowledge and identity through gatekeepers and various “representatives.”

Messages have also been sent that the territories, resources, culture and knowledge of indigenous and local communities have values other than just economic. The discussions in the CBD, for example, have been criticised for taking too much of an economic skew in dividing biodiversity up into “genetic resources” rather than focusing on social, cultural, and spiritual values (Biber-Klemm and Szymura Berglas, 2006). A statement from the International Indigenous Forum on Biodiversity indicates:

...knowledge is not merely a commodity to be traded like any other in the market place. Our knowledge of biodiversity is indivisible from our identities and our laws, institutions, value systems and cosmovisions as Indigenous Peoples. For generations, our peoples have been and continue to be custodians of nature upon which we all depend. We are

therefore fully committed to the first two objectives of the Convention, that is, the conservation and sustainable use of biodiversity. However, any discussion of the third objective, that of access and benefit sharing, must recognise our fundamental rights to control our own knowledge, our right to free, prior informed consent as peoples, and our collective land and territorial security. (International Indigenous Forum on Biodiversity, 2001; cited from Biber-Klemm and Szymura Berglas, 2006).

The broader perspectives and values described here must be recognised. In this thesis I try and reverse the reductionist trend to diminish, universalise and value-substitute “traditional knowledge” by focusing on the connections of knowledge to people, place and culture under the concept of *knowledge domains*. This concept seeks to recognise the situatedness of knowledge, but also its heterogeneity and connections to physical and cultural domains. Notably, I draw ideas for the concept from Gupta (c2004) who explores elements of different knowledge domains, the Philippines Indigenous Peoples Rights Act (1997) relating to ancestral domains, Rowse (1992) on the Aboriginal Domain, the IUCN Inter-commission Task Force on Indigenous Peoples (1997) and Posey’s concepts of Traditional Resource Rights. Drawing from this literature, the terminology “domains” implies a terrain broader than ownership – it reflects recognition of the diverse customary protocols, laws and institutions that may regulate traditional knowledge in local contexts.

In relation to customary protocols and laws, the anthropological literature clearly dominates. The literature on law and anthropology or from “legal anthropology” has largely focused on the management of conflict and dispute in society (Rouland, 1994; Pospisil, 1971). It particularly relates to the way societies use conditioning mechanisms to avoid dispute and to operate on a normative basis – how society is self-regulating through various mechanisms like conflict avoidance, “saving face,” through ritual, and by social sanctions for misbehaviour (see Strathern, 1985:112-113, see also Gluckman, 1955, and other works by these authors). From this perspective, these anthropologists suggest that legal systems act as safety nets, particularly in non-Western societies, and that legal systems (especially common law systems) are doubly institutionalised, whereby traditional customs and norms have been re-institutionalised in a codified manner (Bohannan, 1967).

WIPO has recently attempted to develop an understanding of customary law systems related to intellectual property. As WIPO have noted,³⁹ a customary law system may be regarded as “a living law, a law activated and modified not by specialised practitioners but by those who in their daily lives, practice the law, living out their traditional customs in everyday contacts.”⁴⁰ Authors such as Dutfield (2006) and Taubman (2005) have raised the importance of customary systems of regulation for traditional knowledge, whilst also noting the difficulty in formally recognising the systems. There have been suggestions that it should be documented, formalised and codified in various ways. However, approaches seeking the documentation of customary protocols may only freeze a static version in time, which may not be in keeping with evolving practices by local communities. While forums such as WIPO provide research on customary protocols (WIPO, 2001), they do so through a specific mandate, approaches and ideologies, that have been criticised by many authors (Boyle, 2004). Research conducted through other fora (e.g. the CBD 8(j) Working Group on Traditional Knowledge, and the UN Permanent Forum on Indigenous Issues), independently (Thom and Bain, 2004; Yos, 1998, 2003), or from NGOs (Roy, 2005) have made useful contributions on how customary systems operate, typically with *sui generis* rights approaches suggested for their recognition and implementation.⁴¹

There is also a reasonable amount of literature on social and cultural norms in Southeast Asia, as well as documentation of traditional laws and customary law systems (Chiba, 1986, 2002; Saneh and Yos, 1993; Yos, 2003; Hooker, 1986; Engel, 1975, 1978; and Huxley, 1996). These authors demonstrate the existence of non-state systems of regulation in Thailand, where traditional laws, moral and religious beliefs, and cultural norms all still have resounding impacts on societal self-ordering. As a result, many of these customary approaches have greater daily importance and relevance to the Thai peoples than the some of the imposed Western Laws relating to intellectual property and biodiversity aspects of traditional knowledge. These aspects are explored in considerable detail in Chapter Seven.

³⁹ WIPO are currently undertaking consultations on customary laws and protocols. Details can be found at: http://www.wipo.int/tk/en/consultations/customary_law/index.html Acc 8/2/2007.

⁴⁰ Cited by Dutfield (2006), at p24.

⁴¹ These approaches are, of course, incredibly complex to develop, given all the competing considerations – respect for jurisprudential diversity, representation issues, enforcement of rights, dispute settlement, and other considerations – as outlined by Dutfield (2006). The Philippines Indigenous Peoples’ Rights Act (1997) provides the best practical example of how this might be done, but still, the law has proven difficult to implement in practice.

Due to the ethical implications of doing research on biodiversity and indigenous or traditional knowledge, a number of guides for researchers have emerged including Posey and Dutfield (1996), Grenier (1998), Greaves (1994), Laird (ed: 2002), and Smith (2005). These vary in terms of content, but have typically sought to recognise the need to respect a broader set of indigenous and community rights, have pointed to flaws in research approaches, have encouraged participatory approaches where researchers work *with* local people, and act reflexively to recognise researcher positionality. The following chapter on methodology deals with these important considerations in more detail.

In conclusion to the chapter, while many technical contributions of the aforementioned authors have helped progress towards the implementation of a range of “development-friendly” reforms, they have often done so through the situated knowledges and terms which render intellectual property problematic to indigenous and traditional local groups in the first place. There is a complex politics of representation here – with indigenous people and developing countries often spoken for, often by outsiders, or individual interests. This thesis builds on the existing literature and explores these impositions on Thailand, their ramifications in terms of “biopiracy” and related concerns, the need to recognise non-state customary norms, and ethical research concerns.

3. METHODOLOGY AND FIELDWORK

Due to the interest in analysis of traditional knowledge, biodiversity and intellectual property issues with an understanding of situated knowledges and the politics of scale, a diverse range of stakeholders and actors were sought out who reflect law/policy discourses at global, national and local levels. Due to limitations of project size and scope, this was performed by working through the various discourses representing the Thai state in global fora, national discussions, and those within Thailand. Therefore the fieldwork involved various forms of analyses in locales with global reach (including fieldwork in the global decision-making hub of Geneva), at the Thai state (and intra-state) level, and in the locales of rural Thailand where understandings of traditional knowledge contexts were sought. Through this layered approach, it was possible to determine the various situated positions and knowledges of diverse actors, as well as varying interpretations of law. An assorted range of perspectives were sought, in order to prove the law, scale and society⁴² relations involved. In this respect, “the field” implicated attendance to a particularly diverse variety of locales, individuals and discourses.

Reflecting the nature of the topics being studied, a qualitative methodology was employed. Using quantitative techniques, although often able to yield data that is objective and tangible, would head down a path towards the universalising reductionism and positivism that this research is arguing against. The main components of the methodology included: interviewing of key actors and stakeholders; biopiracy case studies; legal discourse analyses; and some partial ethnographic analyses (participant observations and local case studies). Each of these approaches is subsequently explained. Table 2 summarises the fieldwork and methodological elements of the research in Thailand.

⁴² Consequently, the human/society – nature relations discussed were also examined as a significant theme.

Table 2: Fieldwork and Methodological Elements in Thailand.

Activity	Description
Interviews (formal)	41 Interviews were conducted with experts, officials and stakeholders to survey discourses, concerns, approaches, legal issues and perspectives.
Interviews (informal)	A number of opportunistic informal interviews (approximately 10) arose throughout the fieldwork, in which individuals contributed to the discourse of an issue.
Informal Focus Groups	2 informal focus groups were conducted opportunistically. One was conducted spontaneously amongst some Karen women at a forest ordainment ceremony with the aid of a translator. These women wished to comment anonymously. The second was conducted following an organic agriculture class with Daycha Siripat, near the Kwao Krua Rice Research Foundation in Suphan Buri. This group also contributed anonymously.
Local Case Studies	Five sample case studies were conducted to provide some specific, ethnographic insights on traditional knowledge and customary laws. These were limited by time and scope. They included a case study at the <i>Khao Khwan</i> Rice Research Institute and classes; observation of an Alternative Agriculture Network seed exchange fair and farms/villages in Ku Ka Singha, Roi Et province; A field trip to Baan Mae Ka Pu (and adjoining forest areas/villages), Amphoe Samoeng, Chiang Mai associated with a forest ordainment ceremony; Baan Khun Khlang, Amphoe Jom Thong; and Baan Soplan, Amphoe Samoeng, Chiang Mai.
Meeting Observations, Policy and Participant Analysis	A number of meetings were attended where policy was discussed and analysed, and the actions of participants was noted: <ul style="list-style-type: none"> - CBD, Ad Hoc Open Ended Working Group on Access and Benefit Sharing, Feb. 2005. - Jasmine Rice FTA (Chulalongkorn University) - TK pre-survey expert consultations (Kasetsart Uni) - TK post-survey expert consultations and strategic outcomes (Ministry of Foreign Affairs)
Legal Discourse Analysis	Legislative analysis of traditional knowledge components of: <ul style="list-style-type: none"> - The Constitution of the Kingdom of Thailand - Plant Variety Protection Act - Act on Protection and Promotion of Traditional Thai Medicinal Intelligence - Various intellectual property laws - Community Forests Bill
Analysis of 'Biopiracy' Claims/Cases	Five primary cases are analysed for legal and cultural concerns, including: the "Jasmati" trademark; the "Stepwise Program for the Improvement of Jasmine Rice for the US"; the marine fungi – University of Portsmouth case; the <i>Plao noi</i> case; <i>Kwao krua</i> cases. Additional bioprospecting incidents are also discussed.

Additionally, fieldwork was conducted in Geneva. This primarily involved participation at interviews organised through the organisation where I was a program assistant and visiting researcher: the International Centre for Trade and Sustainable Development (ICTSD). This provided a useful platform to gain access to delegates to the WTO, WIPO and United Nations bodies. Table 3 describes my research activities in Geneva.

Table 3: Fieldwork and Methodological Elements in Geneva, Switzerland.

Activity	Description
<p>Organisation and Participant Observation in Meetings</p>	<p>In Geneva I helped organise or attended a number of high-level meetings for delegates to the WTO and UN bodies. This allowed me close insights into forum politics, country positions and the negotiating culture in Geneva. These meetings included:</p> <ul style="list-style-type: none"> - ICTSD Future work of the Intergovernmental Committee on Traditional Knowledge and Folklore in WIPO Roundtable - WIPO NGO meeting - WIPO General Assembly (indirect coverage) - Quaker United Nations Office (QUNO) Disclosure of Origin Meeting – progress in WTO - QUNO NGO strategic meeting on IPRs - QUNO IPRs Hong Kong meeting (on IPRs and Public Health) - ICTSD International Copyright System Meeting
<p>Interviews</p>	<p>12 interviews were conducted with a number of staff from the United Nations Conference on Trade and Development (UNCTAD), WIPO, the WTO, and country delegates to both WIPO and the WTO. Many of these interviews had to be kept anonymous, and they were often conducted opportunistically or on an informal basis. They include:</p> <ul style="list-style-type: none"> - Christoph Spenneman, IPRs and Technology Transfer, UNCTAD (Nov. 2005). - Victor Konde, IPRs and Technology Transfer, UNCTAD (Nov. 2005). - Anonymous WTO official (Oct-Dec. 2005). - Antony Taubman, Head, Traditional Knowledge Division, WIPO (informal, Nov. 2005). - Shakeel Bhatti, Traditional Knowledge Division, WIPO (informal, Nov. 2005). - Chumpichai Svasti-Xuto (Nov. 2005) - Atul Kaushik, Indian Delegate to the WTO (Oct-Dec, 2005). - Leonardo Athayde, Brazilian Delegate to the WTO (Nov. 2005). - John Scott, Programme Assistant, Indigenous Knowledge, CBD Secretariat (Nov. 2005). - Two anonymous African Delegates to the WTO (Nov. 2005). - Anonymous Asian Delegate to the WTO/WIPO (Nov. 2005).
<p>Reporting on Events</p>	<p>An important part of my role at ICTSD that contributed to this research was my investigation and reporting on events in Geneva (and Thailand) relating to intellectual property, trade, traditional knowledge and biodiversity, public health, and related topics. I have drawn on many of these articles in the text of Chapter Four.</p>

Doing Cross-Cultural Research

As Howitt and Stevens (2005) note, most human geographic research is cross-cultural, because we are drawn into thinking about how other people view place and culture amongst other things. Being an Australian researcher, heading to “the field” in Thailand, meant attempting to adjust a great deal of my thinking, to engage with where “others” are coming from. I write here (and at other times) in the first person, because of the need to recognise one’s “positionality,” (McDowell, 1992a) that is, my role as a researcher in unfamiliar places, interpreting foreign cultures.

I had to grapple with a relatively new language⁴³ in Thailand, and attempted to understand aspects of the Thai peoples’ traditions, practices, religions, politics, ethnic differences, regional differences, ideological approaches and other culture shocks. However, it is important to note that I faced similar culture shock from my fieldwork in Geneva, though probably not as intense. There were obviously profound differences, but in both cases I realised I needed to reconceptualise the “otherness” implicit in what I was doing, who I was and what I might represent. This was not a simple task, and as Rose (1997) has found, it is not easy to write either.

This research could therefore be described as postcolonial, in the way it attempted to provide avenues of self-determination to “others” and research findings which value their rights, knowledge, perspectives, concerns and desires, and which are based on more open and egalitarian relationships (Howitt and Stevens, 2005). This research attempts to decolonise some of the ethical and legal approaches surrounding research access to traditional knowledge and associated bio-resources by seeking the insights of relevant local communities, farmers groups and individuals (see Tuhiwai Smith, 2005). However, there are notable limits in gaining access and insight in these cross-cultural “development fieldwork” situations (see Scheyvens and Storey, 2003).

⁴³ I have an intermediate spoken proficiency of Thai, having taken language courses prior to leaving and in Thailand and having spent twelve months in Thailand improving these skills.

My Situation

This brings me to my situatedness, or rather my organisational situation, throughout the research. Being a foreign researcher, my intention was to enter Thailand not as a western “expert” seeking my own academic gratification, but rather to critique the way previous research (and my own) is conducted, by understanding the concerns of stakeholders and suggesting ways research processes could be made more appropriate. I was worried that I would enter local villages to the complete outrage and distrust of locals. What I knew of biopiracy made me think that I might have great difficulty even hearing local concerns about the issue.

Before even entering the field, I would need to establish a means for which I could be situated in a positive light from the perspective of traditional knowledge holders. I considered and contacted NGOs, but ultimately was able to gain an internship with the National Human Rights Commission of Thailand (NHRC), based in Bangkok. The NHRC is an independent statutory authority which acts like an overseer for the human (or community) rights of people.⁴⁴ I spent an initial seven months at the NHRC, and then a further three months in separate trips under an agreement of “mutual-benefit” which has since turned into a more informal ongoing working relationship built on trust and shared interest rather than formal contractual obligation.

Although a state authority, for which there is typically considerable local resentments or distrust, the NHRC was generally viewed favourably because it has been critical of many central government policies. This also enabled me a rights-based situation, which was ideally what my research was already about, such that I could openly engage with relevant stakeholders. Ultimately, this did mean greater local access for me, often facilitated by other NGOs,⁴⁵ for which I had to retain a self-reflexive approach to what I was doing (discussed in a following subsection). While the NHRC was often a “gatekeeper” to an initial exchange, I also had to

⁴⁴ Details of the NHRC can be found at www.nhrc.or.th

⁴⁵ I am mindful of the budding anthropological and “post-development” interest in ethnographies of NGOs, or at least reference to research positionality affected by NGO activities. I am referring to Fisher (1997) on the politics and antipolitics of NGO practices, Markowitz (2001) on the complex ethnography of trans-national NGO linkages and politics, and Lewis (1999) who reviews anthropological approaches to research on “third-sector” or non-business civil society organizations.

continually generate enthusiasm or interest in my work and satisfy the permission requirements (formal or informal) of a diverse range of people in Thailand. Being a researcher associated with the NHRC was not an open door to interviews and for village case studies. First and foremost, I was a researcher and was identified as such. In some cases there was distrust because I was a foreign researcher, and also because of my link to the NHRC.

My role as an intern at the NHRC was primarily a research role. I assisted with office duties, translations, the editing of documents, preparation of meetings and speeches, involvement in project activities for the tropical resources project (surveys and meetings), but most of my time was spent on research for my doctorate. Staff from the Strategic Policy Project on Tropical Resources, and some of the Commissioners had a close interest in the protection of traditional knowledge and biological resources. Rather than being seen as a “student,” which is how I was treated in Australian institutions, I was seen as an “expert” applying my experience and knowledge to a research project. Therefore I was asked to give expert advice and comment on a confidential draft of the Thai Government for the Thai-US Free Trade Agreement, on a Traditional Knowledge and Folklore Survey, and on other important policy documents. I also produced a report based on my research in Thailand (Robinson, 2006), and some (Draft) Model Guidelines on prior informed consent (see Appendix 3) which have been discussed in an NHRC Sub-Commission on Intellectual Property Rights and Genetic Resources, and in meetings I had with the twelve Commissioners.⁴⁶

Being called an expert was a confidence booster. In Australia, the research environment at the University of New South Wales emphasised a “student” level of learning, despite the fact that I had several years of professional working experience on environmental issues and policy in local and state government, private consulting, and in academic research. The doctorate researcher status in Thailand has an elevated level of social status associated and people would jokingly call me “ajaan” (meaning university teacher/professor). While good for my confidence, I had to juggle to two contexts of student and researcher/expert carefully, so that I did not get carried away with what I knew and was capable of knowing, before even doing the research. I had to be

⁴⁶ The outcome of the Model Guidelines review was that more work was needed and greater political will to see the concept through. The Model Guidelines were intended to generate discussions on the issues of misappropriation, and should be regarded as an evolving document.

particularly careful in interviews and local case studies not to allow a re-colonisation of their knowledge. Interviewees, particularly farmers and local people, often saw my academic knowledge as somehow superior to theirs, despite the fact that I was expressing my interest in their knowledge and its importance for a variety of uses and values. I often did this by verbally discussing the knowledge systems as different but equal. I return to the position as “expert” shortly, and in later chapters.

In Geneva, I similarly expected WTO and WIPO country delegates and officials to be difficult to enrol for a discussion, or an interview, without some organisational affiliation. I was able to organise the short-term role at Geneva-based NGO ICTSD which has observer status in the WTO and a range of UN organisations. This allowed access to meetings, information, interviews and the culture of the international policymaking community.⁴⁷ During this time I worked long hours meeting, researching, interviewing and reporting for ICTSD publications, and organising core activities for ICTSD. Most of my activities were directly relevant to my research and so I regularly found myself “swapping hats” between programme assistant and researcher.

As a result of both of these roles, and from my research interactions and outputs related to them, I have been asked to produce a number of reports and comment on important documents as an expert. In doing so, I have faced an intellectual dilemma about the situatedness of knowledge, and the scales at which decision-making is made. The reports and comments have typically targeted decision-makers at the national and international level, and I have been chosen to write them with the understanding that I have a “better” understanding of local community expectations than other policy-makers and academics. Thus, I have attempted to link national and international policy developments, with what I have learned from local communities. This emphasises to me that there is still poor direct representation of local communities, and it worries me that there is not greater impetus on engaging local communities directly. I have no doubt that academics and decision-makers, like myself, are continually put into a position where they are supposed to extend their partial knowledges and experiences to reflect the situated knowledges of others.

⁴⁷ Duke (2002) contributes an interesting article on access to policy-makers and getting beyond the “official line,” although in quite a different context. She notes that such transparent accounts (and reflexivity) are rarely presented by researchers because of the pressures and constraints of academia.

On the other hand, one of the primary strengths of this thesis is its ability to present a strong understanding of the issues and situated knowledges at local through global scales, and in doing so, it presents a critique of this scaled conceptualisation as well. I return to these discussions and reflect on these questions within the research, at the end of the thesis. The following sections detail interviewing and other methodological aspects.

Initial Scoping

Key organizations, institutions, actors and stakeholders were identified at each scale. Globally-influential entities were identified through prior knowledge of the primary international laws and organizations involved, through extensive literature review identifying key actors, and through participation in meetings in Geneva. Key Thai entities (actors, laws, organizations and stakeholders) were identified by initial scoping, news-article and literature reviews, followed by snowballing sequential connections of actors to be interviewed. Many of the key research questions (both practical and theoretical) were engaged through the interviewing of these actors, approaches such as observation and participation (policy-meetings and village setting observations) as well as legal discourse analyses (explained in the following subsections).

Interviewing of Key Actors and Stakeholders

Key actors and stakeholders were interviewed to identify their motivations, backgrounds and perspectives, ability to convince and enrol other actors and stakeholders, and to explore the key questions of the research project. Interviews were typically semi-structured, with a range of key questions, plus variable questions based on the expertise or background of the individual, as well as some opportunity for them to steer the discussion. Interviews were often conducted in English, but sometimes in Thai via an interpreter, and in many cases involved a combination of both. The bulk of formal interviews (forty one) were conducted in Thailand.⁴⁸ Twelve were also undertaken

⁴⁸ In fact, there were about 70 interviews conducted, but many of them were follow-ups with the same individuals.

in Geneva – however disclosure of the content of these is limited by confidentiality or the information cannot be attributed to a named source.

Particularly when interviewing small-holder farmers and local people, interviews were informal to allow a very discursive and comfortable format. These also often included extended discussions and activities around the home, farm or village, in an effort to understand local contexts and even to participate in the daily lives of the individuals or communities. In these cases, the guides and research assistants accompanying me were instructed to ask about local customs, to ensure we complied with them.

Interviews were analysed in a qualitative manner. Due to the limited number of actors,⁴⁹ and consequently the limited number of interviews, a more quantitative analysis was not likely to be useful. Similarly, the contextual nature of the issues of interest, lend themselves to qualitative rather than quantitative analysis. However, the responses to some specific questions yielded some clear and notable trends. A list of interviewees is provided below.

- Saneh Chamarik, Chairman, National Human Rights Commission of Thailand (2 interviews, 19 April 2005 and 2 March 2006)
- Buntoon Srethasirote, Project Director, Strategic Policy Project on Natural Resource Base, National Human Rights Commission; and FTA-Watch coordinator (numerous interviews, February 2005-December 2006)
- Yos Santasombat, Academic, Chiang Mai University (17 May 2005)
- Chaweewan Hutachareern, Research Director, National Parks, Wildlife and Plant Conservation Department (18 and 28 August 2005)
- Komong Pragtong, Forest Conservation Officer, National Parks, Wildlife and Plant Conservation Department (18 August 2005).
- Wichar Tithipraesert, former director, Plant Variety Protection Division, Department of Agriculture (6 May 2005)

⁴⁹ Due to relatively recent nature of biopiracy concerns and issues relating to the protection of traditional knowledge, there are still relatively few designated officials, academics and NGOs working in this area in Thailand. There are however a diverse array of stakeholders and a range of these were interviewed or observed as permitted by the time and resources of the research project.

- Chamaiparn Santikarn ('Cha'), Thai Traditional and Alternative Medicines Institute, Department of Public Health (May 2005).
- Ubon Yuwaa, Farmer/activist, Alternative Agriculture Network, (25 April 2005)
- Surawit Vanakorod, Academic/consultant to the PVP Committee, Kasetsart University, (5 July 2005 and 5 February 2006)
- Jade Donavanik, Academic and Practicing Lawyer, Mono-Thai, Jade and Associates, and former Biotec Official, (27 April 2005 and 5 February 2006)
- Wisut Bai Mai, Academic, Mahidon University; Head of the Biodiversity and Research Training Program; and Chair, Intellectual Property and Genetic Resources Sub-Commission, National Human Rights Commission (2 August 2005).
- Tanit Changtavoorn, Intellectual Property Consultant, Biotec; Associate Judge, Intellectual Property and trade Court (1 June 2005).
- Waraluk Chaitap, Researcher/NGO staff, Northern Development Foundation (21 March 2005 and on other dates)
- Suradet Assawin Tharang Goon, Head of Patents Division, Department of Intellectual Property (9 June 2005, 21 February 2006)
- Thosapone Dansuputra, Department of Intellectual Property and former WTO delegate (July 2005).
- Mr Kawin Nitrimantree, Department of Intellectual Property (July 2005).
- Witoon Lianchamroon, Director, BioThai NGO; Coordinator, FTA-Watch; Leader, Alternative Agriculture Network (February 2005, and numerous other dates to December 2006).
- Channida Bamford, Focus on the Global South (March 2005).
- Sajin, Focus on the Global South (March 2005).
- Somkiat Tangkitwanitch, Research Director, Thai Development Research Institute (16 February 2006).
- Wichai Chokevivat, Director, Thai Traditional and Alternative Medicines Institute, Department of Public Health (August, 2005).
- Daycha Siripat, Director, Kwao Kwan Rice Research Foundation; Former PVP Committee member; and activist (29 April 2005; June 2005).

- Jakkrit Kuanpoth, Academic, University of Wollongong; Former Researcher, National Human Rights Commission; Research Affiliate, International Centre for Trade and Sustainable Development (numerous interviews from Feb. 2005)
- Jaroen Compeerapap, Vice President, Silapakorn University (for Intellectual Property and Traditional Knowledge).
- 'Pii Yung,' Karen Village Leader, Baan Mae Ka Pu, Samoeng; NGO staff, Northern Development Foundation (interview and discussions, 26-28 March 2005)
- 'Pii Huay,' NGO Director, Northern Development Foundation, (interview and discussions, 26-28 March 2005)
- 'Ka-le,' Karen Villager and activist, Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- 'Pathi Dang,' Karen village elder, Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- 'Pathi Taa Ye,' Karen village elder/healer, Baan Soplan, Mae Lan Kham, Samoeng, (13 - 15 February).
- 'Pha Mur,' Karen village elder Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- 'Leng', Hmong villager and tourist trail guide, Baan Khun Khlang, Amphoe Jom Thong. (12 -13 February 2006)
- 'Mee-leng', Hmong elder and traditional healer, Baan Khun Khlang, Amphoe Jom Thong (13 February 2006)
- 'Kwaam Bak Lai', Northeast Thai Farmer/activist, Roi et (25 April, 2005)
- 'Watasana (Dej)', Northeast Thai Farmer, Roi et (25 April 2005)
- Suwanna Wadapikun, Academic, Northern Research Center for Medicinal Plants, Chiang Mai University (21 February 2006)
- Prapoj Peetragaart, Project Director, Thai Traditional and Alternative Medicines Institute (May, 2005 and numerous other dates)
- Anonymous Seed Industry Official (22 February 2006)
- Appassorn, Somboonwattanakun, NGO staff, Thai Volunteer Service; Research assistant and translator (13 February 2006)

- Pearmsac Mokharibhirom, Academic, Kasetsart University; Former Community Forests Bill Committee member (August 2005)
- Surakrai Sungkabuan, Director, Plant Variety Protection Division, Department of Agriculture (December 2006).
- ‘Dr Songkhran,’ Former Rice Research Director, Department of Agriculture (December 2006).⁵⁰

Interviews were analysed using latent content analysis techniques, allowing the results of interviews to be organised into themes. These themes were then subsequently used to guide organisation of chapters and sections of the thesis such that the data is presented in a fairly structured manner.

It should be noted that standard “Human Research University Ethical Considerations” were approved⁵¹ and followed in the conduct of interviews, observations and village case studies of traditional knowledge and related customs – particularly pertaining to prior informed consent approaches. A reflexive analysis of these ethical approaches in practice yielded a strong critique of their limitations and inadequacies (which are discussed below, explored in Chapter Ten and the Conclusions).

Biopiracy and Misappropriation Case Studies

Bioprospecting, biopiracy, and misappropriation case studies based on interviews, literature reviews and patent document analyses provided an important analysis of some of the key issues. Interviews of actors and stakeholders with diverse and often opposing perspectives were used to obtain background information on the alleged cases, as well as public/stakeholder perceptions and conflicts. Notably, the concepts of biopiracy and misappropriations are politicised, therefore the commonly understood perceptions (as per discussions in international fora and academic

⁵⁰ Note that for some individuals I have not put an exact date. Often I discussed matters with these individuals in person and also over the phone across a number of dates.

⁵¹ These were approved by the University of New South Wales, prior to a transfer of candidature to the University of Sydney following fieldwork.

literature) of the issue were built upon, re-defined and re-conceptualised as the issue has evolved in the pluralism of Thai contexts. The heterogenous nature and various representations of biopiracy are reflected in this analysis.

Biopiracy cases and bioprospecting incidents were first identified from the press and NGO websites. NGO investigations into the cases were typically vague on details and one-sided; therefore I sought to expand the available information on these cases, using patent and trademark documents and interview information, in an open and pragmatic way. Additionally, while conducting interviews and fieldwork with local communities in Chiang Mai, I encountered a bioprospecting incident and followed up on this with further investigation.

Observation

Additional participant observation was conducted through the attendance of an extensive array of different policy-maker meetings. These were attended upon invitation whilst in Thailand, and covered a range of related issues such as traditional knowledge protection, FTA talks, biopiracy issues, and food security concerns. These meetings were typically attended by diverse stakeholders and key actors such as ministerial officials, academics, industry representatives, NGOs, peoples'/farmers' organisation representatives, and local farmers. Attendance at these meetings allowed immersion in the (largely centralised) culture of policy-making, the complexity of the perceived problems, and the multiplicity of perspectives reflected by representatives. It also often led to interviews.

Participant observation was also conducted in Geneva as part of predominantly informal policy-making discussions, surrounding a range of WTO, WIPO and UN negotiations. This provided access to key officials, up-to-the minute international deal-making, and insight into the culture of international negotiations. Often, however, these officials were unable to be quoted due to the closed nature of the talks – an important element of international negotiating custom.

Local Village Case Studies

Case studies were undertaken to engage various communities in three of the regions of Thailand. These case studies were conducted to determine local needs, expectations, perspectives and customary structures surrounding traditional knowledge. During the studies I interviewed (predominantly) local farmers, healers and elders; observed traditional practices, customs and rituals; and participated in some local activities (NGO activities, festivals, information sharing, chores and daily activities). These communities were selected because they were reputed to be representative of the issues in their broader surrounding region. Some cases were chosen opportunistically, because they coincided with a festival or fair, class, ceremony or demonstration which represented the community's interests in plant resources and/or traditional knowledge. Others were a random entrance into an area of known interest (i.e. some of the community forest areas in Northern Thailand). Figure 3 indicates the provinces in which local village case studies were conducted.⁵²

⁵² Note that the case study from Prachin Buri ultimately has only received a brief mention in the thesis, because it gave fewer interesting and useful insights than other case studies. Instead, additional studies were done in Chiang Mai province in February 2006.

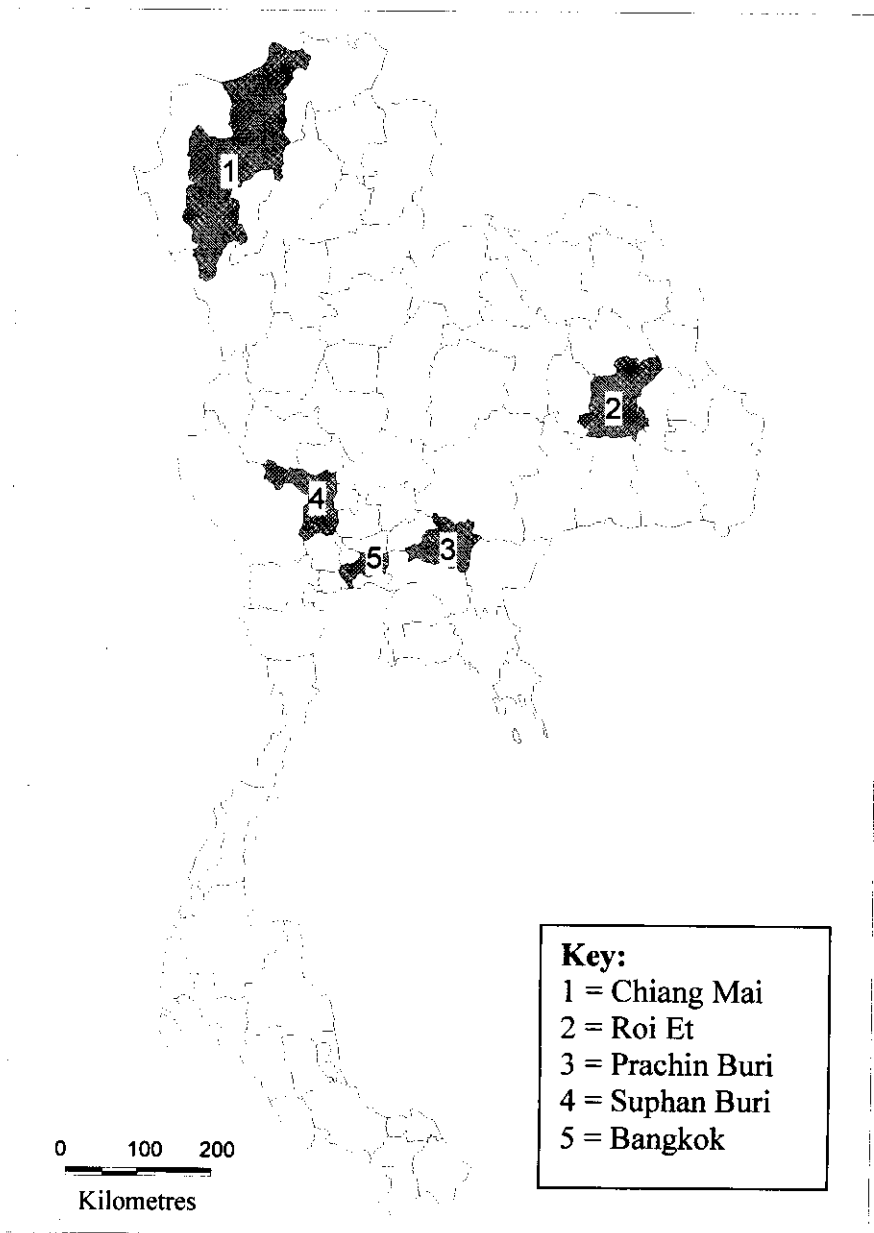


Figure 3: Map of Thailand, Highlighting Case Study Provinces

Due to constraints of time, limited return trip funding for airfares, due to organisational affiliations, and the multi-scaled scope of this research, case studies could not be detailed ethnographic studies of the kind and depth that Geertz (1973) suggests are necessary in cultural anthropology. Typically these case studies were short (typically 2-3 days), and this is a limitation of the fieldwork. In response to the emphasis placed on detailed “in-village” case studies, I should note that while welcome for the short duration that we were there, the local people probably did not want us “probing” for information over a sustained period as the “subject of

research” (discussed by Smith, 2005). The length of the studies allowed important research insights, and recognized the value of the peoples’ knowledge and culture without interfering too extensively in the lives of the people I talked to. Furthermore, this is not an anthropology thesis, and initial recommendations from faculty reviews of the methodology actually suggested a lower priority on local case studies, assumedly for reasons of risk and liability in researching in remote areas. Thus I also faced structural limitations on the scope of the research, within the confines of expectations for doctorate research in Australia (i.e. it was “just a PhD,” not an attempt to practically resolve community rights issues relating to traditional knowledge).

My sense was that I could not, in good conscience, neglect to research traditional knowledge in local communities without the entire research being hypocritical. As a result, I made a compromise to conduct a number of smaller case studies of short periods that targeted specific information on the status and nature of local traditional knowledge and its regulation. This allowed me to gain useful insights that have rarely been studied in the context of recent intellectual property concerns. It also helped me to surmount structural boundaries in doctoral research – including passing academic reviews, fieldwork occupational health and safety approval, travel and ethics approval.

I highlight that the local case studies are important for this thesis because they engaged with local people – something that happens too rarely in the intellectual property context of traditional knowledge. However these case studies should not lead to the problematic connotation that I am an “expert” on the traditional knowledge of local communities. The true experts are those who I met with. The importance of my role was to bridge scales, to reduce their conceptual importance, and identify alternative forms of regulation relating to traditional knowledge.

The case studies also allowed valuable comparisons between villages and communities. The comparison of case studies enabled recognition of the heterogeneity of communities.

Instead of spending all of my available time in one village conducting a more detailed ethnographic study, I was able to go to several villages to make comparisons between different communities, ethnic groups, regions and approaches. In addition to the case studies described in this thesis I also went to a large number of other districts, villages and towns throughout rural

Thailand, including Prachin Buri, Samoeng, Trat, Krabi, Rayong, Surin, Ayutthaya, Amphoe Jom Thong and others. These were often trips associated with this research, work with the NHRC, networking activities with NGO staff and academics. They provided additional insights and immersion in Thai culture outside Bangkok or Chiang Mai,⁵³ but were less useful as case studies for the aims of this thesis.

Notably there were NGO and academic gatekeepers who assisted with my entry to a number of communities (Suphan Buri; Ku Ka Singha; Baan Mae Ka Pu). Rather than view this negatively, as something that might skew the research, it actually allowed a valuable insight into the way NGOs shape community actions, perspectives and discourses. The political influence of NGOs, local researchers and academics should not be hidden – they have shaped the way traditional knowledge discourse is generated and portrayed throughout Thailand. These cases studies allowed some pragmatic reflection on the politicisation of traditional knowledge. Additionally, other village case studies (Baan Khun Khlang, Baan Soplan) were entered without NGO invitation or assistance, and therefore comparisons of NGO influence could be made.

Access to villages and interviews with local people was never forced. In all cases we were invited or we asked and were then welcomed. In all cases I was accompanied by a research assistant who helped translate the discussions. They were also instructed to follow local customs, and to inform me so that I could also behave appropriately. The information gained from local communities was openly exchanged. In most cases, due to the illiteracy of the local people, and due to their custom for formal “law-avoidance,” they gave us verbal prior informed consent to interview them, for which my research assistant acted as a witness. In many cases where traditional knowledge of specific plants was disclosed, I have not reproduced the names of the plants, to avoid inappropriate entrance of this information into the public domain from local knowledge domains.

These case studies utilised a reflexive approach, in order to respect the customs of the people, but also to better understand the researcher relation with local people in traditional knowledge

⁵³ Notably there are considerable regional variations in Thai culture, as well as between those who dwell in Bangkok or Chiang Mai, and those who live within towns or rurally.

research circumstances. This will hopefully assist in the development of future potential ethical “best practices” or preferred approaches which decolonise past methods. In essence, input from “tribal” and local people was sought relating to morals, ethics, and relevant customs and norms to re-define current ethical practices and hopefully empower them in research situations. A notable consequence of similar efforts by academic activists⁵⁴ in Chiang Mai and elsewhere (see for example: Anan 2000; Yos, 2003a; Saneh and Yos, 1993) has been a consequent strengthening of the political activities of often marginalised “tribal” ethnic minority⁵⁵ and farming communities, stemming from recognition of local knowledge, customary protocols, land tenure and collective property. Zurcher (2005) makes a notable discussion about the role of academics as brokers influencing community forest policy in Thailand. Recognition (and critique) of the legitimising representation and activism inherent in a great deal of academic research is a recurring theme in this thesis for which reflexive approaches are discussed below.

Reflexivity

Linda Tuhiwai Smith (2005) has noted that “research” is probably one of the dirtiest words in the vocabulary of indigenous people. Researchers have historically and recently caused a range of affronts to indigenous and non-western peoples. The discovery, extraction, appropriation and transformation of knowledge has been criticised by those from the cultures that have been probed. Most prominently, Said (1978) has criticised the *re*-presentation of non-western cultures as the “Orient” under Western “regimes of truth.” This highlights the need to view knowledges as partial and situated as Haraway (1991) has suggested.

⁵⁴ It should be noted that there is often very little difference between activist and academic amongst many researchers working on environmental issues, anthropological concerns such as minority rights, local germplasm and plant protection issues, especially in Thailand.

⁵⁵ Notably there is no favoured identifying term for the peoples of the “hill tribes” region adjacent to Chiang Mai in Northern Thailand. “Hill tribes” has a negative connotation associated with government and societal depictions of the minority groups as “primitive.” On the other hand, “hill tribes” provides a distinction from the dominant ethnicity – Thai – and from which the local peoples of the north have emphasized their difference, even more in recent years, as a political strategy. Identification as “tribal” has allowed a connection to the international movement of “indigenous peoples” – a contested term in Thailand – and thus a presence in international fora. Where possible I have referred to the local peoples of Northern Thailand by their ethnic grouping, from which peoples including the Hmong and Khon pga k’nyau (Karen) have drawn “consensus” or a sense of unity that has helped them assert community rights claims.

The aims of this research directly relate to the need for a rectification of oppressive or colonial methods of research access and extraction. But, as Smith (2005:118) also explains: “even if such [research] communities have [ethical] guidelines, the problem to be reiterated again is that it has been taken for granted that indigenous peoples are the ‘natural objects’ of research.” The implication from this is that indigenous people, as well as other non-western people, are seeking greater power in research relationships – including power to refuse access.

The irony for this research project is that, in seeking resolution to the issues of knowledge misappropriation and research ethics, one must engage with the very peoples who may be resistant to access. What I sought was an emphasis on local stakeholder expectations, rather than an objectification of the people and their culture. The subject matter was essentially reversed. Instead of mining for knowledge of useful plants to be extracted, the customary context for use and protection was emphasised. The “right” that these people have (or should have) to say no to research intrusions was put to both the stakeholders (farmers and local peoples) as well as to authorities in a position of regulatory power. I could not guarantee that I could automatically assert the rights of the local people I spoke to (nor should I have), but I was able to convey important messages to the NHRC – the most sympathetic ear for community rights in the Thai government.

At the same time, my role there as researcher was critiqued. I came with a set of concepts such as informed consent and benefit sharing, which in all likelihood will have a Western epistemological skew. My situatedness – as an academic researcher and as a “rights-based” intern – cannot be denied. For example, I have not disclosed the names of some plants used by local people for reasons of potential affront or misappropriation. But is this an imposed or unnecessary censorship when we consider the knowledge-sharing environment that these people often encourage? These questions need reflection, but ultimately may be irreconcilable. At the various times I have also been called to be an “expert” on these issues, for which I have considerable personal concerns about the assumed or imposed coloniality of these requests. The positionality this entails for the research is therefore reflected on in the text, and I have tried to walk a very fine line between obligations (academic, institutional, de-colonising, and moral). As Rose (1993; 1997), England (1994), Gibson-Graham, J.-K (1994) and McDowell (1992a; 1992b) have

suggested, reflexivity highlights the absences and fallibilities of the researcher, their position as well as that of our research participants, and forces us to write this into our research practices. Reid-Henry (2003) has gone further to suggest that the *performative production* of the text must be attempted to avoid re-privileging the position of ethnographer or interviewer. Where possible this is attempted, but in agreement with Rose (1997), it is near impossible to achieve these recognitions fully – hence the repeated emphasis on partiality and situated knowledge.

Limitations of the Research

The research focuses heavily on the fact that there is a layered debate on the regulation of traditional knowledge that transcends scales. By engaging with each of these layers within the confines of doctorate research parameters, I have had to balance the rigour of specific analyses (like local case studies, or biopiracy case studies) with the overarching aims. This has meant, for example, that detailed ethnographic studies of traditional knowledge and customary laws could not be conducted. The local case studies, while an important part of the thesis, represent only a sample of the traditional knowledge and local customary norms that exist in the regions of Thailand. As I have already discussed, more detailed approaches were not possible within the structural confines of doctorate research in Australia. This raises issues of concern in themselves, and I discuss these further in Chapter Ten.

Summary

These methods reflect typical qualitative approaches in human geography and the social sciences (drawing upon anthropology, political science, and science and technology studies). The approaches used (and the results yielded) seek to advance understandings of cross-cultural research ethics, their limitations and potential improvements in relation to traditional knowledge issues (see Appendix 3 for suggested PIC guidelines). The methods employed therefore yield tangible (but polemical) results on “biopiracy” concerns, legal issues, perspectives on science and nature, and the nature of traditional knowledge, whilst correspondingly critiquing the research process at key junctures in the text.

Part II – International Dimensions

4. INTERNATIONAL REGULATION AND KNOWLEDGE POLITICS

This chapter builds utilises fieldwork from Geneva to develop an understanding of the situatedness of the main international regulatory regimes, and negotiations. The knowledge politics involved in pursuing international, bilateral and regional agreements are discussed based upon interviews and observations in a range of high-level meetings and settings. Building upon arguments by Parry (2002) and Wright (2005) that industry and specific government proponents have crafted new “scales of importance” in intellectual property, this section provides evidence of current debates from the source of these agreements. As Parry (2002:679) notes, although often presented as inherently normative, Euro-American systems of IPRs are “best understood as particular, culturally defined systems for codifying knowledge employed to discipline objects, phenomena and social relations.” IP systems have undergone steady process of harmonisation in the past 25 years, in which many countries that previously had no interest or need for IP laws have been drawn into global agreements which forcefully oblige them to recognise the IP rights of external companies.

Despite the diversity of legal cultures and legal traditions in the world (thoroughly examined by Glenn, 2004), WTO member countries are now forced to recognise one uniform blanket of IP standards. There is a “globalised localism”⁵⁶ of European-origin IPRs suitable for advanced economies: they have been exported to many countries that may have little or no direct use for them. While many developing countries are concerned about the impact this will have upon innovation, technology, creativity and economic development, there is also the issue that traditional laws and customs which surround traditional knowledge and the concept of public domain, have rapidly been displaced or made problematic. In response to the issues encountered, international NGOs and delegations to international fora have sought to respond through international law. However, as Greaves (1996:36) has noted, these are “largely conducted by non-indigenous professionals and advocates, [who] encounter prodigious conceptual problems

⁵⁶ Swyngedouw (1997) uses the term “glocalisation” to refer to a process whereby locally generated discourses may come to have global resonance through their ability to “jump-scale,” thus rendering scale an inherently politicised subject in our increasingly connected world.

and very slow progress...” The result has (largely) been an ongoing situation of representational colonialism, with insufficient opportunity for indigenous and local groups to contribute to the debate, as well as coercive pressures on developing countries and their representatives. It is suggested that there are currently too few initiatives generating discussions which can bridge the conceptual “local-global divide,” although this appears to be gradually improving.⁵⁷

International regulatory regimes for biodiversity and agriculture have also been generated, albeit with a different range of political inputs, with some more nuanced implications for regulatory subjects. The interaction of these laws has particular implications for alternative conceptualisations of nature in biotechnological contexts (see Chapters Seven and Eight), and for the way we as researchers (and even policymakers) might view law, jurisdiction, sovereignty and scale (see also Chapters Nine and Ten). The importance of the international dimensions cannot be understated because many of the problematic bio-resource and knowledge transactions that have recently occurred are trans-national. In this respect they transcend not only national boundaries, but also different moral, cultural and epistemic geographies across space and scale. Through these transactions, and through the responsive regulatory framework which seeks to organise these transactions, a range of representations are made which often transcend scale. Therefore much of this chapter questions whether generic regulatory decisions are being made in the representation of Others and whether they may be empowering or oppressive – establishing themes which continue to be explored in subsequent chapters from Thailand.

Section 4.1 provides some historical context and background to the evolution of the issues. The following sections engage with more current debates and representations. Specifically a focus is made upon Thailand’s actions and position within the discourses. As a starting point, Table 4 provides a summary of international laws relevant to the governance of intellectual property rights (IPRs), traditional knowledge and bio-resources with brief details of their most pertinent elements.

⁵⁷ Whilst it was noted during this research project that indigenous representatives had difficulty being heard in fora such as the CBD (Ad Hoc ABS Working Group) the WTO and WIPO, Greene (2004) makes the important point that indigenous representatives have continued to gain political capital in bioprospecting situations and related debates – but that there are also issues to do with representations that homogenise indigenous identity, and with the legitimate extent of an indigenous representation.

Table 4: Approximate chronology of international laws on intellectual property rights, traditional knowledge and genetic resources.

International Law	Year Drafted	Details
International Convention for the Protection of New Varieties of Plants (UPOV)	1961, revised 1969, 1978 and 1991	- UPOV is essentially designed for protection of new plant varieties for commercialisation. The most recent version has been criticised for limiting farmer's rights. Represents the only international <i>sui generis</i> system of plant variety protection.
International Undertaking on Plant Genetic Resources for Food and Agriculture (IUPGR), FAO	1980	- Non-binding, but had rhetorical importance for the consideration of germplasm as the 'common heritage of mankind'.
Convention on Biological Diversity (CBD)	1992	- Established principles of: facilitated access to genetic resources subject to benefit sharing; prior informed consent of provider parties; national sovereignty over natural resources; conservation and sustainable use.
Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement, WTO	1995	- Globalises exclusive private intellectual property rights. - Members must allow patenting of genetic resources or implement a <i>sui generis</i> system of plant variety protection. - Raises minimum standards, eg minimum patent term is 20 years.
Patent Law Treaty and Patent Cooperation Treaty (PCT), WIPO	2000 (and 1970 (amended 1984))	- Although the Patent Law Treaty and PCT are not specific to genetic resources and traditional knowledge, they work to 'harmonise' patent standards worldwide. WIPO also holds an intergovernmental forum on genetic resources and traditional knowledge.
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), FAO	2001	- The ITPGRFA includes recognition of farmer's rights, and sets up a standardised material transfer agreement for accessing plant genetic resources in CGIAR gene banks.

4.1 Historical Contexts: International Developments and Laws

Due to the complexity of the international laws and negotiations currently operating, it is important first to raise, in this section, a number of international developments and laws. These have occurred in recent history (i.e. in the past 50 years), and therefore they provide some context underpinning the situation and position of the key actors from developing and developed countries in present forums.

The Consultative Group on International Agricultural Research (CGIAR)

The establishment of a number of international research gene banks in the mid-Twentieth Century began a new era of plant ownership. We are regularly reminded by Southern NGOs that prior to this there was a period of free exchange of plant germplasm, limited exclusive ownership rights over plants, and on-farm improvement of crop varieties by millions of small-scale farmer-breeders (Kloppenber, 1988; Shiva, 1993; 1991).⁵⁸ Colonial plant hunting occurred, but then so did plant exchange within and between developing countries, and it was relatively uncontroversial.

The gene banks that were established ultimately became part of the International Agricultural Research Centres (IARCs), and the Consultative Group on International Agricultural Research (CGIAR). The CGIAR was established in 1971 and came out of the Green Revolution era which emphasises the breeding and development of advanced hybrid or “high-yielding plant” varieties. It also saw encouragement of international germplasm exchange and further legitimisation of what we now typically describe as “bioprospecting activities.” The CGIAR became the umbrella body for sixteen IARCs, each with their own governing body.⁵⁹ With a budget of some US\$340 million per annum, the CGIAR oversees the largest agricultural research effort focusing on crops and materials of interest to the developing world (Blakeney, 2002). In addition to supporting plant breeding research in the IARCs, the CGIAR supports a collection of germplasm which currently comprises over 600 000 accessions of more than 3000 crop, forage and pasture species which are held at the research centres (CGIAR Website Acc 1/7/2005).

Although intended initially for developing countries, much of the research undertaken by the CGIAR, as well as the raw germplasm has been of considerable interest to biotechnology and life science companies in the Global North that may utilise what already exists in the CGIAR for their own research and development. With increasing Northern research utilising the research and

⁵⁸ Shiva (1991) for example, depicts the “violence of the Green Revolution” in changing plant ownership, creating genetic uniformity in agricultural landscapes, and the trap of contract farming with “high-yielding” varieties – all of which have meant a conquest of nature and society. See also Hamilton (IRRI Website, Acc 17/6/2005) for a narrative of pre-CGIAR plant ownership, breeding and exchange conditions.

⁵⁹ The major sponsors are the FAO, the World Bank, the Rockefeller and Ford Foundations, the United Nations Development Programme, the United Nations Environment Programme and the aid programmes of the EU and a number of individual countries.

germplasm of the CGIAR, came the desire to protect the result of such research using the IP system, primarily in the form of patents and plant variety protection.

Blakeney (2002) and Srinivasan (2003) indicate that a commercial consequence of the intrusion of IP into agricultural research has been the concentration of key IP rights in the hands of a small and declining number of private life-science companies. A result of this market concentration has been the locking up of key intellectual property rights in the hands of a few powerful entities and the raising of barriers to market entry of others wishing to participate in these activities. Thus by the end of 1998, the top five vegetable seed companies controlled 75 per cent of the global vegetable seed market (Blakeney, 2002). This raises serious questions about the future effects on public sector plant breeding, and for small start-up plant breeders, particularly those in developing countries. It seems that control of R&D will increasingly move away from the public sector and from smaller enterprises – a trend of particular relevance for traditional agricultural knowledge and plant breeding in countries such as Thailand (see Chapter Seven).

The allocation of IP rights of patent and plant variety protection over material originating from the CGIAR institutes has proven to be extremely controversial. Furthermore the research conducted by such bodies or by researchers accessing the materials, has often used the knowledge of indigenous or local peoples over specific traits relating to plant varieties to short-cut the many steps involved in the chain of invention resulting in commercially viable varieties. As a result, considerations of the ownership and control of the collections of the CGIAR have come into serious question, having been previously neglected. These bio-resource transactions were coming across new boundaries – boundaries of resource exchange and intangible ownership, but also new boundaries between nature and society (most notably in the debate about genetic reductionism, and genetic modification), and moral, cultural and epistemic systems related to ownership and science. After much meandering, the majority of the institutes have asserted that the materials contained in their gene banks are not owned by anybody, but rather that they are held “in trust for the international community” and that they would “not claim ownership, or seek intellectual property rights over the designated germplasm and related information.” This agreement was made in 1994 under the auspices of the FAO which now acts as custodian for these materials.

Now access to such materials held in most CGIAR IARCs is subject to a standard material transfer agreement (MTA) which specifies that intellectual property rights are not to be allocated to germplasm originating in their gene banks.⁶⁰ This MTA is set up to control access under the International Treaty on Plant Genetic Resources (ITPGRFA) discussed in a following section. As for materials that were taken from the CGIAR gene banks prior to this date, and have since been developed and commercialised, the outcomes are far from clear. Similarly the transfer of biological materials with medicinal or other non-agricultural qualities has been unclear, with previously no overarching international legal framework regulating these transactions, but which is something now being addressed in the CBD.

International Union for the Protection of New Varieties of Plants (UPOV)

The scope of the International Convention for the Protection of New Varieties of Plants which establishes UPOV⁶¹ is narrower than some of the conventions and fora to be discussed. UPOV was developed essentially for the protection of plant breeders' rights. Whilst UPOV does not have many direct influences on traditional knowledge, it is important to note for its potential effects on farmers' rights and the modernisation of agricultural systems through the allocation of plant breeders rights. Some critics have suggested that the scope of UPOV may be appropriate in countries with advanced breeding methods, but not necessarily in countries with developing or subsistence agricultural systems. Notably, UPOV was developed in Europe at a time when there was still some resistance to the implications of patent (monopoly) control over plant varieties and biotechnological innovations. The US, although it has since come to adopt UPOV, has favoured patent protection of plant innovations since the 1930s.

The first UPOV convention was completed in 1961 (amended in 1972), and then subsequently re-drafted to establish the 1978 Act and then the 1991 Act. UPOV was established in Europe as a way of establishing and protecting the right of plant breeders to obtain reward for the breeding of new plant varieties. The system was seen as a preferable way of rewarding breeding innovation,

⁶⁰ This MTA can be found at the Gene banks and Databases page of the CGIAR website at: http://www.cgiar.org/pdf/mta2003_en.pdf

⁶¹ The acronym comes from the French name 'L'Union Internationale pour la Protection des Obtentions Vegetales'.

rather than through plant patents which were allowed in the US. In response to increasing industry pressures, the 1978 UPOV system was updated to keep up with modern biotechnological techniques. To be eligible for protection under the UPOV system, plant varieties must be homogenous (in UPOV 1978) or be novel, distinct, stable and uniform (in UPOV 1991) (Dutfield, 2004). The 1991 UPOV text strengthens protection by widening the array of protectable subject matter.⁶² This is deliberately intended to suit the interests of large scale breeders. Breeder's rights are also extended between the versions.⁶³ Furthermore the UPOV 1991 version extends protection from at least 15 years to a minimum of 20 years (Leskien and Flitner, 1997; Dhar, 2002).

The farmer's exemption (or farmer's privilege) allows farmers to keep propagating materials for sowing in a following season. The 1991 UPOV text defines the farmer's exemption more carefully than the previous text, by allowing a farmer to use, for propagating purposes only on their holding, the product of the harvest which they have obtained by planting, on their holding, the protected variety or essentially derived variety (Tannit, 1998). This limits the scope of farmers who wish to save, exchange or sell their seeds to other farmers where they have used protected materials. National bodies have the right to determine whether to implement the farmers' privilege. This portion of the UPOV convention is particularly contentious for developing countries which have significant populations of farmers who still save, exchange and sell their seeds. Therefore many countries in this situation have preferred to adopt the 1978 version or their own national *sui generis* version (such as Thailand), in order to retain these farmers' rights.

⁶² The protection covers not only the propagating material of the protected variety, but also (unlike the 1978 Convention) the harvested material (including entire plants and parts of plants), the products made directly from harvested material of the protected variety, and essentially derived varieties (Tannit, 1998) The concept allows the protection of cosmetic modifications on already protected varieties, subject to permission from the breeder of the "initial variety." Ramanna and Smale (2004) suggest that Indian NGOs have implied that within EDV provisions under their PVP law, the parent genetic material contributed by rural and tribal peoples could be included in the definition of "initial variety." However, the protection of general domestic or farmer's varieties from free-riding is not UPOV's intention.

⁶³ Under UPOV 1978, the scope of protection of the breeder's right is for "the production for purposes of commercial marketing; the offering for sale; and the marketing of the reproductive or vegetative propagating material, as such, of the variety." Under pressure from plant breeders the 1991 version extends the scope of the breeders rights by increasing the number of acts for which prior authorisation of the breeder is required, including "production or reproduction; conditioning for the purpose of propagation; offering for sale; selling or other marketing; exporting; importing; stocking for the above purposes." This goes beyond just reproductive or vegetative propagating matter, but also encompasses harvested material obtained through the use of propagating material and essentially derived varieties (Dutfield, 2004).

One particularly useful thing that UPOV 1991 provides is a definition of “plant variety.” the 1991 Act describes a plant variety as a:

Plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a breeders’ right are fully met, can be:

- *Defined by the expression of the characteristics resulting from a given genotype or combination of genotypes,*
- *Distinguished from any other plant grouping by the expression of at least one of the said characteristics, and*
- *Considered as a unit with regard to its suitability for being propagated unchanged.*

Thus, it is a grouping below sub-species that may have distinct and useful characteristics. This is important for later discussions of plant variety protection, and its relevance for landraces (undomesticated relatives of farmers’ varieties), farmers’ varieties, local and wild variety protection.

This brief discussion of UPOV is important because the Convention is the only international example of a system of plant variety protection. This has implications for the implementation of Article 27.3(b) of the TRIPS Agreement (discussed in section 4.4). Consequently, recent versions of UPOV have been pushed on developing countries, despite its potential inappropriateness for small scale breeders, the possibility that it will encourage monocultures, and loss of small-holder food sovereignty. Importantly, UPOV may also allow exclusive protections over plant varieties derived from farmers’ varieties and which utilise traditional agricultural knowledge.

The International Undertaking on Plant Genetic Resources for Food and Agriculture (IUPGR)

The FAO International Undertaking (1980), although a non-binding international agreement, held some rhetorical importance for the consideration of plant germplasm as the “common heritage of

mankind.” The International Undertaking came about at a time when many developing countries, indigenous and local communities felt cheated by an expanding realm of exclusive or private control over genetic resources, often resulting from utilisation of associated traditional knowledge. Germplasm and biological resources had been provided by these countries and their people “in trust” and “for the benefit of... particularly developing countries” (CGIAR, Acc 2006), with little realisation that their derivatives may in the future become private property for exclusive economic gains.

The IUPGR was being pushed by developing countries who sought to resist the expanding private ownership domains of industry over genetic resources that they had donated to the IARCs. Instead the developing countries wanted to highlight the “commons status” that they argued had existed before the IARCs were created, and before developments in intellectual property (primarily patent and plant variety protection) law in some developed countries. Ultimately, the International Undertaking did little more than allow discursive critique of this process of increasing privatisation of plant genetic resources. The increasing loss of such biological diversity, coupled with the perceived misappropriation of biological resources, prompted the international community to negotiate towards the CBD text. Whatmore (2003:221) notes that a retrospective analysis of the IUPGR presents “an episode in the geo-politics of biodiversity management that exposed the partiality of western modes of IPR as the boundary markers between the natural and the social, a common heritage, and an exclusive claim.” The situated knowledges driving this agenda, she argues, have established divisions, while other boundaries of ownership and the lines legitimising man-made from natural have been moved.⁶⁴ In the period since, the IUPGR “commons” status of plant genetic resources has become legally meaningless – with the IUPGR now little more than a historic reminder of the rapid structural privatisation of biological resources. Subsequently the FAO has developed the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), a substantially different (and binding) treaty, which was forced to respond to changes in biodiversity and intellectual property regulations discussed next. The ITPGRFA is discussed in detail in Section 4.7.

⁶⁴ Whatmore (2002) discusses for example, the “hyperbolic inventiveness of the life sciences to complicate the distinctions between human and non-human; social and material; subjects and objects to which we are accustomed.”

4.2 The Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) was drafted in 1992 at the Rio Earth Summit Convention and became effective in 1993. The CBD is worth substantial deliberation in light of its relevance for traditional knowledge protection, and because it is a forum where key debates were continuing at the time this document was finalised. During this research I attended some CBD meetings and interviewed staff of the CBD Secretariat to gain close insights into the operation of the Convention, particularly relating to traditional knowledge, access and benefit sharing. These sections, and following sections within the international dimensions chapter, discuss the implementation of treaties from interviews in Thailand. This provides insights into the potential problems raised by importing regulatory systems on knowledge and biodiversity that may conflict with past approaches, and regional or local regulatory systems.

The three primary objectives of the CBD are the “*conservation of biological diversity, the sustainable use of its components, and the equitable sharing of benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding*” (CBD 1992). Importantly, the CBD also recognises national sovereignty over genetic resources.

The key provisions of relevance here are Articles 8, 15 and 16. Article 8 relates to *in situ* conservation, that each Contracting Party shall, as far as possible and as appropriate:

(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices (CBD 1992).

Article 8(j) is the result of substantial developing country, indigenous group, and NGO pressure for recognition of the intergenerational and innovative contributions of traditional indigenous and

local communities. The article sets an international precedent and presents a highly important claim to indigenous and local rights over intangibles (knowledge, innovations), insofar as they are linked to useful bio-resources. Thus while the traditional knowledge of these peoples are respected, the extent of the Article is qualified and limited.

Article 15 on access to genetic resources, in Paragraph 1 recognises the “*sovereign rights of States over their natural resources,*” and thus “*the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.*”⁶⁵ This article has been important for countries that feel they have had their biological materials exploited by bioprospecting, the sharing of genetic resources through the CGIAR system and otherwise without adequate compensation. It allows countries to assert that they alone have the authority to control access to genetic resources. It does however, place limits on the practical application of measures to achieve Article 8(j) at the local level. Since only states may be party to the CBD, this raises questions over the adequate representation of local and indigenous groups by their prevailing governments. There are many cases where local communities, tribal, minority and indigenous groups may feel they are ill-represented by the dominant views expressed by their government, including some circumstances in Thailand.

Article 15, Paragraph 2 requires countries to “*facilitate access to genetic resources*”, which has been a bone of contention, considering the misappropriations of these resources that have occurred in the past. Due to the expanding reach of IPRs, many developing countries and local groups may actually be seeking defensive protections *from* IPRs, effectively shunning the mandate. As a partial qualifier to these concerns Article 15.5 requires that “*Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.*”

Prior informed consent (PIC) basically relates to a contract between the provider and the user. What is often unclear is who can be considered a provider. For the most part it will be a state authority with control over biodiversity, or one of its various forms, due to the sovereignty

⁶⁵ The Article has its origins with the 1962 UN Resolution 1803 which makes a Declaration of Permanent Sovereignty over Natural Resources (Brownlie, 2002).

assertion in Article 15.1. But some countries also extend PIC to local communities, establishing “tiers” of PIC (Laird, S.A and Noejovich, F, 2002 – see p190). The extension of PIC to local communities is encouraged by the Bonn Guidelines.

Article 16 on access and transfer of technology states under Paragraph 5 that: *‘The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.’* This article is an attempt to assert that the CBD is not incompatible with *the word* of other international laws (notably the pending TRIPS Agreement being pushed by the US in GATT negotiations at the time) if not the principles enshrined therein.⁶⁶

The CBD contains text not only on the first, holistic goal of conservation of biological diversity; it breaks it down into its component parts. The term “biological diversity” includes diversity within species, between species and of ecosystems, and refers to ecological complexes to which these are a part (CBD 1992). There is some scepticism that a more holistic approach to the conservation of biological diversity, one which recognises this complexity, has been undermined by scientific genetic reductionism,⁶⁷ by placing exclusive rights on such resources, and encouraging the facilitated access to these resources.

One of the primary economic values (besides that achieved via tourism or agriculture) that can be placed on biological diversity is through research on its genetic components for use in food (agrobiotechnologies) and medicines (pharmaceuticals). With further developments in international law (particularly the TRIPS Agreement discussed in Section 5.6) means that genetic components utilised for invention may be subject to exclusive intellectual property rights, and this arguably represents a commodification of the complexity of biological diversity. Furthermore this reductionism may embody a conflicting knowledge system to that of indigenous and local communities who view cultural and spiritual interaction with their environments as intrinsic to

⁶⁶ There has been a lively debate about the compatibilities of the TRIPS Agreement and the CBD. See for example Walker, 2001; Neumayer, 2002; Downes, 2002; and Dutfield 2002. While underlying principles arguably conflict, positivist assertions of the “mutual supportiveness” of the texts have led to slow reforms in both.

⁶⁷ Genetic reductionism refers to the conceptual reduction of the complexity of biological diversity to its core elements - genes.

existence and lifestyle (see Posey 1999). To this effect the CBD includes a number of elements which seek to balance holistic concerns with reductionist ambitions. The access and benefit sharing (ABS) conditions of the CBD, for example, have thus been referred to as “the grand bargain” (Jeffery, 2005). Notably, Parry (2002), Castree (2003; and Braun 2001), Dutfield (2003), Whatmore (1999), and McAfee (1999; 2004) have questioned the ascendancy of specific knowledge claims and systems surrounding the life science industries and their role in the regulation of intellectual and biological property in the CBD and TRIPS.

Some of these concerns were reflected in Thailand’s initial reactions to the CBD. In Thailand the ratification of the CBD was delayed primarily due to the protested concerns of NGOs, academics and the rural public about the protection of traditional knowledge relating to biodiversity and due to government concerns over implications of the terms of protection of IPRs and access to biological resources (Jaroen. Interview, 2005; Buntoon. Interview, 2005). Whilst Thailand signed the CBD in 1992, it did not ratify until January 2004.

In the interim between signing and ratification there was considerable complaint from NGOs, people’s networks and concerned academics about how the CBD should be implemented. Essentially they demanded that Thailand should develop two bills on traditional medicines and plant variety protection, as well as further development of the Community Forests Bill which had been drafted, but remained in a political limbo. Initial development of these bills included broad public consultations, but suffered somewhat from departmental disagreements, and a change of government.

The Ministry of Science, Technology and Environment put pressure on the new government to sign and ratify the CBD, seeing the potential benefits of for conservation in Thailand. They also sought the possibility of drawing Global Environment Fund sponsorship. This set in motion a Cabinet Committee which developed a plan to resolve the implementation issues surrounding the CBD. Several concerned academics and the Bar Association protested that this Cabinet solution was in violation of a section of the Constitution at the time relating to participation. The Constitutional Court then forced the government to come into compliance such that in April 1994, the Parliament approved Thailand’s entry as a Party of the CBD, allowing it to be finally

ratified in 2004 (Jaroen. Interview, 2005). This illustrates a process of relatively broad public participation, NGO activities, and governmental department cooperation on these matters. Chapter Seven discusses the development of the aforementioned bills into acts at considerable length.

The ABS system can essentially be justified by two arguments: *utilitarian* justifications that suggest that apportioning benefits to state authorities and custodian communities will assist them in the conservation and sustainable use of biodiversity; and a justification that such custodian communities have a *right* to benefits due to their contributions generation after generation which would otherwise go unrecognised. The latter rights-based argument may be made with reference to human rights justifications (economic and cultural rights), as well as Locke's theories of property rights (see section 3.2), and at a more local level it is beginning to be made in terms of "community rights."⁶⁸

In terms of utilitarian justifications it has been widely assumed that benefit sharing (monetary profits or otherwise) will assist with biodiversity conservation and the maintenance of traditional practices of local communities (Tobin, c2005; Heineke, 2004). This is problematic because there is little evidence yet to suggest that it indeed will, particularly with regards to *how* the benefits can be equitably shared with custodian communities such that it contributes to biodiversity conservation and sustainable use (see for example Barrett and Lybbert, 2000). Apportioning benefits fairly may be impossible or unfeasible. As Dutfield (2004) notes, new plant varieties are often the product of generations of breeding and cross-breeding, which in turn are the result of selection and breeding by farmers throughout the world and of the evolution of non-domesticated varieties. The new variety may then have descended from numerous locations and compensation of provider countries and communities may involve prohibitively high transaction costs. This is not to suggest that benefits should not be shared, but rather it is important to recognise the practical problems relating to the implementation of ABS regimes, and to recognise that there are many other aspects to the CBD including conservation, sustainable use and traditional knowledge of biological diversity.

⁶⁸ This is certainly the case in Northern Thailand where there is a prominent academic discourse of "community rights" in the assertion of predominantly land rights, but also cultural and knowledge-based claims. The most prominent international example is the African Model Law which contains provisions on community rights.

The development of individual national systems of biodiversity conservation and *sui generis* systems for the protection of traditional knowledge, while important, are limited in their jurisdiction. Because these matters often involve international transactions (such as foreign company access to biological resources) an international framework is considered essential, particularly in the eyes of the bio-diverse developing countries. The Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilisation lay out a guide for countries attempting to implement systems of ABS, and for researchers seeking to achieve equitable ABS approaches. The Bonn Guidelines may come to be superseded as a range of countries and groups (particularly developing countries, and representatives of indigenous and local groups)⁶⁹ have pushed for an International Regime on Access and Benefit Sharing to harmonise and establish standard practices. This has been discussed in an Ad Hoc Working Group of the CBD.

Ad Hoc Open-Ended Working Group on Access to Genetic Resources and Benefit Sharing

The ABS working group met in February 2005 in Bangkok, Thailand, and in Granada, Spain, in January 2006, primarily to negotiate the development of an International Regime on Access and Benefit Sharing, but also to disseminate information on research and progress on this topic from research institutes, organisations, academic circles and other forums. I attended this meeting and observed the discussions, and many of the side-event presentations.

The regime being sought represents a promising opportunity to facilitate international harmonisation of ABS laws and activities, and build a more substantial framework than the Bonn Guidelines. The pursuit of an ABS mechanism is important with respect to the assumption that a great deal of biological resources and associated traditional knowledge has been expropriated, is already held in international gene banks, or research institute herbariums. ICTSD provide a good summary of the proceedings at these talks (ICTSD, 22 March 2006).

⁶⁹ This statement is made with some caution. Developing countries – predominantly the “Mega-diverse Group” have been forceful in seeking an International Regime. Other developed countries have not been so keen to see access and benefit sharing extend beyond the Bonn Guidelines, which although important, are not enforceable.

During the 2005 and 2006 meetings, indigenous people have sought to be officially recognised as a party to the discussions. An indigenous representative group, the International Indigenous Forum on Biodiversity has been present in the meetings, but only as an observer, with only limited standing in the talks. Inclusion of the indigenous representative group as a recognised party has been controversial because the CBD recognises state sovereignty over biodiversity. A similar group named the International Forum of Local Communities has also been acting as an observer representing other local groups which do not fit the definition of “indigenous.” The eighth Conference of the Parties in 2006 continued discussions over their inclusion in discussions on an international regime, and their inclusion still has not been resolved. This highlights one aspect of the problematic scales of representation in this debate – where legitimacy is only granted to state authorities.

In the ABS Working Group meetings in Bangkok and Granada, Thailand only made a few muted contributions. This is likely to be due to their only recent ratification to the CBD, and due to an unfixed bureaucratic position on ABS. Thailand has generally been supportive of the ambitions of the Group of Mega-diverse countries. However the negotiating strategy of representatives (which are from the Office of Natural Resources and Environmental Policy and Planning) has been to take a “wait and see” approach, at least in part due to the lack of a national framework or consensus on the issue.⁷⁰

Apart from the main discussion forums, side-events provide a useful opportunity for a diverse range of people to view research related to ABS and to share various perspectives. They also give insight into the pre-conceived notions different parties and representatives bring to the meetings. During a side-session of the Bangkok meeting, an unknown life-science industry representative indicated that in order to facilitate ABS, developing countries should aim to more clearly define physical property rights. I noticed that this comment resurfaced again at other side-events and has been a sentiment shared by external commentators, particularly those against an ABS regime. Oxley (2005:5), who attended the meetings, suggests that governments can “adopt national laws

⁷⁰ These comments are based on personal observations, Personal Communications from Emily Quinton, Researcher and Observer at the Granada meeting (March 2006), and Wisut Bai Mai, BRT Project Bangkok (May 2005).

that delineate property rights to genetic resources and traditional knowledge and set rules on the transfer of those rights.” In some cases this would no doubt help. In other cases such as Jasmine rice which is grown by millions of farmers across the northeast of Thailand in predominantly defined private land property rights, the issue of intellectual property protection is still problematic (see Chapters Six and Eight). In cases where a resource is communally or differentially held, shared and governed by inalienable customary laws, the forceful government delineation of property rights (which has occurred in Thailand) has been criticised by human rights bodies as colonialism and an abuse of various aspects of human rights (such as Article 8 of the ILO Convention 169 on customary laws) or as inequitable. This short detour highlights the cultural differences and situated knowledges which individuals and parties bring to these discussions. It also comes back to an issue of regulatory boundary-making explained through Drahos’ (1996) definition of proprietorism – that there is an ongoing trend towards making every conceivable item infinitely divisible and own-able.

It also needs to be emphasised that Article 8(j) is not simply about the equitable sharing of benefits, as has been the emphasis of so much debate. The Article encourages countries to “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles.” This is similarly asserted in CBD Article 10(c) on sustainable use. This is probably *not* achieved through an access and benefit sharing regime per se, but through implementation of legislation and practical measures that provide for a broader set of rights for these communities such that they can pursue traditional lifestyles. Benefit flows may assist in the alleviation of poverty, in the development of infrastructure, and in other ways, but they do not guarantee that a community will be able to continue their traditional practices – they may in reality do the opposite (see Chapter Nine).

To many lawmakers, a compensatory mechanism (or liability regime) represents a more tangible solution than a rights-based approach, or a customary law regime, both of which the 8(j) Working Group is heading towards. Arguably, the delineation of clearer rights frameworks, including recognition of customary laws, is needed to allow for self-determination of custodians of traditional knowledge and genetic resources. The difficulty of assuring the continued practice of these communities is an issue that has a long and difficult history for which there are no simple

legal mechanisms to apply. The 8(j) Working Group within the CBD has been attempting to address this matter more closely.

Article 8(j) Working Group

The Ad Hoc Open-ended Inter-Sessional Working Group on Article 8(j) and Related Provisions on the other hand is a forum which deals more closely with indigenous rights issues and has thus received less media and academic attention in IP and trade circles. The forum has a broad mandate for the protection and promotion of traditional knowledge and associated local practices. The Working Group is also mandated to work with the ABS Working Group on an International Regime in order to ensure it is in compliance with the aims of Article 8(j). It is worth mentioning that this Working Group allows direct participation of indigenous and local groups, but problematically they are not able to participate directly in the ABS Working Group. This represents another exclusion and division of indigenous and non-indigenous forums, rather than bringing them together. The CBD secretariat has noted that the ABS Working Group is to be “closely informed” by the concerns raised by indigenous representatives in the 8(j) Working Group (see also Bridges Trade BioRes, Vol 5 no 14, 22 July 2005).

One outcome of the Working Group has been a series of Composite Reports from different regions on the status and trends regarding the knowledge, innovation and practices of indigenous and local communities, including one on Asia (Langton and Ma Rhea, 2003).⁷¹ The reports documented the loss of traditional knowledge and emphasize the relative scarcity of examples of measures and initiatives specifically designed to protect, promote and facilitate the use of traditional knowledge. As a result the Working Group is now discussing options for *sui generis* (unique) systems of protection and promotion of local practice and traditional knowledge, with specific emphasis on the respect of customary laws of local and indigenous peoples. Such negotiations have however been hamstrung by the need to have a framework that is broad enough so as not to limit or exclude the applicability of the wide range of customary laws. It is also worth noting at this point that there has been some reluctance by Parties in CBD, WTO and WIPO fora

⁷¹ The Composite Reports can be found at: <http://www.biodiv.org/programmes/socio-eco/traditional/documents.asp>.

to link traditional knowledge to a broader rights-based approach asserting self-determination and territorial rights to communities or indigenous groups.

Staff at the CBD Secretariat have also noted that there has been a “limited working interaction between them, the Working Group on Indigenous Populations and the Office of the UN High Commissioner on Human Rights” (CBD Secretariat Staff. Interview. 2005). He indicated that while CBD staff had attended workshops of these organisations, the presence of the Working Group and Human Rights bodies at CBD meetings (generally) had been limited. There seems to be some disconnections between these forums where they should be working closely together for indigenous rights. This disconnection is likely to be mandate driven and due to the focus on *state* representation in the UN.

Cooperation such as the 8(j) forum can only be of assistance in bridging new ideas about potential *sui generis* systems that can be promoted by indigenous and local advocacy groups, and that interested countries might develop. However, taking on an issue with as great a diversity of stakeholders as this from the top-down is a colossal task. It is evident that further bottom-up research, case studies and even regulatory trials on a country by country, and case by case basis, could help inform this debate – particularly in relation to customary protocols and laws.⁷² Gradually more investigations are emerging, for example the IIED project Protecting Community Rights over Traditional Knowledge,⁷³ Thom and Bain (2004), as well as this doctoral research. It was suggested by a prominent Thai intellectual that such an approach could then more effectively (at least in SE Asia) build-up through regional cooperation to inform the international community (Saneh. Interview. 2006). Gradually, organisations such as the Asian Indigenous Peoples’ Pact (Chiang Mai, Thailand based) and Tebtebba (Philippines based), are developing stronger networks for representation and presentation of case studies at these CBD events.

⁷² This is something that WIPO has sought to have researchers provide information on, to develop a critical mass of literature and better understand the customary regulation systems that relate to traditional knowledge. The UN Permanent Forum on Indigenous Issues has also held workshops attempting to develop this critical mass of information.

⁷³ Project details are available at the International Institute for Environment and Development website at: http://www.iied.org/NR/agbioliv/bio_liv_projects/protecting.html

4.3 US Pressures and Interventions

This section stands in considerable contrast to the last. While Thailand ultimately accepted the principles of the CBD as useful international obligations, they have been subject to repeated pressures to develop and enforce strict intellectual property laws, particularly from the United States. These pressures began even before Thailand had *any binding legal obligation* to protect US intellectual property (Jakkrit, 2003a). This section provides details of the coercion of Thailand by the US in the lead up to the TRIPS Agreement.

The work of the United States Trade Representative (USTR) seeks to enrol “entire governments” including “customs, courts, prosecutors and police, commitment by senior political officials” towards strong IPR laws and enforcement worldwide (USTR, Acc 7/6/2005). The US, through their Trade Representative body has been the most aggressive actor seeking to influence Thailand’s IP laws. Central to this work is the promotion of a discourse that “to copy is to steal.” US policy is rigorously enforced extraterritorially through bilateral trade sanctions and incentives.⁷⁴ Where foreign countries do not provide adequate intellectual property protection for US commercial interests, the USTR has adopted a policy of retaliation and economic coercion.

The first form of bilateral pressure is via the “Special 301” review mandated by Congress in the Omnibus Trade and Competitiveness Act (or as it is commonly referred, the Trade Act) of 1988 (USTR, Acc 7/6/2005). The Trade Act generates three lists of countries including priority foreign countries, a priority watch list, and a watch list, in order of decreasing concern. Thailand has been on the US Special 301 Watch List every year since 1994, primarily for copyright-related piracy and in relation to pharmaceuticals (USTR, 2005). In 1988 it was claimed that US copyright owners had lost approximately \$US61 million from piracy in Thailand. Estimates of patent and trademark infringements in Thailand added up to a huge sum of almost \$US 2,000 million for 10 US pharmaceutical companies (Jakkrit, 2004). In 1991 the USTR placed Thailand as a Priority Foreign Country and removed Generalised System of Preferences (GSP) from some

⁷⁴ More subtle yet is the “technical assistance” that the US offers in drafting “good” IP laws, as well as assistance in IPR enforcement through the FBI, Department of Justice, and US Customs Service (USTR, acc 7/6/2005).

export products of Thailand on the ground of alleged inadequate protection for copyrights and pharmaceutical patents⁷⁵ (Jakkrit, 2003a; 2004; Interview. 2005).

These perceived “trade barriers” are likely to have been directly reported (and investigated) by private industry and industry groups. USTR Special 301 enforcement cases against Thailand include the ‘Thailand Copyright Enforcement’ case (USTR 301-82) filed in 1990, and the ‘Thailand Pharmaceuticals’ case (USTR 301-84) (USTR, Undated) in 1991. The Thailand Copyright Enforcement case was filed by the International Intellectual Property Alliance, the Motion Picture Export Association of America, Inc and the Recording Industry Association of America – all industry groups. Similarly the Pharmaceutical Manufacturers Association industry group filed a petition with the USTR in the Thailand Pharmaceuticals case. In terms of agriculture, Monsanto has also submitted letters to the USTR seeking to pressure Thailand to modify laws relating to biotechnology (Monsanto Company, April 8th 2004, available at www.grain.org). The ability of individual private actors to influence the USTR is well-documented (see Braithwaite and Drahos, 2000; Drahos with Braithwaite, 2002; Sell, 2002; Sell, 2003). This is therefore a situation where the interests of large corporations are able to use trade leverage to undermine the sovereign right of states to determine appropriate legislation. Furthermore this is conducted regardless of their status as developing countries, and with little consideration of the specific economic, environmental, social, or cultural impacts in those countries.

In April 1991 the US called for a meeting with Thailand on matters of intellectual property, which was held in Amsterdam. The US made several demands in the meeting, including amendment of copyright, trademark and patent laws in order to protect some particular products such as pharmaceuticals, computer software and some living organisms. They also required an extension of the patent term of protection from 10-20 years (Thoosapone, Interview. 2005).

Threatened with trade retaliation as a Priority Foreign Country, Thailand began meeting US demands, and under additional demands to meet TRIPS amended its Copyrights Act (B.E. 2533)

⁷⁵ However one Department of Intellectual Property (DIP) official noted that this removal of GSP was of little concern to the Department and in subsequent years Thailand’s record on IP enforcement had improved in the eyes of the USTR (Thoosapone, Interview. 2005).

in 1997, the Trademarks Act (B.E. 2534) in 1998 and Patents Act (B.E. 2535) in 1999. Jakkrit (2003a) indicates that the attempts to amend the patent law were attacked by many domestic interest groups and academics, on the ground that the law yielded too much to the US demands and that the amendments would cause adverse effects to domestic industries and the well-being of the poorest groups of the population.

The US Department of State has also attempted to interfere in matters relating to the development of draft Thai laws, particularly the Draft Act on Promotion and Protection of Traditional Thai Medicinal Intelligence. A letter was sent dated April 21 1997 to the Royal Thai Government advising them that “Washington believes that such a registration system could constitute a possible violation of TRIPS and hamper medical research into these compounds” – despite the fact that Thailand was not obliged to comply with TRIPS until at least 2000, and that medical and diagnostic practices may be exempt (Jaroen, Interview. 2005). In response to this letter there was a considerable international response from a range of organisations and individuals (see the Institute for Agriculture and Trade Policy, letter to Madeleine Albright, co-signed by a long list of concerned parties – dated 30 June 1997).

This section highlights the coercive imposition of intellectual property laws onto Thailand in recent years. However, Thailand was not the only developing country target, with the US seeking to enrol countries into adoption of their regulatory standards in the lead up to the Uruguay Round of Trade Negotiations leading to the TRIPS Agreement.

4.4 The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)

The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) was negotiated as part of the Uruguay Round of Trade Negotiations, culminating in the Final Act which established the World Trade Organisation (WTO) in 1994 (in force 1995). Representing a true paradox of neo-liberal strategy, developed countries (particularly the US, EU and Japan) managed to incorporate a monolithic *protectionist* text⁷⁶ as part of the agreement establishing the key multilateral “free-trade” organisation in the world today. Yet it has been suggested that “probably less than 50 people were responsible for TRIPS” (USTR official, cited by Drahos with Braithwaite, 2002: 10) – largely those from the US business lobby, and the USTR.

As has been described by Wright (2005), a few specific epistemic interests were able to “jump-scale,” establishing their concerns as universal and global. Intellectual property protection rapidly became a global concern. Various forms of unilateral economic coercion were successful in convincing the developing world to accept TRIPS as part of the WTO package. Many policy makers have since come to question why the developing world signed on to TRIPS. The answer largely lies in the fact that it was bundled amidst other concessions which promised to provide more open markets such as tariff reductions, the WTO Agreement on Agriculture, an agreement on textiles, trade benefits in the form of the Generalised System of Preferences (GSP); and further – that the developed world did not have a clear concept of the ramifications that TRIPS would have on them (see Drahos 2005a, b).

The outcome of the Uruguay Round negotiations is supposed to be a compromise of benefits and concessions to facilitate more harmonised rules of trade. According to the theory of comparative advantage, all countries should eventually benefit from reduced protectionism in the form of tariffs, subsidies and other non-tariff barriers to trade. However, the Final Act with its various annexes has far-reaching implications beyond such a narrow definition of trade. Since then the

⁷⁶ While the main priority of GATT and the WTO has been to reduce barriers to trade through the dismantling of tariffs, barriers and other regulatory instruments, TRIPS imposes a complex regulatory system that inhibits the free transfer and trade of intellectual property protected items. These become subject to licencing systems for use, require the establishment of intellectual property offices, require enforcement, and dispute settlement procedures.

Doha round of trade negotiations has sought to facilitate a more “development-friendly” set of provisions, with limited progress.

Since the Uruguay Round, developing countries have been highly sceptical about the benefits of TRIPS to them. In a recent closed meeting of NGOs and developing country delegates to the WTO, one delegate stated that in the time since signing they thought that TRIPS had presented “no direct or tangible benefits for their country, its economy, and innovation” (Anonymous African Country WTO delegate, Sept. 2005). In other cases, members of WTO staff have repeatedly leaked information to NGOs and journalists from confidential or closed WTO TRIPS Council meetings because of their evident dissatisfaction with the lopsided nature of the Agreement, the lack of transparency in WTO proceedings, and the lack of progress on “development agenda” items (Anonymous WTO Official, Oct. 2005).

One major developing country concern regarding the TRIPS Agreement, is the article relating to patent protection of genetic resources. Article 27.3 states that:

Members may also exclude from patentability...

- (b) *plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof...*

Many developing countries have noted that there may be compatibility problems with the implementation of this article in light of their CBD obligations. There are also ethical, social and environmental concerns about the patenting of plants animals and their products, and concerns that further biopiracy of genetic resources may occur. Numerous countries, including Thailand, have therefore sought to design and implement “effective *sui generis*” systems of plant variety protection to suit their own development needs instead of an UPOV system described in section

4.1. However Thailand, and other developing countries, have notably been concerned that these *sui generis* systems have limited extra-territorial effects.

The TRIPS Agreement operates with considerable enforcement capacity, as the WTO has established a Dispute Settlement Body which allows for cross-retaliation (essentially trade sanctions) where countries are not in compliance with TRIPS (or other WTO) requirements. Drahos and Braithwaite (2002) note that it was a huge discursive victory for large corporate interests to link IP to trade in the Uruguay Round Negotiations because it meant that IP enforcement could be coercively pursued. Essentially a range of industry lobby groups were able to convince the US, and the other member of the Quad Group (EC, Japan and Canada) to forum-shift IP from WIPO to the WTO such that enforcement carried the threat of trade sanctions.

Importantly TRIPS also establishes minimum standards of IP protection, but the WTO agreements allow for countries to seek bilateral and regional free trade agreements that comply, or provide higher protection than TRIPS.⁷⁷ The US has since therefore pursued a series of bilateral and regional free trade agreements (FTAs) which go further than the minimum standards of TRIPS, namely requiring higher standards than Article 27.3(b), including patent or UPOV 1991 protection of plants and animals.⁷⁸

The TRIPS Council “Biodiversity Triple Agenda Item”

Due to some developing country dissent over the content of Article 27.3(b) in the development of TRIPS, a reform and review process was built into the Agreement. Thus, the TRIPS Agreement mandates a review of Article 27.3(b) by the TRIPS Council. The Doha Development Round of trade negotiations has since broadened the focus of the Council’s discussion and review. According to Paragraph 19 of the 2001 Doha Declaration the Council should also look at the relationship between the TRIPS Agreement and the UN Convention on Biological Diversity, the protection of traditional knowledge and folklore. It adds that the TRIPS Council’s work on these

⁷⁷ Such agreements must comply with the rules of GATT, GATS and other aspects attached to the Final Act establishing the WTO.

⁷⁸ For a more detailed technical legal overview, see UNCTAD-ICTSD (2005).

topics is to be guided by the TRIPS Agreement's objectives (Article 7) and principles (Article 8), and must take development issues fully into account (WTO, Acc 20/5/2005). These discussions are described as the "biodiversity triple agenda item" by officials working in the forum.

In the TRIPS Council, Thailand has co-sponsored submissions by Peru, India, Brazil and others for a patent requirement for disclosure of the source and country of origin (when genetic resources or traditional knowledge have been used in the invention process), mechanisms for prior informed consent, and the sharing of benefits arising from the utilisation and commercialisation of genetic resources and traditional knowledge. The Thai delegate to the WTO indicated that Thailand had continued to support developing country calls for amendments to the patent system because of biopiracy and related concerns (Chumpichai, Interview. Oct. 2005).

While the abovementioned developing countries have been consolidating on progress made in the CBD, some developed countries have tried to forum shift disclosure requirement discussions into WIPO. A number of developing country delegates indicated that they would not be persuaded to shift forums, because TRIPS is the agreement which has caused substantial harmonisation of IP laws onto their countries and because WIPO has a less forceful mechanism of dispute settlement (Kaushik, Interview; Anonymous trade delegate, Interview; October 2005). Meanwhile the US has sought to weaken developing country alliances through bilateral and regional TRIPS-plus free trade agreements such as the CAFTA-DR, the US-Peru FTA, the negotiations with Thailand, and potential negotiations with other countries such as Malaysia.

Box 1: Thailand's Submissions to the TRIPS Council and the Trade Negotiations Committee.

Submissions to the TRIPS Council Co-Sponsored by Thailand:

Date	Parties	Title	WTO Doc No.
31/5/2006	Brazil, India, Pakistan, Peru, Thailand and Tanzania, joined by China and Cuba	Doha work programme – the outstanding implementation issue on the relationship between the TRIPS Agreement and the Convention on Biological Diversity.	WT/GC/W/564 TN/C/W/41
21/3/2006	Bolivia, Cuba, Ecuador, India, Sri Lanka and Thailand	Submission in response to the communication from Switzerland.	IP/C/W/470
18/3/2005	Bolivia, Brazil, Columbia, Cuba, Dominican Republic, Ecuador, India, Peru, and Thailand.	The relationship between the TRIPS Agreement and the Convention on Biological Diversity (CBD) and the protection of traditional knowledge – elements of the obligation to disclose evidence of benefit-sharing under the relevant national regime.	IP/C/W/442
10/12/2004	Bolivia, Brazil, Cuba, Ecuador, India, Pakistan, Peru, Thailand, and Venezuela	The relationship between the TRIPS Agreement and the Convention on Biological Diversity (CBD) and the protection of traditional knowledge – elements of the obligation to disclose evidence of prior informed consent under the relevant national regime.	IP/C/W/438
21/9/2004 to 10/2/2005 2/3/2004	Brazil, Cuba, Ecuador, India, Pakistan, Peru, Thailand and Venezuela	Elements of the obligation to disclose the source and country of origin of biological resource and/or traditional knowledge used in an invention.	IP/C/W/429 with Rev.1 and Add.1,2,3
24/6/2003	Brazil, Cuba, Ecuador, India, Peru, Thailand and Venezuela	The relationship between the TRIPS Agreement and the Convention on Biological Diversity (CBD) – checklist of issues.	IP/C/W/420 and add.1
24/6/2002	Bolivia, Brazil, Cuba, Dominican Republic, Ecuador, India, Peru, Thailand and Venezuela	The Relationship between the TRIPS Agreement and the CBD and the Protection of Traditional knowledge	IP/C/W/403
24/6/2002	Brazil, China, Cuba, Dominican Republic, Ecuador, India, Pakistan, Thailand, Venezuela, Zambia and Zimbabwe	The Relationship between the TRIPS Agreement and the CBD and the Protection of Traditional knowledge	IP/C/W/356 and Add.1
10/8/2001	Thailand	Review of the Provisions of Article 27.3(b) – Information from member.	IP/C/W/125/Add.22

Source: WTO website, www.wto.org, Acc 20/5/2005.

Box 1 details a list of submissions co-sponsored by Thailand, in which a group of developing countries have sought to align themselves to push for amendments to TRIPS. African Group and the India-led submissions (IP/C/W/404 and IP/C/W/403) have stressed the need for a multilateral solution to these issues.⁷⁹ The India-led paper proposed amending the TRIPS Agreement to require patent applicants to (a) disclose the source of origin of the biological resource and

⁷⁹ ICTSD produce a range of trade news briefings (Bridges Weekly, Bridges Monthly, and Bridges Trade BioRes) which this author contributed to during 2005. These sources can be referred to for precise and up-to-date policy-making developments in the WTO, WIPO and the CBD.

associated traditional knowledge; and (b) provide evidence of PIC and benefit-sharing where access is sought. The African submission took on stronger terms, calling for revision of Article 27.3(b) so as to prohibit the patenting of plants, animals and micro-organisms:

Patents on life forms are unethical and the TRIPS Agreement should prohibit them, through modifying the requirement to provide for patents on micro-organisms and on non-biological and microbiological processes for the production of plants or animals. Such patents are contrary to the moral and cultural norms of many societies in Members of the WTO. They make the exception in Article 27.2 for protecting ordre public and morality, which Members that consider patents on life forms to be contrary to the fabric of their society and culture, and to be immoral, and which they would otherwise invoke, meaningless in this regard. (African Group, 2003. WTO Doc: IP/C/W/404, at 2)

In following talks and submissions, the idea that member states might have strong cultural complaint with across-the board patent (or PVP) requirements for life-forms was barely entertained at all – they were dismissed, ignored, or left subject to national interpretation. Dealing with moral and cultural objections are not the strengths of trade negotiators and WTO officials. Moreover, developed country negotiators had worked hard to secure this standard of protection for their domestic and transnational biotech industries. Subsequent talks were guided by legal positivism and literalism, such that members stuck to the words of the mandated “Development Agenda” review, in order to obtain some potential technical resolution to the concerns surrounding TRIPS-CBD mutual supportiveness.

Indigenous and local groups, many of which would no doubt have concerns about this portion of the Agreement, also have no access to the forum and are therefore represented only by the interests of their respective state-parties. Many negotiators would argue that this is necessary to keep the talks definitive, yet given the specific epistemological origins of TRIPS it is not surprising that a broader scope of debate is not allowed. Laws or agreements such as TRIPS, represent a consensus that has a distinct historical and situated epistemic context. They are regulatory snapshots in time-space. However all parties are rarely at total consensus at the outset on the content, implementation and enforcement of a law, and it will of course change over time. The mandate of these talks has been restricted by the state-centric power-relations of the forum,

is influenced by broader WTO politics, and by external economic/geopolitical alignments under regional and bilateral free trade agreements.

US responses to these proposed reforms by developing countries (see IP/C/W/449 and IP/C/W/434) have been to assert that the most effective way to ensure the objectives of ensuring prior informed consent and equitable benefit sharing are tailored, national laws outside the patent system, as well as preferring a contract based system of access and benefit sharing. The US has indicated that the suggested additional requirements would be a burden on the patent system and would undermine technological development incentives. The US has stated that where patents have been granted erroneously, Members should focus on remedies including the use of organized databases, information material to patentability and the use of post-grant opposition or re-examination systems as an alternative to litigation (ICTSD, Dec. 2005). This narrow response to developing country reform demands highlights US unwillingness to listen to alternative agendas. On the other hand, the EU has indicated that it is not against the idea of a disclosure requirement, but has been waiting to see what form such a requirement would take. Despite EU openness,⁸⁰ the broader politics of the forum have stalled discussions.

Since 2004, Members have remained relatively locked in their positions. With the collapse of the Doha round of trade talks in June 2006 little substantive multilateral policy-making seems likely to be achieved in the near future.

Geographical Indications

The one area of intellectual property protection that is of particular interest to developing countries in relation to traditional knowledge protection is geographical indications (GI). This category of intellectual property is unique because it protects collective ownership rights linking a product with its place of origin and specific type, or production type, of goods. TRIPS recognizes the “quality, reputation or other characteristics of the goods” from a specific geographic region for protection. Authors such as Gopalakrishnan (*et al.*, 2007), and Rangnekar

⁸⁰ Notably the EU has been much more inflexible on other matters such as agricultural subsidies and demands for extension of GI protection.

(2004) have argued that many of the goods based on ancient methods and practices of traditional agricultural or medicinal knowledge from specific regions could also qualify for protection. Gopalakrishnan (*et al.*, 2007) also note that the collective rights endowed by GIs reflect traditional practices and customary laws that already exist in many Asian countries, and therefore would be perceived as being more appropriate than a form of private right.

In the WTO, discussions on geographical indications have centered on the extension of GI protection to products other than wines and spirits⁸¹ and the development of a multilateral system of notification/registration of GIs for wines and spirits.⁸² The EU and Switzerland are the main demandeurs for GI extension. However they have been joined by a number of developing countries – including India, Kenya, Sri Lanka and Thailand – in calling for further discussions on the issue. Although it may seem unusual for a negotiating alignment between the EU and these countries, it provides evidence of the varied geopolitics of economy and international law, and of the importance of underlying micro-political concerns which bridge the generalized north-south divide.

GI extension is strongly opposed by the US, Argentina, Australia and other “New World” countries that are net exporters of agricultural products, as well as frequent users of “Old World” GIs for their own food products, such as names of hams and cheeses (ICTSD, Dec. 2005). Thailand has an interest in pursuing GI protection because it would like to limit deceptive claims about Jasmine Rice (*Khao Hom Mali*) – a series of related cross-bred rice varieties endemic to Thailand (Jakkrit, Interview. January 2005). Thailand is the largest rice exporter in the world, for which a large proportion is Jasmine Rice. There are concerns that cheap or deceptive imitations will erode their export market, amongst other cultural concerns associated with misappropriation of their rice varieties.

⁸¹ Mandated as an “outstanding implementation issue” under Para. 18 and 12(b) of the Doha Declaration

⁸² Mandated under Para. 18 of Doha

Summary

The TRIPS Agreement represents an enforceable international legal mechanism which has brought about rapid harmonization of intellectual property standards. The Agreement globalised an economically and culturally situated configuration of justice. As Drahos (2005b; 1996) has noted, this was carefully planned in highly specific western locales, amongst small epistemic communities, for individualist “proprietary” ambitions. It is questionable what benefits developing countries, and particularly less developed countries, will receive from TRIPS. Caught relatively unaware of its implications, developing countries have gradually been trying to draw something back out of the Agreement, or to have their concerns retrospectively recognised.

4.5 The World Intellectual Property Organisation (WIPO)

Closely related to the interests of TRIPS, are the activities of the World Intellectual Property Organisation (WIPO). WIPO is one of the 16 specialised agencies of the United Nations which claims to be dedicated to promotion and protection of intellectual property works for the expansion of science and technology and the enrichment of the world of arts (WIPO, acc. 2005a). WIPO is a driving force for the international harmonisation of intellectual property standards. The Patent Law Treaty and the Patent Cooperation Treaty (building upon the Paris Convention for the Protection of Industrial Property) facilitate harmonisation of patent laws internationally, attempt to facilitate and streamline the process of international patent applications and simplify prior art searches (WIPO, acc. 2005b,c). Although overlooked by many authors and activists, WIPO has played an important role in the politics and debate surrounding IP, traditional knowledge and biodiversity.

It is important to highlight the way WIPO has constructed norms in language regarding intellectual property. In fact it was with the establishment of BIRPI – WIPOs predecessor – that the term “intellectual property” came into regular use in the 1950s. The rhetoric about IP “harmonisation” could be interpreted with some obvious irony by developing countries as well,

given that the implementation of binding international IP obligations has typically been anything but harmonious.

Gradually, developing countries have been convinced to join WIPO-administered treaties through a process of persuasion and advice. WIPO is the wealthiest UN organisation, principally because of the fees it collects under its international registration services. Drahos and Braithwaite (2002) note that in December 1997 WIPO's total reserve funds amounted to 313,022,413 Swiss francs. They also note that despite concerns about the costs and benefits of joining WIPO, there were attractions for the individual officials in the form of funded trips to Geneva and other European locations:

Under its development programme WIPO would target selected developing countries for assistance and pay officials to attend WIPO meetings... More and more developing country officials with generous per diem allowances under their belts found themselves in business class flying to the right hotels to attend meetings of status on the WIPO calendar. (Drahos and Braithwaite, 2002: 111)

To some extent, WIPO has struggled to maintain its importance as a productive forum for debate on these issues. This is perhaps a product of its narrow and technical legal mandate. In the case of other UN bodies, such as the UN Development Programme, the ILO and the UN Environment Programme, there are broader mandates and, generally speaking, the scope of work undertaken has greater freedoms attached. Also, although WIPO plays an important administrative role in the regulation of international patent systems, the WTO and TRIPS retains a much stronger mechanism in its Dispute Settlement Body, and thus has had a more forceful or direct influence on higher IP standards in developing countries. According to Braithwaite and Drahos (2000), the forum shift from WIPO to the WTO was a deliberate and calculated move pursued over more than a decade, such that it could be linked to the economic leverage given by trade related factors.

As a consequence of these factors, many discussions of importance to both developed and developing countries have made greater progress in the WTO. As a result, WIPO has developed the label that it is a "talk-shop." It has been criticised for the massive volumes of text it produces from meetings and reports, without producing substantive outcomes (Anonymous Asian WTO

Delegate, Interview. 2005). WIPO has also been criticised for pushing a “maximalist rights culture” that creates evermore individual rights and continually harmonises them upwards without sufficient consideration about public and community ramifications. Along with TRIPS, WIPO has adopted a “one-size-fits-all” approach to intellectual property for the developing world, with flexibilities and retrospective “development-friendly” exceptions always taking a grudging second place to IP harmonisation (Boyle, 2004). In the area of genetic resources and traditional knowledge, WIPO has developed a rhetorically important, but fairly politically idle forum in the *Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore*.

The Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore.

The IGC is intended to “constitute a forum in which discussions could proceed among Member States on the three primary themes which they identified during consultations: intellectual property issues that arise in the context of (i) access to genetic resources and benefit sharing; (ii) protection of traditional knowledge, whether or not associated with those resources; and (iii) the protection of expressions of folklore (WIPO Acc 23/6/2005).”

The IGC has provided a useful coordination point for dialogue, fact-finding missions, national case studies, the dissemination of such information and the articulation of the traditional knowledge issue in a predominantly IP context. It tends to also be the target of a range of criticisms because of its limited mandate, lack of progress on substantive mechanisms for protection from misappropriation in the IP regime,⁸³ and for providing a distraction point for countries such as the US to deflect progress on the disclosure issue in the TRIPS Council. At the WIPO General Assembly in September-October 2005, the mandate of the IGC was extended indefinitely such that it can continue its work on achieving workable solutions to the protection of traditional knowledge. Recent rounds of discussions, as well as from the work of the Traditional

⁸³ It has however made an amendment to the PCT such that PCT patent applications whilst undergoing the examination process, must cross-check with prior art databases including journals on traditional knowledge.

Knowledge unit of the WIPO Secretariat have made progress on useful participatory tools such as the Voluntary Fund for Indigenous and Local Communities⁸⁴ to directly facilitate and support the participation of representatives from these communities in the work of the IGC (ICTSD, BioRes, 14 October 2005). Responding to the IGC, the WIPO Secretariat have also recently attempted to develop ideas on how to respect customary laws for the protection of traditional knowledge and associated cultural expressions or folklore (WIPO, acc 26/2/2006).

During negotiations, many developing states have been somewhat sceptical of the role of this body because of the mandate of WIPO for the promotion of IP, and because of its limited enforcement capacity (Anonymous Asian WTO/WIPO delegate, Interview. September, 2005). In meetings a WIPO official has tried to reverse the latter concerns, indicating that WIPO could have already drafted a text on disclosure of the source or country of origin, as a WIPO administered text, however developing countries had insisted on pushing further talks in the WTO (which, he suggests, have been slower and more politicised) (Taubman, Interview. October, 2005).

The IGC has been useful for delving into the complex nature of traditional knowledge and developing new understandings and approaches. The secretariat, on the demands of the IGC, has produced a plethora of documents out of its sessions, but there is still some dissatisfaction and a lot of confusion about how traditional knowledge “protection” should in fact be implemented. In IPR terms, “protection” relates to the legal rights to exclude others from the use of the subject of protection. In general terms, however there is a much broader meaning. Some confusion seems to have also arisen through the use of the terms “defensive” and “positive” protection. While most indigenous and local stakeholders concerned about traditional knowledge would assume that in effect a form of IPR protection over traditional knowledge would be contrary to desires, and that *in fact traditional knowledge may need to be protected from IPRs themselves* (Gibson, 2004). However through the manipulation of language, the norm has become such that “positive” protection of traditional knowledge occurs through the use of IPRs, property rights and liability regimes, and that “defensive” measures include databases and other forms of protection which

⁸⁴ But note that this is only a *voluntary fund* and relies upon state donations to support attendance of indigenous and local representatives.

limit use. Such issues raise the question of whether WIPO is indeed the most suitable forum for such discussion or whether they would be more appropriately made elsewhere. On the other hand the ongoing discussions in WIPO could be useful for developing countries to strategically block progress on a Substantive Patent Law Treaty (SPLT) as has been noted by some authors (Dutfield, 2005a).

Since conducting fieldwork there in 2005, progress again seems to have been slow. The ninth session of the IGC met in April 2006, with the only substantive progress being a submission by Norway (WIPO/grtkf/9/12) on a compromise for the protection of traditional knowledge and traditional cultural expressions (ICTSD, May 2006). The next meeting scheduled for December 2006 again made little substantive progress. What is perhaps most important to note is that discussions on traditional knowledge in WIPO will likely be restricted and slow due to its limited mandate for the regulation of exclusive advanced and western forms of IP protection. It is also difficult to see how the intimate and particular traditional knowledge and customary law systems of diverse peoples across the world might be protected through a body synonymous with “one-size-fits-all” intellectual property harmonisation approaches.

Meanwhile, much more rapid negotiations are being undertaken, particularly by the US, which have imposed and raised intellectual property standards in many developing countries.

4.6 Bilateralism and Regionalism

In the lead up to the TRIPS Agreement, the US successfully used bilateral coercive tactics on developing countries to make them raise IPR standards and improve enforcement. In the post-TRIPS era, the US has been the predominant litigator in the WTO Dispute Settlement Body pursuing IPR infringements. The US has continued to seek raised standards outside of the WTO as well as through further bilateral actions. Although the Special 301 and GSP preferences are still used as a coercive measure, the latest tactic has been to bilaterally or regionally raise intellectual property standards that they have had difficulty securing in WTO negotiations. They have pursued these “TRIPS-plus” actions using bilateral and regional free-trade agreements

(FTAs). Drahos (2005a) refers to this as the “bilateral ratchet effect” in which IPR standards are being incrementally raised through various negotiations, particularly with developing countries who may be persuaded by trade deals touting the benefits of greater market access. Although other countries such as Australia, Japan, China and the European Union of countries have also sought bilateral trade deals, intellectual property standards have not been pursued with nearly as much zeal as the US. Bilateral and regional free trade agreements are discussed below, with particular emphasis on the Thai-US FTA.

The Thai-US Free Trade Agreement

The USTR has launched negotiations for bilateral treaties or FTAs with a large number of countries, including Chile, Jordan, Morocco, Singapore, Central American countries (CAFTA-DR), Andean countries, Thailand, Panama, Bahrain, Southern African countries, and many others. In South East Asia, the US has signed bilateral treaties with two countries (Singapore and Vietnam), and has been in negotiations with Thailand. While negotiations with Thailand are underway, the US is also seeking talks with another three ASEAN countries (Indonesia, the Philippines, and Malaysia).

The US-Chile, US-Morocco, US-Jordan, US-Singapore FTAs and the bilateral treaty with Vietnam have all sought TRIPS-plus standards of IP protection and it seems clear that the US will seek the same with Thailand, after FTA negotiations began between the two countries in 2004 (Kuanpoth, 2005). US intentions to seek TRIPS-plus standards are indicated clearly in the statement of objectives of the USTR’s Letter of Notifications for FTA negotiations with Thailand as follows:

The United States is concerned about intellectual property protection in Thailand. The United States has worked with Thailand on intellectual property rights issues under the Trade and Investment Framework Agreement. While some progress has been made,

*bringing Thailand's intellectual property regime up to the standards set in other recent FTAs that the United States has negotiated will be a high priority of these negotiations.*⁸⁵

This pressure has continued during the negotiation including statements made by a US intellectual property expert during talks between US FTA negotiators and Thai academics, on the eve of intellectual property negotiations in Pattaya on April 5 2005 during the third round of Thai-US FTA negotiations (Bangkok Post, 29 April 2005 Acc 09/05/05). Comments made by Barbara Weisel, head of the US negotiating team at the end of the Third Round of negotiations (The Nation, Apr 9, 2005, Acc 1/7/2005) and a statement from Robert Zoellick initiating the First Round (Nation, Feb 14, 2004, Acc 1/7/2005) have also indicated that the US desires TRIPS-plus standards. Besides copyright infringement concerns, a concern of both countries is with regards to the scope of patent protection and related enforcement measures. The latest (2005) USTR National Trade Estimate Report on Foreign Trade Barriers furthermore mentions concerns over pirated or counterfeit seeds and other related products, suggesting that the implementation and enforcement of the Plant Variety Protection Act (1999) is inadequate. It also notes a growing problem of counterfeit pharmaceuticals.

In Thailand patents on plants and animals, as well as pharmaceutical patents have been area of concern for public interest groups, academics and NGOs. Such groups would like to see plants and animals remain exempt from patent protection, and would like to see the standard of patent protection for pharmaceuticals not extended⁸⁶. Furthermore, disclosure of source or origin where patents have been issued on inventions which utilise genetic resources in the US, are desired on the FTA agenda by Thai public interest groups and government departments themselves.⁸⁷ These groups have been particularly persuasive and vocal to date, however the content of the FTA negotiations are confidential leading to criticism of the way the Thai Government has handled matters of participation.

⁸⁵ Letter of Notification of USTR to US Congress of Intent to Initiate Free Trade Agreement Negotiations with Thailand, 12 February 2004.

⁸⁶ Particularly with regards to patent term, surgical methods and diagnostics, and data exclusivity requirements on the testing of drugs.

⁸⁷ Thai Department of Intellectual Property officials noted that they had demanded these disclosure of origin requirements as part of the talks (Suradej; Thoosapone, Interview, February 2006).

Past bilateral FTAs sought by the US have established a template for such negotiations, one consistent factor of which is the pursuit of higher standards of patent and/or plant variety protection than that required of WTO member states by the TRIPS Agreement. Jakkrit (2005a) provides a useful side-by-side comparison of the FTA provisions of the TRIPS Agreement, the US-Vietnam Bilateral Trade Agreement, and the US-Singapore FTA with the implication that the standards demanded will continue to rise. This is indicative that the outcome of the FTA could go against the wishes of the broader Thai public and may have considerable effects on economic development, science and technology, Thai society, and most pertinent to this study, on biodiversity and traditional knowledge. Although the consequences are unclear, if Thailand were forced to remove patent exemptions on plants and animals under the FTA, it is evident that many Thais would view this as an action that could accelerate biopiracy. It could also make the national laws that have been developed either partially or completely redundant. On the other hand, the FTA represents an opportunity for Thailand to attempt to convince the US to implement requirements such as disclosure, PIC and ABS to their patent laws or other respective (eg biodiversity) laws. However, this seems unlikely given the stance the US has taken in recent FTAs. The political and economic bargaining power, and even the negotiating terms of the FTA are clearly in the US's favour.

There are other concerns related to the patenting of plants and biological materials. Thai academic, Jakkrit Kuanpoth (2005a) describes the broader potential implications below:

The patenting of life when imposed through an FTA could have a considerable socio-economic impact on developing countries. Granting of patents on biological materials such as genes will cause a power shift in agriculture towards large biotechnology companies and will disrupt the access to essential products such as seeds or foodstuffs the same way as patents are unfairly restricting access to vital medicines for people in poor countries. Stricter protection for IPRs would increase monopoly powers of the right holders, generally multinational firms, allowing them to gain far greater control over the production chain of crops and food... Moreover, gene patenting will have detrimental effects on the research environment and generate negative effects on downstream innovation.

A leaked version of the US FTA position on IPRs has since been posted on the website “bilaterals.org” indicating that they are seeking an extension of the patent term where there have been bureaucratic delays in patent examination, patentability of surgical methods, therapeutics and diagnostics for humans and animals, and complicated data exclusivity requirements on the safety testing of pharmaceutical drugs and agricultural chemicals.⁸⁸ This confirms the fears of civil society groups and concerned academics. Notably the FTA talks have been halted since Prime Minister Thaksin Shinawatra was ousted in 2006⁸⁹ and the current military backed government has sought to re-establish democratic government and anti-corruption reforms. Under these altered political conditions it is unclear if or when FTA talks will resume.

This section highlights the numerous aspects of extraterritorial intervention, and economic coercion utilised by US trade and foreign policy. The full “package” of the FTA, which some Thai politicians have touted as a “win-win” situation, threatened to degrade or nullify the socially, environmentally and economically appropriate laws that have recently been developed through comparatively open and participative means. Considering the methods with which the US has dealt with Thailand on trade and IP matters in recent years, Thailand should be highly cautious about how far it extends its IPR laws in response to FTA talks. The ongoing US “ratchet” of higher IPR standards is likely to pressure Thailand to develop inappropriate IP laws that various civil society, academic groups and government departments have continued to oppose.

It is important to note that not all bilateral and regional agreements have detrimental ramifications for traditional knowledge and biodiversity. Given the considerable regional connections with regards to biodiversity, traditional knowledge and public interests, the Association of South East Asian Nations (ASEAN) has attempted to develop consistent approaches on access and benefit sharing. The Draft ASEAN Framework Agreement on Access to Biological and Genetic Resources and fair and Equitable Sharing of Benefits has attempted to

⁸⁸ Bilaterals.org Website: www.bilaterals.org/ Acc 9/2/2006.

⁸⁹ Notably, one considerable cause of public displeasure that actually led to the ousting of Thaksin Shinawatra, was the FTA talks with the US, and the manner in which they were conducted.

establish some regional unity on these matters and to set down guidelines for the avoidance of trans-border controversies; however it has remained in draft format.

4.7 International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

The most recent relevant international law, which has a narrower scope than the CBD or TRIPS, is the International Treaty on Plant Genetic Resources for Food and Agriculture (2001). The ITPGRFA was completed in 2001 and came into force only recently, in 2004, following the ratification of forty governments. The ITPGRFA is administered by the Commission on Genetic Resources for Food and Agriculture of the FAO. Countries have been slow to ratify the agreement, particularly agriculturally biodiverse developing countries, because the implications of the ITPGRFA are still unclear. From Asia, for example, only Bangladesh, Bhutan, and India have ratified the Treaty, with many other developing countries participating only as signatories. Many countries, including Thailand, seem to have adopted a “wait and see” attitude whilst the Parties to the ITPGRFA resolve issues of implementation (Surawit, Interview, 2005; Surakrai, Interview, 2006).

The ITPGRFA has a number of notable features including the creation of a Multilateral System of access and benefit sharing over a range of listed plant genetic resources for food and agricultural purposes. Parties which ratify the international treaty effectively open up their agricultural plant genetic resources to access via a Standard Material Transfer Agreement (MTA). The Multilateral System also covers the *ex situ* collections⁹⁰ in gene banks of the International Agricultural Research Centres (IARCs) of the Consultative Group on International Agricultural Research (CGIAR).

⁹⁰ “Ex situ” genetic resources refer to samples of biological materials stored in gene banks, herbariums, research institutes and other simulated environments. “In situ” genetic resources include those that exist in their natural, wild, or domesticated agricultural environments.

The Standard MTA was adopted in June 2006 at the first session of the Governing Body.⁹¹ The Standard MTA establishes a contract between the provider and recipient of plant genetic resource products for food and agriculture incorporating materials⁹² or any of its genetic parts or components that are ready for commercialisation (Standard MTA, Acc. 2007). This excludes commodities and other products used for food, feed and processing.

Relating to the provision of materials, the provider should provide all available passport (transfer) data, and descriptive information about the materials. Access to these materials protected by intellectual property rights must be consistent with international and national laws. During the period of plant genetic resource *development*,⁹³ including material being developed by farmers, access is at the discretion of its developer. The recipient must use the materials only for the purposes of research, breeding and training for food and agriculture, and must not claim intellectual property rights that may limit the facilitated access to the materials or their components. In cases where a recipient commercialises a product they must pay one point one per cent (1.1%) of the sales of the product less thirty per cent (30%) to be paid to the Trust Account of the Governing Body (Standard MTA, Acc. 2007).

The Multilateral System coordinates benefit sharing through a range of mechanisms: exchange of information; access to and transfer of technology; capacity building; and the sharing of monetary and other benefits arising from commercialisation. This is administered under the guidance of a Governing Body, composed of all contracting parties, which has a rolling Global Plan of Action. Under the ITPGRFA, benefit sharing arrangements are currently being established. Article 17 of the ITPGRFA also calls on Parties to collaborate with each other to develop a Global Information System on plant genetic resources for food and agriculture, to complement those already existing in the IARCs.

The ITPGRFA also recognises farmers' rights, and encourages parties to take measures that protect and promote them (Art. 9, ITPGRFA). These include: protection of traditional knowledge

⁹¹ For an overview of the talks, see: ICTSD, 'Model Agreement Adopted for Access and Benefit Sharing of Genetic Resources.' *Bridges Trade BioRes*. Vol. 6-12. 30 June 2006.

⁹² Meaning: materials of plant origin, including reproductive and vegetative propagating materials, containing functional units of heredity (Art. 2).

⁹³ Meaning: material that is not ready for commercialisation.

relevant to plant genetic resources for food and agriculture; the right to equitably participate in sharing benefits arising from the utilisation of plant genetic resources; the right to participate in decision making at the national level; and the right to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate. Because the ITPGRFA has only recently come into force and due to its still limited membership (53 ratified Parties as of January 2007), it is still difficult to predict the full impacts of its rules.

A research team of legal experts, academics and government officials researched the potential impacts of the ITPGR for Thailand (Jakkrit *et al.*, 2004). Their findings reflect the comments of other stakeholders, that it may inadvertently encourage the commoditisation of biodiversity and traditional knowledge without adequate consultation of local custodian communities. The experts outlined negative and positive aspects of the ITPGR for Thailand which have been provided in Appendix 4.

There is still concern about the triggering of benefit-sharing provisions associated with the new Standard MTA. Although intellectual property rights cannot be claimed on the transferred resource “in the form received”, the claiming of intellectual property rights over the subsequent products and derivatives is more open, causing some concerns by providers (ICTSD, 19 May 2006). Therefore Thailand is delaying signature and ratification of the ITPGRFA until the ramifications are clearer and there are definitive examples of its potential benefits and costs (Surawit, Interview, 2005; Surakrai, Interview, 2006).

Despite the notable provisions in the ITPGRFA for the protection of agricultural traditional knowledge and farmers rights’ to save, re-use, exchange and sell farm saved seed, the implementation of these provisions is vague and largely open to national interpretation. More targeted international approaches for the direct recognition of the rights of local and indigenous communities have been developed, but again have faced political challenges. The following section discusses aspects of human rights law, and approaches relevant to indigenous peoples.

4.8 Aspects of International Human Rights Law and International Laws on Indigenous Peoples

A number of authors have highlighted the potential human rights implications of intellectual property rights vis-à-vis biodiversity and traditional knowledge (Cullet, 2005; Coombe, 1999; Daes, 2003; Haugen, 2005; Posey and Dutfield, 1996; Craig, 2004). These authors recognise that there are various indigenous and local peoples and groups who have suffered from deprived self-determination, political exclusion or oppression, poverty, persecution, lack of legal and civil rights, limitations or pressures on the practice of minority culture or language, the pursuit of subsistence and economic activities amongst others. By providing and respecting the basic rights of marginalised groups, they will be better placed to shape their own futures, including the protection of their own knowledge. Predominantly out of human rights fora, there is a wealth of relevant legally-binding and non-legally binding instruments to be found. Certain aspects of these have relevance and may impact upon the protection and promotion of traditional knowledge and associated local practices.

The legally binding instruments consist of four main instruments including the UN International Covenant on Civil and Political Rights 1976, UN International Covenant on Economic, Social and Cultural Rights 1976, the International Labour Organisation Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries (ILO 169) 1989, and the CBD 1992, which has already been discussed. Of the non-legally binding agreements it is worth mentioning the UN Draft Declaration on the Rights of Indigenous Peoples 1994, the UN Draft Declaration of Principles on Human Rights and the Environment 1994, the Leipzig Declaration on Farmers' Rights (now also being addressed under the ITPGRFA) (Sanh. 2004), and the UNDP Consultation on Indigenous Peoples' Knowledge and Intellectual Property Rights.⁹⁴

⁹⁴ Other regional initiatives by international organisations such as UNDP and UNESCO also appear supportive of indigenous or community rights projects in Asia. UNDP operates a Regional Initiative on Indigenous Peoples' Rights and Development (RIPP) which engages governments, UN agencies and indigenous peoples in dialogues of indigenous rights and development (UNDP, Acc 27/2/2006). The programme establishes five priority areas of which the Natural Resources Management, and Justice and Human Rights seem the most pertinent. UNESCO also features a project on 'A Place for Indigenous People in Protected Areas, Thailand' with a particular focus on sea nomad communities on the Andaman Coast of Thailand (UNESCO, Acc. 27/2/2006).

There are also a range of other important non-legally binding agreements or pacts made outside the UN framework of international law, in which indigenous and local peoples were some of the main contributors. These include the Kari-Oca Declaration and the Indigenous Peoples' Earth Charter (1992), the Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples (1993), the Covenant on Intellectual, Cultural and Scientific Resources (for full details of these see IUCN, 1997), and, important for this research, the Thammasat Resolution (1997) signed in Bangkok. These agreements have all made important statements and demands for the protection of indigenous rights. Rather than explore them all, I want to focus primarily on the Thammasat Resolution.

The Thammasat Resolution was the final declaration of a meeting on *sui generis* rights held by the Thai NGO BioThai, and the international NGO GRAIN, in Bangkok. *Thammasat* means both "justice" and "knowledge of nature" in Thai. At this meeting, 45 representatives of indigenous, peasant, academic, non-government and government organisations from 19 countries met to discuss strategies that would help prevent the patenting of biodiversity and traditional knowledge (Cantuarina Marin, 2002). The Resolution rejected the understanding of *sui generis* depicted by the WTO TRIPS Agreement as "highly detrimental to peoples' economies, cultures and livelihoods."⁹⁵ The parties involved made a statement of "opposition to the extension of intellectual property rights to life forms, be it on humans, animals, plants, micro-organisms, or their genes, cells and other parts. We are also adamantly against biopiracy and the monopolisation of biodiversity-related knowledge through such IPRs." In opposition to TRIPS, they reaffirm their own *sui generis* rights as:

- *'Sui generis' perfectly describes the rights and systems we are struggling to defend - our 'own kind' of rights and systems. We recognise our sui generis rights to exist independently of the IPR based sui generis systems promoted by the TRIPS Agreement.*
- *Our rights are inalienable; they existed long before IPR regimes were established. As legal, political, economic, social and cultural rights, they are part of people's sovereignty and therefore part of human rights.*

⁹⁵ The text of the Thammasat Resolution is available at the GRAIN website: www.grain.org

- *As community/collective rights, they are indivisible and intergenerational; they include Farmers' Rights and apply to Indigenous Peoples, peasant and family farmers, fisherfolk and other local communities, which derive their livelihoods from biodiversity.*
- *Their place and expression is firstly at the local level, but they must also be recognised and guaranteed at the national and international levels.*
- *The rights that we are struggling to develop, defend and let flourish should never be misinterpreted as, or denatured into, intellectual property rights.*
- *Because people's rights are under tremendous threat, we see the promotion of such rights also as a tool for resistance against, and the rolling back of, the forces of monopoly.*
(Thammasat Resolution, 1997)

This strong statement for recognition of their own forms of *sui generis thammasat* derived from their inalienable systems of rights or law completely rejects the imperialism they view as inherent in the TRIPS Agreement. The Resolution furthermore makes a call to:

- *Demand the revision of TRIPS in order to allow countries to exclude life forms and biodiversity-related knowledge from IPR monopolies under the jurisdiction of the WTO.*
- *Reinforce the defence mechanisms of local communities who are highly vulnerable to unbridled bioprospecting and to the introduction of genetically engineered organisms.*
- *Support any calls by local communities for a moratorium on bioprospecting, and demand an immediate moratorium on the research, development, release, and transboundary movement of genetically engineered organisms.*
- *Assert the primacy of international agreements on biodiversity, such as the CBD and FAO instruments, over TRIPS and other trade regimes, for the resolution of these issues.*
- *Reaffirm the original intent of the CBD for the conservation and sustainable use of biodiversity and prevent the CBD from becoming a mechanism for transnational corporations to trade in biodiversity in the name of "access" and "benefit-sharing."*
(Thammasat Resolution, 1997)

This coalition of concerned people and organisations has made strong claims that have been repeated by other groups and stakeholders for revision of TRIPS. They have also called for greater rights for local communities, restrictions on bioprospecting practices, and the avoidance

of reductionist ambitions taking over the greater aims of the CBD. Importantly, the Resolution makes a clear statement of the position of mistrust and outright opposition of IPRs and bioprospecting coming from prominent NGOs, indigenous and local people from Thailand and elsewhere.

Notably, some of these complaints have gradually come to be heard in Thailand. These have included tighter regulations on bioprospecting and public protest relating to perceived “biopiracy” cases, and wider recognition of the plight of traditional local communities, particularly in community forest area of Thailand. However, the full demands of this coalition are unlikely to be met.

The laws, agreements and declarations made in this section provide various binding and non-binding principles and mechanisms for the assertion of the rights of indigenous, minority and local groups. In the context of traditional knowledge, there may be many cases in which oppressive forces, whether state, industry or otherwise, inhibit the ability to continue traditional practices, or cause affront to the traditions and customs of these groups. Therefore these sorts of rights-based approaches may provide important emancipatory or empowering effects where indigenous, minority and local groups seek them, and where states and external authorities allow them. With respect to various forms of self-determination and recognition of customary law and practice, a key challenge rests with the open-mindedness and resolve of national governments as well as the struggles of indigenous and local peoples. A policy niche also exists for the development of means for the recognition of the collective rights of minority groups (whose identity as indigenous is construed as ambiguous) who wish to be identified as distinct “communities,” as is the case in certain parts of Thailand.

Recognition of Community Rights?

Although human rights have European origins, and suffer in practical terms from the broadness of their “universal” application, they may offer some principles that are applicable to the recognition of the rights of communities. Various communities and marginalised groups have sought forms of legal pluralism for the assertion of their rights (such as the de-centralisation of

resource control, communal land rights, related control over knowledge and cultural expressions, and the respect of associated forms of local customary laws) through appeal to universal rights such as the international human rights system. Such groups have at times used these principles to shape their political claims, but often they have sought to counter-pose the individualism inherent in human rights. In Thailand the link to human rights is often made indirectly or in inexplicit ways, with groups preferring to make claims under a somewhat vaguer and pluralist framework of “community rights” (Yos, Interview. 2005).

Broadly, community rights can be defined as “group specific claims to a benefit that should be recognised and upheld by an authority” (usually the state) (Johnson and Forsyth, 2002). One serious limitation facing those arguing for greater community rights is the inherent difficulty of defining what constitutes such a community and to what extent they are extended rights (and by what authority). The cohesiveness of these groups has been strategically employed as a political strategy in Thailand to secure rights for a disparate array of groups in the different regions. It is then typical to generalise about these groups without adequate recognition of the heterogeneity of individuals and the adaptiveness of their cultures (Walker, A., 2001; and Yos 2004 have discussed some problems associated with such homogenous conceptualisations in Northern Thailand).

Community rights are enshrined in various laws in Thailand (see Chapter Seven). But there is still only a weak framework for community rights in Thailand (legally speaking). Currently the strength of community rights in Thailand rests with the actions of communities to politically assert themselves as rightful custodians of their local environments, knowledge and resources. However, local customary protocols of tribal groups in northern Thailand are not well-recognised, and are only really respected trans-locally (see Chapter Nine). Due to the considerable disruption of the customs and the threats they face, the groups are effectively trying to solidify such norms through an effective and externally recognisable means. This raises the potential and probability of academic or activist initiatives to consolidate links between local customary protocols, national legal niches, and international support.

4.9 Summary

The main implication from this chapter is that the overriding regime of intellectual property needs to be recognised as emerging from specific situated knowledges – in which alternative knowledge systems have been parochialised. Also, regulatory boundaries have been placed establishing the nuanced and still-evolving jurisdictional territorialisation of knowledge and bio-resources. Indigenous, tribal, and local groups are afforded little if any access to most of the fora discussed and developing countries have undergone considerable coercion by external parties. The result has been skewed representations of interests, and numerous consequent civil society and state resistance campaigns.

Geo-politically there are evident re-alignments regarding international regulation of intellectual property, biological resources and traditional knowledge. These are broadly evident coalitions and oppositions configured around particular forum spaces, epistemic communities of actors, and countries which share similarities of economic development status, biogeographical or cultural circumstance. International law is not fixed and static, but can be viewed as a contextualised snapshot in legal space-time. Although it holds binding obligations, it can be contested or built-upon and metamorphosed by negotiating parties (states) to various ends. This is done both through negotiating fora, through national adaptations, public and activist response.

As these clearly “glocal” places produce influential international legal discourses, they will have variously contested reactions, resulting in different understandings, implementations and enforcement of laws in domestic jurisdictions. Later chapters will elucidate this micro-politics of place and scale – with comparisons between the situatedness of lawmaking in the fora of Geneva, national bodies centred in Bangkok, the expectations of farmers, and the maintenance of customary structures in a number of local Thai and “tribal” communities. At these national and local scales there is evident resistance to the ongoing IP ratchet, and the development of political challenges to the perceivably regulatory or offensive aspects of these laws (Chapters Six and Seven). Some local tribal groups view these scales of regulation as something fairly anomalous to their more intimate (e.g. embodied or personified) and infinite (e.g. relating to after-life) structures of “ownership,” knowledge-sharing and ritual (Chapter Nine). However, some other

local farmer groups may be more amenable to the compensatory provisions which could be forthcoming as a result of this new boundary-setting on plants, knowledge and communities (Chapters Seven and Nine).

**Part III –Thailand: National Regulations,
Discourses and Norms**

Part Three explores the substantive issues relating to traditional knowledge, biodiversity and intellectual property in Thailand. Chapter Five explores the nature, politicisations, types (agricultural, medicinal and ecological) and domains (formal/public, community or “folk,” and private) of traditional knowledge in Thailand. These insights are based on field experiences and definitions discussed in policy-making meetings between government officials, academics and activists. The chapter establishes national and local contexts for seeking protection and promotion of traditional knowledge. The findings of a government Traditional Knowledge – Folklore (TK-FL) Study Group scoping project reflect interview and case study findings from this research project which are detailed in this and further chapters. Namely, the varied nature of traditional knowledge requires diverse approaches if it is to be protected and promoted. Overall this section highlights the different forms of traditional knowledge, their context and often their inalienability from surrounding beliefs, values and structures.

Chapter Six demonstrates the ongoing occurrence of bioprospecting in Thailand, as well as making a detailed examination of cases whereby various actors or stakeholders have made claim to biopiracy incidents and misappropriations. Interviews and correspondence with relevant authorities, as well as patent examination and literature searching were used to understand the often (deliberately) vague claims made by NGOs and stakeholders, as well as the insensitivities of researchers and industry. The chapter highlights the breadth of claims which get bundled into “biopiracy” rhetoric, but also underscores the problematic, unethical or inappropriate actions of researchers given new contexts of intellectual property.

Chapter Seven provides an analysis of the relevant laws in Thailand, the legal system and its history, informal norms and customs, enforcement and resistance, as well as discussion of other technical approaches and policies on traditional knowledge, particularly in the IP context. The chapter analyses legal discourses, and contextualises them with interview responses from the public, commentators and stakeholders. This chapter notes the regulatory effects intellectual property laws are having, and also notes the implementation problems associated with *sui generis* laws and initiatives. The chapter also identifies a range of economic, technological and cultural concerns associated with patents on plants and animals (and their derivatives) from a range of

Thai contexts. What is presented is a demonstration of the unique regulatory approaches, and their underpinnings in alternate situated value-systems that have historical and cultural contexts.

Last, Chapter Eight provides a discussion of the regulation of biological resources and nature in Thailand. The chapter considers the bio-geographic and transactional distributions of plants associated with Thai traditional knowledge, and further discusses the need to differentiate the different knowledge domains.

Together these chapters identify and analyse the intellectual property relations and (state and non-state) regulation of biodiversity-related traditional knowledge in Thailand. These chapters demonstrate the situation of the knowledge systems that underpin the ownership, exchange and regulation of traditional knowledge and biological resources. They provide a critique of the imposition of inappropriate regulatory systems onto Thailand, an analysis of Thai *sui generis* regulatory initiatives, and a discussion of other regulatory forms and knowledge domains that need to be recognised for the promotion and protection of traditional knowledge.

5. THAI TRADITIONAL KNOWLEDGE

To determine the needs of traditional knowledge holders and to identify ways to protect and promote traditional knowledge in Thailand it is important first to outline some of the attributes of this knowledge. Some reference points are needed. In earlier sections it was already established that traditional knowledge is typically passed on from generation to generation, may be adaptive, culturally and environmentally situated, it may be shared or held secret, amongst other factors. There are other important considerations in the national context. It also needs to be recognised here that there is a strong self-generating desire to protect and promote traditional knowledge in Thailand (i.e. it has not merely been picked up as a CBD mandate, and in fact the discourse has a history in Thailand pre-dating the CBD).⁹⁶ There is general support in-principle for the protection of traditional knowledge of various forms (e.g. of medicines, agricultural products, and related to folklore, cultural expressions and designs). However, there are competing ideas about *how* traditional knowledge can be protected and promoted.

In the policy-making discussions and meetings I attended in Thailand, people usually referred to traditional knowledge as *phum-panyaa tongtin* (lit. local wisdom – also knowledge). *Phum-panyaa* may be used alone in some cases, as it connotes place-based knowledge in itself. That knowledge has an innate discursive link to place is highly relevant to the central arguments of this thesis. Thailand thus has a linguistic recognition of the place-based situatedness of knowledge in *phum-panyaa*, although in some cases the word may be substituted with *kwaam-ruu* (lit. knowledge) which does not have the same connotation.⁹⁷

Reynolds (2001) notes that *phum-panyaa* is a commonly used traditionalist or communitarian political slogan of “local wisdom”; hence the reason IP policy-makers have doubly emphasised the “local” context with *tongtin* as a differentiating measure (Buntoon and Jade, 2005). As Reynolds also notes, and which is evident from cross-department meetings on traditional knowledge, there may also occasionally be references to *phum-panyaa heeng-chaat* which

⁹⁶ The Thai Local Development Institute, for example, has been working for the protection of traditional knowledge for more than two decades.

⁹⁷ This Thai word is used more commonly to refer to innate or idiosyncratic knowledge (see Thrift, 1996).

connotes national (place-based) knowledge. This also may be used in two ways: as a political catchphrase recognising national wisdom (often in reference to the countries agricultural culture and traditions); in policy-making to refer to domestic knowledge of agricultural plants, traditional medicines and other useful items deemed worthy of “protection.” The latter has typically been involved in discussions on *sap-sin thang-panyaa* (Lit. intellectual property/assets), which in Thai language seems to differentiate more partial or situated “knowledge” (*phum-panyaa*) from higher order “intelligence” in these discussions. Thus some differences exist in the way the terms are used colloquially, politically and in the IP policy context.

Stemming from international law and policy-making, traditional knowledge is now typically recognised as being associated with biological resources. Traditional knowledge is generally referred to in three main categories: that which relates to agriculture; that which relates to medicines; and ecological knowledge. Within these there are subsets as well. Agricultural traditional knowledge noted during the research included domestic plant varieties; local varieties, wild varieties (undomesticated), seed selection processes, crop protection techniques, knowledge of microbial fermentation (of foodstuffs or of fertilisers), animal husbandry techniques, soil and nutrient related knowledge.

Domestic plant varieties such as Jasmine rice are prevalent in the central region – I visited Jasmine rice farms in Suphan Buri and Prachin Buri – and particularly in the northeast. Local as well as wild crop and vegetable varieties were on display at a seed exchange fair in Ku Ka Singha, Roi Et province and in Mae Ka Pu, Chiang Mai. Crop protection techniques are highlighted by Yos (2003a) and were demonstrated in Baan Mae Ka Pu as well as in farms near Ku Ka Singha. Seed selection was practiced by many groups, notably those visiting Ku Ka Singha and in *Khao Khwan* at Suphan Buri where the practice is re-taught. Knowledge of microbial and plant based fermentation techniques were demonstrated in Suphan Buri – for use in food dishes and for fertilisation of paddy fields – and in Ku Ka Singha for creation of fertiliser for vegetables. Traditional buffalo husbandry was demonstrated in Baan Mae Ka Pu, and past elephant “semi-domestication” originally brought across from India, was also explained to have been mostly lost by the Karen with the loss of habitat, land and elephant numbers. Soil nutrient

knowledge was explored in classes taught by Daycha Siripat in Suphan Buri.⁹⁸ All these examples from local case studies and fieldwork are discussed in more detail in Chapter Nine

Traditional agricultural knowledge is often closely linked to folklore and rituals which teach important values about nature. These vary considerably throughout the country, but due to the dominance of Theravada Buddhism, there are common themes about human's role *in nature* (see Siraporn, 2004 from a folklore perspective; Suvanna 1989 on the treatment of plants and animals; see also Suthiwong, 2004 regarding Southern Thai folk beliefs; Pinkaew, 2001 on Karen beliefs). The negative response to biotechnology and the monopolisation of life-forms in Thailand is closely related to these popular beliefs.

Medicinal traditional knowledge is also widely prevalent throughout Thailand. Pennapa Subcharoen (2003), who was instrumental in the development of the Act on the Protection and Promotion of Thai Traditional Medicinal Intelligence, notes that Thai traditional medicine is a "holistic approach, opposed to reductionism." Thai traditional medicine borrows concepts from Indian Ayurvedic medicine and also shares similarities with Chinese traditional medicine. Pennapa indicates that these have been uniquely shaped however, through practices dating back to the Sukhothai period (about 800 years ago) and especially the Ayutthaya period (about 600 years ago).⁹⁹ There is a considerable emphasis placed on overall well-being (including spiritual aspects) for the *prevention* of illness. Many Thai herbal medicines, teas, meals (most famously – *tom yum*), as well as treatments such as traditional massage and *sapaya* (spa) are to be used for everyday health. In addition there are various treatments for the symptoms of illness.

The third and perhaps most diverse type of traditional knowledge, ecological knowledge, is commonly promoted as part of local strategies for the assertion of land rights in community forest areas – particularly by supporters of the Karen in northern Thailand – and by other groups for various aims such as ecotourism. Similar to the other forms of traditional knowledge, a holistic presentation of their knowledge is typically portrayed. In fact, it is important to note that these distinctions between kinds of traditional knowledge may be an artificial reduction of *phum-*

⁹⁸ Daycha Siripat is the Director of the Khao Kwan Rice Research Institute and an activist for farmers' rights. For more detailed discussions of these, see Chapter Nine.

⁹⁹ See also Mulholland (1988a), at 7.

panyaa as it is traditionally supposed to be portrayed. The potential commercialisation, as well as innovation in these knowledges, has likely led to their more discreet separation – in which intellectual property is now an ever present concern. Traditional medicine and agriculture, through the isolation of active compounds in remedies or specifically desirable crop traits, have great *potential* monetary value, but this value has been tempered by the controversies surrounding the transaction of these isolated elements (explored in detail in the following Chapter), as well as by market realities.

Knowledge is of course fluid and ever changing – it can be added to or diminished and in some cases can be lost. Some have argued that some kinds of knowledge are inalienable from place-based (local), cultural (including values), spiritual (ritual, sacred and taboo), and environmental situatedness (in particular see Posey, 1999; Mooney, 2000; and in Thailand through linguistic associations see also Yos, 2003a; Saneh and Yos 1993). Certainly in Thailand there is some traditionalist resistance to the removal of extracts of traditional medicinal knowledge, for example, from its embeddedness in holistic ayurvedic concepts and even from Buddhism (Pennapa, 2003). Although notably there is some suggestion that the links between Thai traditional medicine and Indian ayurvedic techniques are actually something that has been overgeneralised in recent years, and that the links are actually a late addition or a “re-traditionalisation” (see Mulholland, 1988b at 175; Salguero, 2003 at 6; and Brun and Schumaker, 1994 at 32).

The embeddedness of Thai traditional medicines in cultural and religious belief systems does not necessarily mean that it cannot be commercialised, and will depend upon other factors which define the knowledge. This leads us to consideration of discourses of knowledge *domains* which imply place-based associations, but also more complex social contextualisation of knowledge.

This is something that Sutawan (2005) stressed in a presentation at a Thai Traditional Knowledge – Folklore (“TK-FL”) meeting. Knowledge may be situated in the *public domain*, in *community domains*, and in *private domains* (see also Gupta, c2004). These are useful divisions to make. Public domain knowledge refers to generally available public knowledge, and is a concept well trodden in IP debates. Community domains are something more conceptually problematic, as

Sutawan has noted. They depend upon the ability of the community to self-recognise as a unified group and be recognised as such by those external. Community knowledge may differ between individuals and may amorously merge and change with the community context and boundaries. Contexts and boundaries may signify territorial limits, cultural or ethnic units, or in the case of plant-based knowledge, may be associated with bio-geographical distribution (i.e. natural distribution of wild varieties, or distribution of domesticated varieties via seed exchange networks). All of these boundaries will likely change though, if they ever existed as static.

Private and individual domains refer to knowledge with very limited boundaries – secrets¹⁰⁰ – or to domains that have restricted access, not unlike intellectual property domains. There may be various reasons for keeping knowledge secret. It may be sacred (something worth returning to), the knowledge-holder may wish to restrict or personally capitalise on the benefits, or it may be kept secret for conservation.¹⁰¹ The need to protect secret or sacred traditional knowledge deserves special consideration. Although secrets represents probably the smallest knowledge domain (but notably there is no way to gauge this), it is one of the most controversial circumstances in bioprospecting and biopiracy concerns. It has been suggested that trade secrets could be used to protect secret traditional knowledge (see Dutfeld 2004), but for practical reasons this seems unlikely. It was noted that the formality and costs involved in applying for trade secrets, as well as government distrust, would make trade secrets “an unlikely option” for protection of secret traditional knowledge in Thailand (Suradet, Interview 2005; Jade, Interview, 2005).

Notably, the local case studies conducted as part of this research indicated that sacred knowledge domains may overlap with other domains – community, private or public. The cultural significance and reverence of rice in Thailand for example provides a significant argument against patents on certain varieties. Some *khao dam* black sticky rice varieties in the northeast region “may be used only for ceremonies such as weddings,” and “are not to be eaten” (Ubon, Interview, 2005; Witun, Interview, 2005 respectively). Much of the outcry against IP protection

¹⁰⁰ Secrets are something that is not new to intellectual property concepts. Trade secrets have been used as a means for the protection of innovations, ingredients and designs for a lengthy period of time.

¹⁰¹ An instance of secret traditional medicinal knowledge was noted in Baan Soplan. The locals could tell me only of a “great medicine” but not its whereabouts or properties because it was sacred and rare – see Chapter Nine.

of Jasmine rice also relates to cultural concerns as much as economic or competitive concerns (Saneh, Meeting Comments, 2005). Obviously, different community groups will also have different values attached to traditional knowledge of plants; and individuals, such as traditional healers, will have their own sentiments about the sacredness and taboo of plants especially (see Chapter Nine).¹⁰² On the other hand, a great many plants (and knowledge of their uses) are secularly treated and will be readily available for normal uses.

If we now consider Thai traditional medicine as an example, there are evident separations in knowledge domains. Salguero (2003) and Wongsatit *et al.* (1997) note that there are two distinct traditions, in which there is considerable overlap: the royal tradition (public traditional knowledge domains) and the rural and “hill-tribes” traditions (“folk” knowledge domains). Notably, in its National Reports on the Implementation of the CBD (ONEPP, 2006; 2005; 2004) and in a Royal Forest Department (RFD, c2002) report on “Access and Benefit Sharing Relating to Forest Genetic Resources and Traditional Knowledge in Thailand,” the Thai government avoids talking about the folk knowledge systems. Instead it represents Thai traditional knowledge as a deceptively uniform and homogeneous entity, and creates a false sense of the unity in knowledge domains and applications. The implication from this is that official government actions of traditional knowledge are still hesitant to fully recognise the merits of local folk knowledge, even though it shares many applications and traditions with the more codified royal tradition evident in government institutes (e.g. the Thai Traditional and Alternative Medicines Institute) (Prapoj, Interview. 2005). The RFD report, using colonialist language, even suggests the backwardness of these folk systems, noting “the local people will have to be informed, convinced and organised to embark on forest-based rural development.” Despite their claims to be meeting them “in the middle” (Komon, Interview. 2005), the RFD clearly has some way to come before appropriately recognising the value of traditional folk knowledge and the rights of these local groups.

This overview helps us understand the different contexts and situations of traditional knowledge in Thailand, in which the boundaries are often fluid. Even the *national* framing places a situated

¹⁰² Kalinoe (2004) also notes the need to make differentiations and provide extra protection for secret/sacred knowledge in Papua New Guinea. Rarely, however, do commentators make a clear enough distinction.

onus on the knowledge (which might more correctly be regional or local). Similarly the *traditional* places a burden on knowledge that may often be a hybrid of modern and time-tested. Indeed, I agree with the nuanced arguments of authors such as Parry (2002, writing of Pacific Island countries), Wright (2005, writing of the Philippines), and de Laet (1998 writing primarily from South Africa), who suggest that all knowledge, whether labelled traditional or modern, is situated in various “geographies,” “spaces,” and “contexts” respectively. On the basis of the above discussions, I think the most pertinent and policy-relevant language is *knowledge domains* in order to echo heterogeneous place-based concerns, but also distributional and cultural concerns, and even to reflect the new importance (for better or worse) of intellectual property.

The following section details the results of a traditional knowledge – folklore (TK-FL)¹⁰³ policy-making questionnaire in which some of the aforementioned implications are echoed, and in which a range of key actors explored the direction of Thai traditional knowledge protection and promotion, and which I participated.

Traditional Knowledge Policy-Making Questionnaire

With international impetus and domestic concerns, many Thai government departments have been involved in discussions over the treatment and protection of bio-resources and associated traditional knowledge. Most of them have specific ideas and interests about traditional knowledge related to their departmental mandates. Departments include, but are not limited to: the National Human Rights Commission of Thailand (NHRC), the Department of Intellectual Property (DIP), the Department of Agriculture (DOA), the Department of Public Health (DPH), the Royal Forestry Department (RFD) and the Department of National Parks, Wildlife and Plant Varieties (DNPWPV). Some departments have explicitly documented their standpoint on the treatment of traditional knowledge, and others have less clear policy that is often only verbally disclosed.

¹⁰³ It is worth noting that throughout the discussions in meetings surrounding this questionnaire, different individuals referred to “TK” and “TK-FL” while others referred to *phum-panyaa tongtin* or just *phum-panyaa*. The difference was quite distinct and reflected the background of the individuals from legal or scientific perspectives, who used “TK,” and from anthropologists, NGOs or community based researchers who more typically used “*phum-panyaa*.”

There have been ongoing meetings attended by relevant academics and officials for the past few years on the treatment of traditional knowledge, or “TK,” by the various departments. There have been suggestions for the development of a more coordinated approach to traditional knowledge promotion and protection and even for a broader Traditional Knowledge Act; however it is likely that the development of such an Act would be a long time in development (Indananda, Nantana, cited by Bangkok Post, 26 May 2005, Suradet, Interview. 2006). The establishment of a single body would certainly help with the coherence, transparency and clarification of registrations and databases, but the idea has been criticised by NGOs for potentially re-centralising control away from local communities in the regions.

A questionnaire was developed by staff within the Tropical Resources Project of the Human Rights Commission where I was interning. It surveyed attitudes to traditional knowledge and folklore amongst academics, NGOs and government body staff. I cannot claim authorship over the survey, but was involved in the process by making comments on it prior to distribution, by attending the meetings and observing participant discussions. The questionnaire was distributed at a meeting on Traditional Knowledge and Folklore held on 21 April 2005 at Kasetsart University, which I attended. Attendees of the meeting included academics and government policy-makers working closely on traditional knowledge and folklore issues from various perspectives (e.g. anthropology, natural resource management, intellectual property, cultural studies, plant breeding, and traditional medicines). There were 25 responses from 43 sets delivered (see Appendix 5 for a tentative translation of the survey results).

The questionnaire¹⁰⁴ first indicated that there were broad interpretations of the terms “traditional knowledge” and “folklore” and, not surprisingly, significant disagreement about an appropriate definition.

The second question asked what traditional knowledge and folklore protection should be aimed at. Respondents could give more than one answer. The highest response was to “prevent people from inappropriately taking advantage of traditional knowledge and folklore,” followed by the

¹⁰⁴ This information comes from: TK-FL Working Group (2005) *A summary of the questionnaire on traditional knowledge and folklore protection*. Unpublished document, distributed at a subsequent traditional knowledge and folklore meeting (in Thai).

“restoration and promotion of traditional knowledge and folklore,” and the “preservation of traditional knowledge and folklore for broader social benefits.” Economic reasons factored in further down the list.

The survey also indicated that the majority of respondents were concerned about the use of IPRs to protect traditional knowledge (most thought that IPRs were insufficient for traditional knowledge and folklore protection), but where it is used they predominantly indicated that it should be to stop exploitation or use without permission, and to protect personal or community rights that have created and preserved the traditional knowledge and folklore.

Protection mechanisms favoured included a *sui generis* mechanism as the most favoured means of traditional knowledge and folklore protection, followed by databases, and then a few respondents agreed with contracts on access and benefit sharing. They also indicated that in cases where some form of traditional knowledge and folklore protection has been provided the rights owner should be the creator, developer or author (where it can be proved), as well as communities (where it is shared knowledge). This was closely followed by responses indicating it should be overlapping systems of rights such as the TTMI Act which has some rights allocated to individuals, some to communities, and some to the state.

The questionnaire, although based only on the responses of a small group, provides an insight into the current aspirations for traditional knowledge and folklore protection and promotion. The responses also reflected comments and trends from my interviews with key policy makers and stakeholders – notably that there was less interest in economic reasons for protection of traditional knowledge, and that contracts on access and benefit sharing were less favoured as a traditional knowledge protection mechanism. These trends are explored more in Chapter Seven and also reflect some concerns in local case studies, that *protection* may have little to do with economic incentives or external “benefits.”¹⁰⁵ But the array of responses to each question highlights the complexity of the issues, for which adequate solutions often appear to be dependent upon highly specific circumstances. This poses a problem for developing a broad

¹⁰⁵ On the other hand, some farmers’ groups – notably those in Suphan Buri and some farmers in Ku Ka Singha, indicated that they would be interested in accruing “benefits” *if they were likely*. The farmers and NGO staff however, were sceptical of actually receiving potential benefits.

Traditional Knowledge Act, or for developing some other framework of protection. What seemed most pertinent from the results was a desire to protect traditional knowledge from misappropriation. Clearly the protection of traditional knowledge must also go beyond that proposed in the intellectual property and biodiversity protection framework, to provide rights of protection to those who still maintain the knowledge. Therefore, Chapter Six provides an analysis of bioprospecting in Thailand, as well as a detailed examination of alleged biopiracy cases and misappropriation claims.

6. BIOPROSPECTING, MISAPPROPRIATIONS AND BIOPIRACY EPISODES

This chapter provides an analysis of a number of controversial bio-resource transactions in Thailand. As previously indicated, the facilitation of bio-resource transactions linked to traditional knowledge have been lauded as a way to formally develop pharmaceutical products and useful crop or plant varieties, for the potential benefit of society, national economies *and* for local communities (see for example Reid *et al.* 1993; and Laird 2002). There are many critics of these assumptions, with one result being the generation of the counter-discourse of “biopiracy” (see Mooney, 2000). But the extremes of these views may gloss over many of the finer details of the transaction processes.

A range of bioprospecting and benefit sharing cases have been analysed in academic or policy-making circles to determine if appropriate, fair, equitable and just relationships can be made between researchers, local authorities and local custodians. These include the INbio case from Costa Rica (see Castree, 2003; and Mateo, 2000), Shaman Pharmaceuticals in Tanzania (see Svarstad, 2000; Posey and Dutfield, 1996), and a wild rice from Mali *Oryza longistaminata* involving research and a patent at the University of California at Davis (see Gupta, c2004) (see Chapter Two). Each of these have illustrated that there are immense practical difficulties in satisfying either or all of the stakeholders involved in terms of compensation and approval.

Why have these cases proven to be problematic? Strathern (2004:102, 99) notes that biodiversity “transactions entail the substitution of values...” and a “disembodiment,” but such disembodiment may be regarded as “a re-empowerment (the stripping away of extraneous identity) as well as a moment of loss for one party and gain for another.” Speaking of Papua New Guinean transactions, she notes the importance of the value substitution (in cultural and monetary terms), but also emphasises the “relationship” between those who extract and those who provide (as does Laird, 2002; seeking to highlight the ethical implications of research partnerships and relationships). In Strathern’s study, social and money obligations may compete with each other – often money is substituted for social relations – but they also frequently run together. This substitution of values is likely to be a source of recurring controversy in these benefit-sharing

cases. Due to the inequality in relationships, the conditions of the relationship have to be carefully defined. This is frequently raised in CBD talks on ABS and in Thai government meetings – there needs to be mutually agreed terms between parties.

The following cases of reported bioprospecting transactions, as well as alleged biopiracy incidents and misappropriations, allow an exploration of the legal (or illegal) exchange, but also the substitution of values, and impressions of the sorts of relationships involved. The cases, all set in Thailand, but typically involving international transactions, have not been extensively researched or reported, even by the media. Most of the insights that were previously described were from NGOs and defensive responses from research institutions or industry. Therefore this chapter provides the most thorough and objective investigation and discussion of the cases to date. The cases are all polemical – that seems unavoidable – but an attempt has been made to convey the same sort of “situational pragmatism” recommended by Greene (2004), Brown (1998) and Castree (2004a). This is consistent with the ambitions of the thesis, for recognition of the situatedness of actors and stakeholders (myself included).

6.1 Bioprospecting Events and Trends

Bioprospecting¹⁰⁶ generally refers to the scientific “discovery” and extraction of useful products from nature. Pinpointing potentially useful products from nature would be a lottery for scientists if they acted randomly; therefore they have typically conducted bioprospecting activities where there have been reports of traditional knowledge in isolated or previously untapped sources. Bioprospecting discourses have largely been presented in terms of a win-win situation whereby a new medicine, useful plant or similar is found, researched and commercialised; there is increased value placed on biological resources, and hence benefit flows back to materially “poor local communities” may help with biodiversity conservation and local development (Svarstad, 2000).

¹⁰⁶ The term’s likely origins are from Reid *et al.* 1993 at 1. Parry (2000:375) notes that “collecting” was a more commonly acceptable term prior to this, representing a “benign aesthetic activity or alternatively as a dispassionate scientific activity, but rarely an inherently political activity.” She highlights the need to study the dynamics of collecting as well as the ethical, political, economic and cultural implications of collecting practices.

There is a considerable history of bioprospecting activities in Thailand. The Forest Herbarium of the National Park, Wildlife and Conservation Department provides a long history of collections by foreign botanists, the bulk having occurred in the 20th century, but with some going back to as early as 1778 (RFD, Acc 31/7/06). Thai authorities, officials and locals were often generous hosts to visiting scientists and provided assistance with the collection of plants, herbs and other biological specimens often with useful traditional applications. Often these were relatively uncontroversial, but changing institutional conditions have put Thai authorities and NGOs on the defensive.

One attempted bioprospecting arrangement is well reported by Kaosa-ard (1995). The case involved the trans-national company Riche Monde (Thailand), which intended to finance a bioprospecting project, with anticipated joint-support between the England-based Foundation for Ethnobiology and the Biology Department of the Faculty of Science in Chiang Mai University. Project intentions were to study traditional medicines from plants and herbs used by the Saka Karen tribes in five remote villages in Northern Thailand.

The *Matichon Weekly*, (July 18-24, 1995) reportedly outlined monetary and training benefits which would accrue to Karen informants, as well as benefits including collected samples and data to be provided to the Royal Forest Department in Bangkok and the Pharmacology Department at Chiang Mai University, which maintains a herbarium. These were conditional on the approval of the project, which was in an early stage.

But negative press reports and NGO complaints arose at the same time. The *Manager* newspaper (June 30, 1995) published a facsimile memo from the project. Allegedly Riche Monde had drawn up a contract for the Karen communities which included the following clause: "The signature on this contract indicates that you will allow us to work with your people, in your village, and on your land, and to receive the right to study your understanding of the environment, including both general knowledge and the knowledge of the specialists in your culture." Kaosa-ard (1995), notes that the article also indicated that the project had not received the National Research Council's approval; most of the eminent local advisers listed by Riche Monde as its consultants disclaimed any official association with the project; and the Foundation of Ethnobiology, whose

representatives had conducted the preliminary feasibility study and design of the project, had received a grant from the Hutton Molecular Development Co. Ltd., a broker of intellectual property rights.

A representative from Riche Monde was interviewed and published in the *Executive* newspaper (September 1, 1995) indicating:

- The project was not a research study but aimed to record traditional uses of herbal medicine. National Research Council approval was, therefore, not necessary.
- The company's internal memo had been translated incorrectly so that the words "those consulted" became "consultants." The local advisers cited in *Manager*, though consulted during the project's preliminary feasibility study, and later listed as such in project publications, were not in fact project consultants.
- Hutton Molecular Development had hired the Foundation of Ethnobiology as a consultant for a project that had nothing whatsoever to do with the Thai project.
- No contract had been offered to the Karen community. In fact, the contract with Chiang Mai University had yet to be signed as the company had only just begun preparing the project feasibility study.
- The project, as described by the company, was entirely a philanthropical activity to help preserve Thailand's tribal heritage. There would be no commercial benefits. Sharing of the gains with the local communities had, therefore, not even been discussed.
- The hiring of expatriates was necessary because of the lack of local taxonomists (Kaosa-ard, 1995: 8).

As a result of the bad publicity, Riche Monde cancelled the entire project before it even started. As Kaosa-ard (1995: 8) notes, "mistrust, lack of appropriate communication, and other cross-cultural problems plagued this project from the start." One commentator (Wisut, Interview 2005) has noted that "had this project been coordinated more sensitively and carefully, it could have potentially helped preserve and promote traditional knowledge and plant varieties, rather than how it was publicly perceived" – as a way of commodifying it. So who do we believe? Were NGOs justified in claiming that the project would result in misappropriation of traditional knowledge of medicinal plants from the Karen and potential patents? What seems most likely is

that the NGOs and press who were critical of the project made considerable assumptions based on past cases of biopiracy and misappropriation. On the other hand, Riche Monde may have inaccurately presented its intentions for the project, or may have made considerable assumptions about the desire of Karen people to be involved in the project. Due to the time passed since the controversy, there were no representatives willing or able to comment on the case from Riche Monde, the Pharmacology Department at Chiang Mai University, or from the Karen communities I visited.

During local village case studies and interviews “in the field,” I also noted ongoing bioprospecting activities. The following fieldwork narrative details and explores a bioprospecting activity I encountered.

A field trip to *Samoeng* district (Chiang Mai Province) in February 2006 was intended to gain a better understanding of the customs, taboos and rituals associated with the use of traditional herbs and local plants by Karen people (*Khon pga k'nyau*)(see Chapter Nine). The visit coincided with a bioprospecting activity by the Chiang Mai University Faculty of Pharmacy, just prior to our arrival. Karen people from nearby *Mae Lan Kham* indicated that researchers from the university had come and taken many herbs from the village and surrounding forest after presenting an official looking letter (Ka-Le, Interview, 2006). Ka-Le indicated that the Karen people provided the herbs, having little knowledge about the legal authority of herb and plant protection, and assuming that they had little right to say no to the collection. The researchers provided a document to the Karen people from the Northern Research Centre for Medicinal Plants at Chiang Mai University.

I contacted an academic at the Northern Research Centre, Mrs Suwana Wadapikun (Interview, 2006), to identify details about the bioprospecting activity. She indicated that she was not sure who the researchers were, but that it was common for them to access material in *Samoeng* district from the communities and that other universities such as Chulalongkorn and Mahidon (both based in Bangkok, and which have herbariums used for pharmaceutical research) also conduct these activities. The Centre had a herbarium with extensive collections already taken from the surrounding region, including documentation of traditional medicinal uses. When research activities were conducted, Mrs Suwana suggested that the head (*Kamnan*) of the community, or

the elders, were always contacted and shown the purpose of the project. She also indicated that they provided some benefits back to communities in the form of information sharing and education about traditional medicines. The Centre does not yet commercialise any of its research, but Suwanna indicated that if commercialisation did take place, then the provider communities should be consulted first.

This indicates a reputedly common occurrence (Buntoon, Interview, 2006; Wisut, Interview 2005) where Thai academic researchers access biological materials and associated traditional knowledge from local communities, but without a clear transaction process. Although the consultation activities of the researchers from Chiang Mai University may sound adequate, the people who provided the resources were left with many questions and concerns that the materials might be commercialised, misused according to their customary laws, and possibly patented to the exclusion of others (Ka-Le; Pathii Ta-Yae and Pathii Dang – *Soplan* villagers, Interview, 2006). Provision of information about the extraction may not be sufficient if it does not also identify future potential for further transactions – seemingly the main concern of the villagers. Although verbal consent appears to have been given for the extraction, it does not appear to be sufficiently *informed*, nor were the benefits clear for the community (Ka-Le, Interview, 2006). This case highlights the uneven bargaining power and power relations between formally educated researchers, and local people leading traditional forest-dwelling lifestyles. It also raises concerns about the substitution of values that occur in these transactions: the Karen people interviewed in this area have a close ideological and spiritual affinity with plants and nature, which may be disrupted by substituting plant extraction with training or other “benefits.”

These two bioprospecting cases¹⁰⁷ – one documented, and one noted during fieldwork – identify the potentially uneven negotiating power between parties; the possibility of NGOs, the press and companies in inflaming the circumstances of attempted transactions; mistrust and lack of transparency; as well as the potential substitution of values. There are also other implications.

Much of the NGO and press concern about bioprospecting and biopiracy is directed towards multinational companies and their interactions with indigenous or local groups. Given the

¹⁰⁷ Dhillon and La-aw (2000) also briefly describe a bioprospecting case of *Makaam kaek* (*Cassia augustifolia*).

controversy surrounding projects such as the Riche Monde project, it is becoming more common in the current research climate for foreign bio-resource transactions to source extractions from research institutes. As Hayden (2003a; 2003b) notes, some bioprospecting operations in Latin America have deliberately sought to avoid indigenous or local bioprospecting, by establishing solid relationships with national authorities, extracting from established research institutes, and even sourcing “de-indigenized” plants and knowledge from urban markets (like *Talaat Chatujak* in Bangkok) where they are already a commodified part of the national public domain (see Greene, 2004). This is the case in Thailand too (as discussed in the following section), but Thai research bodies are clearly still conducting ethno-botanical collections which end up in these herbariums or gene banks (Brockelman, 1999). The typical origins for these domestic bioprospectors are local farming communities and community forest areas. Thus the knowledge and bio-resources are passed on through a sequence of transactions, and local prospecting polemics can be avoided. This is commonly the case with agricultural plant resources, in which there is a long, documented history of sharing and transfer. It may also be the case with medicinal plants, although these are more likely to have been “pin-point” sourced by researchers or companies, meaning the source of origin can more readily be traced. It is suggested that often the *sequence* of transactions needs to be addressed (in regulatory and informal ways) from the local providers through to the final holders/researchers, rather than simply focusing on the end of the chain, as is often the strategy of NGOs. These issues are further explored in the following sections.

The following cases have generally been harshly criticised in the Thai (and international) press and labelled as biopiracy or misappropriations. Some are well-known, and others not so. The analyses are intended to eliminate some of the hyperbole and strategic vagueness utilised by various activists and lobbyists, through analyses of patent documents, literature review and interviews. By nuancing these cases, it is possible to see that ‘biopiracy’ and all its rhetoric is actually a complex heterogeneous range of issues that cannot be resolved through simple or singular policy actions.

6.2 The Jasmati Case

The most widely publicised cases of biopiracy or misappropriation have been that of Jasmine Rice or *Khao hom mali* for which there are a number of incidents to consider. Why have these been so politicised? It is first worth noting that rice represents Thailand's largest agricultural export for which *Khao hom mali* makes up a significant proportion (approximately 20 to 25%). Furthermore Thailand's long history as a rice growing country whereby rice represents an integral part of its agricultural heritage, emphasise its importance both economically and culturally.¹⁰⁸ Therefore the following two related cases hold a place of special concern for the Thai people, as well as for the Thai authorities. The first case examined is the Jasmati case.

In 1998 an international network of NGOs informed the Thai NGO BioThai that a US company had registered Jasmine rice under the US intellectual property system. Scrutiny of the claims reveals that a US company named Ricetec, Inc., based in Alvin Texas had made several attempts to trademark the name "Jasmati" or some similar derivation of the word "Jasmine." Ultimately they succeeded in registered a trademark associated with a rice product called "Jasmati" in 1993.¹⁰⁹

The concerns were rapidly and widely reported in the Thai press with varying degrees of accuracy.¹¹⁰ Because Ricetec had also successfully registered a US patent called "Basmati Rice Lines and Grains" in 1998, some confusion may have occurred between the two cases (Benjavan, 2003). It was widely believed by the Thai public at the time that there as a trademark *and* a patent on Jasmine rice.¹¹¹ In fact there was only the "Jasmati" trademark. DNA fingerprint analysis has since been done comparing the US varieties in question with the most common Jasmine rice

¹⁰⁸ It is worth noting that the Thai word for 'food' is 'khao' which literally means 'rice'.

¹⁰⁹ The Jasmati trademark can be found on the USPTO website in its Trademarks Electronic Search System (TESS) at <http://tess2.uspto.gov/>. It has registration number 1807817 and serial number 74372314.

¹¹⁰ For example the Thai language "Matichon Newspaper" placed an article on the 23rd of July 1998 entitled "Farmers Mob Demand the American Embassy to Revoke the Jasmati Patent," despite there being no patent on the Jasmati product. The concern and confusion was probably related to the patent on Basmati by the same company.

¹¹¹ It was noted that in a number of interviews and meetings, the interviewees and attendees still thought that there was a Jasmine patent in the US. This is in part probably related to the frequent translation problems – while copyright law has existed in Thailand for a century, patents and trademarks are a relatively new form of IP law and hence are a new concept for many people. Often people confused intellectual property (*sap-sin thang-pan-yaa*) patent (*sitthi-bat*), trademark (*kruang-maai-gaan-kai*), and copyright (*lika-sit*) as overlapping or the same concept.

varieties, revealing that “Jasmati” is genetically unrelated to Jasmine rice. Hence the trademark does not use Thai Jasmine genetic material or agricultural traditional knowledge.

Consequently there were a number of protests held throughout the country, including a crowd of about 500 Jasmine rice farmers outside the US embassy in Bangkok led by Assembly of the Poor leader Wirapol Sopa and Witoon Lianchamroon of the NGO BioThai, amongst others.

The group made the following three demands of the US:

- The US Government must revoke the Jasmati patent (trademark) and must refuse to grant any patents on Jasmine rice or other indigenous rice varieties from Thailand;
- Must urgently cancel the trademarks on Jasmine, Jasmati, or other marks that may confuse the public into believing that such rice is Jasmine Rice;
- Must stop direct and indirect pressures to force developing countries to provide patent protection of life-forms (Lerson, 1998).

The Thai government was in the midst of dealing with Thailand’s sizable national economic crisis at the time, and therefore it is reported that they did not adequately inform the public or attempt to reconcile their concerns in a timely manner. Consequently, the King of Thailand, who does not usually become involved in such political matters, granted an audience to executives of IRRI, where it was believed that the genetic material had been obtained by Ricetec, Inc. IRRI quickly made a public statement that they did not condone the “Jasmati” trademark, and believed it may “mislead consumers that such rice is Jasmine rice, grown in Thailand, or Basmati rice, grown in other Asian countries” (Lerson, 1998).

The Jasmati trademark has since been approved for renewal in 2003. Only one challenge has been made on the trademark by another US Company named Sun Lee, Inc., likely to be a claim over a similar logo graphic used by both companies. The action was dismissed by the US Trial and Appeal Board (USPTO, Acc 2006). The Thai Government and Thai companies to date have not challenged the trademark. A representative from the Thai Department of Intellectual Property was somewhat sceptical whether a case for repeal of the trademark would succeed, noted the expense for which a trial would amount, suggested that political pressure had been seen as a more

desirable option at the time, but suggested that Thai companies could still challenge the Trademark (Suradej, Interview, 2005).

Another interesting related US patent has also been identified with Patent Number 5,208,063 assigned to RiceTec; this time the subject of a process patent that yields fluffy and tender cooked rice with similar characteristics to that of Jasmine rice (Lerson, 1998). The patent does not however mention Jasmine rice, and thus has aroused a lesser amount of public controversy. This does however arouse curiosity about whether Ricetec, Inc. were intending to use this process to give the “Jasmati” product characteristics more like Thai Jasmine rice, thus contributing to possible deception beyond the name of the product.

The case also highlights the common Thai public concern that plants and animals should be excluded from monopolistic intellectual property protection (see Yongyuth, 2003; Witun, Interview, 2005; Tannit, Interview, 2005). As Lerson (1998) argues, many Americans who complained that the Jasmine rice crisis was blown out of proportion to its actual severity should understand that the Thais’ resentment towards any attempt to monopolise plants is base on their agricultural background and heritage. Since rice is the most important crop culturally and economically for Thailand, the issue became particularly sensitive.

As a consequence of the trade-mark, some Thai authorities have since been considering a self-defensive form of intellectual property protection. The potential for geographical indication of Jasmine rice has been considered to protect its name.¹¹² However Thailand has reportedly been under pressure from the US not to provide such protection, but rather to undertake trademark protection for individual companies that sell and export the rice. Trademark protection would not necessarily stop similar misuses of the name “Jasmine rice” or *Khao hom mali*, but only protect individual companies.

While the potential use of geographical indications to protect Jasmine rice may be able to stop similar deceptions of the public relating to the name “Jasmine rice,” it would not necessarily protect Jasmine rice from cases where the germplasm is accessed, modified and potentially

¹¹² The new Act on Protection of Geographical Indications B.E. 2546 [2003] is discussed in Chapter Nine.

patented. The differentiations between generic name, trade-mark, transfer of germplasm, and patent are important to make, but have too often been left to interpretation by strategically vague NGO reports.

In summary, the primary concern here is with the misuse of the *name* “Jasmine rice,” which is associated with a product of distinct quality, regional origin, and which is also highly regarded in Thai culture. Whether a trade-mark justifies the label “biopiracy” is open to debate. But notably, it was attached this label due to public confusion, by association with the RiceTec “Basmati rice lines and grains” patent, a related patent suspected of misleading consumers, and by association with the Stepwise Programme for the Improvement of Jasmine Rice for the US discussed below.

6.3 Stepwise Programme for the Improvement of Jasmine Rice for the US

The “Stepwise Programme for the Improvement of Jasmine Rice for the US” has also been the subject of *potential* biopiracy (of tangible and intangible property) and competitiveness concerns. The programme has been the subject of debate in numerous meetings in Thailand and has appeared in the press with outraged comments made by NGOs and members of the Thai public (see the Nation, Nov 6 2001).

The purpose of the Programme is to develop jasmine rice that US farmers can grow easily and profitably, and thus compete with Thai imports according to Dr J. Neil Rutger, project coordinator and director of the Dale Bumpers National Rice Research Center, US Department of Agriculture/Agricultural Research Service in Stuttgart, Arkansas. Public concerns and news media coverage in Thailand has focused primarily on the partner project run by plant breeder Chris Deren in the University of Florida Everglades Research and Education Center (see for example, Bangkok Post, 11 Dec 2003; Nation 6 Nov 2001). The programme uses two methods including induced mutations of Jasmine rices using gamma ray irradiation, and using conventional breeding methods, cross-breeding Jasmine rice varieties to improve the varieties to US conditions.

Regarding the conventional method, Deren has been cross-breeding Khao Dawk Mali with Jasmine 85. Scientists selected Jasmine 85 as IR841, from the 841st IRRI cross, made in 1966 by Dr. Ben Jackson, Rockefeller Foundation rice breeder and IRRI liaison in Thailand from 1966 to 1983. Prior to this, the rice strain was sourced from provincial Thailand.¹¹³ Organic Jasmine 85 sells well as a “niche rice” to upscale U.S. customers who want new, healthy products--but not to the larger ethnic Asian market (Nation 6 Nov. 2001). Thus the Stepwise Programme uses two varieties that originated in Thailand and have since been modified to suit US conditions. Thai NGOs and the press have argued that improvement of these varieties by Thai farmers, and the generosity of the Thai people to have allowed such germplasm exchange in the past have been taken advantage of. Arguably, these breeders can reduce the need for the US to import Jasmine rice products from Thailand, and also compete with Thai Jasmine rice in international markets. When the germplasm was transferred, it has been argued that the Thai researchers didn't perceive that it would be used to compete against the exports of Thai farmers (Suntorn, Meeting Comments, 2005).

One main concern is that Thai farmers in the arid *Thung Kula Ronghai* plateau in the Northeast (Issan Region) have through generations of conventional breeding and selection improved the quality of jasmine rice. Today many communities and consumers are attracted by its especially soft texture and unique aroma. The *Nation* newspaper reports that these Issan farmers had never thought of seeking exclusive rights to the fruit of their labour. They freely shared seeds with other farmers. To them, and indeed many other Asian farmers, rice and other food crops are the “common heritage of mankind” (The Nation, 6 Nov. 2001).

The feelings of many Thai farmers are also summarised by Mr Ubon Yuwaa, a Jasmine rice farmer from the Issan region and well-known activist and commentator on farmer's rights:

Khao Dok Mali 85 or 105 would not have existed had our ancestors not developed and nurtured it through decades of conventional breeding. Jasmine rice belongs to our ancestors, not

¹¹³ It is likely that this strain of rice was collected in 1950, by Mr Sunthorn Srihaneon, an agricultural official in Chachoengsao province. The collection of various rice strains was part of a project operated with an American geneticist, Dr Henry H. Love, acting as consultant. The qualities of the rice were investigated and then later submitted to IRRI (Witun and Buntoon, 2005).

scientists. How dare [scientists] claim ownership of it by simply changing a few characteristics? (The Nation, 6 Nov. 2001).

With ownership complaints there are also likely moral, cultural or religious concerns as mentioned in the previous section. Inducing mutation through gamma-ray bombardment could be interpreted by many people as accelerating evolution, and would arguably be at odds with popular Theravada Buddhist teachings and “Thai values” of nature (Yenchai, 1989; Wilaiwan, 1989; and Saneh, Interview 2005 respectively). In public polls about allowing genetically modified field trials in Thailand, those polled have repeatedly rejected the trials on cultural and environmental grounds (BioThai Website, 2005).

This case of perceived biopiracy therefore relates to the tangible property rights of the genetic materials, to competitiveness concerns associated with the changing institutional status of germplasm in IARCs, and also with cultural concerns. But these have been argued alongside the potential for intangible (intellectual) property rights, namely a US patent on the rice.

Deren’s rice is very similar to a variety of Thai jasmine rice called Khao Pathum Thani 1. If Deren were to patent the varieties that he bred or mutated, it has been claimed that there could be consequences for Thai exports. Thai academic, Jakkrit Kuanpoth, notes that if there are doubts about the similarity of the two varieties, Thai exporters will have to provide scientific evidence that the rice they sell in the US is a different variety from Deren’s. According to him, they would have to prove that they did not violate Deren’s exclusive rights over his new variety. The testing could take a long time, could cost Thai exporters, and sacks of Thai jasmine rice could sit idle at US ports for considerable amounts of time (The Nation, 6 Nov. 2001). Notably I am using a lot of hedging in portraying the patent concerns – the weakness of these claims is that they have been about *potential* patenting.

On the 6 of November 2001, IRRI issued a press statement in response to concerns in the Thai press. IRRI admitted that in 1995, they shared a sample of Khao Dawk Mali 105 with Dr. Neil Rutger at the USDA’s Dale Bumpers Rice Research Center, however no MTA was signed because at that stage they weren’t required by IRRI. Both scientists have since publicly agreed to

accept all the terms and conditions in the current IRRI MTA and have issued signed letters saying so (IRRI, 2001, Acc 1/7/2005).

Dr Padolina of IRRI has noted that “It should be clearly understood by all concerned that it would be very difficult for Dr. Deren to patent any results of his research concerning jasmine rice, and he has publicly stated he would not seek any patents. It is also important to note that American rice breeders have been trying for years to improve the quality of their rice to match Thailand’s but have been unable to do so” (IRRI, 2001, Acc 1/7/2005). Thai farmers are now more concerned about the ownership of tangible propagating materials in the US, rather than intellectual property ownership. Thus, the direct conflicts involved in this case have faded somewhat, but the free trade agreement talks with the US have given rise to further activist and academic reflections on these Jasmine rice controversies, in order to ensure that further incidents do not arise.

This Jasmine rice case is clearly multidimensional. Tangible property of the germplasm, competitiveness of exports, and cultural aspects are the main concerns which have been conveyed, as well as the *potential* for patents – a prospect which seems unlikely in hindsight. Again, it is debateable whether or not the case deserves the label “biopiracy” which it attracted in the heat of the debate, and to which it is still referred by NGOs academics and even government officials. It does raise questions about the scope of a biopiracy definition along with a raft of other questions.

6.4 Marine Fungi: the Biotec – University of Portsmouth Case

A collection of more than 200 strains of marine fungi were originally collected by researchers from mangrove and coastal areas in Southern Thailand in 1997-1998. In interviews, mixed responses were received about whether the strains were known to have uses by locals at these sites; however it seems these were just samples collected from driftwood with no traditional applications. These were initially taken to the National Centre for Genetic Engineering and Biotechnology (Biotec), in Bangkok. Biotec did not have adequate storage facilities for the

strains. The marine fungi specimens were then posted to the UK by a Portsmouth University professor – Gareth Jones – as part of a collaborative research project.

In 1998 the Thai government asked for the specimens back, citing a “gentleman's agreement” that they would be turned over when requested. Portsmouth University staff then proceeded to give conflicting answers to that request for several months (Buntoon, Interview, 2005).

Thai officials and academics began to fear that the country could lose the right to develop and benefit from the fungi strains if external pharmaceutical firms discovered and patented any drug potential in them (Kuanpoth, cited by the Bangkok Post, 1998). Kuanpoth also explained that Thai scientists would lose their right to develop the same fungi strains even if they could still be found in the country. These concerns are based upon a chronology of confusing replies received by Portsmouth University as described below:

- In January 1998, Dr Richard Greenwood, head of the university's School of Biological Sciences, said he would “endeavour to repatriate the Thai isolates” and asked Thailand to contribute to the cost of dispatching the cultures.
- In February, he wrote back saying that he would not take any action which might have a “financial or legal repercussion.” Greenwood also indicated in an electronic mail message to Biotec in February the university was willing to return the fungi specimens, but would ask Biotec to shoulder technical and shipping expenses. Weeks later, he said a number of strains collected from Thailand had already been sold to commercial companies.
- Another letter from the university's business development director, dated Aug 10, implied the institution would not return the specimens because the fungi strains had been collected by its own staff and therefore, legal title to the collection resided with the university.
- On another occasion, Biotec officials were told that the university could not return the strains because they belong to a company which sponsored the fungi strains collection and research in 1997.
- Yet in August of that year, a Portsmouth University spokesman was quoted in “The Independent” newspaper as saying the strains “are being looked after properly and have not been sold to science.”

- And on August 27, Biotec received a reply from John Craven, university vice chancellor, saying that his institution had no use or interest in the cultures and would have them returned as soon as possible. (Bangkok Post, 1998)

This is a case where the transfer of genetic materials has had unclear tangible property rights allocated. Biotec staff had been cited as indicating that the bizarre correspondence between Biotec and the University raised a “strong suspicion” that Portsmouth had sold some of the strains to industry (Bangkok Post, 27 Aug 1998). Thus consequential research and commercialisation of products based on the material could have had further implications and ambiguities over intellectual property ownership.

Based on anonymous interviews with members of industry (2005-2006), it has been suggested that the activities of Gareth Jones were highly suspicious. Gareth was reportedly “retired” from the University of Portsmouth in 1996-1997, in which he moved his activities to Hong Kong and then on to Biotec in 1998. During this period, Professor Jones reputedly had close working associations with a company called Cyanamid (which has since changed its name). There is a strong possibility that he sold the strains to this company for screening to determine the potential pharmaceutical value of the strains. During Biotec’s investigation into the strains they actually hired Gareth Jones, not realising that he was the potential culprit of the fungi misappropriations, but rather they had thought that the University had sold the strains to industry.

Eventually some of the fungi were returned to Thailand on a date later in 1998 (some had died through improper storage) shortly after this chain of events (Dhillion and La-aw, 2001; Tannit, Interview, 2005). But notably, officials who were interviewed within the Biotec department knew few of the specifics of the case, noting that NGOs and the National Human Rights Commission had been more concerned about it (Tannit, Interview, 2005). Yet anonymous sources suggest that Biotec officials have adopted a non-confrontation stance and are merely attempting to “save face” since hiring Gareth Jones, who still works at Biotec, rather than questioning him about the issue. Due to the sensitive questions raised by my interviews at Biotec, I was no longer able to contact their staff following this investigation.

What has concerned Thai researchers and officials is the possibility that samples of the cultures were sold to other researchers without their consent and cannot now be tracked down. There have been numerous speculations about transfer of some of the cultures to foreign companies, subsequent research and associated patents (Jaroen Compeerapap, Buntoon Srethasirote; Interview. 23 Feb. 2006). However, all of these remain speculations, and industry sources suggest that the strains only have academic and intrinsic value. With the eventual return of the strains, this case has been largely forgotten. However, it again highlights the problematic nature of ownership (both tangible and intangible) over bio-resources which are easily transferable and in the past may have been shared or exchanged without the same controversy. It also demonstrates the potential for a situation to be complicated by personal politics, deception, and cultural responses (i.e. saving face, rather than confrontation).

6.5 Thai and US Patents on Kwao Krua (*Pueraria Mifca*)

Considerable confusion has also surrounded a number of attempts to patent compositions containing *kwao krua* (*Pueraria mirifica*). The herb *kwao krua* has been known for its cosmetic and revitalising qualities for more than 100 years by Thai healers, communities and households. In more recent years, scientists have identified that the effects are related to the presence of phyto-oestrogens, or plant-produced female hormones. Scientific claims have since been made that the extracts may enlarge and firm breasts and assist with male sexual performance and erection, similar to the Pfizer trademarked drug Viagra.

In 1998 a number of patents were filed on inventions based upon the extracts of Kwao krua. The first patent granted was Thai patent application no. 8912 named "Medicinal herbal Composition from *Kwao krua*" and listed as the invention of Mrs Mantana Uawitaya, a Thai National. After the patent was granted, Matana Panich Chiang Mai Co. Ltd, the filing company, put up advertisements and notices from a local law firm in local newspapers informing the public and other producers that the company now has exclusive rights to the (conditional) production of *kwao krua* and was determined to enforce them (Lerson, 1999). Under the Patent Act of Thailand this Patent was approved in May 1999, being considered to be based on a *chemical derivative* of

a plant product as part of a composition, and thus avoiding the scope of the patent exclusion on plant and plant extracts under Section 9(1). The scope of application of this exclusion is controversial in Thailand and has also met with concerns in CBD fora, with some parties indicating the need for broader coverage of patent exclusions to “derivatives” of biological materials.

Considerable public outcry was made over the claims by other local competing pharmaceutical and cosmetic companies that they would be heavily restricted in their use of products containing Kwao krua extracts. The Thai Drug Act B.E. 2510 has required traditional medicine manufacturers to register their formulas, and current data shows that there are more than 35 companies producing more than 50 formulas containing *kwao krua*. There are therefore concerns that patents on *kwao krua* extracts may inhibit the use of others to continue their original business practices (Pennapa. *et al.*, 2001).

Thai scriptures collected since 1931 by Luang Anusarn-Sunthorn provide evidence of the prior art of *kwao krua* in considerable detail. Clearly documented, the knowledge of *kwao krua*, is distinctly Thai traditional medicinal knowledge (national public domain knowledge with a considerable history), but it is also traditional folk medicinal knowledge (the herb is prevalent in the Issan region and is often used by communities there). It appears that in the examination process the Department of Intellectual Property (DIP) did not know about the documents establishing prior art, that would make the claimed invention fail a non-obviousness test. Officials at DIP appear now to be waiting for someone to bring the case to the Intellectual Property and International Trade Court (Lerson, 1999; Suradet, Interview. 2006). So far no-one has challenged the patent and it is likely that the situation has been resolved between competitors informally. Similarly, the advertised inflation of the patent scope was criticised in the press. One likely outcome is that the claims of the lawyers have been ignored by other companies given the ensuing press (Suradet, Interview. 2006).

Lerson (1999) has suggested that preventative measures for such instances could include further training for patent examiners, access to traditional medical formulations in databases or textbooks, and social responsibility by private lawyers and IP counsellors such that they do not

seek to inflate or obscure the scope of patents in the public's mind. Requiring disclosure of the source of origin of the materials and knowledge used in the invention process could have potentially facilitated the patent examiners rejection of the patent on grounds of prior art. If the inventor had attempted to conceal the source of origin however, the patent examiner still would not have known. This indicates the importance of searchable databases or consultation with external expertise, as well as possible penalties for failure to disclose the origin of materials and associated knowledge used in an invention.

A number of subsequent Thai patents and US patents have also emerged since. Dr Wichai Cherdshewasart of Chulalongkorn University in Bangkok is the claimed inventor of three different inventions under patent examination in DIP Thailand relating to Kwao kua. These apply to Thai patent numbers 046779, 048605, and 052443, of which the latter has been the source of considerable controversy. According to the head of the Patent Division of the Department of Intellectual Property, the approval of these patents has been challenged, having spent 2-3 years in the Intellectual Property and Trade Court, and then 3-4 years in the Supreme Court (Suradet, Interview. 21/02/06). Each of the patents refers to extracts of one or more of *Pueraria mirifica* (white *kwao kua*), *Butea superba* (red *kwao kua*) and/or *Mucuna collettii* (black *kwao kua*).

As private IP attorney and academic, Dr Jade Donavanik describes in Box 2, Thai Patent number 052443 appears to be the direct foundation of USPTO patent number 6,673,377 (IPC, Acc Feb. 2006; USPTO, Acc Feb. 2006). The claims, in both the Thai and US patent applications include an extract of *kwao kua*, a method for extraction, and a method for manufacture. While the patents on processes and methods seem valid, the primary concern here is that the extract is not new, novel, or non-obvious.

Box 2: US Patent on Kwao Krua by a Japanese Company

A very recent case of bio-piracy involves Kwao krua, specifically white Kwao krua, a plant about which little was widely known until three or four years ago but is now recognised for its ability to firm or enlarge breasts and revitalise sexuality. Interest groups and NGOs identified that white Kwao krua has become an essential subject matter in US Patent No 6,352,685, owned by Kose Corporation of Tokyo and Shiratori Pharmaceutical Co Ltd of China. There is strong evidence that at least one of the four inventors of the product patented has worked extensively with local scientists in Thailand.

The patent's foremost claim, couched in the sophisticated language of patent professionals, is "an external composition for skin comprising, as an essential ingredient, a liquid extract of a dried root lump of *Pueraria mirifica*; wherein said liquid extract comprises an extraction solvent which is at least one selected from the group consisting of water, lower alcohol, liquid polyhydric alcohol; and wherein said external composition for skin contains 0.00001 to 5 wt % of said liquid extract of said dried root lump of *Pueraria mirifica* as dried solid in the composition."

What this means in everyday language is that the product is nothing more than an extract of white Kwao krua using water; a lower alcohol such as methyl alcohol or ethyl alcohol, and a liquid polyhydric alcohol such as glycerol as extraction solvents, resulting in a dried solid active constituent of white Kwao krua which is combined with other ingredients in a quantity 0.00001 to 5% by weight to form a liquid composition that could be a cream, gel or the like for use on the skin.

A similar, simpler claim already exists in traditional Thai medical scriptures on the use of white Kwao krua as a cosmetic. Hence, the claimed invention under US Patent No 6,352,685 is nothing novel, or should fail a non-obviousness test, which presents a statutory argument for revoking the patent under the US Patent Act.

But the Japan-owned patent is not the only one with the US Patent and Trademark Office. Cheil Jedang Corporation, a company based in Seoul, holds US Patent No 6,673,377 for a product which also uses white Kwao krua as its main ingredient. This might be a copy of the Japanese patent were not the inventor of the patented Korean product a Thai scientist (Dr Wichai Cherdshewasart of Chulalongkorn University).

The principal claim of the Korean patent is that it is "an extract derived from *Pueraria mirifica* having an effect on improving breast firmness, breast enlargement and wrinkle removal from the breast, wherein said extract is prepared by the steps of: drying tubers, roots, stems, leaves and/or tissue-cultured calluses of *Pueraria mirifica*, optionally by spray-drying, freeze-drying and/or vacuum-drying; pulverising the dried tubers, roots, stems, leaves, and/or tissue cultured calluses into pieces or powders and then immersing the plant pieces or powders in a mixture of methanol and water; extracting the mixture; and filtering the resulting extract and then concentrating it in a vacuum to remove the solvent."

Again the description uses technical language that would obscure the origins of the product. There are however a number of patents already listed in the Thai language at the Department of Intellectual Property, as Thai patent application numbers 046779, 048605, and 052443, specifically the latter since it appears to be the direct foundation of US Patent No 6,673,377. The detail in the three Thai patent applications and the abovementioned US patent bear striking similarities to entries in Thai scriptures collected since 1931 by Luang Anusarn-Sunthorn.

The only real difference is that the products covered by the four patent applications employ more advanced extraction methods and sound more scientific than what Luang Anusarn-Sunthorn recommends. But on the whole, these patents have little or no novelty or inventiveness. They merely re-invent the wheel.

Source: Abridged from Donavanic, J., Bangkok Post, 22nd Nov, 2004.

Dr Jade and others (see Pennapa, et al, 2005) have made a persuasive argument, that these claimed inventions under patent, have little innovative merit. Of the biopiracy cases discussed here, this *kwao krua* case presents possibly the strongest argument for a disclosure of source or origin patent requirement, as has been pursued by a range of concerned parties in Thailand. Hypothetically, had there been a “disclosure requirement” under US patent law, then the proponent would have likely had the patent refused based on prior art and lack of novelty. If it was found to be novel and was not refused, then a disclosure requirement would stipulate that the origin of the material was Thailand and that benefit sharing should flow back to providers (in this case, probably the Thai government). Nevertheless, the documented public domain traditional knowledge should have been detected based on standard patent criteria. This is something that DIP have expressed concerns about, and the case has been one of the main bases for attempting to establish traditional knowledge databases or registers for utilisation by patent examiners (Jade, Interview. 2006; Suradej, Interview. 2006).

It should be noted that the plant is endemic to the region, not just Thailand. The plant exists in Burma and Laos (and possibly also Cambodia) (Nation, 2 March 2005, Acc 9/2/2006).¹¹⁴ Knowledge of the traditional uses of the plant, through documentation and public use, has entered the public domain. Yet it has been claimed by some healers, that the knowledge has origins in the Issan region where the plant is a most prevalent (Patthi Dang and Patthi Ta Yae, 2006). This poses important questions about who consent should be sought from and how fair and equitable benefits could be provided to custodians of the plant and associated traditional knowledge. One possible solution could be to provide benefits to traditional healers’ networks which conserve the herb, if profits were created from the commercialisation of patented *kwao krua* derivatives.

In response to the increasing value of *Kwao krua* based on these patents and therapeutic claims, it is pertinent to note that over-cultivation is emerging as a problem. The cultivation of the herb is already limited in National Parks and restricted areas by the laws governing them. However, in other areas the quantity allowed for cultivation has been less clear. The Thai Traditional and Alternative Medicines Institute of the Department of Public Health has since enacted a regulation under the Act on the Protection and promotion of Thai Traditional Medicinal Intelligence (TTMI

¹¹⁴ This highlights the potential importance of the Draft ASEAN Agreement on ABS.

Act). This regulation seeks to enforce the protection of the plant from excessive cultivation (Nation, 18 May 2005, Acc 9/2/2006). This does not yet exclude cultivation by traditional medicinal practitioners, but limits commercial quantities from being poached or harvested due to the increasing rarity of the herbs. In one village, an elder expressed concern that they might be restricted from use of the plant (Patthi Ta-Yae, Interview, 2006), but this seems unlikely and the head of the Thai Traditional and Alternative Medicines Institute has stated that they will not restrict this kind of limited local use (Vichai, Interview, 2005).

In summary, the *kwao krua* patents cited by Dr Jade appear to fit within the most typical definitions of biopiracy. There is a strong case to suggest that the patents should not have been granted in the first place, because they are not sufficiently novel. This highlights problems with the patent examination process. The case also raises questions about whether phyto-chemical derivatives should be allowed considering Thailand's rules on the non-patentability of plants. There are also questions regarding the potential scope for extension of benefit-sharing to derivative-based inventions sourced from traditional knowledge. It raises the concern that the researcher in question, Dr Wichai Cherdshewasart, has sold-off Thailand's biological resources (and distinctly Thai traditional knowledge) for personal gains (Buntoon, Interview, 2006). It is probable that this thesis cannot answer all of these questions, however suggestions are made for the protection of traditional knowledge and biodiversity in the coming Chapters.

6.6 Japanese Patents on Plao Noi (*Croton sublyratus*)

Plao noi is a local herb whose medicinal properties were recorded centuries ago on palm-leaf books (*samutkhoy*). In a series of related patents issued to the Japanese Sankyo Company Ltd. protection has been sought over the process and derivative extracts of the *plao noi* (or *plau noi*) plant (scientific names of the species and sub-species include *Croton sublyratus*, and *Croton columnaris airy shans*). Related plants used in the extract of derivatives include: *plau-luat* (*Croton hutchinsonlanus hosseus*) and *plau-yai* (*Croton oblongifolius Roxb.*). The patents were assigned under USPTO number 4260551 (filed in 1979 and approved in 1981) and also number 4,192,953 (filed in 1979 and approved in 1980) which is based on earlier claim 4059641 (filed in

1975 and approved 1977), and a continuation of the abandoned patent with Serial Number 807,913, filed June 20, 1977 (USPTO, Acc 24/02/2006). Notably the patents occurred a significant period before the CBD came into force.

The patents are on “Polyprenyl derivatives... useful as medicines for treating peptic ulcer.” The claim covers a series of esters and their chemical derivatives, which when combined have been called “Plaunotol” (USPTO, Acc 24/02/2006). This has since become the active ingredient in a commercial drug called KELNAC-Plaunotol (which is also a registered trademark).

In the description, the inventors indicate that:

We have for many years been engaged in studies for finding out novel pharmaceuticals by way of isolating a physiologically active ingredient from plants. As a result of our studies, we have isolated a diterpenediol compound, (E, Z, E)-7-hydroxymethyl-3,11,15-trimethyl-2,6,10,14-hexadecatetraen-1-ol, from plants belonging to the genus *Croton*, particularly *Plau-noi* (*Croton columnaris airy shans*), *Plau-luat* (*Croton hutchinsonlanus hosseus*) and *Plau-yai* (*Croton oblongifolius Roxb.*) growing in Thailand and also succeeded in chemical synthesis of this diterpenediol compound as well as its homologs and derivatives (USPTO, Acc 24/02/2006, emphasis added).

How exactly the Japanese researchers obtained knowledge of the qualities of the plant, and the biological materials is unclear and during this research interviewees gave various responses. Some have speculated that during the Japanese occupation of Thailand in World War II, Japanese scientists working with local scientists and traditional healers obtained the materials and the local understandings of its use for the treatment of various ailments including peptic ulcers (Wisut, Interview, 2005). Dhillion and La-aw (2001) indicate that researchers found out about the qualities from antique recorded medical texts on palm-leaf parchment called *Samutkhoy*. Sinha (1996:159) suggests that *plao noi* was “long used by the Thai tribals for stomach ache.” It is most likely that a combination of these sources and knowledge domains were utilised for the identification of the drug.

Rachan Pooma, an official from the Royal Forests Department (Pers. Comm. 29 August, 2005), indicates that *plao-noi* was first actually collected for analysis from Prachin Buri, in open disturbed areas, not in protected or forest areas. Mr. Chana Phromdej, a botanist of the Forest Herbarium, National Park Wildlife and Plant Conservation Department apparently led the Japanese team to explore *plao-noi* following the information from specimens recorded in the herbarium. After several trips were made, materials from Prachuap Khiri Khan had the best quality extracts. Apparently no benefits were shared with the Thai authorities, local traditional knowledge holders or possible individuals conserving the plant, with the exception that Mr Chana Phromdej has been offered to be a company consultant to the Japanese researchers (Rachan Pooma. Pers. Comm. 29 August, 2005). But it seems that although there are groups which knew about the qualities of *plao noi*, it was not taken from them, and may have been fairly readily available in the public domain. The suggestion that the plant was found in “open, disturbed areas” raises the question of how it came to be known about and whether that area was chosen to avoid the ire of those who use or conserve the plant (as Hayden has noted elsewhere: 2003a; 2003b). Although Dhillion and La-aw (2001) suggest that the plant only has limited distribution in southern Central Thailand, there is evidence today that the plant is conserved by local groups and healers (both Thai and groups such as the Hmong and Karen) in the north of Thailand (See Chapter Nine).¹¹⁵ However this is not always the case throughout Thailand, and over time the perceived conservation value of the herb may have since been inflated by the research and patents.

Dr Chaweewan Hutacharern (Interview, 18 August 2005) indicated that as a consequence of the research she thought that a *process* patent was made on the isolation and purification of the medicinal properties of the herb. If this were the case then this would not restrict people from use of the product, but clearly the text of the Sankyo Company Ltd. patent indicates that it is the extracts and derivatives of the plant. This may be exclusive in terms of the commercial use of such extracts, at least in the jurisdiction of the patent. This could potentially affect the export of Thai medicinal products based on the plant; however this does not appear to have occurred in practice.

¹¹⁵ Dhillion and La-aw also note inconsistencies in reported distribution of the plant in their article.

But in terms of justice and compensation, the Japanese researchers and the company holding the patent have extracted and monopolised something that was not originally theirs, something that was located and known about by various groups (or even publicly) in Thailand. This provides some basis for argument that there should be some kind of benefit sharing, at least back to Thai authorities, or to custodian groups. Dhillion and La-aw (2001) indicate that the Japanese company still actually gets locals to harvest the plants in areas where it apparently thrives, in Southern Thailand, but does almost all the processing and technical procedures in Japan. Thus local technology transfer is still yet to occur, although it was originally promised (also indicated by Witun, Interview, 2005; and Buntoon, Interview, 2005). Reasonable levels of benefit-sharing appear to have failed in this case.

Plau-noi is now a well known herb in Thailand and, as noted has an unclear distribution. It is therefore possible that it also occurs in neighbouring countries such as Malaysia, Burma, Laos or Cambodia. But if the plant is only really conserved and used by certain groups, then how could benefits have been shared fairly? This case draws similar parallels to the blight resistant rice *Oryza longistaminata* case that was investigated by WIPO and UNEP, where the people who conserved the valuable rice strain (a displaced immigrant group called the Bela people) were not clearly understood as the rightful “owners,” however the rice was considered a weed by many local Malian farmers (Gupta, c2004). In the *plao noi* case it is just as unclear how benefits could be appropriately shared back.

There are further patents relating to *plao noi* listed in the USPTO. The case which Dr Hutacharn was probably referring to is the USPTO patent 5879916 which is assigned to the Thailand Research Fund, a government research body. This patent is on a process for the extraction of a phyto-chemical “geranylgeraniol-18-hydroxylase” from *Croton sublyratus* (a *plao noi* variety) to form plaunotol, the anti-ulcer medication patented under the Sankyo Company Ltd. Patent. As this is a process patent, it does not restrict the use of *plao noi* in any way, but as described in the patent documentation, this patent provides a “less cumbersome and more effective process for the production of plaunotol” (USPTO, Acc 21/02/2006). Similarly, USPTO Patent number 5,264,638, an older patent approved in 1993 (assigned to Chulalongkorn University, Bangkok), also covers a “process for extraction and purification of plaunotol.” Again

the patent claims only refer to processes for extraction and purification, with no claims over chemical extracts.

If a process patent does not restrict the use of a plant, but aids in the extraction, then should benefits be required to flow back to authorities or traditional knowledge holders? It would be fairly problematic to expect this. Although the patent references indicate the use of *plao noi* as a medicinal plant with traditional uses, a patent on the process of extraction arguably does not interfere with the use of the plant – but it may facilitate its broader use commercially. Does this affect the conservation of the plant? It is possible, but the relationship between the conservation, sustainable use, and application of traditional knowledge through to commercialisation is less clear than in other cases because the patent is *not* on the use of the material itself. If these organisations wanted to apply socially responsible practices to clear any uncertainty in the public's mind, they could make some form of compensation available, potentially to traditional healer's networks who are actively involved in the use and conservation of the plant.

In summary, the patent on extracts of the *plao noi* plant may be valid according to patent law, because the researchers have isolated and extracted the active derivative compounds. However it could be argued, like in the *kwao krua* case, that there is insufficient novelty for the grant of a patent because it merely provides a more scientific way of extracting and providing a medicine that was already available from traditional healers. It seems likely that they obtained prior knowledge of the therapeutic effects of the plant from Thai authorities, antique documents, and/or local sources. Therefore they arguably have an obligation to provide some return benefits to Thai stakeholders. This argument is based on moral grounds rather than legal, because the CBD was not in force at the time of the extractions and patents.

In terms of benefit sharing, in this case, it seems difficult to identify who the real local stakeholders are (if any besides the Thai government can be clearly identified), and therefore the issue has remained polemical to this day. In the cases of the process patents, they appear to be valid as well, but there are also concerns (as in the *Kwao krua* case) about the potential for accelerated use and exploitation that a published patent may have on plant conservation – this is something that is unclear, and the distribution of *plao noi* seems to be only vaguely known

(Saralamp, *et al.* 1996). Importantly, this case demonstrates an incident where the proposed virtues of the intellectual property system, in terms of providing benefits and technology transfer, were an utter failure. The system allowed the expropriation and monopolisation of a resource, without the original owners and knowledge-holders receiving anything in return. Since this time the CBD has been trying to rectify circumstances such as these. However, the seeds of distrust have already been sown, and many Thai people are still sceptical about how new regulatory concepts (like benefit sharing, access regimes, prior informed consent, and intellectual property protections) will benefit them.

6.7 Other Cases

Pennapa *et al.*, (2001) also note that Thai patent number 008863 refers to a pharmaceutical composition for HIV/AIDS and includes a Thai medicinal plant in the scope of the patent.¹¹⁶ A similar US patent has apparently also been made by Japanese researchers referring to a “combination of medicinal plants used to treat the AIDS virus” for which Thai medicinal plants are suspected to be included. A number of the medicinal plants were mixed and dried using modern technology and the source of traditional knowledge was only very broadly specified (Pennapa. *et al.*, 2001). The only inventive steps reputedly relate to the drying process and to the use of the medicinal plants to treat AIDS, where it had not formerly been used as a treatment for this virus.

It is likely that these claims relate to a variety of Thai bitter wax gourd called *mara* (*Momordica charantia*, also noted by Kerr and Yampoin, 2000) which is sometimes alluded to as a biopiracy case, but was not well known by the individuals interviewed and the groups visited. Salguero (2003:83-84) notes the use of *mara* as a powerful detoxicant for the blood and colon. He notes that “the fruit is commonly used in rural Thailand to fight HIV-AIDS, hepatitis and cancer, as well as other systemic diseases.”

¹¹⁶ The Industrial Property Information Centre of Thailand however has no data available for a Thai Patent record no. 008863 and therefore these claims could not be investigated further. The patent may have been withdrawn, challenged and repealed or otherwise.

It is likely that Pennapa is referring to US Patent Number 5,929,047, which refers to an “Anti-viral agent prepared by basic and acidic extraction of mangroves.” The description indicates that the invention covers an alkali extract of *Momordica charantia* and that the agent is agent is “effective against retroviruses such as the human immunodeficiency virus (HIV).” The patent does not note the source of origin of the plant or their knowledge of its effects. This could well be a legitimate biopiracy claim relating to traditional knowledge, although it would be quite hard to prove.

Another patent with number 5,484,889 makes similar claims, but indicates that the source of the plant, at least in terms of varieties that are eaten, is Eastern and Southern China. The owners of this patent note that there are many varieties of *Momordica charantia*, including medicinal varieties. They also note that it “has not been naturally available in the United States” but that “in order to provide a constant and sufficient supply of the source material for the inventors’ experiments, they began planting and cultivating the medicinal variety from selected seeds.” It is unclear from this description if this is a unique variety that they have used (or indeed if it came from China, or Thailand, or elsewhere). The lack of clarity in this patent document suggests the need for a disclosure of origin requirement and better international biodiversity transfer mechanisms (like material transfer agreements and certificates of origin) to allow tracing of unique varieties.

Depending upon the search of the USPTO database conducted, it is possible to identify several patents related to the medicinal qualities of this plant, and literally hundreds that mention the plant somewhere in the patent document. A number of the documents note that the plant is a popular fruit with a wide distribution throughout Asia (also noted by Salguero, 2003). Therefore it is difficult to identify specific origins of the plants being used, without even considering the potential knowledge associated with the plant.

Another recent concern has been raised about the use of the mangosteen (*Garcinia mangostana* or *mangkhut*) fruit in a number of inventions. In 2004 US patent number 6,730,333 was lodged, covering a “nutraceutical mangosteen composition.” This has been described by some Thai NGOs as a “bad patent” that cites a number of Thai and Indian medicinal texts in the patent

document. This is a very generic patent for a beverage juice based on numerous fruits that does not look particularly novel. Given the relatively broad distribution of mangosteen, this case does seem to represent a “bad patent” rather than something more malicious or negligent. Notably, some Thai inventors have patented an antiseptic gel in the US based on an extract from the mangosteen fruits’ skin (patent number 7,135,164). It is unclear in this case if this is based on Thai traditional medicinal knowledge.

Notably, in cases such as these where the plant has a broad distribution, it may be difficult to prove that a case is “biopiracy” even where more specific national or localised traditional knowledge has been used.

6.8 Summary

This chapter’s analysis of biopiracy cases in Thailand raises many questions. Thai bioprospecting, biopiracy and misappropriations seem to represent an overlapping range of issues. The cases are punctuated by problems related to patent quality and scope, tangible biological research ownership and control, competitiveness (and protectionist) concerns, political representation, personal politics and deception or strategic vagueness, knowledge and bio-resource origin, compensation and consent, in which each case has considerably variable circumstances. Therefore, biopiracy concerns in fact need to be regarded as a diverse but often delimit-able or partial range of political issues, rather than a narrow breach of national or international law (as implied by Oxley, 2005; 2006) or through some of the vague sentiments expressed by NGOs such as RAFI.

Some of the main outcomes of this analysis include evidence of the need for better patent examination techniques, better transfer mechanisms for biological resources (such as certificates of origin and material transfer agreements), and for some form of disclosure of source or origin requirement (or more practically, a “legal acquisition” requirement – see Dutfield, 2005a). There also needs to be better consideration of cultural concerns, both broad (as in the Jasmine cases) and narrow (in cases such as the Samoeng bioprospecting incident), in biological resource

transactions. In doing so, it is important to also consider the relationship of the resource being extracted to the knowledge surrounding its use. I return to this at length in Chapter Eight and Nine.

In Castree's (2003) critique of the polarisation of the bioprospecting debate, he attempts the difficult task of exploring the specifics of the Costa Rica INBio case, whilst also critiquing the situatedness of those analyses on either side of the debate. It is hoped that the analysis in this chapter also provides insight into the actualities of the cases in Thailand, whilst recognising the situation of those generating conflicting arguments. In his conclusions, Castree raises an important question: "*what kind of bioprospecting for what kind of benefits in which contexts?*"¹¹⁷ Indeed this section has highlighted that there are different kinds of bioprospecting: international transactions from research institutes or affiliated organisations; or local researchers seeking to expand university herbariums. There are also different kinds of *actual* and *potential* benefits. In the cases in Thailand the benefits have been extremely limited. But there could have been various kinds of potential benefits had trustworthy relationships been established, with the media and NGOs onside, and had institutional circumstances been better (and they seem to be gradually improving – see Chapters Seven and Eight). This echoes other situations examined by authors in other countries and contexts where benefits have generally been limited (discussed in the introduction to this section, and in Chapter Two), particularly where retrospective compensation is attempted as an afterthought to resource extraction.¹¹⁸ There are, however, various potentials for benefits to national economies (training, technology transfer, trade) and for local communities (recognition of their contribution, secured rights, local trade), and these are evident in these Thai case studies. Perhaps it is more useful for stakeholders to recognise that bio-resource transactions, while they clearly should not be conveyed as a guarantee of prosperity, may have more nuanced benefits than previously recognised.

These cases highlight the recent tendency to avoid bioprospecting transactions from indigenous or local populations, but rather to source crops or medicines from various research repositories, or even to regenerate old drugs (see Kuanpoth, 2006). Despite this it appears that Thai

¹¹⁷ Note: emphasis added.

¹¹⁸ See also Hirsch (1996) on the failure of compensation relating to dams and resource tenure in Indo-China.

researchers still regularly make extractions for analysis and storage in herbariums. In cases such as these, the importance of a prior informed consent mechanism cannot be understated. However, my research experience and work in Thailand on a model prior informed consent mechanism, have also proven the potential for incompatibilities of PIC with customary informalism, as well as difficulties associated with formal implementation of PIC (see Chapter Ten, and Appendix 3 respectively).

The extraction of plants by researchers even within Thailand has implications for disembodiment of certain plants into the public domain from previously collective, sacred or secret sources, and which may end up like *plao noi* as a widely known herb, or *Momordica charantia* (*mara*) which has a number (possibly hundreds) of patents related to it. Sequential transactions could potentially see these commercialised without the knowledge of the original holders. As a representative of the Indigenous Saami Council has indicated:

Indigenous peoples have rarely placed anything in the so called "public domain," a term without meaning to us... the public domain is a construct of the IP system and does not take into account domains established by customary indigenous laws. (WIPO Intergovernmental Committee, 7 July 2003; cited by Taubman 2005:p544).

So the customary structures of local knowledge domains still exist, although their number is probably dwindling (see Chapter Nine), and could be continually eroded by this process. But then on the other hand, the increasing value (rhetorical or actual) placed in these resources could see indirect benefits in terms of the recognition of the knowledge and rights for these groups. It is evident that while NGO claims often sensationalise biopiracy claims, and may sometimes give depictions of indigenous or local groups as "ecologically noble savages/locals" (Orlove and Brush, 1996:334; Yos, 2004), their actions are also embroiled in the complex politics of empowerment for indigenous, tribal, peasant or farmers groups (see Missingham, 2001 on the Assembly of the Poor in Thailand for example).

As both Strathern (2004) and Greene (2004) note from their case studies, bioprospecting research and related NGO relationships may be of benefit in a broader self-determination context, but then

could cause other issues of unrealistic expectations relating to benefits, commodification of culture, and differential preferencing of indigenous, tribal groups, communities or individuals over others. Farmers groups, such as Jasmine rice farmers, receive a great deal of public attention because of the “national heritage” and economic implications of their concerns. Karen people probably receive less attention for their local knowledge and land rights concerns, and further down the line Hmong groups who have been depicted negatively in recent Thai history have even less-regarded rights and knowledge concerns (see also Forsyth, 2004, and Walker, 2001, on the discursive preferencing of local or ethnic groups in Thailand). In Thailand this representational politics is highly nuanced, and is explored in more detail in Chapter Nine, and in terms of the centralised forms of lawmaking in the next chapter.

7. LAWS, REGULATIONS AND GEOGRAPHY

“There are differences between having a law and having it applied effectively... there is currently insufficient protection for farmers and local communities” (Ubon Yuwaa, Interview, 2005)

The quote above by Mr Ubon Yuwaa, a farmer’s rights activist, reflects his first-hand experience with the Thai Plant Variety Protection (PVP) Act. In my interview with him, he expressed frustration at the political barriers and impracticalities of the law, meaning that it had not yet been implemented. He also suggested that the Department of Agriculture always sided with big industrial interests rather than farmers in the operation of the Act and PVP Committee.

This reflects a typical populist/activist-state antagonism in Thailand. An outcome of Thailand’s tumultuous history towards a still unconsolidated democracy (Hewison, 1997), there is a large and active civil society¹¹⁹ which has significant distrust of the state and its authorities (and often of “big industry”). This is evident in the mass-movement actions of the Assembly of the Poor (see Missingham, 2001), popular Bangkok student uprisings against militant governments throughout recent history, as well as recent peaceful mainly middle-class mass-protests to oust Prime Minister Thaksin Shinawatra.

Consequently there are often similar antagonisms regarding state laws and enforcement. Due to the centralised nature of lawmaking in Thailand, there may be spatial (regional) or broadly class or interest-group based resentment of the regulatory imposition of various laws. Intellectual property laws present an obvious case, as well as environmental laws which generate multifarious positions in Thai activism (See Hirsch and others, in Hirsch, 1996).

¹¹⁹ I exclude industry from this definition of civil society for two reasons. First, the power of corporations now often rival states and yet can hardly be described as representing public interests. Second, there is an extensive history of complaint about official corruption in Thailand associated with mis-dealings with corporations – the latest of which embroils the previous Prime Minister, Thaksin Shinawatra and his former company ShinCorp.

This chapter analyses the Thai legal system, its history, Thai laws, and informal legal aspects, of relevance to the discussions on traditional knowledge and intellectual property concerns. I also explore some economic and cultural concerns in Thailand relating to intellectual property law. The chapter highlights the diverse legal relations and legal geographies in the country: the constellations of different legalities and illegalities operating in variously connected time-spaces (recreating local-national-global scale rhetorics). While universalising principles have been imposed by international obligation, at the scale of the state the Thai government has reformulated them to their own diverse objectives. When we ask “where is law?” (Blomley, 2003:24-32; Delaney *et al.* 2001) it becomes apparent that the meaning-making of legal principles is not spatially innocent – it varies based upon the scale of reference, the practicalities of the law (its implementation and enforcement), and different conceptions of norm, custom, community, unity and identity. As the networks of epistemic communities of IP-interested parties harmonise global standards, there are differential state responses and intra-state reverberations. As the Thai state unifies a national response, which intra-state communities are resistant? To what extent are they legitimised or de-legitimised by laws?

It is evident that law-making in Thailand has adopted and adapted imported concepts from western IPR systems. While some of these adaptations seem to have potential for local plant or herb protection, there is insufficient scope for protection from biopiracy and insufficient coverage of broader concerns surrounding traditional knowledge and the rights of local communities. In this respect there appear to be a range of divergent dialogues operating between the various situated knowledge systems and their means of approaching the issues. This situatedness seems rooted in various re-politicisations of scale as different actors have begun simultaneously to repel, import or engage with external discourses. The legal landscapes demonstrated thus far are therefore re-conceptualised to recognise this politics of scale, including recognition of heterogeneous norms, interests, and conceptualisations of community.

Consequently, whilst Thai departments have largely tried to be responsive to their domestic constituents – particularly in the drafting of laws – in practice some have fallen short for complex reasons relating to capacity, lack of political will, alternative agendas, poor representation of some groups, and the complexity of the issues at stake. These departments have also been

coerced into some positions by external political forces. In response there is often public resistance to,¹²⁰ particularly, IP laws. There are also noticeable informal or autonomous self-regulatory mechanisms of note in Thai and “hill-tribes” customs. In terms of the rights of various local groups (namely farmers, community forest dwellers and tribal peoples), further attention to their customary norms could help empower them in various ways.

7.1 The Thai Legal System, Legal History, Customs and Norms.

Although a full discussion of the development of the Thai legal system is not possible or necessary here, it is important to provide a brief history, outline some of its main features and to discuss trends in social reception and norms. The aim is to identify spatial-historical difference in the development, acceptance, and interpretation of laws and to highlight the differences between imported laws, traditional laws, customary norms, moral and religious beliefs, and a resistance to legal conceptualisation and formality.

Prior to the Sukhothai (or Sukhodaya) period (A.D. 1238-1350), the Thai peoples were an association of tribes inhabiting the region of southern China and parts of Indochina. 1238 A.D. marked the embryonic beginnings of a Thai state in the northwest of the territorial configuration of modern day Thailand, adjoining the Lanna Kingdom which made up the modern day area surrounding Chiang Mai (see Baker and Pasuk, 2005). Early forms of governance and jurisdiction were customary and intermingled with morals – influenced by a combination of animist and Buddhist beliefs (such as the Traiphum cosmography; Thongchai, 1994 at 20; see also Lee, 1978). Simple customary juridical developments were made under the authority of King Rama Kamheang the Great of Sukhothai, and amongst family units. Outside the Sukhothai Kingdom were other Kingdoms and civilisations. Sunait and Baker’s (2002) edited volume, for example, covers the history of the Southeast Asia region from the perspectives of some of the autonomous or semi-autonomous non-capital cities (like Phuket), the changing and mobile communities, and fluid local politics. These demonstrate the amalgamation of a variety of related but distinct

¹²⁰ Commonly there are also nonchalant attitudes to enforcement of intellectual property rights and blatant infringements.

cultures into territories now known as states (also see Penth, 1994, for a history of the Lanna Kingdom; Wichienkeoo, 1996 on Lanna customary law; and Thongchai, 1994, for a thorough history of the geo-political construction of Siam).

Power was later transferred to the Ayutthaya (or Ayudaya) Kingdom further south, close to the sea on the Chao Praya river. During this period (A.D. 1350-1767) the legal system became much more complex, formalised and institutionalised (Preedee, 1986).¹²¹ The period saw strong influence from the Hindu legal culture (*dharma-sastras*) and the Code of Manu, via interpretations in Burma by the Mon people (see Lee, 1978 for a detailed history of the Burmese legal system and social norms; and Huxley, 1996 for a debate on who influenced whom). The *dharma-sastras* were strongly influenced by Theravada Buddhism, and became adapted by Thai society to shape their understandings and *corpus juris*¹²² of law and kingship. This came to be known as the *thammasat* (Lit. justice) – a form of legal code which was the fundamental statement of royal law and legitimacy in Thailand (Engel, 1975; Ishii, 1986; and Geertz, 1983). The period also saw influences from the Khmer Empire on the development of ministries, and some other minor influences from maritime trading partners in China and Indochina.

Following invasion from Burma, the Bangkok (*Khrungtheep Mahanakhon*) period (A.D. 1767 onward) saw restoration, clarification and expansion of the legal system of the Ayutthaya period. This culminated with King Rama I's codification of the Code of the Three Great Seals (*Kotmai Tra Sam Duang*). The laws, although not devoid of external influence or induced change, were quite closely linked to traditional custom-derived laws from the previous periods. The Code of the Three Great Seals, described by Vickery (1996:133) as the "Constitution of Ayutthaya," was seen as a way of "purifying" and rectifying practical problems arising from the loss of legal documents in the Burmese invasion. The Thai *thammasat* was thus restated in the Law of the Three Seals, which in turn was a considerable elaboration on the Manu *dharma-sastra* (Engel 1975). In the context of the *thammasat* the king of the time would be limited by the Hindu-derived concept of *dharma*, which would provide external and internal guidance and obligation.

¹²¹ Note that Preedee Kasemsup is heavily referenced regarding Thai legal history, because there are very few comprehensive overviews, apart from those which explain the Thammasaat, and especially in English.

¹²² *Corpus juris* refers to a body or compilation of law, and to the general interpretation of them.

The Code of Three Seals had 41 volumes containing contents such as: The Words of Indra, Palace Laws, Constitution of the Law Courts, Compensation, Law of the Division of People, Husband and Wife, Miscellaneous Laws (paddy fields, housing, land and gardens, hire and loan, purchase and sale, gift, gambling, quarrels, and black magic), theft, crimes against government decrees regulating the Buddhist Sangha, and others (Ishii, 1986). It is notable that there was a concept of compensation going back to this date in Thailand, although used in different contexts to the focus of this thesis. Thus forms of liability (like benefit sharing) do have a precursor in traditional Thai law.

But as Preedee (1986) notes, the Code of Three Seals was not a comprehensive statement of law to govern the all-inclusive area of human relations. The field of ordinary civil and criminal justice was not entirely codified in written law, particularly civil justice, which was typically pursued through custom and norms. Preedee (1986) generalises about the people of the East, including Thais, conceiving of the idea that the relationships between people in a community should comply with the well-established tradition of usages, customs and morals, and therefore do not make a clear distinction between the concepts of usages, customs and morals on the one hand and law on the other. With the passage of time, the violation of existing norms led to greater external forms of adjudication in Thailand. When the King adjudicated a conflict case, it became normal practice to announce that the adjudication should be taken as a precedent for similar conflicts in the future – a feature similar, but not exactly the same, as the English common law system.¹²³ Through this process, the codification of the Thai traditional legal system emerged with the form of Royal Ordinances or Royal Decrees. Preedee (1986) notes that this gives rise to two legal domains: the domain of written law, and the autonomous legal domain. The written law domain is what we are accustomed to in the west, whereas different autonomous legal domains handle their conflicts and affairs internally. These domains may include family units, broader communities or tribal groups, or religious groups such as the *Sangha* (Brotherhood of the Buddhist Monks). The activities of the family and the *Sangha* were informed by practices, customs, moral and religious norms (see, for example, Chiba, 1993). These autonomous domains were in fact, wider in prevalence than written law – and there is some considerable retention of

¹²³ Thai traditional law, through to modern law, relies on precedent for later adjudications. However, these forms of precedent are not as stringently binding as they may be in western common law systems.

this *corpus juris* into the modern legal system (Huxley, 1996). Notably, the changing laws, legal system and the Cultural Mandates in the early twentieth century was intended to unify the state of Thailand by reducing and suppressing autonomous local or folk cultures. The freedom these groups enjoyed under the more pluralist name “Siam” was replaced for the perceived government importance of the state-defined “national” culture (Reynolds, 2002:9).

While the modern European legal system evolved to employ state power to control and regulate almost all aspects of daily life including aspects of the private domains of family, centralised social control was avoided in traditional Thai law. This goes some way to explain the embedded resistance to some of the externally imposed and “universally” intended laws, such as intellectual property laws, in recent years.

In this period from the early 1800s onwards, Preedee also notes that there are some problems with the assumption that the general public has a good knowledge and education of the law in Thailand. Whilst lawyers and judges in the nineteenth century were expected to know the written Thai *corpus juris* as well as unwritten laws, this knowledge was generally only perceived as being important for related officials. He goes as far to say that:

Even today, the older generation with a strong conservative view is still reluctant to let their children learn law. The profession of lawyer is not highly regarded in the belief that a good person does not need to know the written law, nor to go to court, if he conducts himself in compliance with usages, customs and morals. (Preedee, 1986: 284).

In fact, during the nineteenth century, there were provisions making it illegal to help another unrelated person in a case. There was instead a culturally embedded onus, based on Hindu and Buddhist principles, on making peace rather than conflict. Obviously these have evolved such that the legal profession is viewed quite differently, but elements of this desire oriented towards informal conflict resolution and legal culture were present in interviews with Thai farmers in 2005.

The modernisation process was received tentatively at first, with conflicting desires for economic and technological development versus the desire to retain the national cultural tradition

(including legal traditions). King Rama V invited in changes to the legal system, at first through piecemeal exposure to the English common law system. English common law principles were typically used where gaps existed in the traditional Thai laws. At the end of the reign of King Rama V, the Thai government sought to create a complete code by appointing a Legislative Council in 1897 to draft the Criminal Code, and another in 1909 to draft the Civil and Commercial Code (Engel, 1975; Preedee, 1986). However this involved a dramatic shift in legal influence to the French civil law system throughout the first 25 years of the twentieth century. This imported system was devised in legal positivism and constructivism, which represented a stark change from traditional Thai law and has had lasting effects. Preedee indicates that “law became an articulated fixed system, with the emphasis on certainty of the law, that is, the spirit of *jus strictum*¹²⁴...., a machine of logic ready to be employed by lawyers indiscriminately.” Law therefore became divorced from morality, at least in its written and formalised state. This came to be altered with later receptions of codifications of the German Civil Code in Thailand, at a time where *jus aequum*¹²⁵ was gaining ground in jurisprudential ideology.

Today, the Thai legal system is categorised as a civil law system, however it retains a melange of traditional Thai law and some common law influences. The spirit of legal positivism and literalism had some lasting impacts on the Thai system, meaning it was not possible to develop an entirely fruitful organic connection between the received Western law and the indigenous cultural milieu (Preedee, 1986). However, recent scholarship and trends indicate a resurgence of *jus aequum*, interest in legal pluralism, legal informalism, and socio-legal concerns. This is clearly evident in Engel’s (2005; see also 2001; 1978; and Saneh, 1982) discussion of the “decline of legal consciousness” in a provincial Thai court, where concepts of injury have been reverted to religious discourse in Buddhist precepts rather than liberal legalism or rights.¹²⁶ In other words, he found that more frequently or preferentially, appeals were made to religious remedies rather than to typical legal forms. This has meant a refrain from the individual pursuit of compensation. This could be a reversion to informal and traditional law associations where “peace-making” is valued over causing conflict or seeking compensation. The findings of Engel’s study correspond

¹²⁴ *Jus strictum* means strict law, particularly positivistic (emphasising word of the law rather than interpretative or purposivistic) law.

¹²⁵ *Jus aequum* means equitable law; law that takes into account the principle of equity.

¹²⁶ Jackson (1997) draws similar conclusions with regards to the role of Buddhism in politics outside the capitol.

with the mistrust expressed by Thai farmers about centralised or formalised lawmaking for plant variety protection and traditional knowledge.

There has been a similar refrain in the pursuit of law-suits related to misappropriations or overly broad patent claims in Thai courts such as the new Intellectual Property and Trade Court – a special division of the Supreme Court (Nantana, Pers. Comm. 2005; Suradej, Interview. 2005; Ariyanuntaka, 1999; Antons, 2006). This could be due in part to the culturally embedded non-confrontational nature of Thais. The refrain also reflects a non-legal culture highlighted, expressed, and encouraged by the Chairman of the National Human Rights Commission. Professor Saneh has appealed to grass-roots activities, legal pluralism and customary law rather than universal rights¹²⁷ in order to respect and protect traditional knowledge.

This has important implications for understanding the Thai response to international obligations couched in “global” and universal discourses. These include intellectual property rights, biodiversity conservation and human rights laws. The noticeable continuance of legal informalism, current romanticisation of traditional Thai law and “*sui generis*” rights,¹²⁸ and interest in forms of legal pluralism reflects dissatisfaction with the cultural insensitivity and aspatiality of imposed or disruptive laws. Namely these have affected customs and norms associated with the sharing of knowledge, human existence with biological resources in situ, and the customary domains of groups maintaining traditional lifestyles.

7.2 Legal Protection in Science and Technology

As Thailand pursues its current course of rapid economic development, government policy seeks improved home grown science and technology to help improve quality of life and to provide competitive advantages to industry (Yongyuth, 2003). Of particular interest here is the ability for Thailand to capitalise on its natural assets and existing knowledge base. This section provides a

¹²⁷ Although he notes that these should not necessarily be seen as competing.

¹²⁸ I am referring here to the type of self-generating or pre-existing rights that were argued for in the Thammasat Resolution, rather than the typical international law definition “unique/of its own kind,” or meaning plant variety protection in TRIPS terms.

brief overview of the current trends, organisations and protection considerations in science and technology.¹²⁹ The primary question asked is “whom is legal protection really serving?”

Historically most intellectual property systems such as patents were designed to encourage technology transfer for the benefit of society. As western intellectual property systems increasingly shift towards the private rights of protection for commercially oriented research, the benefits to society have become less clear, and IPR systems have been accused of raising costs and reducing access to new technologies such as pharmaceutical drugs. In Thailand, the benefits of allowing patent protection over biological resources are quite questionable. One prominent researcher, Somkiat Tangkitvanich, who acts as a Research Director at the Thailand Development Research Institute (TDRI) has warned of the potential effects of higher IPR standards under the Thai-US FTA:

“A large portion of Thailand’s population are farmers. They are located in a tropical area which has high bio-diversity, but our research and development capacity is very low. The Kingdom’s overall R&D budget was only 0.27 per cent of the nation’s gross domestic product [last year],” (The Nation, Jul 12, 2005).

Thus until Thailand’s home grown R&D has expanded, higher standards of IP – particularly patent protection – will not necessarily be benefiting many Thai researchers. Rather Thailand would be providing protection for foreign interests such as biotechnology companies, which have been trying to expand their interests, investments and corresponding legal protections.

Although there has been a consistent drive for the modernisation of all sectors of the Thai economy, agriculture included, Thailand has to date resisted movement into transgenic or genetically modified crops (GMOs). For the past few years a cabinet resolution has held a moratorium on the agricultural use of genetically modified crops, or even on field trials. Activities related to the genetic modification of organisms are restricted to controlled experiments under laboratory conditions. There is regular concern about possible implications of

¹²⁹ For a more detailed overview see Supachai and Sasithorn (eds) (2003)

contamination from GMO crops detailed in the press.¹³⁰ The advocacy of groups such as the Thai Biotechnology Alliance Association for example have to date been more focused on pushing for the removal of the moratorium on GMOs and public education than they have on the patent exclusion on life-forms (BAA brochure, 2006). Transnational companies have been the ones taking stronger positions – for example Monsanto has sought US Trade Representative pressure on Thai authorities.¹³¹

In an ICTSD report on the indicators of the relative importance of IPRs in developing countries, Lall describes Thailand as a country with low technological activity based on a number of empirical indices. She indicates that:

These countries are likely to have both significant costs and potential long-term benefits from stricter patents, depending on the level of domestic technological capabilities and their reliance on formal technology inflows. Those that are building their innovation systems on the basis of local firms copying foreign technology and importing technologies at arm's length would gain less than those with a strong trans-national corporation presence (Lall, 2003).

In the case of Thailand, its innovative capacities relate primarily to incremental innovations and there has been considerable utilization of copied foreign technologies in the development of its technology base as noted in USTR reports. There is a moderate and expanding TNC presence in Thailand however with significant foreign investment in innovation oriented towards exports. In terms of technology effort, Lall (2003) indicates that Thailand fits a low category with 0.002 “innovation” patents per person. The implication of these indicators is not entirely clear; however it is likely that it would be appropriate for Thailand to have relaxed IPRs in some areas and stronger IPRs in others in terms of innovation and technology promotion (Lall, 2003). It is likely that this will be highly dependant upon the industry sector being considered. In terms of agriculture and pharmaceuticals there appears to be little need for higher IPRs. Agricultural innovations are typically incremental and through conventional breeding methods, with little

¹³⁰ See www.biothai.org for press articles on GMO concerns.

¹³¹ Explained in greater detail in Chapter 4 on ‘US Pressures and Interventions’.

trans-national corporation presence in Thailand as yet. As for pharmaceutical innovations, Thai society benefits from a moderately strong generics industry which provides affordable medicines to the public and relies upon cheap compulsory licensed or copied foreign technologies. It is clear that higher IPR standards and stricter enforcement in pharmaceuticals will raise the operating costs of such generics companies significantly (Jakkrit, 2006).

Dr Somkiat Tangkitvanich indicates that a staggeringly high proportion of “innovation” patents – 94 per cent – belong to foreign companies or individuals and this has not changed much over time (Interview. 16 February 2006). However Thai innovators are much more likely to utilise the utility model, designs or “petty patent” system to register their more incremental innovations, with approximately 93 per cent of utility models registrations currently being held by Thai nationals. Dr Somkiat indicates that there is a considerable “disconnection” between the production sector and the inventor - inventions in Thailand are typically lower-technology and “indigenous” having local application, hence the preference for utility model protections (Interview. 16 February 2006). To put this into perspective, in the year following amendment of the Patent Act in 1989 only 32 Thai citizens patented their inventions, compared to 2412 foreigners (Buntoon Srethasirote, Bangkok Post, 9 February 2006). This has changed somewhat in more recent years. Jakkrit (2007:49-50) notes that in 2005 there were 6,627 foreign patent applications (invention and utility model/design) versus 4,258 Thai applications. Of those, 491 invention patents and 326 design patents were granted to foreigners, versus only 62 invention patents and a more substantial 443 design patents.¹³²

Patent protection in Thailand currently includes eligibility for micro-organisms and their components that do not occur naturally, and the Plant Variety Protection Act allows protection for the work of plant breeders. Jade Donovanik (Bangkok Post, 29 April 2005, Acc 09/05/05) notes that this already forces struggling Thai breeders and scientists into innovations or more advanced areas of breeding. The small number of individuals involved in these more advanced areas of R&D in agriculture and pharmaceuticals are already stretched to their limits catching up, rather than keeping up, on many developments in science and technology. Under the FTA, the

¹³² Notably not all applications are granted, and the Patent Office does not have the capacity to process all patent applications in a timely manner – something the US has sought to help Thailand improve.

US wants to expand patent protection to plants and animals. But Jade notes that almost all entities possessing the capability to come up with novel and inventive kinds of plants or animals, especially using genetic modification techniques, are multinational corporations. In relation to biodiversity, medicinal herbs and agriculture, Professor Wisut Baimai, who is head of the Biodiversity and Research Training Programme (Interview. 2 August, 2005) notes that before such advanced techniques are pursued by Thai researchers, there is much still unknown about the biodiversity of Thailand and such “basic” research should be given more emphasis first.

Such higher standards may see greater foreign direct investment, which is often argued as an incentive for higher IP standards, however it would mean greater royalty flows back to foreign countries, the entry of some controversial technologies, and the potential of foreign purchase or mergers with Thai companies. Central to many NGO and academic concerns about higher IP standards is the loss of “food sovereignty”; in other words domestic or local control over agricultural production in Thailand. In many developed countries there has been a trend towards centralisation of agriculture within a few large companies (Srinivasan, 2003). As these companies expand and merge with other companies, it is argued that the control of agricultural production becomes further removed from small scale farmers. As market share is dominated, farmers are thus provided with few choices and their food sovereignty is eroded.

Aside from technical matters, there are some ingrained social and philosophical objections in Thailand to certain aspects of science in technology, for example biotechnology and the patenting of genetic resources:

The worldview of the Thais in general is to create harmony with nature and the universe, rather than to control them as in Japanese or Western societies with their great scientific and technological advances. (Srisak Wallipodom cited by Yongyuth Yuthavong, 2003).

Thus there are certain economic as well as social, environmental and philosophical considerations to be made about the future of science and technology. The kind of protection allowed for these technologies has direct impact upon investment and research in them. The director of one prominent rice research and education body in Thailand has had notable objections to first and second generation legal and technological structural controls of agriculture. Daycha Siripat, from

Khao Khwan (Lit. rice spirit/embodiment) has sought to merge traditional and scientific methods, but teaches the avoidance of chemicals and technologies as contrary to Buddhism and the natural order of things (Interview. April 2005). This includes avoidance of herbicides, insecticides and pesticides, genetically modified technologies. He also encourages criticism of structural legal mechanisms such as plant variety protection, which may coerce or entice farmers into the yielding of their food sovereignty to corporate agricultural packaging.¹³³

There are few organisations designated specifically to the scientific research of biodiversity in Thailand. The Biodiversity Research and Training Program of Thailand (BRT) is the largest such designated body, however biodiversity research is also undertaken in various university centres and institutes, and through the National Parks, Wildlife and Plant Conservation Department. The Director of the BRT has noted however that biological researchers are generally poorly treated and the research is not made a high priority by funding authorities (Wisut, Interview. 2 August 2005). This makes it hard enough to get researchers to undertake taxonomic studies and catalogue biodiversity such that it can be monitored, let alone ethno-botanical studies that involve an understanding of local utilisation of biodiversity.

The other primary research bodies of relevance to this study are the Department of Agriculture who undertake research on crop varieties, and the Institute for Thai Traditional and Alternative Medicines in the Department of Public Health, who undertake research on Thai herbs. Both of these bodies have direct or indirect involvement with botanical (and some ethno-botanical) research in order to improve opportunities to produce and commercialise crops and medicines in Thailand (Wichar, Interview. 2005; Chamaiparn, Interview. 2005). As yet the transaction processes with custodian communities from which the genetic resources are obtained are not entirely transparent, as will be discussed in the following section.

In summary, this section provides evidence of the tensions between an imposed and purified understanding of protection for narrow (predominantly business) interests, and forms of protection for innovation that might generally be more appropriate for Thailand's economic development and culture. Even a re-configuration of IP and related (e.g. biodiversity) laws could

¹³³ See the case study on *Kwao Krua* in Chapter 10 for more information.

be preferable, considering the domestic popularity of utility models versus innovation patents, concerns about biopiracy and pharmaceutical access, and the potential for geographical indications protection for agricultural products, including traditional knowledge aspects.

The following sections look in detail at the main laws of relevance in Thailand. They indicate the context and situation in which they were developed, and are now being implemented. The discussions provide insight into the difficulties of introducing imported regulatory systems like the intellectual property system, and demonstrate the mechanisms that stakeholders in Thailand have found to shape national regulatory systems to suit their own needs.

7.3 The Constitution of the Kingdom of Thailand

Western liberal political theory suggests that the constitution of a country is an extremely important unifying pillar of nationhood, the rule of law, institutional and judicial establishment, and should provide for autonomy and self-reflexivity of the democratic legal system. However, constitutional law, reform, and sequential government overthrows in Thailand would suggest that this central pillar of state jurisprudence can be something more partial, contested and politicised. The Constitution of the Kingdom of Thailand B.E. 2540 (1997) is the 16th charter since 1932 when the country became a constitutional monarchy. Continual political reform, uprisings and coups meant that Thailand's legal system has been in continual flux throughout its recent history. This version is popularly known as the "People's Constitution" (*ratthamanuun prachaachon*) because it was seen as a significant advance towards protecting civil and political rights of its citizens and reduction of party political corruption. The constitution was a consequence of decade-long pro-democracy movements. Ongoing discussions of constitutional and political reform as well as populist movements have continued along this path suggesting that the legal system of Thailand is anything but static, unifying and apolitical as constitutions are portrayed in liberal political theory. Notably this constitution has also been repealed following the 2006 military overthrow of the *Thai-Rak-Thai* administration and dissolution of parliament. It seems likely, however, that many of the components of the People's Constitution will be recycled for the new version (Saneh, Interview. 2006). Therefore this section should be read with the

knowledge that this Constitution has been repealed, but the subsequent law may be similar in nature.

As a result of the popularity and perceived importance of “localisation” policy discourses, there are several mentions of local communities in the People’s Constitution. Relevant to the research topics there are also provisions in the Constitution relating to community rights, traditional knowledge and biodiversity conservation. Most importantly the Constitution recognises the right of traditional communities to conserve their local knowledge and participate in the management of natural resources in Section 46.

Section 46 (see Box 3 for details) has been regularly cited by local communities and supportive academics, NGOs and government officials as a source of the protection of traditional knowledge. It should provide a forceful means for greater involvement of communities in conservation and a whole range of other broader activities. The final few words “as provided by law” have however meant that little action has formally been taken to make possible the intentions of the provision. It could be argued that the Plant Variety Protection Act and the Act on the Protection and Promotion of Thai Medicinal Intelligence provide some scope for the implementation of this section of the Constitution. However, as will be explained in the following sections, this has little to do with “customs”, “good culture,” and there remain notable restrictions on communities subsisting in forest areas.

Box 3: Relevant Provisions in the Thai Constitution.

“Section 46. *Persons so assembling as to be a traditional community shall have the right to conserve or restore their customs, local knowledge, arts or good culture of their community and of the nation and participate in the management, maintenance, preservation and exploitation of natural resources and the environment in a balanced fashion and persistently as provided by law.*” Constitution of the Kingdom of Thailand, B.E. 2540 (1997).

Also important are principles of participation in the use and preservation of biological resources:

“Section 56. *The right of a person to give to the State and communities participation in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and preservation of the quality of the environment for usual and consistent survival in the environment which is not hazardous to his or her health and sanitary condition, welfare or quality of life, shall be protected, as provided by law.*” Constitution of the Kingdom of Thailand, B.E. 2540 (1997).

“Section 79. *The State shall promote and encourage public participation in the preservation, maintenance and balanced exploitation of natural resources and biological diversity and in the promotion, maintenance and protection of the quality of the environment in accordance with the persistent development principle as well as the control and elimination of pollution affecting public health, sanitary conditions, welfare and quality of life.*” Constitution of the Kingdom of Thailand, B.E. 2540 (1997).

Section 81 also provides brief mention for the “...promotion of local knowledge.”

As raised in Chapter Five, localisation is a discourse and process with considerable significance in Thailand. The discourses of localism and of a subset of that – local knowledge – has become so prevalent that it can be described as a now mainstream agenda in broader policies, including nationalism (Connors, 2005). Reynolds (2001), for example, highlights the emergence of nationalist policies of *phum-panyaa haengchaat* (lit. national place-relevant knowledge), clearly demonstrating the discursive politicisation of scales and knowledge. Indeed, localist discourses are often crafted by elites in public positions far removed from the rural grass-roots locales where dynamic forms of traditional knowledge are in regular practice. Notably, the King has encouraged the doctrine of self-sufficiency and self-reliance, which have been heeded by prominent intellectuals and in Thai government policies. Reynolds (2001) suggests that these responses are a reaction to threats to sovereignty and “economic warfare” being waged on the country by international financial institutions and the market. These discursive and policymaking

reactions have been heightened by the Thai-US FTA and WTO membership. Yet these responses inevitably entail forms of “globalised communitarianism” whether its critics on both sides like it or not. Scaled localist and nationalist or sovereign discourses inevitably must be understood as mutually constitutive and responsive rather than pure. These appeals for localism, whether genuinely locally derived, or based in a nationalist context are resistant to external pressures increasingly involving international trade and interconnectedness with “global” laws, movements and discourses. This makes understanding of claims to “traditionality” complicated, as well as conceptualisations of traditional communities who are claiming Constitutional protection to assert their “community rights” (*sitthi chumchon*). Chapter Nine details case studies where essentialist appeals for civil and political rights effecting livelihoods, local knowledge systems and practices are an important issue which have been abstracted by these debates and central policymaking.

Professor Saneh Chamarik (2002), Chairman of the National Human Rights Commission of Thailand (NHRC) notes the importance of these (Box 3) aspects of the Constitution but suggests that there is much to do to effectively realise these ambitions: “The Constitution does not provide a ready-made respect for the community right, and people must struggle for its realisation.” Professor Chamarik has been depicted as “bridging the gap between radical and moderate localism” (Connors, 2005). For Chamarik, community rights are an important political aspiration, which need not necessarily be seen as segregating, but rather is integrative and hybridising of local community involvement in the market. This is reflected in his perceptions of knowledge relevant to this research: “traditional knowledge should not be seen as contradictory or conflicting with scientific knowledge. They can be complementary given the right circumstances” (Interview, 2005). But this is qualified by implication that this kind of localism must be made on their own (community) terms. Therefore he has been an advocate of a rights-based approach which is pluralist rather than universalising, so as to suit diverse local needs.

What is much clearer is that mainstreamed localisms (the popularisation of concerns that are “locally-derived” in theory or practice) and appeals to sovereignty over lawmaking, agricultural inputs and control of production, and biodiversity/resource control are prominent discourses

against higher intellectual property standards.¹³⁴ There is a broad resistance to raised IP (particularly patent) standards for various economic, environmental, cultural, moral and value/logic reasons which are discussed here in subsequent sections and in Chapter Nine (in the local community context). This form of resistance exists in a flux between local, national (sovereign) discourses and infra-state movements (with international connections) where there is considerable collaboration between different groups.

7.4 Intellectual Property Laws

With the exception of copyright which has a hundred year history, the legal protection of intellectual property is a relatively new concept in Thailand. The Patents Act, for example, was not drafted until 1979. Thus a designated Department of Intellectual Property (DIP) was not established in Thailand until this time. The Trade Secrets Act, and Act on Protection of Geographical Indication were only established in 2002 and 2003 respectively.¹³⁵ Thus it is worth considering that prior to this, laws and customs relating to the “ownership” and sharing of knowledge were considerably different, and the adaptation of a western system has required a considerable amount of cultural compromise. Furthermore implications of the IPRs regime relating to traditional knowledge and genetic resources are relatively recent and typically treated with much scepticism and concern.

In the lead up to 1994 which saw the TRIPS Agreement included in the package establishing the WTO, the U.S. government, had sought to bring bilateral and regional pressures on developing countries with poor records on intellectual property protection (as described in detail in Chapter Four). Kaosa-ard (1991) notes that in 1991 the pressures on Thailand brought about unfavourable responses from the Thai public for three main reasons: local industries might be destroyed; prices of patented drugs might be increased, especially those needed by poorer sections of the community (HIV/AIDS, malaria, diarrhoea and other drugs); and local technological ability could be discouraged. In the years following, a fourth concern could be added, that farmers and

¹³⁴ Access to cheap generic pharmaceuticals is probably the most pervasive anti-IP discourse in Thailand.

¹³⁵ See Jakkrit Kuanpoth (2003b) for a detailed overview of intellectual property in Thailand, and Antons (2003) for a review of legal culture and history of law relating to intellectual property in Asia.

traditional healers had become concerned about the misappropriation of biological resources and traditional knowledge. These arguments against the broadening and extension of patent rights have already been outlined in this chapter. Nevertheless some standards have been raised in subsequent Patent Act Amendments, as Thailand responds to external pressures and the “harmonisation” of international norms.

Briefly returning to the argument proposed in Section 7.1, it is important to note that as Thai authorities harmonise their laws with “global” standards, it generally does so on its own terms. That is, it takes full advantage of limitations and exceptions within the law, and in other cases has postponed ratification of other agreements. This is consistent through intellectual property and trade law, environmental laws (such as the CBD) and human rights law. Coinciding with findings by Mushkat (2004), there is however some divergence at the micro-level of policy implementation, compliance and enforcement. The “cultural relativism” she refers to, reflects a divergence in “Asian values” as distinct from universal terms, particularly in international environmental law and trade law. But this is generally felt at the “micro-level” of policy implementation where there are other local/regional influences. In the case of this research a similar phenomenon seems to be occurring, whereby Thailand has introduced some universal international laws, but has implemented them in various ways that are divergent from the external norm. Far from suggesting this is the result of generic “Asian values,” the findings of this research suggest that there are *diverse and particular responses* within the fabric of “Asian” societies, and indeed within Thai cultures. These are explored further in this and the following Part. In the case of patent law, Thailand has utilised an exception in TRIPS to avoid the patentability of life-forms apart from micro-organisms.

There are several aspects of the Patents Act B.E. 2522 (1979, as amended 1992 and 1999) worth discussing. The first are the inventions which are *not* protected under the Act in the context of this study. Section 9 of the Patents Act states that protection cannot be accorded to:

- (1) naturally existing micro-organisms and their components, animals, plants or animal and plant extracts; and...
- (5) inventions contrary to public order, morality, health and welfare.

The Act is thus designed to fit the minimum standards set by TRIPS, and no higher, in relation to biological materials. The Act clarifies that “naturally occurring” micro-organisms cannot be patented to avoid discovery-type applications, which takes the exception in TRIPS a step further “on their own terms” (Tannit Changtavorn, interview. 2005).

The US has retained pressure on Thailand to take plant seed from the patent exemption since the late 1980s (Setboonsarng *et al.*, 1991). Yet Thai authorities (under diverse popular pressures) have continually resisted this due to concern about the role of private foreign investment in the seed industry in Thailand, for social, economic and environmental reasons. The US has also maintained consistent pressure regarding implementation concerns, compliance and enforcement, in which there is some considerable public resistance in Thailand. This resistance is most obviously embedded in Thailand’s “illegal economy” where the US has used discourses of piracy to target copyright breaches amongst other perceived IP infringements (USTR, 2005). Resistance also has been evident in public policy; research reports on innovation and technology; in the drafting of laws; and in public resentment of the formalisation of foreign protectionist measures. IP laws are also perceived as a means for foreign companies to pilfer their knowledge and resources. In one interview with a Thai farmer (Watasana [Dej], Interview. 2005), he indicated that “... [the IP aspects of] the FTA is bad because it will take the rice from my hand.”

While the US views IP piracy as a serious issue, it is placed a lesser weight in Thai society. In a detailed study of Thailand’s illegal economy and public policy by Thai academics, the authors (Pasuk *et al.* 1998) considered ten corrupt activities of major concern for public policy. Intellectual property piracy was not one of them, and was not even mentioned as a component of organised criminal activity (which the USTR has sought to implicate). Policy-makers and law enforcement agencies in Thailand have a considerable range of other, perceivably more important, illegal activities to concentrate on. So what arguments might the Thai authorities make against strict public enforcement of IPRs? Urbas (2005) suggests a number of reasons why public authorities are reluctant to undertake intellectual property enforcement referrals, even when there is clear legislative foundation for them to do so. He suggests that country authorities may have little experience in dealing with these matters; that they are of comparatively low priority for police attention; they are often considered as essentially commercial disputation rather than

criminal activity; they regard the protection of private interests a lower priority than that of broader public order concerns; investigations may be complex, expensive and lengthy, and prosecutions can have a low success rate; and other public policies such as competition, domestic industry protection or free trade agendas may undermine the policing of IP infringement.¹³⁶

As discussed in the following chapter there may be other moral or cultural concerns with the juridical legitimisation of certain technologies, like biotechnology, through IP protection. Suvanna (1989) indicates that different plants and animals are regarded as having *khwan*, or spirit, under dominant Thai interpretations of Buddhism, as well as in animist (or hybrid) beliefs, and that rituals and folklore may imply human submissiveness to nature. Saneh Chamarik has also criticised “reductionist beliefs” that do not consider “Thai culture and prominent beliefs” (Interview, 2005). In response to public concerns, Section 9(5) of the Patent Act asserts an almost identical clause to that of 27.2 of TRIPS, thereby attempting to provide exceptions where public order, moral, health and welfare issues may arise. The extent that this clause may be used in the case of a dispute is as yet unclear and has no precedent in Thai courts, or in international fora such as the WTO. In the TRIPS Council, appeals by the African Group for removal of life-form patentability, citing conflict with the provision have been quashed.

When asked about the inclusion of disclosure elements in the Patents Act, the head of the Patent Division of the Department of IP noted that this would be beneficial for the protection of traditional knowledge within Thailand, from possible misappropriations by Thai persons or companies, but is not enough to stop such occurrences overseas (Suradej, Interview. 9 June 2005). Disclosure requirements are currently being considered by DIP, but have not yet been included in the text of the Patent Act. A Draft Ministerial Declaration on disclosure of origin has been developed by DIP officers and is awaiting approval from senior officials and the Minister. It is noted however, that there is considerable conflict within the department itself about whether a disclosure requirement is beneficial or detrimental to innovation and knowledge protection in Thailand (Suradej, Interview. 21 February 2006).

¹³⁶ The US government has sought to counter this trend by offering technical assistance to Thailand and other countries, including FBI training of local law enforcement agencies (Jakkrut, 2005b).

But not all forms of IP protection have been resisted. As noted in Chapter Four there has been some consideration of the protection of Jasmine Rice by geographical indications (GI) law. Thailand has been pushing for the extension of the GI protections offered for wines and spirits under TRIPS, to other products including agricultural crops. If this was successful, protection of the “*Khao hom mali* Jasmine rice” name could be made using the Act on Protection of Geographical Indications B.E. 2546 (2003) such that it can be internationally recognised as originating from a particular region (and hence associated with a premium regional quality), similar to the recognition provided to some wines (e.g. Champagne and Bordeaux), cheeses and other products (Jakkrit, Interview. 2006). During FTA talks, the US has pressured Thailand to seek trademark rather than geographical indications protection for Jasmine rice. At this stage a decision has not been made.

There have also been suggestions that trade secrets may be one form of IP protection of use for traditional knowledge (see for example Dutfield, 2004). There seems to be considerable hesitation among IP academics and DIP itself about the use of such protection however, because it requires technical registration of such knowledge that is impractical for local people and overly formal. With the exception of geographical indications, there has been a general reluctance to protect traditional knowledge using intellectual property rights.

DIP Thailand has also sought to register traditional knowledge in a database, for prior art purposes. The department has only achieved limited success however, with a much smaller list of registrations when compared to other countries such as India, who have sought to catalogue traditional knowledge (see Chapter Eight).

PVP has also been suggested as a means for the registration of local plant varieties, in order to also provide a measure of protection to traditional agricultural knowledge. In Thailand the PVP Act was drafted with some protection mechanisms for local, wild and domestic varieties and it is administered by the Department of Agriculture.

7.5 Plant Varieties Protection Act

Thailand may not yet have developed a plant variety protection act, had it not been for the requirement for a *sui generis* system or patent protection in TRIPS. Setboonsarng *et al.*, indicated in 1991 that despite pressure from the private sector to develop a PVP law, it would be unfeasible given the lack of competent personnel in the Department of Agriculture. After TRIPS however, agri-business (both multinational and Thai) and large scale plant breeders quickly jumped at the opportunity to push the Department of Agriculture and the Department of Intellectual Property to develop an Act to suit their interests. Both departments concurrently made a draft each. At the same time, NGOs and academics became concerned that the Draft Plant Variety Protection Acts contained elements that would not protect farmers' rights, nor would allow forms of protection for general domestic (e.g. Jasmine rice), local, or wild varieties (landraces). Initially elements were included for the protection of farmers' rights, however explicit mention of these were gradually cut out of subsequent drafts (Jaroen, Interview. 30 June 2005).

Consequently Thailand developed an act that allows a standard of protection for plant breeders with elements similar to that of UPOV 1978 and 1991, rather than the higher standards of patent protection. The Plant Varieties Protection Act B.E. 2542 (1999) (hereafter PVP Act) has unique qualities however, as it also tries to reconcile protection of new varieties with the protection of general domestic, local and wild varieties. For local and wild varieties there are also mechanisms for access and benefit sharing to registered varieties. In this sense it is a truly unique *sui generis* system designed to suit the diverse agricultural conditions of Thailand. Notably, Thailand has adopted a liability regime approach for local, general and wild plant varieties, and a property regime approach for new varieties. In other words, for the use, research, development and commercialisation of local, general and wild varieties, compensation (benefit sharing) must be paid to the Thai authority.¹³⁷ This was a preferred approach to an exclusive property rights

¹³⁷ This is in contrast to the Indian Plant Variety Protection and Farmers' Rights Act (the only other true *sui generis* plant variety protection law in Asia), which more closely follows a property regime model and grants exclusive rights to farmers' varieties and domestic (extant) varieties (See Appendix 1). Notably, neither of the Thai or Indian PVP laws operates as purely a liability (i.e. use now pay later) or property rights regime. They contain elements of both. Furthermore they contain elements of both "positive" and "defensive" protection. As Dutfield (2006: 22) notes, the distinction is rarely clear cut. These terms can be somewhat deceptive of the variable nature of *sui generis* PVP, TK and related laws which are typically hybrids of such concepts.

regime over local, general and wild plant varieties, for which there are strong public sentiments against monopolistic controls (as best demonstrated by the Thammasat Declaration).

The development of the Act was not without considerable public consultation and input from civil society groups. Notably the Assembly of the Poor, with extensive academic and NGO support made demands for requirement of protection of local and wild varieties (Buntoon, Interview. 21 February 2005; and Surawit, Interview. 5 July 2005). Table 5 below describes an approximate chronology of events leading to the development of the PVP Act, the concurrent development of the Act on Protection and Promotion of Traditional Thai Medicinal Intelligence (TTMI Act), and the early administration of these Acts. It is important to recognise the ability of these groups to enrol broad support from the public and government officials, towards laws which seek to have the majority of public interests covered.

Table 5: Development and Operation of the Plant Varieties Protection Act and the Act on Protection and Promotion of Thai Traditional Medicinal Intelligence

Date/ Event	Description
1991	A Thailand Research Fund supported article (Setboonsarng et al.) suggests that Thailand does not need a plant variety protection act, stating that it would burden the agriculture department with unnecessary additional costs given the current state of agriculture in Thailand.
Early 1990s	Alleged biopiracy episodes and misappropriations in other countries raise concerns over the protection of genetic resources and traditional knowledge in Thailand.
1992,1993	The CBD is developed at Rio and discussions begin on potential ratification in Thailand. Initially many groups are concerned that there is not adequate protection for genetic resources and traditional knowledge and thus advocate for the government develop new legislation before becoming a signatory.
1994	The CBD is signed by Thailand for gradual ratification and a process of drafting the PVP Act and a Thai Traditional Medicines Act (TTMI Act) begins.
1995	The TRIPS Agreement comes into effect requiring developing countries to develop at least a <i>sui generis</i> system of plant variety protection by the year 2000.
1995 - 1998	<ul style="list-style-type: none"> -The DoA develops a draft PVP Act focusing primarily on new plant variety protection initially, and concurrently DIP develop their own draft PVP Act. -Assembly of the poor asserts concern over biopiracy and loss of TK. Pressure government to include elements of domestic, local and wild variety protection. - The DoA include elements of domestic, local and wild variety protection in the Draft PVP Act. - The DPH develops a draft TTMI Act. There is cross-department collaboration, particularly during the latter stages of the development of this Act. - Cases of 'biopiracy' including the Jasmati case and the Marine Fungi/University of Portsmouth case are reported in the media in Thailand. - Protests ensue and there is extensive public criticism, particularly of the Jasmati trademark.
1999	<ul style="list-style-type: none"> -Lower House of Parliament favours the DoA Act, but components of the DIP Act are incorporated as well as aspects of local and wild varieties protection. The PVP Act is passed by parliament to be administered by DoA. - The TTMI Act is approved by parliament at around the same time as the PVP Act. - Both Acts are passed by the Council of State and comes into effect
2000-2004	<ul style="list-style-type: none"> - The DoA and DPH begin establishing divisions to handle the affairs of each Act. - Regulations and organic laws are quickly passed for the protection of new varieties of plants under the PVP Act due to industry pressures. - Organic laws of the TTMI Act begin an open and participative, but long process of development. Organic laws reach the Council of State and Cabinet in 2004. - Ministerial Regulations are considered in parliament for the protection of local and wild domestic varieties before being passed to the Council of State.
2005-2006	The local and wild varieties Ministerial Regulations are still being considered and finalised by the Council of State. It is estimated that they will come into effect in 2007. Similarly the organic laws of the TTMI Act are still being deliberated but are due to be released in the near future.

Sources: Setboonsarng et al (1991), Buntoon, Interview. 21 Feb. 2005; Surawit, Interview. 5 July 2005; Wichar, 6 May 2005; Vichai, Interview. 19 Aug. 2005.

The rest of this section reviews the contents of the Act to provide an understanding of its implications to farmers, the protection of Thai plant varieties and associated knowledge. Comments are made on potential issues and implementation difficulties. The review is made chapter by chapter.

Chapter 1 of the PVP Act establishes a commission to oversee the operation of the Act. The Commission consists of ten Director-Generals and officers from a broad range of relevant government departments, and twelve qualified members appointed by the Council of Ministers as members. These qualified members are appointed from a range of stakeholders across civil society. They include six farmers, one academic in the field of plant variety breeding, one academic in the field of natural resources conservation, two members from agriculture and natural resource conservation NGOs, and two from representatives of associations whose objectives involve the breeding and propagation of plant varieties.

The broad inclusion of stakeholders allows for a balanced and diverse array of views to be shared about the operation of the Act. Some commentators and committee members have complained about certain aspects of the committee.

Chapter 2 of the Act defines plant varieties similar to the UPOV 1991 definition. To be eligible for protection a plant variety must be uniform of shape or appearance as expressed by the genotype, stable in each cycle of reproduction, and distinct from other varieties. This description does not apply for wild plant varieties under the PVP Act.

Chapter 3 of the PVP Act relates to the protection of new plant varieties. The text of the section follows closely to elements of the UPOV Convention. To date this is the only category of plant varieties that has regulations such that the Department of Agriculture can implement their protection. Based on industry demand, the Committee votes to add broad plant groupings (for example, currently on the list are rice, durian and orchids, for which each may have several species) as an umbrella for which new plant varieties can be protected. As of July 2005, the Committee was making a controversial consideration on whether to allow protection of varieties of eucalyptus species (Daycha, Interview. 29 April 2005).

Chapter 4 is designed for the protection of local domestic plant varieties. Thus it allows registration of plant varieties that can only be found in a particular locality in the Kingdom. It is designed such that individuals and local communities are able to register:

*A sui juris person, residing, commonly inheriting and passing over culture continually, who takes part in the conservation or development of the plant variety..., may register as a community under this Act.*¹³⁸

The community must register the jointly conserved plant variety, with information about the methods of conservation, the names of community members, and a map clearly demarcating community areas.

This section sets up a profit-sharing arrangement in cases where people may seek access to such varieties for academic research or commercialisation purposes. When registered, the local community will have exclusive rights over the local domestic plant variety to develop, study, experiment, produce, sell, export, or distribute the propagating material thereof. Any person who wishes to access the plant variety for purposes of variety development, education, experiment or research for commercial interest must make a profit sharing agreement to provide some monetary benefits from utilisation back to the community. Such authorisation of others to use the local plant variety rights requires the profits to be divided such that:

- twenty percent shall be allocated to those persons who *conserve or develop the variety*;
- sixty percent is allocated to the *community as its common revenue*; and
- twenty percent is allocated to the local government organisation, farmer's group or the cooperative that registers the agreement in the name of the local community.

The finer details of the profit sharing arrangement will be included in the Ministerial Regulations which are yet to be passed. Where there is dispute over this allocation it is to be decided by the Committee. Protection is provided for 12, 17 or 27 years (depending upon the type of plant) from

¹³⁸ Note: this content is taken from a tentative translation provided by Dr Wichar Titipraesert of the Department of Agriculture, and the advice of Dr Jakkrit Kuanpoth. The same text is available at www.grain.org.

the date of issuance of registration. Communities may apply for 10 year extensions of this period if the plant variety is still confined to the locality.

There is some confusion and concern regarding the division of profits. NGOs have expressed concern that only twenty percent of the profits are given to those who *conserve or develop the variety*, whilst the bulk becomes common community revenue (Witoon, Interview. 7 March 2005). There are some inherent territorialising assumptions in this. Whilst many communities have local customs, ritual and regulations which deal with distribution of food, goods and money, there are many others in which the sense of community has been eroded, and local customs are lost or changing with other forms of rapid social and economic change. A notable critique of community is made by Hirsch (1993:39) that the “Thai village community is a construct with meaning for those who live there and for those who do not.” It is an inward and outward representation for unity that may actually vary considerably.

In the case of the PVP law, the community self-designates itself for the purposes of acquiring protection and benefits related to custodianship of a local plant. This at least is not a state imposition of boundary (see Breman, 1987), but may be problematic in other ways. I don’t intend here to make crass generalisations about the “loose structure” of Thai communities and society, which have been divisive (see Embree, 1950). But rather, as Kemp notes (1993:82), in Thailand and Southeast Asia, “the image of a traditional peasant village as a closely organised, corporate, territorially defined community is a myth,” and that it is not timeless or static, but ever-changing. Even down to family units, individualism should be expected. While registration by one community or a coalition of communities may benefit them, it has the potential to exclude others. It also raises concerns about community distribution – who controls and distributes benefits? Does the village leader (*Kamnan*) have undue control over village resources? This has the potential to cause some conflict within/between communities, and there is the risk that the Committee rulings may not fully appreciate the local circumstances. Local customary regulation systems may be important in resolving these potential disputes and the PVP Committee should consider referring to these informal norms in such circumstances.

The profit sharing arrangement is something that will have to be tried and tested, with possible clarifications or amendments to the Ministerial Regulations before smooth implementation can be expected (if ever). The time frame for this is likely to be long (in the order of years) before the profit sharing arrangement functions effectively (Surakrai, Interview. 2006).

It is worth noting here that the local plant protection under the Act essentially simplifies PIC procedures developed in the CBD by administratively requiring the local custodians of the variety to register the variety. PIC can then be sought by researchers through the DOA office as a one-stop-shop. The exception here would be where a local herb has medicinal qualities and is protected under both the PVP Act and the Act on Protection and Promotion of Thai Traditional Medicinal Intelligence. In the future there is some potential for this to occur, especially given the character of Thai traditional medicines (see Chapters Five and Eight).

There is a strong incentive for local communities to register their varieties to receive both protection from misappropriation and possible monetary benefit flows. During the drafting of the DOA Draft PVP Act it was believed that the potential monetary incentive would encourage communities to register and conserve varieties that might be useful. Notably, “protection from biopiracy was not the primary concern,” and “the Act does not necessarily provide full protection against this” (Surawit, Interview. 2005). In addition, databases have been suggested by DIP as a solution.

It is important for the DOA to inform farmers about the process of registration, and it is likely that “NGOs will also play a key role in this” (Wichar, Interview. 2005). Even still it is possible that many communities will not learn about registration, or have the means or inclination to apply. In most cases it will be communities that have a strong realisation of the commercial value of certain plant species, and that have the knowledge and means, that will register. This still leaves scope for biopiracy to occur, and hence other means such as databases of plant varieties, associated local custodianship and better recognition of informal customary norms could help close this window. Furthermore varieties that fall out of this scope, and are not new varieties, fit within the scope of Chapter Five.

Chapter 5 of the Act is designed to protect general domestic and wild plant varieties. The chapter establishes that any person who:

Collects, procures or gathers general domestic plant varieties, wild plant varieties or any part of such plant varieties for the purposes of variety development, education, experiment or research for commercial interest shall obtain permission from the competent official and make a profit-sharing agreement.

Income accruing from this is remitted to the Plant Varieties Protection Fund (established in Chapter 6). Rules and procedures are yet to be established under the Ministerial Regulations.

The profit sharing agreement requires the following:

1. the purposes of the collection and gathering of the plant variety;
2. the amount or quantity of samples of the intended plant variety;
3. the obligations of the person to whom permission is granted;
4. a stipulation if IPRs in the products which result from the development, study, experiment or research of or into the plant variety and which are derived from the use of the plant variety under the agreement;
5. a stipulation of the amount or rate of, and the term for, the profit-sharing under the agreement in respect of products derived from the use of the plant variety thereunder;
6. the term of the agreement;
7. the revocation of the agreement;
8. a stipulation of the dispute settlement procedure; and
9. other particulars as prescribed in the Ministerial Regulation.

Thus an access and benefit (profit) sharing procedure is established with enough flexibility for a wide variety of different agreements. It is then up to the parties to reach mutually agreed terms. The fact that a Department of Agriculture official is the point of contact has certain implications. First, they will likely have experience in dealing with such agreements and therefore assumedly should be able to more easily negotiate mutually agreed terms with the person wishing to access the plant variety. Second, however, the decisions made about profit-sharing of a domestic or wild variety is removed from farmers or custodians who may utilise or conserve these varieties (where

they exist).¹³⁹ This again highlights the importance of local variety registration where it exists within a finite area. Where the general or wild variety exists on a broader scale the decision is placed in the hands of the official. Appropriate representation of those who use or conserve local or wild varieties could be a point of concern (Witun, Interview, 2005).

Chapter 6 sets up the Plant Varieties Protection Fund. The Fund is intended to be expended for the purposes of *assisting and subsidising activities related to the plant varieties conservation, research and development*. Income reaches the fund from profit-sharing agreements under Chapter 5, income from the registration of plant varieties, government subsidies and other sources. The money may be provided to local government bodies where the plant varieties have been sourced for exploitation. The body then administers the fund to communities for projects on conservation, research and development of plant varieties. The PVP Committee establishes a separate and smaller Fund Committee to administer and allocate funds.

Chapters 7 and 8 in the PVP Act essentially deal with infringements of the rights of right holders, and describe penalties. Various infringements, including unauthorised collection of plant varieties or parts thereof, include penalties of short prison terms and fines.

Although the PVP Act is promising in terms of participation, representation and its broad scope, there are currently only Ministerial Regulations for the protection of new plant varieties. Thus far the Committee has largely been discussing the protection of new varieties based on submissions from larger scale breeders and agricultural industry interests. Regulations for domestic, local and wild varieties are yet to be implemented, and have been held up in both Houses of Parliament and the Council of State whilst attempting to reconcile potential implementation difficulties. These regulations were expected to be passed in 2006, allowing local communities and farmers to register their local and wild varieties (Wichar, Interview. 6 May 2005).

¹³⁹ Although “wild variety” would typically imply that it is not cultivated or utilised by farmers, it may however be conserved by certain individuals and communities for reasons of ecosystem balance, local custom or belief. “Wild plant variety” is defined as “a plant variety which currently exists or used to exist in the natural habitat and has not been commonly cultivated” in the PVP Act.

Although a number of government officials, NGO staff and academics suggested that there were some local communities interested in registering local varieties and benefit sharing, it seems likely that it will only be a small number of communities unless the benefits are clearly demonstrable. The response from a farmer researcher/educator was to claim that it “still won’t protect traditional knowledge of local plants, or won’t encourage the use of traditional varieties. Farmers have continued to move on to modern crops and the knowledge of older local varieties is being lost. Education is needed for that” (Daycha Siripat, Interview. 2005). Clearly a broader, more concerted approach would be needed to capture these other concerns. But, as one academic has noted: “Implementation of laws is slow. We are a developing country” (Surawit, Interview. 2005). Legal effectiveness in Thailand is clearly limited by the ability to implement and enforce laws, requiring considerable resources which are often unavailable or inadequately distributed.¹⁴⁰

While the PVP Act has received praise by international policy-makers for its *sui generis* qualities, there are critics of the lack of implementation and enforcement, as well as the overriding interests of the Committee. Chairman of the NHRC, Saneh Chamarik (Interview, 2005), has noted that the “bureaucracy have their own interests, and even their own culture. They exist far from the realities of rural communities.” This relates back to the situatedness of those who administer even this seemingly quite progressive law. For local farmers the response was one of removal from the formalities of such a centralised law.¹⁴¹ Although it was witnessed that NGOs have been informing farmers groups, there is some scepticism suggesting that the law will only operate effectively for a few unique circumstances. A number of critics suggested that the Committee has been dominated by specific industry interests and their representatives in the Committee are continuously outnumbered, and therefore local farmer concerns are not being sufficiently heeded (Anonymous NGO staff, Interviews. 2005). Some have even anonymously accused the Committee of “dirty tricks,” to deter NGO, farmer and critical academic presence in meetings.

¹⁴⁰ This is another reason why this law is more suitable than the property rights model used in the Indian Plant Variety Protection and Farmers Rights Law, which is more complicated and will be comparatively more burdensome on authorities than the Thai law.

¹⁴¹ This was the case in all local case study circumstances described in Chapter Nine.

7.6 Act on Protection and Promotion of Traditional Thai Medicinal Intelligence

The Act on Protection and Promotion of Traditional Thai Medicinal Intelligence BE 2542 (1999) (TTMI Act) is one of only a few Acts of its kind in the world. The TTMI Act was developed at the same time as the PVP Act and there was reportedly considerable cross-department cooperation and discussion.¹⁴² It was claimed that the development of the Act also saw considerable input from many groups and individuals within civil society. Table 5 provides a chronology of the development and operation of the Traditional Medicinal Intelligence Act.

Chapter 1 of the Act establishes the Committee on Protection and Promotion of Thai Traditional Medicinal Intelligence. The Committee is made up of ten Director-Generals from a broad range of relevant government departments and similar to the PVP Act, it balances these bureaucrats with selected practitioners that have knowledge, capacity and experience in traditional Thai medicine, the production or sales of traditional Thai medicine, and plantation or transformation of herbs.

Chapter 2 outlines means for the protection and promotion of intelligence on traditional Thai medicine. This section is devoted to protection of formulas of traditional Thai drugs and similar texts on traditional Thai medicine. Such formulas and text documents can be of three categories – national, general or individual/personal. This also reflects different knowledge domains over traditional medicines, with the exception of “communal.” National and individual formulas and documents can be registered and intellectual property rights applied to them. Such intellectual property rights should be valid for the life time of the bearer of the registration and for another 50 years from the time of the registration owner’s death. Patents on drugs can also be applied for under the Act.

Chapter 3 of the TTMI Act details the protection of herbs. Under this chapter the Committee can specify the kind, characteristic, type and names of herbs that are of study and research value, or have important economic significance, or may become extinct and designate them as “controlled

¹⁴² Although there were also other complaints by a number of individuals that the TTMI Act was driven by personal ambitions of Public Health officials, that there was not adequate consultation with other departments, and that it could sometimes conflict with the PVP Act or other Forests or Environment department laws.

herbs.” Controlled herbs are thus given special treatment designated by the Minister, with advice from the Committee with regards conservation, transport, use for medicinal and study purposes, export and other matters. For controlled herbs there is thus certification required by individuals outside government bodies to undertake the aforementioned activities on such herbs. Ministerial Regulation has not been developed to fully implement this chapter (Chamaiparn and Prapoj, Interviews. 2005).

For the benefits of conserving herbs and the areas from which the herbs naturally originate in the ecological system, the Minister with advice from the Committee can designate a “Plan for the Conservation of Herbs” which must then be approved by Cabinet. The Plan designs powers to restrict access to conservation areas to conserve natural resources with minimal human disturbance. The plan also requires surveying and researching of the herbs to assist with conservation.

The Act is quite strict in prohibiting *ownership of land, or plantation, or construction, or cutting, or destruction, or burning, or destruction of trees, plants, or biodiversity or the ecology system, or digging of minerals, stones and soil* in the conservation area. It also restricts changes to waterways that might affect herbs in very broad terms. If the owner or possessor of the land registers the herbs on their property they are eligible for assistance or support under this Act, however this assistance is not yet specified.

A potential conflict arises here where local communities following traditional lifestyles have conserved or utilised protected herbs. In such cases the medicinal value of the herbs may not have been known were it not for those communities, and there could have been unwanted disclosure which brought about such discovery. Thus it is important to question whether such exclusion is necessary or justified, and whether there has been prior informed consent about such knowledge of herbs in the first place. Although there is a fairly balanced membership on the Committee, the final word rests with the Minister and Cabinet and it is conceivable that custodian communities could be excluded from herbal use and conservation. Such exclusion however, could be construed as a breach of the Constitution of the Kingdom of Thailand, Section 46, as discussed previously. The Committee, Minister and Cabinet will have to be very cautious how it approaches such cases,

and the Director of the Traditional and Alternative Medicines Institute, Wichai Chokewiwat, has indicated that local communities are unlikely to be excluded – but rather, commercial cultivators are the main target (Interview, 2005).

Chapter 4 is designated to conservation; however Chapter 3 deals with most of the substantive content for the conservation of herbs.

Chapter 5 of the Act describes the role of officials. Officials authorised under the Act have quite strong powers including the confiscation of items believed to be in violation of the Act, as well as the relocation of people from herb conservation areas. Chapter 7 describes penalties that are similar in nature to that of the PVP Act.

Chapter 6 establishes the Fund on Traditional Thai Medicinal Intelligence. The fund receives its income primarily from state subsidies, and money from the private sector relating to the operation of the Act. The Fund is controlled by the Office of the Permanent Secretary, from the Ministry of Public Health. No benefit sharing arrangement has been established for communities that reside in areas to be designated as herb conservation areas, and there are few limitations on the expenditure of the Fund.

Commentators such as Jaroen Compeerapap, Lecturer in IP law and Traditional Knowledge at Silpakorn University, have warned that careful consideration needs to be made about implementation of certain aspects of the Act. Namely he was concerned that the mechanism for benefit sharing through the Fund is not clear or necessarily transparent. Furthermore he noted that it is not clear how the Act will *promote* traditional knowledge of medicinal herbs, that some revision of the Act may be necessary, or the organic law will have to clarify this aspect (Jaroen, Interview. 30 June 2005). A DPH official indicated that traditional medicines promotion, although not explicit in the Act, is broadly pursued in the mandate of the department, and he noted a recent traditional medicines fair supported by the department (Prapoj, Interview. 2005).

Pennapa (2000) indicates that the Fund on Traditional Thai Medicinal Intelligence will ultimately operate like an access and benefit sharing mechanism, but it is not yet clearly stipulated how.

Chamaiparn (Interview. 24 May 2005) indicates that the Ministerial Regulations will clarify this when they are passed from the Cabinet Committee and Council of State where they have been deliberated for some time. The control of herbs essentially comes under the authority of the state and there is no *guarantee* of continued access or benefit flows to custodian communities (Wisut, Interview. 19 August 2005). Furthermore there is a question of whether prior informed consent will be obtained of local custodian communities in disclosing the value of such herbs and assuming state control over them. The continuing traditional practice by village healers on such herbs could, in some cases, be threatened for a classic western version of conservation which requires that humans be separated from nature, despite a history of interaction. The Director-General of the Traditional and Alternative Medicines Institute (Wichai, Interview. 2 August 2005) allays such concerns, saying that it is department policy to obtain prior informed consent of these communities, and that the control of herbs should be conducive to continued traditional medicinal application. He notes that a pilot project will be needed in the very near future to test the implementation of these policies and the organic law when it is passed. There could in reality be problems of competing or overlapping jurisdiction over protected forest areas between DPH, the National Parks Department, and RFD.

The TTMI Act and the PVP Act represent significant advances in *sui generis* lawmaking in their own right. Despite this, they suffer from a lack of implementation and enforcement capacity. They also have limited mandates which may not protect domestic bio-resources from misappropriation and biopiracy, nor do they necessarily promote traditional knowledge beyond the suggestions by TTMI officials that they encourage herbal medicines fairs, and the “Royal system” of Thai traditional medicines at the Institute.

Some academic advocates have suggested the need for a broader, more holistic “Traditional Knowledge Act” (Jade, Interview. 2005). The survey discussed in Chapter Five of the thesis indicated that there are broader concerns which need to be addressed, and which may more closely reflect the concerns of local communities and farmers groups. DIP has been working on a draft for a considerable length of time, but it is unlikely to be completed or passed in the near future (Suradej, Interview. 2006). Some of the main problems have been an incomplete conception of the problem, the diverse needs of stakeholders and the range of modalities needed

for resolving the issues. Because IPRs are the most prominent legal regime related to knowledge, the modalities that are often used are corrupted versions that re-import some of the same problems. Appropriately reflecting the varied value and logic systems involved is highly problematic.

A range of related concerns have arisen in the Thai policy-scape, including those surrounding the pursuit of “community rights” and especially “community forests.” Although concerns surrounding the Community Forests Bill (now of an unclear status) were predominantly associated with land and resource use, they have consequential relation to the intangible resources of primary concern in this study. The link is something that should not be ignored, considering the concentration of traditional knowledge embedded in the culture, customs and livelihoods of communities living *in situ* in forest areas (Pearmsac, Interview, 2005). The concept of the Bill has also had broader implications for conceptualisation of community identity and resource apportionment in other settings (i.e. agricultural, aqua-cultural, or other unique settings with knowledge, resource, and customary relations).

7.7 Community Forests Bill

The Community Forests Bill (CFB), while it was still being actively negotiated, represented an opportunity for Thailand to balance desires for forest and watershed conservation areas, and the maintenance of the culture and livelihood of indigenous minority groups and local communities *in situ*. Unfortunately the continuous parliamentary negotiations over the CFB have now lapsed due to sustained joint parliament-senate committee disagreements, the government overthrow in 2006, and with the dissolution of the Constitution. The CFB has an unclear future. The promulgation of the new Constitution will be a test for potential revival of Community Forests Bill talks.

The context of the Bill could have provided (or could still provide) an important example to the international community of the plethora of threats and pressures facing indigenous and local communities, which all too often seems lost to other debates such as “facilitated access” and technical forms of “TK” protection (typically couched in terms of IPR discourses) in international

fora (see Appendix 6 for a detailed table of threats to local communities of Northern Thailand; and related discussions by Coombe, 1998; 1999; and Greene 2002). “Biopiracy” threats, and the debate over control of access and benefit sharing arising from the utilisation of genetic resources, are things that typically seem far removed from the daily lives of these communities, their culture, beliefs and environments (See Chapter Nine).¹⁴³ As Dutfield (2004: 109) notes:

Overall, IPRs do not appear to provide many opportunities of which traditional peoples and communities can avail themselves. On the contrary, framing the issue of traditional knowledge protection in the discourse of western intellectual property rights does not go very far unless it is embedded in much broader-based negotiations between traditional peoples and communities, national governments, business and scientists in which the most fundamental concerns of these peoples and communities, such as self-determination (for indigenous peoples), territorial rights and human rights, are openly and comprehensively addressed.

Clearly then it is of crucial importance for the Thai government to recognise more fundamental concerns to livelihood and self-determination. The CFB was intended to provide a type of territorial right to dwell in forest areas and utilise resources where “community forestry” has traditionally been practiced (often by minority tribal groups, but also ethnic Thais in some cases).

The Community Forests Bill was initially drafted in 1991 by NGOs and concerned academics (such as Saneh Chamarik and Yos Santasombat) with close consultation and input from local communities. The CFB then went through extensive parliamentary and public consideration, has had to contend with Royal Forestry Department versions or drafts, and underwent rigorous and polemical scrutiny in a joint-parliamentary committee, only to finally lapse following the aborted election and coup of 2006.

The main contentions about the CFB had related to whether or not to allow local communities to reside in protected forest areas. On one extreme there had been deep green conservationists who believe that these areas should exclude local communities from accessing them because they are

¹⁴³ Although notably, NGO influence has clearly raised their awareness considerably.

of national significance as protected forest for conservation, they contain endangered species, or they are watershed areas. Government authorities such as the DOA and RFD have often sided with this exclusionist ideology, and there is a troubled history of state-locality conflicts and land evictions. The debates are often framed in terms of conservation knowledge, in which other local knowledges are also pertinent. Dr Santita Ganjanapan (1996) notes also that in Thailand bureaucrats are still sceptical about local people being stewards of nature as well as about the value of indigenous knowledge itself. The knowledge is often regarded as inefficient, inferior to scientific knowledge and an obstacle to development (see also RFD [Aniwat], c2002).

Opposing them have been pro-community individuals and organisations, who argue that there is a long history of local practice within certain community forest areas, and that such broader concerns in recent years have had the effect of excluding communities and limiting community rights. They argue that in fact their long history of conservation and sustainable use through decentralised and people-centred development is more appropriate.

The Bill changed significantly since it was first drafted in close consultation with local communities. The Bill essentially attempted to provide for a system of co-management of forest resources. The Appendix contains a chronology of events during the negotiation of the Community Forests Bill (Appendix 7).

The remainder of this section discusses the ultimate content of the Community Forests Bill from a tentative translation of the document since it had entered the joint parliamentary committee (version 12) in 2005.

Chapter 1 of the CFB simply provides a series of definitions which have been continually debated.

Chapter 2 of the CFB established committees for the administration of the Act and community forest areas. A primary Policy Committee on Community Forests was intended to develop policies of community forests establishment, to enact ministerial regulations and other organic laws, to assign experts in the field to province governors where they are appointed to Provincial

Community Forests Committees, to prepare annual reports on the conditions of community forests, to consider appeals of community forests prohibition and other responsibilities.

Chapter 3 of the CFB established Provincial Community Forest Committees. These committees were to be administered by the provincial governor and made up of a balance of government officials and 'qualified people' being community members, academics or experts to act on the board. Apart from general administrative duties, the committee is intended to administer community forest management plans and considers community expressions and opinions of such plans.

Chapter 4 provided for community forest establishment. A group of at least 15 adults (over 18 years) dwelling in a locality containing forest areas may make a petition for community forest establishment. The petition must include identification of the individuals that make up the community, a brief history of their occupation of this area including a map showing its territories and neighbouring areas, and a plan for preservation or restoration of the natural resources and ecosystem diversity. This petition is decided by the Provincial Community Forest Committee.

Chapter 5 described community forest management. Purportedly, once a community forest is approved by the Provincial Committee, the community must abide by the Community Forest Management Plan, and work with the relevant government officials to look after the forests and natural resources. A Community Forest Management Committee would be assigned to the forest and is the primary point of contact between officials and community members. The Committee is obliged to take care of the public properties of the community forests. Essentially the Community Forests Management Committee has juristic rights over the public properties of the community forest. There are restrictions, for example, on activities such as logging and collection of trees and plant in preserved zones within the community forest area. Where these rules are violated there is a liability of prosecution.

Chapter 6 discussed the control of community forests. This section outlines that the Provincial Community Forests Committee may allow research in the area for academic purposes, as well as

research by private sector bodies subject to PIC. The section also discussed the role of community forest officials who operate under the Provincial Committee.

Chapter 7 allowed for the withdrawal of community forests, either partially or entirely under non-compliance conditions. Unmovable property becomes state property, and moveable property may be transferred to other community forests if the Provincial Committee approves.

Chapter 8 established a Community Forests Fund to be administered by the Royal Forestry Department and the Ministry of Agriculture and Cooperatives. The fund was to be spent on the support of community forests management, the support of local communities concerning this, and in the administration of the Act. Community Forest Management Committees may apply for money from this fund.

The CFB represented an opportunity for local communities and the government to co-manage forest areas such that they could be simultaneously safeguarded and used. This would in theory allow communities that would otherwise be excluded from their land and local practices, to continue their traditional lifestyles and participate in the conservation of biodiversity in these areas. Whilst the CFB concept has only lateral relevance to intellectual property, it has key relevance for traditional knowledge, and it could have established one means for prior informed consent of local communities upon accessing their knowledge or resources. In other circumstances it could have potentially helped facilitate benefit sharing arrangements, where desired. Most importantly it could have provided for the promotion of traditional local practice and thus the maintenance of traditional knowledge systems *in situ*.

With the legislative future of the Community Forests Bill uncertain, the strength of community rights in Thailand still rests with the informal, political or demonstrative actions of communities to assert themselves as rightful custodians of their local environments, rather than through formal legislative means. In fact, some academics have suggested that community forests activists find this a preferable political position giving them considerable more leverage for ongoing negotiation in the absence of a codified law (Fisher, Pers. Comm. Nov. 2006; Yos, Interview.

2005). Given the typical regional distrust of centralised bureaucratic control, and the legal informalism that is prevalent throughout Thailand, this is not surprising.

7.8 Other Relevant Policies and Approaches

The government has implemented a number of other policies that may have some consequential impact on traditional knowledge and biodiversity. The most pertinent is the One Tambon One Product (OTOP) initiative.

One Tambon One Product refers to a government initiative to promote local small to medium enterprises. Essentially, as in the title, it seeks to focus the production of a tambon (local administrative sub-district) on one or a few specific products that the area specialises in. The initiative has considerable merit for promoting local products, and promoting local heritage through these products. One commentator (Witun, Interview. 2005) however, has warned that there has been a trend toward the production of trinkets targeting tourists, with “little or no real traditional or cultural heritage value.” Often OTOP products are little more than attempt to “re-traditionalise” designs and products for commercial purposes. Furthermore it might be said that a focus on the promotion of products at a tambon scale, may in effect cause the diversion of production away from products unique to specific villages at the smaller scale.

The OTOP project has implications for the protection of folklore and handicrafts that may be associated with local culture, but is not particularly relevant to traditional knowledge that relates to natural resources (although there may be a few cases where it is). There is considerable scope for further investigation as to the impact of OTOP on the preservation of traditional practices, local culture and folklore.

Another main traditional knowledge “protection” measure that has been widely discussed is the concept of traditional knowledge registries and databases. There are many ways to establish databases and registries, but to be effective they should be carefully designed, clearly explained, accessible, but also sensitive to customary rules. In order to achieve this, the database should document the plant variety/biological resource, its attributes, its distribution (even

approximately), who owns physical property rights, the groups who have traditional knowledge of its uses, groups who act as custodians, and any customary protocols associated with its use. A detailed and accessible database such as this could be an effective way of preventing misappropriations, however the complexity of the database may affect the ease with which stakeholders or officials would register entries.

Traditional knowledge databases have also been discussed in the ongoing official meetings on Thai “TK-FL,” for which some already exist, however they are generally poorly coordinated and are not yet widely known about by the public. Members of the public have been urged to register traditional knowledge with a database in the Department of Intellectual Property, however only 3750 had been listed between 2002-2005 compared with more than 130,000 in similar databases in India (Wiboonlasana Ruamraksa, Deputy-Director General, DIP. Cited by Bangkok Post, 26 May 2005). Department officials have noted that this database has primarily received registrations “relating to designs, handicrafts and folklore, rather than relating to genetic resources” (Suradej, Interview. 2005; Kawin, Interview. 2005). The DOA and DPH have databases on plant varieties and herbs, however it is unclear to what extent ethno-botanical information or related traditional knowledge has been included in these.

Although some press releases have been made, and there has been significant media coverage of these databases, many farmers are no doubt at a loss as to how they would go about protecting local varieties at this stage, or how they can register traditional knowledge, if indeed this is what they desire. On visits to local communities some NGO workers thought it strange when questions were asked of local communities about protection of traditional knowledge and local varieties. The response from local farmers and villagers were largely blank stares and confusion because they know little about the PVP Act, the Act on Traditional Thai Medicinal Intelligence or about means of database registration of traditional knowledge.¹⁴⁴ In effect there is no designated “TK database,” but rather several that contain only elements of relevant traditional knowledge, or are primarily devoted to “genetic resources.” The process is currently not transparent, and these

¹⁴⁴ This refers to a small sample set of approximately 8 farmers and local people from the Khan Watershed, Chiang Mai Province; 5 farmers in Ku Ka Singha, Roi Et in the Issan Region (Northeast); and about 8 farmers in a village on the outskirts of Suphan Buri (town), Central Thailand. Some farmers were asked individually and some were asked as part of a small forum.

considerations point to a potential problem of poor direct representation of farmers and local communities. It also suggests some hesitance by NGOs in promoting databases and registries, because these organisations perceive them as another form of reductionist quantification that may in fact place the knowledge into the public domain (Witun, Interview. 2005; Ubon, Interview. 2005). This is a valid and important concern, worth some deliberation with reference to developments in India.

Under the Indian Biological Diversity Act 2002 (a *sui generis* biodiversity law), the Indian National Biodiversity Authority is coordinating local People's Biodiversity Registers (PeBRs) across India. At each local area the Biodiversity Management Committee must help facilitate the documentation of traditional knowledge related to biodiversity and its many facets. A National Workshop on People's Biodiversity Registers was held in June 2006.¹⁴⁵ The compiling of PeBRs involves obtaining prior informed consent of local communities. In fact, each community controls the entire PeBR process, with the assistance of NGOs and the Biodiversity Management Committees (National Biodiversity Authority, 2006). Only knowledge that receives consent is shared. Knowledge will be coded differentially depending upon the desire of the communities – some will be kept confidential (where it is considered secret or sacred knowledge), and some will be available to the public. At the discretion of the local communities, the information will be linked to a larger Indian Biodiversity Information System. Thus the PeBRs recognise, make distinctions between, and respect different knowledge domains and customary norms.

The scale of this task is enormous, but the PeBRs development process is already at a remarkable level of complexity. During the next six to twelve months there is a working plan for the development of rules (under the Biological Diversity Act), processes, technical measures (including development of the nationwide Biodiversity Information System and incorporating open source People's Biodiversity Register Information Systems – PeBINFO), PeBRs Methodology Manuals for use at the Biodiversity Management Committee level, establishment of Technical Support Groups (including taxonomists and ecologists, expert farmers and computer scientists), amongst other measures (National Biodiversity Authority, 2006). As the Peoples'

¹⁴⁵ The meeting documents can be found online at: <http://www.nbaindia.org/pbr/pbr.htm>

Biodiversity Registers system is developed across India, it will provide important insights for the development of similar projects in other countries.

There are important lessons to be learned from the Indian approach. In response to the potential reductionism inherent in registers, and because government-controlled registers may be viewed with some scepticism by farmers and local people, they have tried to develop a more holistic approach. While this may be feasible in a country like India that has a densely layered bureaucracy and highly active civil society, it may be more difficult in a country like Thailand, where the regional bureaucracy is considerably smaller and more limited in capacity. Nevertheless the Indian approach provides an innovative approach warranting consideration.

7.9 The Role of Civil Society, NGOs and Academics

Civil society,¹⁴⁶ including public protest movements, NGOs and academics, has played an important role in influencing mainstream politics, resisting imposed regulatory standards, and inciting change. NGOs and academics play a crucial role in disseminating information to local communities and farmers, as well as often advocating on their behalf in the media (for better or worse), and lobbying government. Demonstrations have frequently been held on issues relating to biopiracy, natural resource management, community forestry and similar issues, and have been able to enrol considerable public and political interest. Importantly, it is NGOs and academics that have identified and converted local cases of perceived misappropriation, into discourses along the lines of broader international debates. Consequently the shaping of Thai laws has been highly connected to public protest, NGO and academic pressures.

Beyond the development of laws, their implementation and enforcement are also reliant upon civil society actors to enrol broader members of the public. Due to a lack of staffing and funding

¹⁴⁶ Definitions of “civil society” have historically also included businesses and corporations in their scope, and it was essentially considered the domain separate from government and from household/family. More recent applications of “civil society” have tended to exclude business and corporations because their interests have increasingly been perceived as separate from that of the broader public. General shifts in the structure and size of corporations, and shifts in the global political economy to a primarily market based system have perpetuated this effect. The definition of civil society used here excludes business and corporations; however the perspectives of some companies are discussed elsewhere.

in government departments, as well as their typically centralised location and operation, government officers often implied that whilst they do their best, they cannot consult or communicate with all stakeholders about the development and administration of Acts and related programs (Wichai, Interview; Wichar, Interview. 2005). During the development of the PVP Act, NGO staff (including Witoon Lianchamroon and Daycha Siripat) offered to inform the communities through the NGO-COD network, and various farmers' and peoples' networks about the registration of local and wild varieties (Jaroen, Interview. 2005). This relationship is not without dissent however, and department policy and actions frequently conflict with NGO, activist or academic concerns (for example, in the activities of the PVP Committee).

Similarly with databases, while departments suggest that local and indigenous farmers have been broadly encouraged to register their knowledge related to resources, processes and products, the extent of registration is still quite low when compared to the relative success of Indian Peoples' Biodiversity Registers. The role of NGOs and academics in Thailand has been emphasised such that traditional knowledge is "protected" through things like registers. For example a comment was made by the head of the Patent Division of DIP, that it was important for people like Witoon Lianchamroon (Director of the NGO Biothai) "to disseminate to local people that traditional knowledge registration would be beneficial for their protection." On the other hand, disclosure of traditional knowledge into prior art databases might actually open it up to misappropriation in cases where it was not formerly disclosed. Alternatively there might be more appropriate "defensive" responses such as the recognition and documentation of customary laws and protocols (see Chapter Nine). These tensions are continually re-examined in government-civil society interactions and shape the heterogeneous and ever-changing organism of law in Thailand.

Some of the most prominent NGO and activist activities have been directed at the potential imposition of inappropriate laws onto Thailand, in the form of free trade agreement requirements. The following section analyses these complaints and protests against the FTA talks in light of heterogeneous Thai public concerns, values and norms.

FTA Protests and Resistance

In 2005 public rallies and resistance campaigns were organised and held, involving NGOs and academics expressing their concerns in relation to the Thai-US FTA. The most contentious element of which has been the IPRs components, particularly patents on pharmaceuticals, plants and animals (and their components).

Public participation in free trade agreements involving Thailand has been minimal to date. During the Thai- Australia FTA negotiations the public were largely excluded from any input. What is even more problematic, was that the Cabinet approved the Thai-Australia FTA without even passing it through the House of Representatives (or National Assembly) prior to signing (Buntoon and Channisa, 2005). It was argued by concerned groups that the FTA requirements could lead to amendments to national laws, for which the House of Representatives' approval is required as prescribed in the Constitution of the Kingdom of Thailand, Section 224. This FTA would likely impact the implementation of organic laws and regulations, but it is unclear to what extent amendments to national laws were required. In this sense the Thaksin Government (*Thai Rak Thai* party), in power at the time, sidestepped this provision in the Constitution.

Controversially, the Thai-US FTA is subject to a confidentiality agreement which means that all details of the negotiations must be withheld from the Thai public (The Nation, June 15 2005, Acc 28/7/2005). The US demanded this prior to the start of negotiations. Under Article 214 of the (now repealed) Constitution, it has been argued that a referendum was needed to determine public opinion before the passing of the FTA. If the countries reached an agreement, it seemed highly likely that Thailand will be required to amend its national laws, requiring parliamentary consideration, and hopefully (but not necessarily) public input.

In response to the plethora of bilateral free trade agreements that were instigated by the former Thaksin Government, the NGO network "FTA-Watch" was established in 2003. FTA-Watch is made up of academics in state and private educational institutes, independent academics, lawyers, environmentalists, social activists, and development workers in networks such as the Alternative Agriculture Network, Thai Network of People Living with HIV/AIDS, and the Consumer

Network amongst others. The network of FTA-Watch is well-coordinated and has three primary activities: The development of a knowledge base for public dissemination, the facilitation of a social movement, and political lobbying. These have involved numerous seminars; the dissemination of educational materials and establishment of a website; public protests at Government House (28 June 2005), the US Embassy (29 June 2005, 1 April 2005) at the Ministry of Foreign Affairs (1 April 2005), and at the location of the third round of FTA negotiations in Pattaya (5 April 2005), and many other subsequent actions (The Nation, 9 April 2005; The Nation, 6 April 2005). The protests and demonstrations at the seventh round of FTA negotiations were significant because it has been reported that public pressure caused the head Thai negotiator, Mr Nitya Pibulsongkram to resign (The Nation, 18 January 2006). It has been claimed that up to 10,000 people attended this protest.

The primary concerns of the network relate to public input and/or disclosure of FTA negotiations, a referendum on the proposed agreement, and parliamentary consideration of the FTA at the very least. The primary substantive concern has been in relation to patent scope including provisions relating to pharmaceuticals, but also in relation to copyright issues affecting consumers, and issues such as investment, agricultural tariffs and subsidies. Ultimately if the Thai negotiators agreed to the “full package” of the Thai-US FTA, there would be a risk that higher IP standards would be sacrificed in order to receive other trade concessions. It was argued at the time that if the FTA did not receive a referendum, or furthermore if it did not go to the House of Representatives for consideration (which would likely violate the now repealed Constitution, Section 214), the public and their representatives will have been entirely removed from the process. This could have threatened to undo the laws that Thailand has developed with broad participation from the public and cooperation between various groups and departments.

At present the FTA is on hold indefinitely while recent party political turmoil is resolved and re-elections occur. Notably, the Thai-US FTA was a considerable factor leading to poor public opinion of the former Prime Minister, Thaksin Shinawatra, with FTA-Watch groups and concerned sectors of the public demonstrating with other groups shortly before the military coup took power in 2006 (Bangkok Post, 26-28 Feb. 2006). Again now, Thailand will go through another process of legal evolution, which will hopefully establish some democratic reforms.

This section highlights the important role of civil society in shaping public opinion and official actions in relation to actual and potential regulation of people, things and knowledge. Lawmaking in Thailand presents a case whereby there is considerable regulatory malleability, and public and civil society actions will often determine the fate of laws, their implementation and enforcement.

7.10 Summary.

In this and previous chapters we have identified that the boundaries of “legal domains” are actually broader than their typical autonomous representation. As Santos (2002:85) notes, the legal field “is a constellation of different legalities (and illegalities) operating in local, national and global time-spaces.” These heterogeneous spaces and scales are shaped by the discourses and actions of an array of connected actors. As Santos (2002:85) further explains, “the way law’s potential evolves, whether towards [potentially repressive] regulation or emancipation, has nothing to do with the autonomy or self-reflexivity of the law, but rather with the political mobilisation of competing social forces.” Laws may be directly shaped by influential experts and epistemic communities, just as they may be shaped by NGOs, farmers groups and academics. The implementation of IP laws may also have limited extension into social domains due to public resistance, or a lack of willingness to enforce them on the part of authorities. If then, the dominant or imposed laws are broadly contested based on different perceptions of what is just or equitable, then continual re-conceptualisation is possible in the organism of law. These politicisations are evident in the most recent demonstrations and public protests in Thailand.

We have also indicated that the scale (and locale) at which law is analysed is not purely natural or one-dimensional, particularly in a country like Thailand, with such unique social and political forces. Law and scale are distorted by their own local politics, and they travel differentially. There is good reason for this – the IP laws which have been exported from Western countries satisfy specific business interests in parochial space-time. The universalising notions enforced by the WTO and trade pressures are generally resisted in a plurality of other circumstances, for plural reasons: economic, legal, cultural, moral, logical, customary and environmental. While states deal directly with bodies such as the WTO, and with trading parties, they present only a

narrow version of national interests which may be popular or unpopular domestically. What seems clear from different representations in Thailand is that the ongoing “IPR regulatory ratchet” (Drahos, 2005b) of ever higher standards is unpopular at the present time, and across diverse individuals, groups and interests. For state bodies and in infra-state politics IPR law is analysed with considerable distrust, scepticism about claimed benefits, and contrasting logics, values and perspectives. The various bodies making up the alternative and attached regulatory discourses (i.e. those surrounding traditional knowledge and protection from biopiracy) are more complicated, diverse and situated in local contexts (as explored in the next Chapter and Chapter Nine).

The Thai government has responded to biopiracy and the ongoing ratchet of IPR standards, by asserting its sovereignty over biological resources and lawmaking respectively. This is manifested in their submissions to international fora and the drafting of *sui generis* laws, along with re-statements of national interest in traditional knowledge and biodiversity (particularly forests) policy. Much of the pressure to draft *sui generis* laws with components of “local variety protection” and other forms of traditional knowledge protection came from NGOs and academic activists. As numerous activists noted, however, there is a difference between drafting sympathetic laws, and effectively implementing them.

As Chamarik has noted, the departments involved in drafting these laws have made only limited efforts to regionalise or de-centralise control of biological resources and traditional knowledge to farmers, healers and communities in the regions of Thailand (Interview, 2005). DIP were upfront in indicating that they rely on NGOs and peoples networks to disseminate information to these groups, and to inform them of local issues and concerns. Local farmers, healers and communities are still falling through the cracks in the formal regulatory framework which has emerged, at least under the present conditions of implementation delays. While the NGOs and academic activists have been critical of the lack of grassroots-relevant regulations, implementation and enforcement, the official response has been slow. It is likely that this is partly rooted in the desire to maintain state-centred control over land and resources (whether physical, cultural or informational), but is also an outcome of limited resources, and policy prioritising. The unyielding centralisation of control has been most obvious in the long protracted, and now unclear, debates over the

Community Forests Bill where tensions between state interests in biodiversity conservation and the diversity of communities have been most clear. Analysed in specific “traditional” locales in these networked debates and actions – the locales of Karen forest-dwellers, or Hmong healers for example, no doubt have different ideas again about the control of natural resources, intangible knowledges, and conceptualisations of their communities within the broader nationalist community/project. Their concerns are based in different values, logics and embodiments again, but will be shaped by their surrounding influences.

In conclusion to this chapter, whilst these aforementioned laws, regulatory approaches and technical measures may provide some scope for “protection” of traditional knowledge, it generally reflects only one view of knowledge – alienable, static and homogenous. The respect and promotion of dynamic local practices, more nuanced understanding of communities and diverse cultural, customary and value-based conceptions of knowledge is needed. The following Chapter examines in more detail, the resource relations of knowledge domains, with particular reference to the bioprospecting and biopiracy case studies. In terms of the protection of the *people* who generate and maintain traditional knowledge (particularly, that is, in local or “folk” domains), the Community Forests Bill was ultimately an initiative of the people that worked towards at least some of these “peoples’ rights-based” goals. While its future is uncertain, forest communities in the North (and elsewhere) are still documenting their histories in local places, post-marking their community boundaries, and developing community forest management plans (in collaboration with various NGOs, academics and a few sympathetic government officials) to secure broader community rights (Ka-Le, Interview. 2006). Complex and relational approaches are needed to address these concerns, and these relations are examined closely in Chapter Eight and Nine.

8. BIOLOGICAL DIVERSITY REGULATION AND KNOWLEDGE RELATIONS

Previous chapters in Part III (particularly Chapter Five) have focused more heavily on the knowledge component of the issues than the resource or environmental component – biodiversity. But in order to have intellectual property (broadly conceived, and including traditional knowledge), the innovation or intangible (knowledge, creativity), must be attached to a thing, an object.¹⁴⁷ Our interest here is in things natural, particularly living biological entities. In a volume edited by Pottage and Mundy (2004), the authors set about to prove that the complex legal institutions (namely property rights) traditionally used to fabricate and place boundaries between persons and things, rather like that between nature and culture, are no longer self-evident. It is argued that something similar is happening here. Both science and law have allowed new manipulations and territorialisations of nature. Most notably science has allowed biotechnological reductionism of natural, biological objects, whilst IP and other laws have either legitimised this, or restricted it. At the same time, the CBD creates confusing boundaries for biodiversity conservation – there is a sovereign state control emphasis, but at the same time, it allows scope for private IPRs over bio-resources, and also provides some legitimisation to traditional indigenous and local communities. All this has occurred rapidly and has largely been pushed by shifts in Euro-American legal standards. Consequently, there are a range of concerns for developing countries, indigenous, minority and local communities.

The chapter discusses biodiversity in Thailand via two categories of its existence and distribution *in situ* and *ex situ*,¹⁴⁸ with reference to its regulation and territorialisation, as well as conservation concerns. Importantly it also explores the biological resource relations that exist with knowledge domains based on case studies from earlier chapters. This helps establish a clearer framework for

¹⁴⁷ This is true of the case of real property derived from Roman law, which are made of set of legal forms and transactions that attach persons to things. Ownership represents the relationship between persons and things, and between persons (See Pottage, 2004; Thomas, 2004; Hann, 1998; and Strathern; 1999b).

¹⁴⁸ *In situ* biological resources, or biodiversity, can be broadly defined to include genetic materials, associated species diversity and ecosystem complexes in “natural” conditions. This is opposed to *ex situ* resources which occur in “simulated” environments. There may be very broad interpretations of what constitutes “natural” and “simulated” environments. For the sake of this discussion, natural environments include national parks, wilderness areas, farms, and open green space. Simulated environments relate to significantly controlled conditions in laboratories, herbariums, enclosed storage, greenhouses or similar.

understanding the regulation of biodiversity-related traditional knowledge, in particular and situated contexts.

8.1 *Ex Situ* Biological Resources, Government Policy and Access

Ex situ collection and storage of biological diversity provides for the conservation of genetic material, or individual examples from a species that could be threatened or may become extinct. Genetic material can thus be utilised in controlled research, or used to reintroduce a species back to the environment. The drawbacks of *ex situ* conservation are removal of the genetic material, individual plant or organism from its original environment, such that it will no longer be influenced by the same environmental conditions, such as climate, soils and interactions with other species (including humans). This eliminates environmental adaptations and those induced by traditional farmers.

Thailand has a history of making donations to CGIAR research centres, particularly the International Rice Research Institute (IRRI), and cooperation with their research projects. It has been suggested by some Thai farmer-activists that 50,000 accessions and deposits were made to IRRI (Ubon, Interview. May 2005). At the same time that the IARCs were being established, gene banks and herbariums were also established and administered by government departments and in universities for research and academic purposes. Some examples include the Forest Herbarium, which has over 200,000 collections, the Kasin Suvatabhandu Herbarium in Chulalongkorn University, and herbariums in Mahidon and Chiang Mai Universities. Each of these has their own policies on access to *ex situ* biological resources.

In Thailand there is no standard for accessing *ex situ* material, but rather several depending upon the provider body. Government bodies where genetic resources are accessible include the Department of Agriculture which maintains a bank of crop and plant germplasm; the Institute for Thai Traditional and Alternative Medicines which maintains a herbarium of potential herbal remedies and tonics; and Biotec, which maintains a culture collection of primarily fungi, but also some other micro-organisms.

The Department of Agriculture was the first department to establish a Material Transfer Agreement (MTA) policy, and a policy of permission to access genetic resources held in *ex situ* gene banks (Wichar, Interview. 6 May 2005). If something novel is found as a result, and the researchers subsequently patent and/or commercialise the product, they must provide a proportion of the profits in a benefit sharing arrangement as stipulated by contract also to be established by the Ministerial Regulations of the PVP Act (Wichar, Interview. 6 May 2005; and Thanit, Interview. 1 June 2005). This is a similar approach to the International Treaty on Plant Genetic Resources for Food and Agriculture.

The Department of Public health (DPH) has adopted a similar policy for foreign gene bank accessions, and is also waiting on Ministerial Regulations to be passed in relation to the Act on Protection and Promotion of Thai Traditional Medicinal Intelligence. Thus access to herbs is in theory subject to a similar process of contract and/or MTA. It is less clear under this Act what forms of local consent are required, or how facilitation of benefit sharing would be made upon commercialisation of a product (Chamaiparn, Interview 24 May 2005; and Thanit, Interview 1 June 2005).

In the case of herbs which may be used for medicinal as well as agricultural purposes (for example many shrubs, vegetables and spices) both DoA and DPH must be consulted. The differentiation between the two is often a matter of legal reductionism, considering that many Thai foods in fact have dual medicinal properties, as tonics and preventative medicines.

Biotec similarly has an MTA policy for academic use only of their microbial cultures. If research is successful then the team is required to come back to seek a further contract securing a benefit sharing arrangement prior to commercialisation (Thanit, Interview. 1 June 2005).

It is clear that the government bodies want to control access from researchers through some sort of access permission or an MTA with subsequent benefit sharing requirement (in line with CBD mandates and the Bonn Guidelines), however it is less clear whether this transfers down to “original providers” or “holders” of biological resources and associated traditional knowledge. In

many cases the government bodies or research institutes learnt about the qualities of plants from general domestic or specific local traditional knowledge in the first place. While retrospective benefit sharing sometimes may occur, there are few other mechanisms that may apply retrospectively to the plethora of materials already extracted and documented from traditional knowledge. Notably, the Draft Model Guidelines on Prior Informed Consent I drafted for the National Human Rights Commission of Thailand focused on retrospective considerations and *ex situ* materials (based on discussions with staff at the Commission). Ultimately it was thought that retrospective applications of PIC would be unfeasible for logistical reasons. Therefore the document has remained a draft for further consideration and discussion in the NHRC.

Databases of various types of genetic resources correspond to the herbariums and gene banks that retain and research them, for example in DoA, Biotec and DPH. Further documentation has been undertaken by the Biodiversity and Research Training Program (BRT), however biological research has not been made a high priority by funding authorities, and there are still considerable gaps in the documentation of the taxonomy of Thailand. One estimate suggests that less than 80 per cent of plant species have been documented, nearly 100 per cent of mammals, but very few invertebrates or micro-organisms (Wisut. Interview. 2 August 2005). Ethno-botanical knowledge or traditional knowledge which relates to genetic resources is even more partially documented or catalogued and it is questionable how accessible a lot of these materials are. The relatively disjointed and partial documentation of biological resources, and particularly traditional knowledge may be viewed both positively (because it cannot be misappropriated and exploited) and negatively (because beneficial uses might not reach the public, and it may otherwise fail to prove prior art if inventors do manage to obtain and use the knowledge).

There are however a growing number of documents which detail aspects of plant and animal biology in various ways in Thailand. "Biodiversity" is however a relatively new concept and thus the bulk of materials refer specifically to a topic area within the broad scope of this term (i.e. there are few biodiversity of Thailand textbooks per se¹⁴⁹). There are numerous English language books which document useful plants for food, medicinal and other purposes in Thailand (see Appendix 7 for a list).

¹⁴⁹ Probably the best text on biodiversity in Thailand is Wisut (1995).

Of more practical importance for the protection of existing traditional knowledge (rather than retrospective considerations), is *in situ* resource regulation. Again there are a number of regulatory contexts associated with these resources and associated knowledge.

8.2 Access to *In Situ* Biological Resources

Thailand is a country rich in biological diversity. However, Thailand also has a history of land clearing and extensive exploitation of biological resources, particularly forest logging and agricultural expansion. This has been carried out such that there have been many species extinctions and there are currently 213 species listed as threatened (Centre for Conservation Biology, 2004). Thailand was slow to ratify the CBD due to a variety of reasons, particularly including concerns over access to genetic resources, but also because of ongoing debates about the appropriateness of different forms of conservation (whether exclusive of forest dwelling people, or inclusive). In recent decades with growing concerns over biodiversity and the development of the CBD, the establishment of national parks and protected areas has become a high priority of successive Thai governments.

In all circumstances where bioprospecting access is sought to genetic resources *in situ*, the Department of National Parks, Wildlife and Plant Varieties (for national parks, wildlife sanctuaries, no-hunting areas, botanical gardens and other areas established by the Cabinet Committee for example protected mangrove areas) or the Royal Forestry Department (for preserved forest areas) should be consulted (Buntoon, Interview. 29 July 2005). In other cases related to *in situ* herbs such as *Kwao Krua* (discussed in Chapter Six), there may be ministerial regulations relating to “Herb Conservation Zones” with strict access requirements authorised under the Department of Public Health – Thai Traditional and Alternative Medicines Institute.

The Department of National Parks, Wildlife and Plant Varieties has a policy of prior informed consent for academic research which must be sought of the Department (Wisut, Interview. 2 August 2005). The Department does not however have a policy of seeking prior informed consent

of local communities, at least not in written terms. However, it has been suggested that there is often a common understanding between department officials or local government and such local communities about accessing such resources (Komon, Interview. 18 Aug 2005).

In protected areas there may be up to 10 pieces of legislation administered by these bodies that are of relevance when attaining access to genetic resources (Wisut, Interview. 2 August 2005). Thus it is often unclear or burdensome on the researcher seeking access for academic research which authorities have jurisdiction over the genetic resources sought. These complications, and slow approval rates for applications may be the cause of dwindling numbers of researchers from foreign countries in Thailand. It is estimated that maybe only 10-15 academic research projects from overseas are currently researching in Thailand's conserved forest areas under the jurisdiction of the Department of National Parks, Wildlife and Plant Varieties (Chaweewan, Interview. 18 August 2005). None of these have made applications for commercial exploitation yet and therefore no benefit sharing arrangements have been made with this Department.

Access to *in situ* agricultural germplasm is protected by the PVP Act of the Department of Agriculture, discussed in Chapter Seven). Since the Act covers "general domestic, wild and local varieties" all agricultural materials fall under the umbrella of this Act (Wichar, Interview. 2005; Surakrai, Interview. 2006). Prior informed consent rules automatically extends to local communities under the "local plant varieties" chapter, and PIC must be sought from DOA for access to collect, use and develop the other varieties (for foreign researchers, not Thais).

Traditional knowledge holds a unique position somewhere amidst these regulations. The Bonn Guidelines, under which Thai authorities ideally should (but probably do not) provide detailed procedures on prior informed consent and benefit sharing. According to the Bonn Guidelines, permission to access genetic resources *does not necessarily connote access to knowledge associated with those resources*. National authorities in Thailand need to clearly specify distinctions between access to resources and associated knowledge of their uses, particularly where local communities and traditional farming groups are involved. Section 8.3 considers this in some more detail.

Prior informed consent, being the key instrument for research access to resources and knowledge, is considered here briefly, from an idealistic perspective. The Bonn Guidelines also note that PIC should be sought from the relevant competent national authority (which should be clearly accessible). It may also be required of different levels of government, provincial or local, as well as from traditional local and farming communities, especially where *in situ* materials and traditional knowledge are involved, or where *ex situ* materials have clearly traceable sources of origin. PIC should also be sought sufficiently in advance for all parties to consider the application for access.

A PIC system established at the national level should include as a minimum (adapted from the Bonn Guidelines, 2002, Part IV; and the IUCN Inter-Commission Task Force on Indigenous Peoples, 1997):

1. An access point acting as, or directing to, competent authorities that can grant PIC.
2. Timing and deadlines such that consent is sought sufficiently in advance of access, and to ensure quick applications processing.
3. Specification of use requirements, such that consent authorities may consider the validity and necessity of access, and any problems or offence it might cause.
4. Detailed procedures for PIC (detailed below).
5. Mechanisms for the facilitated consultation of relevant stakeholders.
6. Transparent processes including documentation and permits, licences or similar.

In the process of PIC sufficient information must be provided to the provider party about the legal entity/person seeking access, the resources (and associated knowledge where sought), the intended uses of the genetic resources (e.g. education, herbarium storage, research, development, potential commercialisation), intellectual property rights, benefit sharing, project budget and confidentiality, amongst other things. A list of PIC procedures that could be included in application form templates for access could include:

- (a) *Legal entity and affiliation of the applicant and/or collector and contact person when the applicant is an institution;*
- (b) *Type and quantity of genetic resources to which access is sought;*
- (c) *Starting date and duration of the activity;*

- (d) *Geographical prospecting area;*
 - (e) *Evaluation of how the access activity may impact on conservation and sustainable use of biodiversity, to determine the relative costs and benefits of granting access;*
 - (f) *Accurate information regarding intended use (e.g.: taxonomy, collection, research, commercialisation);*
 - (g) *Identification of where the research and development will take place;*
 - (h) *Information on how the research and development is to be carried out;*
 - (i) *Identification of local bodies for collaboration in research and development;*
 - (j) *Possible third party involvement;*
 - (k) *Purpose of the collection, research and expected results;*
 - (l) *Kinds/types of benefits that could come from obtaining access to the resource, including benefits from derivatives and products arising from the commercial and other utilization of the genetic resource;*
 - (m) *Indication of benefit-sharing arrangements;*
 - (n) *Budget;*
 - (o) *Treatment of confidential information.*
- (Bonn Guidelines, 2002, Part IV.C. p11)

Ideally, all of these procedures need to be followed to access biological resources (and potentially traditional knowledge) appropriately. However, in practice, in a country like Thailand where there is ingrained customary informality with regards to law, legal procedures and contracts, these are considerable expectations. Even with all the biopiracy controversies that have occurred, complex procedures such as these are likely to be diminished to what occurred in the *Samoeng* bioprospecting incident – a one page form and verbal consent, if that is achieved at all. Generally speaking, what may be more important is greater respect and recognition of different customary norms and knowledge domains. I discuss these further in later sections.

In terms of the reality of access procedures, there is currently no clear process. Due to the confusion and complications that this may cause seeking *ex situ* or *in situ* access through several authorities it has been suggested that it would be appropriate to have a National Technology

Licence Office, or alternatively a National Biodiversity Authority.¹⁵⁰ This has been suggested as part of a competitiveness strategy by the National Board of Social and Economic Development, to look after national intellectual property (and resource) management in a strategic sense (Tannit, Interview. 1 June 2005). A Prime Ministerial Regulation on Access and Benefit Sharing for Plant Genetic Resources was drafted in 2000 for similar purposes but quickly became redundant due to bureaucratic reshuffling and cross-bureau jurisdictional complaints. Jurisdiction over plant varieties is still particularly confusing, even for government officials (Buntoon, Interview. 2005).

This idea of a national licencing body has its critics, however, because of the potentially narrow mandate centred in terms of “intellectual property” and “facilitated access,” reflecting a particular epistemological position, which does not take account of more holistic concerns. Although a single authority may help resolve some issues relating to conflicting or confusing department policy, it may also run the risk of further removing the biopiracy and traditional knowledge issues from their situated local sources.

In other words, the reality of the problem at a local level may not adequately filter up to the ministerial level, especially with the highly centralised system of government that operates in Thailand. After all, many of these resources are (at least originally) found in provinces removed from Bangkok, and their custodians may often be poor small-scale farmers. Thus a single centralised agency would have a positive effect on coordination of activities relating to biodiversity, but there would be a broader range of benefits if it had within its mandate the close consultation of local farmers and community groups, rather than a purview of research access and licensing. The creation of an alternative “biodiversity office” has also been suggested, but this may result in similar problems (Witoon, Interview. 2005).

These discussions have focused closely on the specifics of access to biological resources and traditional knowledge, but there is also a need to consider the broader perspectives on biodiversity, and on the knowledge domains that relate to it. The following section considers the

¹⁵⁰ A National Biodiversity Authority is largely an academic and NGO suggestion, whilst the government and bureaucrats have focused more heavily on the concept of a licencing body.

need to more clearly distinguish and recognise knowledge-resource relations and regulatory domains.

8.3 Resource Relations to Knowledge Domains

In policy-making, the oversimplification of the uneven and complex distribution of plants and associated knowledge has hampered progressive steps towards their protection. This is particularly the case with knowledge-resource relations, and the way they are connected to place, and regulated through social norms or more rigid rules.

Plant species may be endemic to certain localities, countries or regions, but often they are not. They may have originated in a location, but will often have been distributed, particularly by human exchanges. They can also be widely utilised by different groups for the same or different purposes, and these peoples may develop unique *varieties* from the species, with distinct characteristics. These developments may be based on traditional or modern applications, and may be a combination thereof. There is evidence of this in the case studies in Chapter Nine. Hence policy making on provisions such as “disclosure of the source and country of origin” within patent requirements is problematic, whether in domestic, regional or international jurisdictions.

In relation to benefit-sharing, Dutfield (2004) notes that the bargaining opportunities for biodiversity-rich countries like Thailand are more promising with the pharmaceutical industry, than for agricultural industries (plant breeding and agro-biotechnology). The first reason is that a new pharmaceutical is likely to be derived from a single active compound isolated from a particular species, or a few plants, hence there would likely be fewer benefit claimants. Second, international transfers of biogenetic resources are more likely to flow in a general South to North direction for this industry than in the more complex crop germplasm situation where varieties have been extensively shared beyond their original environments. This suggests that there is a lower degree of interdependence between countries than for the supply of suitable crop germplasm (Dutfield, 2004). Thus the complicated nature of the crop germplasm situation often detracts from the ability of advocacy groups to legitimise their discourse or “prove” that there

may be recurring instances of biopiracy. But again, this division of food from medicines may be superficial in a great number of cases in Thailand.

Further to plant species and variety distribution considerations, it is important to consider that the knowledge associations may vary, as described in Chapters Five and Six. The remainder of this section considers some of the plants that have been involved in bioprospecting and biopiracy incidents and considers the knowledge associations, and regulatory forms, which I articulate as *knowledge domains*.

Figure 4, following, gives a diagrammatic representation of the interactions between private or secret, community, and sacred knowledge domains. The knowledge flows on the left hand side may interact under different overlapping or separate customary regulations and norms. Once this knowledge passed a transactional barrier into the public domain, however, it is transformed and enters the broader (national or international) regulatory environment.

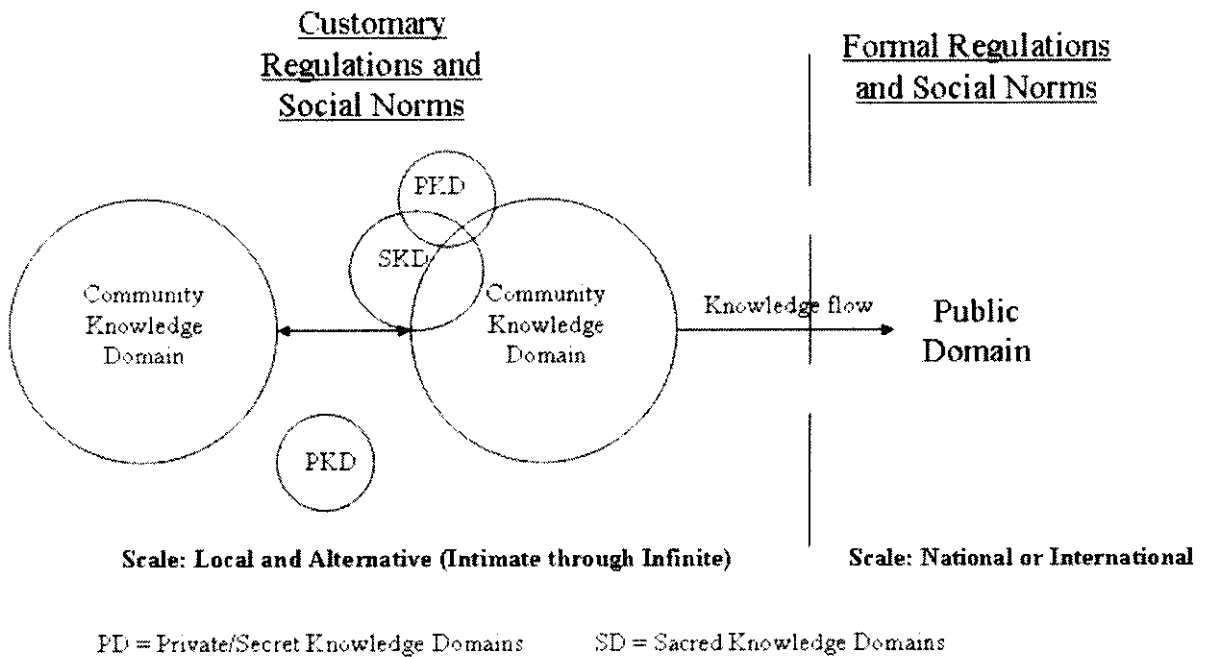


Figure 4: Knowledge Domains and Knowledge Flows Operating Under Different Regulatory Systems.

In the case of the plant *kwao krua*, it is distributed widely across the north of the country. Different species and sub-species exist and these each have different knowledge associations. The case at hand related to White *kwao krua*. The origins of knowledge associated with its uses appears to have come from healers in the northeast, but it has spread, been documented, and is now generally considered to be in the public domain. Removal of the resource and/or knowledge from its original setting has had considerable effects. The plant has now become widely accessible in different parts of Thailand and so it might be easy for researchers to access it in a marketplace – a “de-indigenised” setting. In such cases it is difficult to attribute benefit sharing back to identifiable provider groups. The TTMI Act provides for state authority over the herb in which prior informed consent should be sought, and through which benefits might be provided to healers’ networks or to those who conserve the plant. But there are other forms of association and regulation, for example local communities like the Karen (*Khon pga k’nyau*), came into knowledge of the plant species (discussed in Chapter Nine), and these groups have developed their own customary norms regarding the plant. They have established their own unique knowledge domains for it.

Plao noi presents an interesting case insofar as it has a reputed distribution beyond national borders, yet there is a strong claim that the knowledge of its uses came solely from Thailand. Again there are different species and sub-species, with most found in Thailand or adjacent countries. In this case the knowledge domains were narrower than the resource distribution, even though it was documented in the *national* public domain of Thailand, until it was “discovered” by researchers and commercialised.

The *mara* plant or *Momordica charantia* species is broadly distributed throughout Asia, but specific knowledge domains associated with treatment of HIV/AIDS seem to have been focused in Thailand. It is possible that the varieties in Thailand have unique qualities, or the knowledge might simply have been developed there first. The use of the plant in “rural regions” does not give us a real clue to the types of knowledge domains associated, but clearly it has now entered the public domain, and associated cultural norms are not known.

In terms of the Karen people, who were involved in the two bioprospecting incidents, there are particularly important customary norms and, for some herbs, may be much more localised knowledge domains (private or communal) and sacred relations. The norms and sacred relations may shape the traditional use of the plant until it is transferred to another domain. These cases and descriptions from the case studies described in Chapter Nine, place particular emphasis on the need to further understand local customary norms.

Because medicines are often drawn from a single active compound and plant, and because of the likelihood of trade in agricultural products, crops present a different range of issues. Consider that the Jasmine rice variety (*Khao Dok Mali 105*) had its origins in Chonburi province (central region), was transferred by farmer/breeders and grown in Chachoensao province, and then collected and sent to IRRI, before also being spread throughout the Issan region where it thrives. The plant variety has transferred through various knowledge domains to the point where its origins seem almost forgotten (Songkhran, Interview. 2006). The contributions of Issan farmers to the development of the varieties (there are actually a number of varieties that fall under the generic umbrella of “Jasmine” but *Khao Dok Mali 105* is the most prevalent) cannot be neglected though either. While the complaints about the transfer of Jasmine rice germplasm to the US were made generally in the name of Thailand’s sovereignty over biological resources, there was a more complex underlying politics of ownership between origin, source, developers and each with their own knowledge domains.¹⁵¹ The also distinctly national public domain claim to Jasmine has its own cultural and customary norms associated with the importance of rice in Thailand.

Some local plant varieties (and species) originate and exist only in specific geographic areas. These are typically farmers’ varieties and may have been developed from undomesticated or wild varieties, or they may have only limited distributions for environmental reasons (because of mountain barriers or being located on islands). In other cases the varieties simply may not have been distributed more broadly due to market preferences. Knowledge of their qualities is therefore also limited. In an interview with an expert rice breeder (Songkhran, Interview. 2006) he indicated that Karen communities near Mae Sot in Western Thailand were highly protective of

¹⁵¹ Biber-Klemm (2006) also provides some useful discussions on the origins and allocations of traditional knowledge and genetic resources along these lines.

a local strain of rice (which he referred to only as “Karen local rice”). Waraluk (Interview, 2005) also noted the existence of distinct Karen rice varieties. Documentation of these varieties may or may not be well received and they will no doubt have their own customary norms associated with them.

Wild plant varieties are undomesticated varieties which may be known by local farmers or authorities. Generally these plants are uncultivated because they present undesirable traits which may mean low yields, poor quality as a food crop, poor pest tolerance or other limiting factors. However, this does not mean that these plants are useless. These plants may play important roles within their surrounding ecosystems and contribute to genetic diversity. They may exhibit other traits which actually are desirable or which are not yet known. They may also be useful to cross-breed with other varieties, develop and adapt to different conditions. These varieties were present at a seed exchange fair in Ku Ka Singha (Roi Et), discussed in Chapter Nine. The fair highlighted the fact that some of these varieties were endangered or now extinct. Strains grown by one individual farmer (named Wu Pah) and shown at the fair also demonstrated the potential cross-breeding of wild variety traits into novel local varieties. Often local farmers have knowledge of these traits and may in some cases use traditional methods for development of novel local varieties which may ultimately become domestic varieties (such as Khao Dok Mali 105). Therefore novel local varieties might be developed from wild varieties (landraces) and these may come to be known in private or communal knowledge domains, or even through networks which will typically then place them in the public domain. Many now “modern” varieties had their origins in specific locations, and they have now spread (see for example the Suphan Buri rice variety in Appendix 9, Plate 9). Notably the exchange and openness surrounding agricultural varieties, seems more prevalent than that for medicinal varieties, which are more likely to have distinct local knowledge domains.

So how have these plant resource (and knowledge) exchanges been regulated in the public domain currently and traditionally? Most Thai farmers, in practice, now operate through a physical property rights regime. For example under the Plants Act (2518), farmers must register their varieties to be recognised and allowed to become a commodity for sale. Prior to this system a more customary allocation of ownership rights was followed for the sale of crops to markets

and their exchange – it was not administered by the state. The associated knowledge would have flowed with the resource, or been potentially withheld in some circumstances. The seed exchange networks, which reputedly were prominent in the past (Witun, Interview. 2005; Daycha, Interview. 2005), reflect a customary openness with regard to improved or intangible aspects of plant varieties. In other words, they were often shared, exchanged or sold without claiming exclusive rights. Some of the customary norms that might be expected in these exchanges, particularly relating to knowledge relations, are explored through the case studies in Chapter Nine.

Recourse to property regimes statements is becoming more evident though, as a defensive response to exclusive control over improved or intangible aspects of plant varieties. Protests by a range of Thai actors, authorities and stakeholders have included ownership statements: “*our genetic resources*” (see for example, the Thammasat Resolution). This type of claim is particularly noticeable in the Jasmine rice cases. Thus, exclusive claims have given rise to responsive counter claims of ownership.

Thai laws such as the PVP Act utilise elements of both property rights and particularly liability (use now pay later) approaches in dealing with the knowledge-component of resources. Although these systems have their own merits, are *sui generis* or reputedly self-generated, and having had some public input, the politics surrounding their implementation reflects a gradual bureaucratic move towards integration with more advanced intellectual property systems, under increased external pressures. It seems inevitable that *sui generis* laws reflecting imported IPR systems (such as UPOV) and compensatory mechanisms have been developed, however the quick regulatory leap still leaves a sizable dilemma associated with traditional knowledge protection, particularly in the contexts raised in this chapter. Further analysis of this regulatory evolution is needed. This highlights the need to further document and recognise local knowledge domains, customary protocols, customary variability, as well as responses to regulatory change. These then need to be reconciled with the sovereign-state systems of control in place – quite a considerable task.

This Section demonstrates complex and dynamic relationships existing between knowledge and resources. From this, it can be assumed that there is no one clear solution for the protection and promotion of biodiversity-related traditional knowledge. Rather, improved understandings, coupled with carefully targeted initiatives and legal mechanisms may help resolve some of the complexities that are currently faced. Chapter Nine, provides some important insights that should lead to further research.

8.4 Summary

There is a clash of epistemologies between those seeking to protect private rights in innovations (industry and “knowledge-economy” states), and those (including Thai authorities and stakeholders) who are alarmed at external free-riding and monopolisation of natural assets and associated knowledge. In the case of the latter, there may also be infringements of cultural or customary domains, despite some depictions of traditional knowledge as the “public domain” in intellectual property rhetoric. This appears to be the case in bioprospecting accounts (or attempts) by Thai researchers and foreigners in different parts of Thailand, as explored in Chapter Six. Tensions also exist between narrow and holistic world views about conservation, human interactions with nature, and about protection, promotion or respect of traditional knowledge and associated customs. This is compounded in Thai state-minority conflicts over conservation; and in the central administration – local farmer divergence in perspective, approach and formality.

As previously mentioned the CBD requires prior informed consent for access to genetic resources of the “Contracting Party” whether *ex situ* or *in situ*. Legally, government bodies have authority over such resources; however some countries (such as the Philippines, and the PeBRs in India) are now establishing mechanisms whereby the local custodian communities are consulted for consent (in the Indian register system), and local knowledge domains are respected (as *ancestral domains* in the Philippines Act, reflecting land and “cultural property rights”). In all probability much of the genetic resources and associated traditional knowledge collected by the plethora of academic, government and private research institutes in the past would have been appropriated with little consent of local communities, or respect of customary systems surrounding community

domains. Even where consent was sought the materials and knowledge were likely to have been given with little knowledge on the part of the individuals or communities of the future implications relating to intellectual property rights over such materials. A situation remains today where these bodies control these resources (and often the associated knowledge of its properties and uses) with little incentive or practicable means to provide benefits to these original providers. Furthermore the original custodians would often have great difficulty making claims to benefits unless the transactions were documented, or unless they were relatively recent. Due to the legal procedures that would be involved, the cost and formality of such claims would also be prohibitive for the vast majority of original custodian groups. Thus such retrospective actions are unlikely. The uneven distribution of biological resources poses another problem of potential compensation distribution.

In any case, the remedy typically implied in retrospective circumstances may be something entirely separate to what has been presented in international discourses. There is evidence from case studies with Thai farmers and “tribal” groups which indicates that remedies may make appeals to religiosity or spirituality rather than material or monetary claims (see also Engels, 2005; and Posey, 1999). This suggests that “benefit-sharing” needs some creative, pluralistic and culturally sensitive re-conceptualisation.

To take the discussion forward to dealing with potential situations in the future, a commonsense approach which seemed consistent with the desires of the case study groups, was that researchers should *inform* the providers (of biological resources and traditional knowledge) of research intentions, and consult with them to obtain consent in an appropriate and respectful manner. This includes respect for customary domains, taboos and norms. Appendix Three contains some model guidelines for access prior informed consent of traditional knowledge holders and custodians of biological resources which I drafted whilst at the NHRC. These were an attempt to try and respect the plural cultural domains and rights of such groups to be informed and consulted about research access to their resources and knowledge. The guidelines are intended to facilitate participation by a broad range of stakeholders and represent a “legal hybrid” which merges formal, informal and customary legal modes. Notably, the reflexive discussion in Chapter Ten critiques the PIC process, and upon self-reflection, the guidelines need further development that

can incorporate the need to legal informalities rather than re-bureaucratising the consent process. Therefore the guidelines remain a work in progress in collaboration with the NHRC.

Chapter Nine examines case study experiences in a number of communities in rural Thailand who have a range of relevant, locale-specific concerns, which are often at odds with the perspectives apparent in current trends of supra-state and state lawmaking. It explores their diverse expectations through a series of case studies. Due to the lack of formal acceptance of jurisprudential diversity across plural conceptualisations of community, I ask the question “What projects may hybridise the boundaries of formal legal domains to respect and recognise informal customary domains of law?” Ways of seeing alternate scales of legitimacy and jurisdiction, from the intimate through to the infinite (see Howitt, 2002), are also highlighted.

Part IV – Local Knowledge Domains

9. TRADITIONAL KNOWLEDGE SYSTEMS, LOCAL PRACTICE AND CUSTOMARY PROTOCOLS: LOCAL CASE STUDIES.

This chapter overviews a number of case studies from rural localities in different parts of Thailand. I pursued questions relating to traditional knowledge, local identity and community, local practice, rituals and customs, political organisation, representation, experiences with the government and other matters. In doing so I sought to raise a research agenda: recognition and documentation of *knowledge domains*. The case studies provide documentation of the existence of traditional knowledge, relations with the resource and surrounding environment, estimated distributions, the variable contexts in which the knowledge occurs, customary protocols, and stakeholder concerns.

In line with the primary aims, the chapter also seeks to extend the understanding of law as a socially constituted normalising process, through examples of local customs, ritual, and norms, the suite of which may be described as customary protocols and laws. These informal and soft laws or norms may in fact play a greater role in local governance in the regions than consolidated acts, especially given the centralised and removed system of lawmaking and bureaucracy in Thailand. This suggests that a range of legal landscapes could conceivably be mapped out beyond the codified documents of legislative acts and court rulings. A plurality of informal and uncodified norms and practices are lived by the diverse peoples of Thailand, which may have greater relevance to their daily lives. The laws imposed top-down, from the state and international obligations, onto these locales may have regulatory or emancipatory potentials, or in other cases, irrelevance.

Several local case studies involving limited ethnographic research were chosen for exploration of knowledge domains. The sites came from three of the four different regions of Thailand and thus provide an example of the diversity of agricultural and medicinal uses of biodiversity. The cases also demonstrate cultural diversity exhibited by Thai farmers in different regions, Karen communities, and a Hmong healer. Practices and customs varied between these groups. There was also notable customary diversity within communities.

NGO involvement in case studies ranged from cases where I was invited to attend and there was a continual NGO presence, through to cases where the village was randomly chosen and there was no NGO presence. The differences provided some indication of NGO representation and impact on the activism and discursive cohesiveness of communities.

9.1 Baan Mae Ka Pu, Samoeng

Traditional Knowledge and Local Practice

The first visit to the Mae Khan River watershed area coincided with a festival on the 26 to 28 March 2005 organised by the Community Forests Network, the Northern Farmers Network and the Northern Development Foundation (NDF), as well as other associated NGO-COD groups. The festival, called *Suep cha ta*, or *phii khun nam* meaning, the rain spirit or upper watershed spirits, was organised to recognise the importance of the local communities in the conservation of the forest areas surrounding the *Hnok*, or source of the river tributaries. The festival was centred on the Karen people (*Khon pga k'nyau* as they call themselves – they are known as *Karieng* or *Karen* to Thais and foreigners), whose culture and daily activities, broadly speaking, involve the sustainable use and conservation of local natural resources. Notably, their ideologies, spiritual, ritual and value-related activities reflect an attempt to be at harmony with nature. This is something that is evident from the activities demonstrated during this case study, but is also something which is strongly emphasised by Chiang Mai anthropologists and NGOs.

The *Khon pga k'nyau* people in this area (the festival was held in and near the village of *Baan Mae Ka Pu*) are primarily Buddhist, but retain some Animist beliefs and have some Christian influences. Part of the festival involved a forest ordainment ceremony by Buddhist monks. As Taylor (1996:37; see also Ivarsson, 2001) has noted, “issues of social justice, equity and conservation in Thailand have been frequently articulated in the matrix of a religio-political discourse, which has provided an alternative arena in the exercise of power.” Sure enough,

local tambon officials, and even Senators from the region, attended the ceremony which blessed the forest, those who dwell in it and conserve it (Picture: Appendix 9, Plate 1). This approach couples religiosity with political ambition, even though those who attended clearly had little faith in the local officials to secure their “community forest rights.”

During my time in the village, the merits of “shifting rotational agriculture” or *rai mun wian* were explained to me. The Karen practice a form of shifting rotational agriculture which allows field to lie fallow and regenerate for periods of 7-14 years or more depending upon land availability (Varaluk, c2003, provides an overview of the biodiversity of shifting rotational cultivation, as does Uraivan, 1997). This agricultural practice has also been described by those more critical of the approach as “slash and burn” or as “swidden agriculture.” McKinnon (1997) discusses some of the misconceptions inherent in these discourses, and the historical scape-goating of the hill-tribes peoples for erosion and watershed problems.

The rotational agriculture fields are primarily in lower lying areas near streams. The regeneration period allows for regrowth and replanting of trees such that nutrients are re-supplied to the soil before reusing the land. As land pressures have increased, the ability to continue this practice has been limited, rotation periods have become shorter and more fields have become permanent. In these fields where shifting agriculture is conducted, or when using trees for timber, forked trees typically have only one limb removed close to the stump so that they can plough around the stump, and the tree will regenerate through coppicing rather than having to regrow entirely. The Karen thus practice methods of conservation in their daily activities, as well as applying methods of traditional agricultural knowledge in the use of local varieties and pest control, which Chiang Mai anthropologist Yos Santasombat has documented (see Box 4). Some Karen farmers identified *Pterocarpus* trees near the village which were used for pest control.

Box 4: Methods of Karen Pest and Weed Control and Use of Local Agricultural Techniques.

The Karen have an indigenous organic method of pest and weed control using manual labour, site selection and herbal solutions. The selection of cultivable ground and burning are related to pest and weed control. Old-age bamboo groves with foliage cover minimise *alang* grass infestation after planting. This type of bamboo forest also has loamy soil, encouraging the rice to multiply into clumps easily. Rice seedlings are spaced so that the rice stalks block sunlight and snatch nutritious elements from other weeds, deterring growth of *alang* grass. If the soil is too rich in nitrates after burning, the rice stalks become too lush and leafy resulting in small and shrivelled paddy ears. The Karen resolve this problem by separating the rice plant clumps.

One organic herbal plant pest control is the bark of the *Pterocarpus* tree soaked in water and poured or spread on the top part of the plot to allow the solution to seep into the rice stalks and leaves to discourage insect infestation.

Source: Santasombat, Yos. (2003a) *Biodiversity Local Knowledge and Sustainable Development*. Regional Centre for Social Science and Sustainable Development, Chiang Mai University.

Apart from rotational agriculture fields, village common lands include animal grazing areas, watershed reserved area, and forest area for hunting and gathering of forest products such as herbs for medicines and spices for cooking. During the festival the villagers of *Baan Mae Ka Pu* showed us numerous medicinal plants in the forest, herbs for cooking such as cinnamon, which is cut from the bark of only one side of the tree such that it survives, and other conservation practices which are integrated into custom and ritual in the forest (Picture: Appendix 9, Plate 2).

In terms of useful plants (i.e. “genetic resources” in reductionist-speak) the local communities act as custodians of a vast variety of different plant varieties. They rely on a supply of them for food and medicines and thus recognise the importance of conserving them. Furthermore the local communities of this area typically save, exchange and adapt varieties to different environmental conditions. Natural mutation and more targeted breeding develops new varieties and actively contributes to a broader gene pool (Yos. Interview. 17 May 2005). Over 65 herbs, spices, seeds, or local plant cuttings utilised by the villagers of *Baan Mae Ka Pu* for food or medicines were displayed at one meeting of the festival (Picture: Appendix 9, Plate 3). These were in addition to the main staple rice crops and vegetables. Yet the village has a population of only 978 in 205 households (Northern Development Foundation, 2005).

Members of the community also had knowledge of other forest herbs and plants; however these were not on display because they are either rare or kept secret by some of the healers.

Notably, authors such as Prasert over-romanticise the “wisdom” of local communities to the extent that they may be seen to “do no wrong.” Obviously, these conservation systems are fallible, but the underlying point being made by these authors (also Yos, 2003a, 2003b; and Pinkaew, 2001) is that these communities have been unfairly subject to victimisation by the state,¹⁵² when their knowledge and culture have intrinsic and existence values, and furthermore the communities have a great deal to offer society.

The local Karen people do not necessarily document their knowledge and resources, although they are often documented by external sources – namely NGO activities, anthropological studies, and herbarium collections. The local knowledge of the villagers is highly adaptive and evolves with the changing environment, with seasonal and yearly variations in climate, with adaptations of new or introduced species. As Yos (Interview, 17 May 2005) has noted, such knowledge is highly “situated in local conditions, and involved in local rituals, practice and customs.” He notes that to refer to it as “traditional” knowledge therefore seems strange. The term “traditional implies something static,” which is a common misrepresentation of local knowledge in discussions about in situ conservation use of biodiversity. In his book on Local Knowledge, Yos (2003a) suggests that science is based on the search for universal truths, and that scientific knowledge is portrayed as superseding other knowledges.¹⁵³ He conversely suggests that local knowledge is grounded in a very particular territory, ecology and social structure and is dynamic or adaptive. This was echoed in comments by Karen people (Picture: Appendix 8, Plate 4) indicating local concerns, but also reflecting the influence of local academics and NGOs:

“We do not need their new systems of knowledge and education... We have our own system that is just as complex. We can get our certificates from the natural

¹⁵² Yos (2003b) describes the evictions of Lua swidden cultivators in Nan province of Thailand by Royal Forest Department officials, despite their traditional inhabitation and forest use in these areas. Jaran (2003) describes the “disappearance,” but likely extra-judicial and “pre-emptive” killing of drug traders. This is suspected to have been carried out by state officials, or with their involvement, although it is not widely discussed in public for fear of persecution.

¹⁵³ To refute his point, I would argue that this research has shown that scientific knowledges (from biotechnology for example) are also particular and situated views on the world.

*university*¹⁵⁴ *surrounding us, and our products from the forests, the river, the animals...*” (Anonymous Karen Elder, Baan Mae Ka Pu, 26 March 2005)

The Karen people presented different responses when asked about their “local or traditional knowledge.” Some people indicated that they do not really have any “knowledge,” assuming that the question referred to institutionalised or educated knowledge. When asked again about knowledge of local plants and herbs, the response of a small group of Karen women was that they had extensive knowledge.¹⁵⁵ Village leaders and NGO staff indicated that their knowledge was often disregarded by outsiders. The main exceptions to this comment are NGOs and anthropologists who have been trying to help with the assertion of their knowledge systems, conservation methods and rights to community forestry (Hiaw and Yung, Interview. 26 March 2005). They also indicated that they generally shared their knowledge with others in the community and even with outsiders, however there were some secrets held by individuals and some rules associated with the use of herbs and plants. These leaders and NGO staff were aware of issues such as biopiracy¹⁵⁶ and had become concerned about the sharing of knowledge. Their main concerns were with the exclusive control that intellectual property grants, the breach of local customs and controls over living things, as well as the mistreatment of life-forms through chemical treatments (such as pesticide) and biotechnological modifications.

Customary Protocols and Laws – Land and Resources

The Karen have practices which blend religion and ritual, connection to their surroundings, and utilitarian purposes. One such practice is whereby, when a Karen baby is born and the umbilical cord is cut, it is then placed in a bamboo basket and attached to a tree (Picture: Appendix 8, Plate 5). The child then must care for the tree for his or her entire lifetime, and no

¹⁵⁴ The term “natural university” is a discourse which reflects the influence of NGOs and Chiang Mai academics on the Karen people. It reflects an attempt by these actors to raise the standing and regard for local knowledge to a level equivalent to scientific knowledge.

¹⁵⁵ A group of three anonymous Karen women were asked at a forest ordainment ceremony where seeds and herbs were openly on display.

¹⁵⁶ While these leaders knew about biopiracy, bioprospecting, biotechnology and intellectual property rights, it was clear that not all of the local Karen people knew about these topics or their potential impacts.

one in the village may cut it down. Similarly, when a local person dies, a tall tree is chosen to be their resting place such that their spirit can climb up high and watch over the village (Also explained by Varaluk. Interview. 26 March 2005). There are designated forest areas for such rituals, upheld by customary laws and protections (Prasert, 1997).

Karen communities, including Baan Mae Ka Pu, are typically defined by a number of physical factors such as the local environment, and the size of the local population, as well as by the norms, customs and rituals that establish ownership and delineate boundaries. Table 7 below provides a broad description of the relation between the type of forest (physical factor), and the customary laws and local protection mechanisms (cultural factors) of the *Chao Khao* of Northern Thailand. During the case study, local Karen people indicated that they also had delineated forest areas for different purposes such as *Pa Ton Nam*, *Pa pra-pe-nee*, and *Pa chai soi* (see Table 6) and that these were protected by customary rules, shrines and corresponding spirits.

The land within the village utilises a complicated system of community and private ownership that relates to long held customs. The Karen recognise private ownership of some types of land, for example household compounds, cash crop gardens and orchards. These privately owned properties may be inherited and sold according to Karen custom, but often do not have an official land title deed. Previously in this area an animist religious leader, *Zikho*, had authority in allocating land communally held to individual households on an usufruct basis. In other words the villagers had rights of communality. Through communications with the local spirit, the religious leader was able to locate the village boundary (Anan, 2000). With the stronger influence of Buddhism in the area, the *Zikho* have less authority over the allocation of land, and disputes over common land are now usually transferred to a village leader or leaders. During the festival I spent a considerable amount of my time with a village leader named Yung, who works for the Community Forests Network and related NGOs, as well as Hiaw, the director of the NGO NDF.

Table 6: Community Forest Classification and Customary Laws

Type of Forest	Size	Customary Law	Local Protection Mechanism
<i>Pa Ton Nam</i> Catchment Watershed Forest	300-70,000 Rai (120-28,000 acres)	-strict rules and harsh punishment against any possible violation either by community members or outside encroachers -logging is strictly forbidden	- <i>phii khun nam</i> (watershed spirits) which serve as guardians of the forest
<i>Pa pra-pe-nee</i> Ceremonial Forest	30-300 Rai (12-120 acres)	-preserved for cremation and other ritual purposes -the domain of ancestral spirits, whose wrath and punishment against violators are treated with great fear	-located near to villages -erecting shrines of the various guardian spirits
<i>Pa chai soi</i> Multi-purpose Forest	Large areas close to villages	-economic use: animal grazing, village wood lot, food collection, and construction materials, etc.	-open boundaries, less controlled than other areas

Source: Santasombat, Yos. (2003a) *Biodiversity Local Knowledge and Sustainable Development*. Regional Centre for Social Science and Sustainable Development, Chiang Mai University.

The traditional knowledge of these Karen communities is integrated into their local practices and is linked to local environmental conditions. However these environments are now undergoing accelerated change due to government interactions, external cultural influences and the redefinition of property rights in the past 20 or so years. In Baan Mae Ka Pu the primary concern of the locals was to be allowed to continue to subsist in forest areas and surrounding valleys utilising traditional agricultural practices. The festival was intended to demonstrate to officials that Karen land and conservation systems were not arbitrary, but were based on time-tested knowledge and practices. Anan (2000) indicates that issuing land titles can affect belief systems, customs and other cultural, social, economic, and political aspects of the rural population because the traditional peasant way of life is based upon a very different system from that in which the use of land titles has evolved. As McCaskill (1997:44) notes of the persisting animist world view and traditional culture of the Karen and other groups:

Proper conduct is determined by natural laws which obliterated the distinction between "sacred" and "secular," or the "laws of nature" and the "rules of society."

For both, the natural world and society have as their source the activities which result as humans and nature react upon each other.

The imposed laws have thus altered their normative approaches to nature and society. Essentially the Karen people have also had little participation in the decision making of the transition from the traditional system to a new system of land tenure, and so it has been highly disruptive to their local practices. The community forests movement for the assertion of rights to physical resources thus is also linked to a desire to see other cultural norms and knowledge systems respected. It needs to be stressed that the protection of their knowledge domains is linked to the protection of their physical and social environments. The protection of individual “bytes” of information (for example in databases) will likely only serve to capture it in time, and will essentially mean its isolation from the surrounding domain where the “know-how” and practical use of the knowledge is applied.

As the Thai government redefines property rights however, the ownership or custodian role over biodiversity (holistically conceived) and associated knowledge are changed through physical property control – of immediate concern to these communities – and consequently also changing intellectual property control. Thus for the Karen, including those from Mae Ka Pu, “community” is not only being lost as a tangible form of property; it is also being lost as a value-system which fosters nature conservation, intra and inter-generational equity as described in the previous section. The following section further explores Karen customs which seek to maintain these values. The analysis was made in a nearby village in Amphoe Samoeng and is more specifically related to knowledge and plants.

Before moving on to the next village, an important critique needs to be made which draws on the literature of a number of key academics, and is of relevance to this case study. An important debate was started with an article by Walker (2001) in which he critiques the construction of a broad “Karen consensus.” A number of NGO and academic authors from Northern Thailand have argued that the Karen’s agricultural systems are “sustainable ecologically friendly and subsistence-oriented”, “underpinned by a rich body of local environmental wisdom, a vigorous communal orientation and consistently non-commercial

values,” and “threatened by the recent intrusion of the state and the market” (Walker, 2001:145). Walker notes the fundamentally political claims being made by these authors, he argues, at the expense of ethnographic veracity.

Yos (2004:105,113) has responded to Walker’s claims, recognising the construction of the image of the Karen as “children of the forest” or *Khon pga k’nyau* and conservationists “in their own eyes and in the eyes of others” by these authors and by the Karen themselves. He indicates that this is a strategy to destroy negative depictions and resultant victimizations of the past, to be replaced by that of “indigenous” forest managers. He notes (2004:107) that this is a “reframing of agrarian issues in terms of ecopolitics” where the importance of tenure-security and resource-use legitimacy is now being elaborated in terms of human rights, community rights, biodiversity management, and ethnicity.

What can be made of this in the context of this case study? First, it needs to be recognised that Karen *phum-panyaa* is often romanticised – sometimes overly so. There is good reason for this, and it has to do with the Karen struggle against persecution (in Burma, and in relation drug-related killings in the recent past), struggle against forced relocation, and because essentially the Karen clearly do have a considerable array of local environmental knowledge. As Castree (2004b) argues, there needs to be greater leniency (on the part of outside commentators) made towards strong indigenous claims to territory, which is often made in the face of considerable maltreatment. I return to this in the Chapter Summary.

This brings us to the need to recognise and view local knowledge as politicised in this case. The contexts of these politicisations have also changed such that it is now couched in discourses borrowed from the CBD, and from human rights and “indigenous” perspectives where they may receive greater legitimacy. Notably, these are making attachments to broader, more universal discourses – something that Walker seems particularly concerned of (as do Forsyth, 2004; Johnson and Forsyth, 2002). These authors raise relevant concerns that there are also individual (and household, factional, trans-local) interests within or between Karen “communities” that might seek modest re-engagement with state and international commercial

networks.¹⁵⁷ There are also other groups less connected to NGO and academic political interests, who might have equally legitimate claims which are not heard by as wide an audience. These aspects need to be recognised, but I would argue that they do not need to lessen the legitimacy of the Karen political project. In the sections of this chapter, I try and “write-in” the politics occurring in each case study. Notably this first case study in Baan Mae Ka Pu was entirely organised by NGOs and I was there at their invitation. The following case study and the case study of Baan Khun Khlang were circumstances where I randomly entered a village of my own volition while travelling through different parts of Chiang Mai province. These provided circumstances where NGOs were not present, although their impact could be felt to a lesser degree.

9.2 Baan Soplan, Mae Lan Kham, Samoeng

Traditional Medicinal Knowledge and Local Practice

The case study in Baan Soplan, part of Mae Lan Kham in Amphoe Samoeng (Chiang Mai Province) on the 12-15 February 2006 was intended to gain a better understanding of Karen (*Khon pga k'nyau*) customs, taboos and rituals associated with the use of traditional herbs and local plants. Unlike the previous case, there was no NGO presence throughout the field study.

Upon arrival in Amphoe Samoeng, we were met by a young Karen man (Ka-Le), who explained the recent bioprospecting incident described in Chapter Six. He then explained how the removal and mistreatment of forest plants from their normal surroundings made him sad. He explained that when he left the village, he often saw plants by the highway at hotels, or farms that were “out of place.” They were extracted from their normal environment and neglected or abused with chemicals (such as pesticides). He indicated that on a number of

¹⁵⁷ In the small number of Karen villages I visited, most people did seem averse to engagement with broader commercial networks (beyond local markets). Increasingly though, they had received some benefits from the state or from externally supported projects for which some of the Karen individuals (but not necessarily the whole community) seemed thankful. Examples included improved roads, basic solar power supply, water supply and connection, and modern health care clinics (in Baan Khun Khlang, Jom Thong). This point is also relevant in the failed Riche Monde bioprospecting and benefit sharing project, where NGOs created sufficient public scepticism to thwart the project before it even started, and before their real intentions were known.

occasions “I wanted to cry because they had *Khwan* – they were living things” (Ka-Le, Interview. 12 February 2005). This short description demonstrates the importance of the intrinsic connections the Karen people have to plants, animals and the environment. As well as documenting traditional medicinal applications and related customs, the holistic approaches and values of this Karen community were clearly evident.

Although a full ethno-botanic investigation was not made, a number of treatments were documented in basic detail to demonstrate the extent of local medicinal knowledge. These were based on a description of plants in the surrounding community forest area with Karen elders. Names of plants or full descriptions are not provided to avoid the potentially inappropriate disclosure of medicinal herbs. Notably, a few of these plants were also indicated in the previous case study in Baan Mae Ka Pu. Specific treatments included:

- *They use the leaves of a broad leaf plant, grind it and make a solution for the treatment of ticks on chickens.*
- *They boil the skin of a common Thai fruit to make a drink that helps new mothers produce more milk for their baby. The same treatment can be used for pigs and cows also.*
- *They use a broad leaf from a plant wrapped around wounds to help the healing process. This is a basic remedy and doesn't require any ritual and can be used by anyone.*
- *The leaves of a plant are used to treat the poison injected by a cobra bite. They drink the boiled leaves to help release the poison.*
- *The leaves of a plant are boiled to make a tonic for recovery and revitalisation of a woman after birth.*
- *The leaves of a tree are eaten or boiled in tea for the treatment of coughs.*
- *A vine is used for the creation of a longevity tonic which is used for at least 30 days and can help provide a longer life.*
- *A rare tree was indicated and can be used for the treatment of women after birth. The leaves are boiled and then put in the bath to soak. The leaves can also help relieve headache when wrapped on the forehead.*

- *A tree with multiple uses was identified including use of the leaves for stomach ache, use in rituals with spirits, and the sap of a cut branch can be used for children suffering from cold weather.*
- *The bark of a plant was identified as useful for the treatment of coughs and for women with a shortage of milk.*
- *The leaves of a bamboo variety can be boiled and drunk for the treatment of diarrhoea.*
- *A combination of between 7-15 herbs can be boiled and the steam breathed to provide energy and strength particularly for the elderly.*
- *They use a tree to create a solution for the treatment of sore teeth. This tree is also used for single, young people who have died, in making a small house shrine for them.*
- *A herb was indicated that can be used as a medicine for pigs that don't grow well and also for pregnant pigs.*
- *The leaves of a small shrub can be used to coagulate blood and stop bleeding.*
- *The leaves of another small shrub can be boiled in a baby's bathwater for general well-being.*
- *For the treatment of skin disease, the bark of a tree can be boiled and bathed in.*
- *A yellow flower can be mixed with rice husks to give children and stop intestinal worms.*
- *The use of a particular root with a mixture of up to 12 herbs can be used as a permanent birth control method for women.*
- *Other treatments noted included, the use of leaves of a plant for burn treatment on the skin, extracts from a plant used as an appetite suppressant - "to stop hunger" - and several others.*

(Pathii Ta-Yae, Paa Mur and Pathii Dang – Soplan villagers, Interview. 14/02/2006)

Along with these descriptions of the plants, stories were told which contained moral lessons. These stories are important for the maintenance of norms associated with the values and morals passed down from generation to generation (by elders and adults). Some stories could be described as "folklore" whereas others were more anecdotal. For example, the bark of the Pruak tree is known to be poisonous on the skin and if ingested. A man from another village apparently decided to experiment on this plant to see if it is possible as an anti-toxin for poison

release. The man consequently suffered from chronic diarrhoea and died as a result. The bark of the Pruak tree can also be used to poison and kill fish. It was claimed that the washing of a knife in the water will cause the poison to be absorbed into the metal. However, this is not a common practice (Pathii Ta-Yae, Paa Mur and Pathii Dang – Soplan villagers, Interview. 14/02/2006).

Some of the elders then indicated that they do not experiment a great deal with the traditional medicines to avoid adverse effects. They told a story of a man from another village who was ill and tried several herbal treatments to relieve his symptoms, one after the other. Ultimately he ended up paralysed due to the toxic mix of natural chemicals in his body. This teaches an important lesson for the villagers to be careful, but also to share knowledge with each other and between villages or even between regions to avoid such occurrences (Pathii Ta-Yae, Paa Mur and Pathii Dang – Soplan villagers, Interview. 14/02/2006).

Inter-community knowledge-sharing is also evident in the case of *kwao krua* – one of the biopiracy cases addressed in Chapter Six. *Kwao krua* (white and red) is present in the forest and has various uses (Picture: Appendix 9, Plate 6). Pathii Ta-Yae (Interview. 14/02/2006) learned about the uses of the plant from farmers in the Issan region. He indicated his concern about the future conservation of the plant given the number of people now cultivating it. When informed about the provisions under the TTMI Act for the protection of the herb by limiting the quantities allowed for cultivation, he thought this might be good, but was concerned that it might exclude traditional healers and communities from the local use of the plant in small quantities. *Plao noi* was also present in the local forest. The villagers used *plao-noi* for various treatments, including stomach problems. Pathii Ta-Yae indicated that he knew about the “copyright” (biopiracy) on the plant by Japanese researchers.

When discussing what can be done to avoid occurrences of biopiracy, Pathii Dang (Interview. 14/02/2006) indicated that the government did not often enough visit the regions and the villages and thus did not understand what it is like here. He quoted a famous Karen elder (Pathii Muu Soh):

If you want to see, then go. If you want to know then just ask.

Therefore the government either doesn't care to know, or has not actively sought to know about local conditions related to the rights of communities to not only land and physical resources, but also to associated cultural expressions and knowledge. Pathii Dang related this to the need for villagers to mark out their community territory with posts, maps and global positioning systems (GPS) to show the government that they have a continuing right to the land and the forest in this area, as well as the lifestyles they lead. Notably, the traditional knowledge of this particular village has not been well-documented or used instrumentally by researchers and NGOs, but evidently they had been working with NGOs to assert their right to inhabit this land. Thus their local struggle was now being made on the government's more technical terms involving mapping, planning and the beginnings of forms of exclusion or territorialisation. The elders express a sense of disappointment that their customs too are being lost, along with their knowledge of traditional medicines, of which there may have once been knowledge of thousands, but now there is knowledge of maybe a few hundred (Pathii Ta-Yae, and Pathii Dang – Soplan villagers, Interview. 14/02/2006).

Customary Protocols and Laws – Medicinal Knowledge and Plants

One elder in Soplan – Pathii Ta-Yae (Interview. 14/02/2006), indicated that when their medicinal knowledge was useful, where it could help other people, that he was happy to share it with them. Sharing is a typical community principle and lifestyle for their people. He then complained however that under the system of intellectual property he no longer knew what could happen to such knowledge if he shared it with outsiders. He had become sceptical. He knew about the potential misappropriation and/or IP protection of biological materials, but didn't know what that meant for them. He was alarmed about the modification of plants and exclusionary controls over them, having detrimental effects on the *Khwan* of the plants and on traditional healers.

Despite their openness, in the culture of the *Khon Pga k'nyau* or Karen, there are many rules and taboos about sharing such knowledge or resources with outsiders. This subsection attempts to provide a sensitive documentation of some of these. Approval for their documentation was given verbally by the *Khon Pga k'nyau* elders (Pathii Ta-Yae, Paa Mur and Pathii Dang), noting that they did not see the need to sign a formal consent document (nor could they – the elders I was talking with could not write). They indicated that they “were just telling us about their rules, not secrets.”

Relating to the general use of traditional medicines and herbs are a range of local customs, taboos, rituals and rules (customary protocols) held by the Karen people in Baan Soplan, as follows:

- 1 *Medicines and herbs should not be hoarded. They should only be collected as needed for the treatment of sick people.*
- 2 *Herbs should not be over-collected, especially if the plant is rare.*
- 3 *Before going to collect the herbs, the spirits of the herbs should be first asked and a small donation should be made to the spirits at a shrine.*
- 4 *It is taboo for single women or women without children to collect medicinal herbs. Only married mothers may collect them. Young boys cannot collect herbs without an elder.*
- 5 *Women cannot collect herbs (or do manual work) during menstruation.*
- 6 *If going to the forest to pick herbs for a specific treatment, then the person collecting will not tell anyone that he has gone to do that. On return, the herbs will usually be concealed in a bag. He/she will keep it secret until they have made the preparation for treatment. If it has been told to people, then it will likely be less effective.*
- 7 *When herbal treatments don't work, then the person might seek out a fortune teller to find out if there is a problem with their spirit which is affecting their health. The fortune teller will then advise about where a donation can be made to mend the spirit. This custom is no longer believed by a few of the Christians in the village.*
- 8 *When knowledge of herbs is shared it is often informed by their perception of the character of the person seeking the knowledge as well as based on possible indications from spirits about them. If the knowledge that is shared is used inappropriately, it may*

adversely affect to spirit of the person who provided the knowledge, in the form of illness or otherwise (as was similarly indicated by a Hmong elder).

(Pathii Ta-Yae, Paa Mur and Pathii Dang, Pers. Comm. 13-15/02/2006)

These rules are not formalised or codified, but provide a normative basis for appropriate and moral conduct in the community (also see Picture: Appendix 9, Plate 7). Typically the elders and leaders of the community enforce this conduct with little disciplinary requirements. There is an emphasis on non-confrontation. The first two rules reflect the well-reputed desire of the Karen people to live in harmony with their surrounding environment, without overusing, abusing or commodifying their natural resources – or in fact even conceiving of them *as resources*. The third rule reflects an Animist-Buddhist hybrid belief that plants and animals have a spirit and that they should be respected on a close par with humans. This is a result, at least in part, of a belief in *Karma* and reincarnation. The donations made to the spirits of the plants in this case will ensure that they are respected, helping with their sustainability, and in turn reflecting well upon the Karma of the herb collector.

The fourth taboo reflects tradition relating to adulthood, maturity and the right to collect. The fifth makes consideration that for the maintenance of fertility; menstruation should be a time of rest. These two rules also appear to encourage marriage and reproduction as valued traditions.

The sixth rule is self-explanatory and the seventh is based on predominantly animist beliefs and superstitions. The eighth rule, probably the most important for the interests of this study, indicates that it is the role of the healer to be judge over the character of those seeking knowledge, herbs or treatment. If the healer is a poor judge of the person's character and they consequently misuse the medicine or herbs, the healer will internalise the "wronging of spirits." In this respect, the healer takes on and indeed embodies the authority of the herbs, their sharing, "injuries" in both the legal and physiological sense and the onus of remedy is consequently localised and ritualised on them – possibly through donations to spirits.

The third and eighth rules are largely incompatible with the positivist logic of Western liberal legal theory. They extend the “legal” or normative jurisdictions of scale beyond that of local, national, region or global, to the internal or utterly intimate and to the infinites of life, death and reincarnation. These examples implicate the failure of Western legal systems, and IP law, to allow for alternate forms of value, authority, judgement, injury and remedy in the way knowledge-plant relationships and transactions should be approached. When it is traditional knowledge that is transacted from origins such as these, IP policymakers have been at a loss as to how to respect their customary protocols. The examples also highlight the common tendency (throughout Thailand) to refer to religiosity, non-confrontation and informal measures rather than formal legal action (as discussed in Engel, 2005, 2001; Pradee, 1986; and Chiba, 1986, 2002). These findings indicate that effective “traditional knowledge protection and promotion” needs to be reconceptualised – policymakers need to expand their logic to reflect alternative customary, value and authority systems. The closest thing that has been offered to date has been the concept of a prior informed consent mechanism. Even this has its faults as discussed in Chapter Ten, and as realised through the development of a PIC guideline (Appendix 3).

The elders also indicated a number of herb or treatment-specific customary protocols:

- *The “Great medicine” can only be collected by the elders. It is only for men older than about 30 years old, it cannot be given to pregnant or single women – only married. The medicine is highly valued so it should not be exploited. It should not be taken by outsiders because it has a spirit. Only those that pay respect may be treated by it. If they take more than they need, it may not be a medicinal herb anymore – it might lose its qualities or it might disappear. It should not be treated as a commodity, traded or involved with money.*
- *Many herbal teas for vitalisation as well as other treatments can only be taken by adults – it is taboo to give them to children.*
- *For skin cancers, they perform a ritual involving rice and “holy water,” music and then blow breath on the cancer in a certain way. There are many different ways to blow on an ailment as a treatment.*
- *Kwao krua should only be used by women.*

- Some “lesser” herbal treatments do not have any ritual or taboo associated and may be used by anyone.

(Pathii Ta-Yae, Paa Mur and Pathii Dang, Pers. Comm. 13-15/02/2006)

The customs surrounding the “great medicine” reflect a set of values which respect the quality of this herb as a medicine, for conservation purposes, and as having a spirit.¹⁵⁸ The fact that this herb should not be traded or associated with money also implies that there could be conflict with concepts of ‘benefit sharing’ upon access to the herb.

That *kwao krua* should only be used by women also has potential conflicts with commercial uses being developed. Patents on *kwao krua* predominantly target products to be used on women, but could also be used for men, yielding “Viagra-like” qualities.

These customary protocols make up a set of rules and norms to be monitored by the healer, elder, and community member alike. Some rules are more rigid than others, for example it was stressed that the customs surrounding the “great medicine” *must* be followed, whereas the elders noted that there are many “common” or “lesser” herbs which occur in abundance, have lesser qualities, and thus have fewer customary protocols attached.

In terms of dispute, it was noted that generally little disciplinary action was required within the community. Most would follow the rules and abide by the rituals because of an emphasis on non-confrontation, and fear of justice inherent in the belief of Karma. As a consequence, the villagers are much more likely to refer to religiosity than to legal means for dispute resolution. The structured formality of legal approaches is generally foreign to them. Furthermore, in dealing with outsiders, Karma as justice is also believed to be a more appropriate and lasting approach to fairness and equity. At least this is the case in terms of plant extraction, but may vary in more serious disputes such as those over the right to subsist on their own land in the

¹⁵⁸ Intellectual property laws currently make few provisions for the exclusion of IP protectability of plants on the grounds that alternate values prohibit their trade and exclusive use. The closest provisions are “ordre public and morality” provisions. These have proven to have limited extra-jurisdictional scope due to the disregard for alternate value and moral systems in the WTO under predominantly Western positivism.

forest – in these cases a dualistic approach has been taken in cooperation with NGOs and supportive academics.

9.3 Baan Khun Khlang, Jom Thong.

A Hmong village was also visited in February 2006 and traditional medicines and customs were discussed. The Hmong typically live in the upper altitudes of the mountains and are renowned for being traders (Yos, 2003; and Anderson, 1996). The use of herbs and associated customs are somewhat different from that of the Karen people. In the village they have many traditional medicines grown in their gardens, but also outside the village in local forest areas and farms. In the school, children are taught about traditional medicines in occasional special sessions as part of the local curriculum. During these classes they get elders in for talks and have field trips to the forest or household herb gardens (Leng, Interview. 12/02/2006).

The Hmong villagers, although more likely to sell their herbs than the Karen, apparently trade them in only limited quantities. Medicinal herbs are used mostly for personal use or given to others for free or for a small donation. With some specialist traditional healers you might have to pay more. These healers may experiment with new things but mostly have the knowledge passed down to them from others, they teach their children and the knowledge is retained inter and intra-generationally (Leng, Interview. 12/02/2006).

In the tambon there is a local healers' network of about 20 healers set up and supported by the Tambon Administrative Office. The president of the local healers network in this village was asked if we could speak to her, however she declined because she is wary of outside researchers (Leng, Interview. 12/02/2006). Such networks occur sporadically throughout Thailand, are usually up to local officials to instigate, and are not necessarily coherently organised.¹⁵⁹

¹⁵⁹ The Thai Traditional and Alternative Medicines Institute in Bangkok is attempting to support such networks and will likely set up regional offices to assist in their facilitation (Vichai, Interview. 2 August 2005).

The local community use both traditional medicines and the local health clinic for treatments. Leng indicates that often if the treatment at the health clinic does not work, then the person will try a traditional medicine afterwards. The local health clinic is very cheap and accessible due to a *Thai-Rak-Thai* government subsidy scheme called the “30 baht scheme.” To date the provision of cheap modern medicines appears to have reduced the amount of traditional medicines used and has reduced traditional practice more generally (as was indicated in a neighbouring Karen village called Mae Klang Luang), however it is evident that such practices are not being lost altogether in the area.

The home of a Hmong Woman Elder, Mee Leng¹⁶⁰ was visited to see her herb garden where she grew more than 20 herbs for various treatments. There are treatments for symptoms including sore back, diarrhoea, coughing, bruises, broken bones, stomach ache and other things. She indicated that she knows about more than 100 traditional herbs and had more available in nearby farms and the forest. Mee Leng decides who she treats based on her sense of the person. When making treatments basic things may be made for free, but for other things a small amount is required, up to 500 baht for certain treatments that use rare herbs or complicated remedies. The donation of a small amount is called *Kha Khruu* (the same as in the Karen village and as practiced throughout much of Thailand by healers) as a means of continuing the knowledge (*Khruu* means teacher). It is also a ritual payment made in the belief that there are spirits which protect the herbs and the donation respects them. If the donation is not paid when appropriate, then Mee Leng may fall ill or have something bad happen to her (Mee Leng, Interview. 13/02/2006).

The healers also have a spirit to protect them and not just any person can be a healer. They may have a dream or a vision that tells them that they should be, however Mee Leng indicated that some people who have such visions do not want to take on a healers role due to the many rituals, customs and taboos that are then placed on them. They may not be allowed to eat meat or may not be able to sleep in the same bed as their spouse, lest they receive negative effects

¹⁶⁰ Note that this is not her real name. She was the mother of Leng, and was referred to only as *Mee* (mother), hence she has been cited as *Mee Leng*.

from the spirits for behaving improperly as a healer (Mee Leng, Interview. 13/02/2006). As a result, she indicated that these days not many people wanted to be a healer.

Leng and Mee Leng have heard about biopiracy cases and intellectual property rights on herbs and plants from the local healers group. They expressed concern about the potential misuse of herbs which they conserve, grow and use. Mee Leng stated that it is fine to be treated and to learn about the herbs; however she indicated that if someone steals the herbs she will get sick because a donation was not paid – it is taboo. If this happens she must go and ask people and try to find the person who took the herbs and then try to appease the spirits which protect them. To find the person and appease the spirits she may have to visit a fortune teller. Such customs are based on mixed Animist and Buddhist beliefs, and it was indicated that it is not incompatible with the local beliefs of Christians (Leng; Mee Leng, Interview. 13/02/2006). As in the Karen villages, the theft of herbs from a healer, or when custom and ritual is not followed, will upset the spirit which protects them and they will consequently fall ill. It is probably *not* a considerable extension to assume they would share concern over the genetic reductionism employed by biotechnologists and the subsequent exclusionary protections offered by IP.

Notably, this village had little NGO presence, and this is reflected in the fact that they have been labelled as “troublemakers” and depicted as “bad hill-tribes” as opposed to “good hill-tribes” like the ecologically mindful Karen. Pinkaew (2003) notes that they have attracted the labels “migratory insurgent” particularly relating to communism, “opium producer” and “forest destroyer” because they tend to cash crop and trade goods rather than living a more subsistence lifestyle. However these depictions over-generalise and belie the fact that the Hmong also have considerable traditional ecological and medicinal knowledge. The case study highlights both the connectedness and potential for separation of different groups, indicating the problems associated with making homogenous generalisations about communities and the “hill-tribes” more broadly. The Hmong also deserve some further recognition for their knowledge in line with NGO and academic support for other ethnic groups who have also been victimised. Last, official Thai representations of traditional knowledge need to recognise

these differences and the common threads between different ethnic groups, communities, and national traditional knowledge domains.

9.4 Khao Khwan and Farming Communities around Suphan Buri

Such examples of traditional knowledge are not isolated only to community forests and to the ethnic “hill tribes” peoples. Neither are confined conceptions of community. Another field site visited was the Khao Khwan agricultural research and education centre in Suphan Buri in Central Thailand.¹⁶¹ Two visits were made to the research centre in February and June 2005. The primary function of the centre is for the education of farmers about organic agricultural methods and for the researching of traditional plant breeding methods such as seed selection. The centre operates under a mix of traditional and modern principles and methods, and highlights the adaptations and different contexts inherent in such a definition. Run by Thai plant breeders and agro-ecological activists, the centre trains local Thai farmers in an effort to get them off “input dependent” practices, and have also been involved in research and training throughout the country and the broader region.

When I initially arrived and expressed an interest in “traditional agricultural plants, techniques and associated knowledge,” the director – Daycha Siripat, was taken aback and indicated that they were not really using such varieties nor teaching their students about their use. Many of the plants they were growing were modern re-seeding varieties¹⁶² of the kind available from the Department of Agricultural Extension. Some varieties were even introduced from other countries or regions for adaptation to local conditions. Daycha (Interview, 2005) noted the need to recognise the historical interdependence of farmers and countries on the exchange of germplasm. He indicated that he thought the intellectual property system undermined this interdependence by allowing exclusive controls by certain groups.

¹⁶¹ The centre is primarily funded by grants from the Japanese government.

¹⁶² As opposed to modern “High-Yielding Varieties” with second generation sterility.

Daycha indicated that few farmers in the central region still used traditional varieties, noting a few long rooted, floating “wet rice varieties” still grown in small pockets (Daycha, Interview. 2005). After some more questions, however, it was clear that many of their activities did in fact seek to re-apply traditional knowledge and techniques, if not the use of traditional crops. It was clear that Daycha wanted the centre’s activities to be understood as highly adaptive, useful and current, rather than parochial.

The centre is principled around the Theravada Buddhist philosophies that dominate the religion of Thailand. The name of the centre itself refers to the belief that there is a spirit (*Khwan*) within rice (*Khao*) and all living things. As Parinya (2004:28) notes:

Rice for Thai people has profound significance not only as a source of food but also as an essential component of religious practice, national culture, and way of life. Their thinking with respect to rice is demonstrated in their beliefs, rituals, traditions, folklore, proverbs, riddles, folk songs which are evident throughout production and even consumption processes.

Suvanna (1989), for example, describes the significance of rice *Khwan* through Thai folklore in the tale of *Mae Phoesop* – the spirit protector or provider of rice. She indicates that without rice a person cannot live long, and that Thai people should be respectful of *Mae Phoesop* at mealtimes. She also describes rituals invoking the spirit in order to return plentiful crops. Daycha described this story to me at the centre, and highlighted the importance of these beliefs to the work of the centre.

Thus the centre puts an emphasis on a holistic view of the agro-ecosystem surrounding primary crops and vegetable gardens and on the limited use of chemical inputs. The centre is not preoccupied by religion, but rather utilises the insights that Buddhism provides to develop “commonsense” approaches to agriculture, recognition of the ecological connectivity of living things, and human’s place as a part of this complex system. In this sense, the centre urges a re-traditionalisation of past farming techniques which are time-tested and adaptive to local environmental conditions. The farming plots at the centre aim at balancing staple crop production (rice) with fruit, vegetable and herb growth, secondary staples (corn), natural

drainage ponds containing fish and other animals, natural fertiliser development and use, and traditional/organic pest control techniques. The centre had reverted these plots back to more 'natural' ecological conditions from a former chemical agriculture plot. Daycha noted that as a result of this, pests such as snails and rats were of little trouble because natural predators such as wading birds had returned.

The training of farmers in organic methods (agricultural production using no synthetic fertilisers or pesticides) is one of the main goals of the education offered. The centre demonstrated use of natural fertilisers such as the *Azolla* plant and nutrient fixing indigenous micro-organisms in the rice ponds (Picture: Appendix 9, Plate 8). Furthermore the centre puts an emphasis on the selection of seeds – a skill that has been lost by farmers in many parts of the country.

The selection of seeds allows for the development of higher quality crops in following seasons, and reduces the occurrence of blight, fungus and other grain defects (Picture, Appendix 9, Plate 9). It is also a key activity in the development of new local varieties that are well adapted to their surrounding conditions. The farmers are taught to collect the rice seed and review them for replanting the following season. Seeds are selected from plants which portray certain desirable attributes, for example, disease resistance, strong roots, high yields, adaptations to climate and water availability, and appropriateness for soil types. The best grains from these are selected based on a number of criteria: clarity, lack of cracking, lack of blight or fungus, colour, size and shape. Parinya (2004) also notes that seeds are selected according to cultural and religious significance of the plant (some seeds are highly important for rituals), gastronomic factors and pest resistance.

These techniques are taught to farmers who then apply them on their own land holdings, and share them with friends and neighbours. The program has been so successful that a similar education program has been established by the DoA, primarily with the aim of promoting organic agriculture to fuel the ongoing demand of this niche market (Wichar, Interview. 2005). Consequently, a number of farmers from the school indicated that through the program they

had reduced their reliance on farming inputs, had reduced debt, and in a few cases were subsequently buying back land they previously sold.

The way the teachers and students of Khao Khwan operate is through an attempt to be in harmony with values, logic and beliefs central to Theravada Buddhism. Although a number of important rituals and customs are followed, they are not as prominent as in the villages in Northern Thailand. Nevertheless the centre staff and students are more generally guided by Buddhism about the treatment of nature, the use of synthetic chemicals, and about agricultural methods such as seed selection for improvement of crops. There is a strong resultant sense of pride about the culture of agriculture amongst the teachers and students.

When discussing the issue of (Jasmine rice) biopiracy, Daycha indicated that he was deeply concerned about the affront that had been caused to their culture, given the importance of rice described previously. He was most alarmed about potential harms to agricultural production through the reprehensible “exclusion” and competition by the US “using their own (Thai) crops” which were developed over a considerable period, and provided to IRRI in good faith. A number of students voiced similar concerns that foreign companies might stake exclusive claims on domestic plant varieties grown widely throughout Thailand. However, they were notably more concerned about issues of debt affecting them directly. When asked about farmer debts, most complained that they had bought “seed and chemical” packages from the DOA, which were too expensive, and sometimes did not live up to expectations of yield. This was particularly a problem for the farmers after several years of intensive chemical farming, in which their fields were becoming unproductive and infertile.

Daycha also expressed concern over the implementation of the PVP Act, having been included as a member of the PVP Committee. He indicated that despite the seeming good intentions of the provisions on local plant varieties, wild varieties and those on general domestic varieties, he was angry that the DOA had only implemented new plant variety protections favouring large scale breeders and agro-industry. He suggested that the department regularly sided with industry, and rarely stood up for the concerns of local farmers – including insufficient prevention of future biopiracy cases. The students at the school knew nothing of the PVP Act

or its provisions, and the Act was largely perceived as irrelevant to them. The consensus seemed to be that it was merely a bureaucratic concern for officials in Bangkok.

This case study highlights the flexible nature of traditional knowledge and practices, its potential location in sources outside ritual or minority culture, and in a more rhizomatic “educational community” rather than a specific territorial community.

9.5 Ku Ka Singha Indigenous Seed Fair, Roi Et

The last case study site was a seed fair organised by the Alternative Agriculture Network (AAN) to support the sharing of seeds (primarily rice, but also vegetables) throughout Thailand. The fair was held in *Mu Baan Ku Ka Singha*, Roi Et Province in the Northeastern (*Issan*) Region. The fair is usually held in a province of *Issan*, but has also been held in other parts of the country in recent years. At this fair, farmers were invited to come and share seeds from all regions of Thailand.

Notably the title of this fair entails a different conceptualisation of indigenous. The Issan identity is an ethno-regional association with relations both the dominant Thai and Lao ethnicity. As McCargo and Krisadawan (2004) have noted Issan-ness is a “problematic political construct, reflecting ambiguous self-understandings and self-representations on the part of Northeasterners.” Their relationships with Thai and Lao authorities and groupings have the potential to be fraught with cultural, social and political ramifications. This is notable in relation to traditional knowledge and seed exchange. Whilst this fair initially was predominantly only Issan people, reflecting regional folk knowledge domains (as represented by Bhundit and Areewan, c2002), I came across the fair at a different stage, when it had evolved through NGO collaborations and networks, to incorporate other rural groups. The fair came to reflect openness in traditionalism inclusive of many Thai peoples. In this respect the fair had come to reflect the maintenance of tradition and re-traditionalisation sought by the same NGOs and individuals who had drafted the Thammasat Resolution, and remained

adamantly opposed to IP monopoly over life-forms. The discourse of *sui generis* rights and of customary rights was still evident at this event.

The fair was essentially about promoting the use of local, wild and domestic varieties, adaptation of these varieties to new conditions, and breeding of new local or domestic varieties. The activities of the farmers at such fairs results in a sharing of germplasm across the country (potentially across borders) and contributions to the overall pool of genetic diversity. Crop germplasm has historically had a complex distribution across the globe, with seed exchanges having occurred for millennia. Presentations by NGOs at the fair highlighted the historical sharing of germplasm by these networks (regionally and beyond), and the problems caused by allowing monopolistic controls over plant varieties, genes or plant derivatives.

At this fair there were over 130 different plant varieties (mostly rice, but other crops and vegetables) brought to be exchanged (Picture: Appendix 9, Plate 10). This was an increase on the previous year where just over 100 varieties were brought for exchange. This is an expansion again on previous reports that the Issan network had as few as 50 varieties being grown by the network in the year 2000-2001 (Bhudit and Areewan, c2002). This is due to greater numbers of farmers becoming involved and due to some genetic change resulting in a few newly identified local varieties. One individual named *Wu Pah* is said to grow more than 50 traditional and local varieties on his large farm alone. He shares the seeds from these with other farmers as has been done traditionally for generations.

On display were also plant varieties that had become threatened, and there were also empty displays of varieties now completely lost (Picture: Appendix 9, Plate 11). The signage at the fair encouraged farmers to create *in situ* gene banks for genetic diversity on their farms by planting farmers' varieties or "landraces" (even using these reductionist terms). It also encouraged the exchange of these varieties.

Visits to adjacent farms were conducted to demonstrate traditional agricultural techniques including the use of indigenous micro-organisms and manure to fix nitrogen. Local vegetable

varieties were displayed and a number of herbs with explanations about their applications as tonics and stomach-ache suppressants. The names of these were disclosed to me, but under the understanding that they will not be disclosed to others. Note that many of these can be found in botanical texts on medicinal or crop plants in Thailand (see Saralamp *et al.* 1997) and are therefore in the public domain. However, Ubon indicated that some of the plants were not commonly known about, and were not in the public domain. These could best be described as “community knowledge domain” varieties. It needs to be recognized that this community is not a geographically isolated one, but rather, it is a community with “common understandings about the sharing of plants and associated knowledge” (Ubon, Interview. 2005). These understandings were based on traditions and customs, but were also based on an activism of re-traditionalisation. The seed exchange community should best be envisaged as a network of evolving and expanding tradition.

Rituals were also explained including the use of various varieties of rice for specific rituals, for example *Khao Dam* (or black rice) is highly revered by the local Issan people (Picture: Appendix 9, Plate 12). Ubon (Interview. 2005) indicated that rituals and traditional customs in the Issan region were still regularly associated with crops in a similar approach to those expressed by students of *Khao Khwan* in the central region. Ubon indicated that these customs are widely practiced throughout Thailand, but are gradually being forgotten. While showing me parts of the village, Ubon pointed out at nearly every house the presence of shrines dedicated to *Phra-phuum* (spirit lord of the place/village) or *Phii-baan* (the spirit protector of the house), or to *Mae Phoesop* (spirit of rice). These are not limited to the Issan region, but may be found throughout Thailand, and reflect traditional animist beliefs (despite the dominance of Buddhism).

In the evening of the first night, traditional music and songs were played, and tales of folklore were told by some of the elder people from Ku Ka Singha (Picture: Appendix 9, Plate 13). The speeches made between, and the stories told, linked the need for conservation of traditions in agriculture (including traditional plant cultivation) with the beliefs and way of life of Issan farmers. The songs also celebrated the history of their people, particularly their agricultural existence and its link to their culture.

The visit was also useful for understanding the way information is disseminated to farmers by NGOs. Numerous presentations and discussions were held relating to biopiracy. NGO staff relayed the threat that biopiracy posed, and their opposition to intellectual property monopolies on life-forms. Through these networks some of the local farmers were thus well-informed about things like biopiracy, new government initiatives, new laws, the potential impact of using advanced varieties, and even the potential effects of FTAs. One farmer who was interviewed named Watanasa (Dej) indicated that he thought the “FTA is bad because it will take the rice from my hand. It will encourage them (companies) to take our knowledge and patent it” (Interview. 25/4/2006). Notably, the next farmer interviewed, named Kwaam Bak Lai, had no such concerns; he did not know about such things. He was most concerned about getting out of debt which came as a result of purchasing DOA “high-yielding” (second generation sterile) jasmine rice seeds which had not provided good yields, and which had been affected by drought.

Ubon, who also sits on the PVP committee, expressed concerns similar to Daycha about smallholder representation, and the lack of implementation of the Act. He suggested that PVP was irrelevant to these (Issan) farmers in its present state,¹⁶³ and that it would take considerable review of the provisions, farmer education, and extensive department outreach if it were to have any effects at all. He indicated that most farmers at the fair were too concerned about debt and productivity to know much about the local variety provisions, and that they were probably sceptical of the benefits that might flow from registration. Nevertheless, if groups were interested in registering local varieties, members of this seed exchange community would be likely candidates because of their continued “value-added” practice of seed selection and adaptation. Farmers’ cooperatives or NGOs could, in theory, register general domestic and local varieties for farmers such that they could remain publicly accessible (Ubon, Interview. 2005). This suggests that if DOA is serious about encouraging local plant registration, then they need to use NGOs and networks such as the AAN to inform them. To date, they have made little effort in this regard.

¹⁶³ Although notably he was concerned about the introduction of Eucalyptus species as a protectable variety under the PVP Act. He indicated that Eucalyptus plantations had caused considerable controversy because they had been planted irresponsibly in monocultures and were becoming a weed in the region.

This case study also highlights potential problems with the registration system of the PVP Act vis-à-vis the considerable exchange of germplasm amongst Thai farmers from different regions, and its potential resurgence through NGO and network activities. Thus protecting a local variety may be exclusive of other communities within which sharing activities have been made, or it may go against the interdependence of farmers on germplasm exchange. The administrators of the PVP Act will need to clarify what occurs in such circumstances in the Ministerial Regulations such that registrations of local plant varieties does not limit the age-old practice of seed exchange like modern systems of PBRs.

9.6 Recognising Knowledge Domains and Customary Norms

These case studies highlight some of the variability in knowledge domains (see Chapter Five and Eight) between different communities across Thailand. They provide a qualitative demonstration of the different levels of cohesiveness in communities; knowledge-resource distributions; the impacts that NGO and academic representations can have; the relations individuals and communities had with resources and their environments; different ownership norms (of resources and knowledge); related customs and rituals; and stakeholder concerns.

More detailed and extensive analyses such as these could help differentiate stakeholder expectations with regards to access to biological resources and traditional knowledge *in situ*. In order to demonstrate this, consider some existing and hypothetical examples based on the case studies.

Community forest groups may seem an obvious “hotspot” for discovery of previously isolated plant-related knowledge. This is because of the development of this knowledge over long periods and close affinity with nature. Tribal groups such as the Karen and Hmong may also independently seem an obvious source because of their animist beliefs in which “shaman-like” rituals and experimentation might lead to treatments. However, the same might also be said of less prominent Thai community forest groups (for example, near Prachin Buri in east

Thailand). In cases where herbariums are seeking to collect non-specific herbs, plants and related knowledge for the purposes of discovery from these groups there are a range of problems.

Increasingly there is concern that traditional knowledge in these areas is being lost because it is not systematically recorded. The documentation of this knowledge might preserve it from its disappearance, but at the same time it might have other effects. If the herb is found to be valuable, for example, it might come to be over-cultivated and threatened (e.g. *kwao krua*). Removal of the plant from certain healers might cause internalised injury, and/or spiritual damage. Because traditional groups like the Karen have a very different view of ownership, especially as it pertains to nature, the delineation of property rights (both physical and tangible) may be seen as an affront to their beliefs.

In some very specific cases of rare herbs such as “the great medicine” all of the above consequences might apply. Use of “the great medicine” is highly restricted to only specific individuals, only those who pay respect to the spirits, and it should not be associated with money or traded. Researchers need to work with local groups to understand customary concerns. The groups should be engaged to discuss the balance of benefits to society with potential customary problems associated with documentation of knowledge. Most importantly, these groups need to be able to retain control over their knowledge.

Notably, the *Khon pga k'nyau*, although they received knowledge of *kwao krua* from a different region, where different community knowledge domains operated (and since the patents the herb is now truly public domain), placed their own customary rule on the use of the herb. It is only to be used by women. This is probably related to a realisation of its hormonal effects, which may be seen as a “cultural interpretation of the chemical senses” as Brett (1998) describes it. Thus if *kwao krua* was taken from these people by a man for personal use, this would arguably cause affront to their beliefs.

One of the most important findings from the case studies of customary laws is the internalisation of injury for healers in both *Khon pga k'nyau* and Hmong communities visited.

This raises the serious prospect that misuse and “biopiracy” of herbs may cause embodied and spiritual injury to healers. This law most clearly highlights the alternate customary jurisdiction or scale where authorisation or legitimisation of the transaction is personal (based on trust and insight), internalised, and also infinite (spiritual).

In other circumstances, the sense that when wronged, “justice” would often be resolved through karma, is a prevalent belief in Thailand (Engel, 2005) and was evident in Karen beliefs. This also extends law and jurisdiction to the afterlife and rebirth, where individuals will be judged based on the morals and way they lived their life.

Linking stories for use of traditional knowledge also provided useful messages and lessons to be shared. An interesting contradiction with IP systems can be drawn here. Medicine development in developing countries is often restricted or excluded via patents, and particularly test data protections relating to health and safety, such that generics companies cannot imitate the products without extensive costs or risking public health.¹⁶⁴ It can be safely assumed that the value system of Baan Soplan’s healers contradicts the proprietary creed of US IP lawyers and pharmaceutical innovators. Where the Karen community places a higher value on the sharing of knowledge as “lessons” for avoidance of broader public injury; the proprietary creed separates moral or social responsibility to the public via a positivistic interpretation of law, for reductionist and exclusionary value-added production and profits (related to what Drahos calls negative community).

The seed exchange network highlights the fairly common interdependence of groups regarding crop germplasm and associated knowledge. It suggests that typically generic domestic crops will be more effectively protected by state jurisdictions and that knowledge relations are probably less alienable than in the case of medicinal varieties of plants (with the main exception being distinctively local varieties). Some varieties, used only for ceremonies and rituals, may have more tight customary regulations. Ways of duly recognising the roles of agro-biodiversity custodians (those who conserve and use a range of varieties including local

¹⁶⁴ In recent FTAs, including the negotiations with Thailand, the US has demanded pharmaceutical test data protection, meaning that generics industries have to health and safety test the same drugs themselves at considerable expense, or risk public harm through drug side-effects or unrefined formulas.

and wild varieties) and their customs present a particular challenge for authorities. But notably, support for seed exchange networks will likely encourage better understandings between formal and informal seed and crop regulatory systems.

In the case of generic traditional knowledge of processes like seed selection and methods of organic fertilisation of soils, the knowledge is arguably open and freely available to those who have the know-how. Daycha and Khao Khwan encourage these activities broadly in the public domain, and they recognise the potential public benefits (much like the philosophy of the Honeybee network in India).

It has been suggested by Taubman (2005) that the “access point is the optimal fulcrum of protection” of traditional knowledge and genetic resources. For public domain biological resources and associated knowledge the access point is basically the relevant state authority. Increasingly bioprospectors, researchers and interested parties have been sourcing these things from non-indigenous or non-local sources (i.e. gene-banks, herbariums, ex situ sources, and markets) to avoid conflict, and possibly also to avoid the complex regulations that are emerging. For local resources and knowledge, where sought, the point of access is still local, unless the knowledge comes to be drawn through a chain of sequential transactions. The operation of customary regulations at local access points needs to be formally clarified.

In the papers of Taubman (2005), Dutfield (2006), and WIPO (2005), methods for the formal recognition and/or integration of customary laws into formal systems are outlined. The “principle of locality” is highlighted by Daes (2000) that disputes over the use and acquisition of traditional knowledge and resources should be resolved according to the customary laws of the indigenous peoples concerned. However, extending the jurisdiction of customary law beyond localities may be politically problematic, beyond its recognition in procedures like prior informed consent (WIPO, 2005). WIPO considers and suggests a number of options already raised, including making customary law binding and fixed, recognition of customary laws such that their legal effect is extended beyond its traditional circle, documentation and codification of customary norms to different degrees, use within a subset of legal or procedural approaches, promoting customary laws within and between communities (and on a

national basis), and other related approaches. Clearly the best starting point is to gain further information about customary systems, promote their use, and gradually integrate them into approaches and formal law, if appropriate.

9.7 Summary

In summary, these case studies have highlighted the varied nature of traditional knowledge and local practices relating to genetic resources throughout Thailand. What is important to note is that these practices are adaptive, are frequently shared within local communities and between communities, are subject to a range of norms, rules, rituals, taboos and customs, may be independent or dependant upon ethnicity, and only sometimes supported by government initiatives (in many cases they may in fact be hindered by government actions). In each of these cases, the groups also expressed an aversion to the concept of patents or intellectual property over plants and life-forms for a wide range of moral, cultural, value-based and practical reasons.

By performing a “god-trick” (Haraway, 1996) and dislocating itself as a placeless, universal knowledge system, IP has been impressed upon developing countries, indigenous and local communities. For the reasons noted above, there are an assortment of resistances to IP and the knowledge system it reflects. It is argued that to date, IP law has been highly inflexible in accommodating alternate world views about knowledge beyond that of the “possession” of knowledge, and the inherent reductionism IP entails (see for example Coombe, 1998 on culture and copyright). What is needed is a (re)-spatialisation of IP law as contingent and limited (see also Dutfield and Suthersanen, 2005 on IP laws historical contingency). Where it poses an affront to the culture, customary norms and world view of individuals and communities, there must be flexibility and differentiation built into the law.

This must be coupled with broader recognition of alternate customary associations with knowledge domains. It is suggested that academic, NGO and sympathetic state bodies need to work with local communities towards the documentation, understanding and respect of

customary protocols and law. Documenting customary protocols and knowledge domains allows a holistic representation of the concerns of indigenous or local groups as they are personified in local practice, customs, rituals, taboos, folklore, remedies and customary governance structures. This should go beyond a static “register” of customs; it should be a comprehensive and inclusive project, working *with* local communities, which aims at identifying, acknowledging and sustaining jurisprudential diversity. It could reinforce broader “rights-claims,” such as those suggested by Posey and Dutfield (1996) which might otherwise be ignored. This approach also corresponds with Castree’s (2004b) argument for “a more subtle reading of ‘strong’ indigenous claims to territory, cultural artifacts and informational resources.” It does not imply a geographical apartheid, nor precede one claim over another, but instead recognizes heterogeneous overlapping knowledge domains which may be (or may not be) in conflict with researcher intentions to access them in bioprospecting transactions.

The documentation of customary knowledge domains could be a means of hybridising formal and informal systems of law. It could be linked to procedures of prior informed consent controlling research access to these bio-resources and traditional knowledge. This in theory could give formal rights to indigenous or local groups, a mechanism for consultation, decision-making and consent, and recognition of customary pluralism. It could also be linked to, or a part of, community-inclusive projects like the Peoples’ Biodiversity Registers in India – where disclosure of traditional knowledge is optional and under local control.

Inevitably initiatives like these are dependent upon the willingness of states to recognise this plurality, but it does not preclude academic, NGO or IGO attempts to initiate such projects. These could also link to projects already initiated by local communities, and community involvement and control should be a crucial element of this sort of research. These may generate ways of implementing relational ethical practices (see Whatmore, 1997) which are inclusive rather than exclusive of moral and customary diversity. The following chapter explores the problematics of ethical research practices by reflecting on my personal difficulties during fieldwork. The concluding chapter considers practical approaches and mechanisms for hybridising formal and informal systems of law.

Last, I also want to highlight from this chapter that recognition of the basic rights of traditional local communities is probably the most fundamentally important way to ensure the protection of traditional knowledge, practices, languages, customs and culture. The various threats posed to traditional local groups and their consistent historical disempowerment or victimisation have been the most major disruption to them, particularly for the ethnic minorities in the North of Thailand. These groups cannot concentrate on asserting rights over their knowledge and resources if they have to struggle to assert their right to subsist on the lands they inhabit.

10. REFLECTIONS ON RESEARCH ETHICS

Throughout my fieldwork I tried to critically reflect upon my own activities. I did this for two reasons: first to ensure that I recognised my own situated role (see McDowell, 1992a; 1992b) and ethical responsibilities; and second, for the purposes of demonstrating the difficulties of controlling research such that it is ethical and meets ethical regulatory standards. Essentially this places my research experiences as an example of the problems that might arise whilst trying to conduct research in accordance with a number of ethical and legal regulatory standards. Many of the problems I faced might also be faced by future researchers studying related topics in Thailand, or elsewhere.

As someone analysing research regulatory regimes, the processes that I experienced had direct relevance for my findings and my recommendations. At least part of my results was drawn from the fact that I had *lived* my research, issues of access, prior informed consent and other ethical concerns (also noted by Reid-Henry, 2003).

In order to conduct the research I *had* to follow approved university ethical guidelines, as well as the national laws and regulations of the country I was accessing. But in the conduct of my research I placed *more* ethical requirements on myself. To the best of my ability I followed non-binding international “best practice” guidelines such as the CBD Bonn Guidelines on Access and Benefit Sharing, as well as local non-codified customary norms. For me, the fact that national regulations and university standards took precedence over non-binding norms was problematic. The non-binding norms had been specifically or traditionally developed to deal with exactly what I was doing, whereas the university guidelines and national requirements seemed much more generic and impractical. Namely, the ethical guidelines seemed to respond more to litigation concerns than to the specifics of my research. Harm to interviewees and participants was reduced and defined as a direct impact or stress, resolved with a waiver form of consent. The harm that I could be bringing to local farmers or “tribal” communities in Thailand was much more complex. It related to trust, disclosure and confidentiality, potential breach of customary norms, and possible disruption of spirits.

As a result I will argue that greater weight has to be placed on non-binding rules, especially customary norms associated with traditional local communities. I will also argue that research requirements at all levels need to clarify the place of “knowledge” as a research subject, in line with developments in intellectual property. In order to explore these concerns I use the following sub-headings: University Ethical Guidelines, National Regulation – Thailand, International Legal Standards, and Customary Protocols.

University Ethical Guidelines

Universities conform to national codes of conduct on ethics,¹⁶⁵ for which the norm in Australia (like many other countries) is split into human research ethical guidelines, and animal research ethics guidelines. The dichotomy already presents a concern: for some groups research on plants might have ethical implications. I will return to this point.

I completed the forms and passed a committee assessment for human research ethics, based on the committee decision that my questions were not outlandishly offensive, and that I would follow prior informed consent and confidentiality procedures. At this stage I was left to wonder how the ethics committee knew what would be ethical or not in Thailand. None of them were Thai, or even Asian. Did their situation on an academic committee qualify them to judge ethical research conduct in Thailand? In practice, yes, but in ideal terms I am not so sure. Nevertheless I told myself that I still had to comply with the requirements of Thai authorities and that that would be a saving grace of the whole research process.

I had also given the committee an unrealistically long list of “potential” questions to gain approval. Being qualitative and reactive research in a range of different situations, I was not at all sure what I wanted to ask everyone, nor did I know who I would be asking yet. Nevertheless, I had sufficiently convinced them that I knew what I was doing – a necessarily subjective process.

¹⁶⁵ Ethical codes can be found at the following website: <http://www.nhmrc.gov.au/publications/synopses/e42syn.htm> (Acc. 28/3/07).

In terms of methodology I received advice in reviews and from faculty administrative staff that, in practical terms, I should not conduct extensive ethnographic research because of a number of constraints (relating to occupational health and safety, liability and travel to remote regions, funding constraints and time). This has led to limitations of the extent to which I could make ethnographic observations, and importantly, it meant that there was less opportunity to engage in truly participative and empowering (activist) research. The emphasis was made that this was “just an individual PhD thesis,” not a broader research project or community rights activist project.¹⁶⁶ Nevertheless I did conduct local case studies, worked with local people on issues of community rights, but this was a smaller component of the research than it could have been. This raises the question that academic research constraints may have limited the full ethical potential of the research.

National Regulation – Thailand

Next I had to secure a visa for Thailand. Doing a doctorate, I would have assumed that categorically I was doing “research,” but due to the ambiguous wording of the Royal Thai Consulate General Sydney – Visa Section rules (in 2004), I could also have been conceivably doing “study” towards my degree program. I emailed them to clarify my visa application and to my surprise found that I was conducting a “study” (Visa Section. Pers. Comm. 28 Dec. 2004). The distinction appears to have been made on the basis that my study involved human research (research involving the sampling of knowledge from people), rather than directly involving plants, animals or physical materials. Had I intended to conduct experiments on plants, or even wished to collect them, I would have been required to get the Thai National Research Council’s approval. Hence Thai authorities clearly distinguish between research on tangible Thai products, versus intangible Thai knowledges. The formal protection of the latter is given a lesser weight.

Consider the following hypothetical. I enter Thailand as a “bad researcher,” the kind NGOs like Rural Advancement Foundation International liked to call “biopirates.” Or perhaps even of a category more subtle – the ignorant or negligent researcher. I conduct research to identify useful

¹⁶⁶ These comments were made at a first year postgraduate review to another student and myself.

herbal treatments from plants in the region and document the traditional knowledge of locals. For this, there are few real tangible regulatory requirements to burden me: all of the regulation targets research on physical biological resources. Based on my “discovered” knowledge of herbal remedies, I buy the same herbs at the market and smuggle them through customs, or I find them in an adjacent country with less-strict biodiversity regulations, or from a herbarium in my home country. I have effectively “de-indigenised” the herbs from associated knowledge. I can then send the herbs off for screening to identify active compounds that can then be tested and used in modern day pharmaceuticals. This hypothetical outlines a current regulatory gap relating to the “associated knowledge” that often comes with particularly useful medical herbs and plants. While international and national authorities are attempting to address this matter, there is still potential for this scenario to occur. I return to this issue.

Luckily I was an informed researcher trying to do the right thing ethically, to follow and even go beyond regulations, whilst also trying to clarify this process for other potential researchers. Now my main concerns in the field would be to provide a project information statement to each interviewee, and to obtain consent (written if possible) on the basis that they understood the terms of the interview. I had problems again.

Thai society could be described as a “law-avoidance society” (Kidder, 2000; Engel, 2005). This does not mean that Thailand is a lawless society, but rather there are generally recourses to alternative approaches in the case of general order and dispute. These might include conflict-avoidance, guidance through morality and common values, which is linked to religious beliefs and recourse to karma, amongst other customary approaches. This meant that during fieldwork the average person, including even government bureaucrats, academics and lawyers (!) did not see the need to sign a PIC form – a simple legal contract. In many cases I had to persist to get them to sign. In other cases the persistence was seen as rude and so I stopped, and instead obtained verbal consent from the interviewee (witnessed where possible). Confidentiality was also required at times, not by contract, but by establishing trust.

Personally, I have been an advocate of prior informed consent, and have even gone as far as to draft guidelines for the Thai government similar to those in the Bonn Guidelines on Access to

Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation (Bonn Guidelines, 2002). But over the course of my work and research in Thailand I have come to recognize the situatedness and ethical impositions of PIC. This has been an entirely external concept to Thailand until recently, and while it is intended to help in the transparency of the research process, it actually may hinder interviewer-interviewee relations. Notably, in an interview with NGO staff of “Focus on the Global South,” I started with a good rapport, and then quickly spoiled it by pulling out a PIC form. I thought it looked harmless enough, but the prospect of signing a formal contract seemed “overly legal” to these individuals (Channida, and Sajin. Interview. Feb 2005). Nevertheless I salvaged my relationship with these individuals through a verbal establishment of trust.

Prior informed consent seemed like an even more important ethical tool when seeking interviews with potentially sensitive groups such as “tribal” people, or traditional local farmers. But upon reaching a village I had my doubts about the usefulness of a PIC contract. Many of the village people were illiterate and also some were non-conversant in Thai (they spoke Northern tribal dialects) and so even a Thai language project information statement and consent forms would be impractical. I had to again secure access via an interpreter/guide who could speak their local languages, to ensure they understood the scope of my study (in non-technical or non-academic terms that they could understand), and were happy for me to be there. The guide was also then able to act as a witness of their prior informed consent. These comments are not intended to downplay the need for PIC processes, but on the contrary, they suggest the need for researchers to be honest about the practical difficulties.

With regards to confidentiality, I again had to establish trust with *Khon pga k'nyau*, Hmong people and local farmers. Generally these people were happy for me to document their customs and traditional knowledge, because it represented a way of demonstrating their local traditional existence. This is a powerful way of asserting community rights in areas such as Northern Thailand, where local groups argue with the government over their right to dwell in catchment, forest and semi-forest areas. On the other hand I had my own concerns about what they expected of my research and what I could deliver. I also had concerns that I was documenting a static

version of fairly dynamic and changeable customary protocols, which might be taken by others as a fixed rule of thumb. I discuss this further in a following section.

Further to this, in my writing I have gone even further and censored out some comments because I thought they might not be appropriate to disclose into the public domain (e.g. the names of plants with medicinal qualities; personal slander; and intimate spiritual beliefs). These are mainly personal judgement calls based on my own knowledge of local customs and issues related to biopiracy and misappropriations. But is this my own unnecessary or skewed censorship? The customary norms in Thailand are not fixed with regards to confidentiality, censorship and disclosure. In the past such matters probably were not a major issue. Had I the time and funding I would go back to these villages with a guide, speak to interviewees and check.¹⁶⁷ However, a PhD is a very limited study and this was not possible – another problematic element of the current research climate.

Having grown accustomed to the rejection of written PIC forms, and the Thai desire to keep things informal, I headed off to an interview with a multinational biotechnology industry representative. Running late, I forgot to pack my paperwork including PIC form, project information statement and even name card. Upon arrival I expected the same sort of verbal agreement to be made – as seemed to be the custom for most people. However the situation of this representative, from a multinational life science company, compelled him to refuse the interview. Instead he could only tell me “general information” without a consent form and information statement (Anon, Interview. 2005). In fact, I only really wanted to ask him general information about the research the company conducted, for which he then obliged.

His reactions, however, were more telling than the interview. There are certain epistemic communities of individuals (of which the representative is a part) who place a high weight on the value and exclusive protection of knowledge (particularly that which is not in the public domain). From this mindset comes the formalisation of legalistic confidentiality, consent and IP protection rules. I encountered many similar situations dealing with trade negotiators, UN and WTO

¹⁶⁷ In some cases I can and have done this by email or correspondence to find my judgements have usually been well founded.

officials in Geneva. In fact, a lot of very useful information that I was privy to whilst working on a joint project in Geneva was unfortunately confidential. I could not directly use it in my research.

International Legal Standards

Ironically, it is the same aforementioned epistemic communities of individuals opposed to the formalisation and tightening of knowledge and resource protections relating to biodiversity, as well as to benefit sharing rules. These complaints were evident in the developed country stances in CBD ABS meetings, in industry comments made in side-event meetings, as well as from lobby groups such as the American Bio-Industry Alliance (ABIA, see Finston, 2005). There is a double standard in their claims. Developing countries have been pushing for higher regulatory standards over biological resources and traditional knowledge that are harmonised internationally. They have met considerable resistance.

The Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefit Arising out of their Utilisation provide useful guidelines for developing prior informed consent procedures to be followed by researchers. The Guidelines are not binding, however the development of an International Regime on access and benefit sharing in the CBD may eventually formalise the standing of these rules. Based on my experiences in this research project, the main issue associated with the Bonn Guidelines is that they are geared largely towards the regulation of the genetic resources, without providing any real depth of explanation about how to extend the guidelines to associated knowledge. In sections detailing procedures for obtaining prior informed consent (Para. 36) it barely discussed the treatment of knowledge. Paragraph 37 stipulates that “permission to access genetic resource does not necessarily imply permission to use associated knowledge and vice versa.” Further to that, national authorities are left to assume the responsibility of regulating this knowledge themselves. In my own research which involved investigation of traditional knowledge, I was left with little guidance for my own actions.

Given the emphasis placed on intellectual property protection in fora such as WIPO and the WTO, it is paradoxical that traditional knowledges are still not receiving an equal footing. As regulatory forms now increasingly tighten around biological resources, related knowledges that do not fit the criteria of scientific or industrial have not been able to command the same respect, or equivalent protection. What is now only recently occurring is a greater respect for customary practices and rules which surround traditional knowledge and resource use.

Customary Protocols

I would argue that the most important approach that I used to ensure my research practices were ethical was my attempt to adhere to customary protocols. By learning about and observing the way they treated plants and knowledge, I was adapting myself to their ways of “seeing, thinking, knowing and doing” (Howitt, 2003). This is a challenge that it is difficult to prepare for (Rose, 1997). Before entering villages and local communities I studied up on their local customs where possible.¹⁶⁸ This could only provide me some generic, simplistic and static versions of what to expect, but were nonetheless helpful. Upon arriving in different towns and districts my research assistant (a Thai woman with extensive experience working with NGOs and other researchers in the regions of Thailand), or NGO staff (often also locals) taught me their local customs related to knowledge and resources. Even in these circumstances the case studies were limited in duration and therefore I was left with just a snapshot of their customary systems. Inevitably these are also adaptive and interpreted differently by individuals in the community.

My instinct has been to recommend further documentation of customary protocols. This way future researchers will have better knowledge of how to access local communities appropriately. This raises a paradoxical situation – by statically documenting the customary norms of different groups of a largely law-avoidance society, it formalises rules that are typically seen as fluid. This would have the effect of raising the status of customary protocols (i.e. they may come to be externally recognised) but it runs the risk of bureaucratising norms where they are supposed to be

¹⁶⁸ Sources include: www.hiltribe.org and Yos (2003) for Northern ethnic groups' customs; Mulder (1979), Seidenfaden (1967), Segaller (1995), Keyes (1977), Klausner (1993) and others on Thai culture, regional Thai customs and their variability.

lived. It may also generate confrontation where it is usually avoided (i.e. in circumstances of conflict it, the formalised norm may force a direct resolution where non-confrontational people would normally avoid it).

The same can be said of demanding researchers pursue a policy of PIC. If forced upon interviewees they may be offended or develop mistrust. If the development of these projects and approaches is to be pursued, the local groups in question need to be involved or, preferably, to be in control of the process. As a result of my research I have inevitably been called upon to act as an “expert” on traditional knowledge and customary protocols, when in fact the experts were the local people I worked with and who shared their knowledge with me (Appendix 9, Plate 14). Instead, ideally I should be seen only as an intermediary on these matters. This adds to Smith’s (2005) call that it should not be taken for granted that indigenous or local people are the natural “objects” of research, but rather, research relationships need to establish equal power relations and understandings.

Summary

This reflexive analysis highlights the divergence in ethical and regulatory treatment that is made between resources and knowledge, based upon the differing situated knowledges encountered in Western academic research settings and those in various contexts in Thailand. The divergence is problematic, especially in circumstances where the people in question have different ways of conceptualising customary ownership of resources and knowledge (e.g. in the Karen community forest areas, and in the Hmong healers’ depictions of herbal knowledge). For example the ethical and legal treatment of plants and animals is based on different cultural and contextual backgrounds. Ethical standards for plants are basically non-existent in Western research codes, but some local groups in Thailand were offended by what they see as inappropriate treatment of plants (i.e. displacing them and spraying them with chemicals), let alone modern scientific experimentation or exclusive ownership of replicable quantities (IP control) of plants. The summary also highlights the limits and constraints on PhD research in Australia, and I suspect elsewhere too.

While Western legalised treatments of knowledge in research have increasingly sought to formalise confidentiality and consent to appease ethical and liability concerns, they have done so utilising their own situated knowledges and values (see McDowell, 1992b). My research experience in Thailand demonstrates a greater informality over knowledge sharing, but subject to some variable customary practices (across regions and categorical factors – e.g. between official and farmer). This informality might be mistaken as customary openness, were it not for evidence on the contrary – including biopiracy complaints about the unauthorised or unfair utilisation of traditional knowledge, and the systems demonstrated by local farmers and “tribal” groups. I found that despite my concerns about the potential misuse of biodiversity-related traditional knowledge, and despite recommending more formalised consent procedures, it might actually be a better reflection upon the situatedness of Thai knowledge systems to recommend the clarification of *informal* systems.

This reflective analysis highlights the fact that local people should principally be the ones given the voice to describe their own concerns, or else we (researchers) will continue to impose our own situated knowledges or skewed representations. Thus, I recognise the limits of my own study.

Part V – Conclusions

11. CONCLUSIONS

This research has identified divergences across scales between knowledge systems and values which underpin the regulation of knowledge and biodiversity. The spatial treatment of knowledge was analyzed in fora that produce global discourses, in state regulatory forms in Thailand, and in customary norms at the local level. The result is a demonstration of the geographies of knowledge systems (Parry, 2002:681) and the uneven regulation which codifies, controls and shapes them.

Dominant regulatory systems characterized by a proprietary creed (Drahos, 1996:202), have shaped the ownership of intangible objects through the globalization of intellectual property. These regulatory forms have been imposed upon the majority of the world, reflecting European and North American interests, epistemologies and values. Trade leverage and coercion led to the inclusion of IPRs in the World Trade Organization Agreements, and trends of bilateralism and regionalism have furthered the effects. In fora which regulate biodiversity in all or some of its aspects (i.e. the CBD and ITPGRFA), the reductionist approaches applied to knowledge have also been applied to nature, typified as “genetic resources.” In WTO and CBD fora, the parties have been attempting to balance seemingly conflicting interests (private property rights and rights of exploitation, sovereign control over biodiversity, and the protection of traditional knowledge in the public domain, or in local knowledge domains). Thailand is one of a number of resistant developing countries, making numerous submissions in support of reform of TRIPS in the WTO that reflects their different values and concerns.

The redeeming measures that developing countries have sought to win back have been dismissed and ignored (bans on life-form patentability), have had difficulty gaining developed country support (a disclosure of the source and/or origin of biological resources requirement), are intended largely for the protection of state interests and are often yet to receive sufficient support by states for extension to local communities (access regulations, benefit sharing mechanisms, and prior informed consent procedures). Additionally, the generic language of “traditional knowledge” has had the effect of essentialising it, where it should be understood as a politicized and dynamic concept best envisaged through systems and domains that overlap with other

knowledges. Where these mechanisms are being implemented, and Thailand is a good example of this, the practicalities of local community benefit sharing and prior informed consent are still being resolved. In Thailand this is due to logistical, practical and capacity-based issues associated with the lack of precedent implementing their unique plant variety protection and traditional medicines laws. There is no doubt that it is also partially due to political hesitance and the desire to retain sovereign control over biological resources, rather than yielding it to those in the regions.

Many of Thailand's complaints have been based on cases of perceived "biopiracy" or misappropriations of traditional knowledge and biological resources. Each of the cases analyzed was unique, indicating that there is a set of issues that goes beyond just "patent examination problems." The Jasmine rice cases reflect different interpretations of how far intellectual property should be extended (in the trademark case), as well as culturally informed reactions to the extraction and experimentation on Jasmine rice which were not authorized by the Thai state.¹⁶⁹ These also reflect competitiveness concerns, a result of which has seen developing countries seeking geographical indications of agricultural varieties – something that the US and some developed countries have denied. The marine fungi case highlights the fact that the transfer of biological materials may cause a loss of sovereign control over that resource. Given the mobile nature of these materials it raises questions about the ability to restrict transfers through formal regulations without stifling potential research collaborations and technology transfer. The case also highlights the fact that often these controversies may stem from the unethical actions of only one or a few individuals.

The *plao noi* and *kwao krua* cases involve the use of public domain Thai traditional knowledge as the basis for further research and commercialization of the results into medicinal products. These cases raise questions about the difference between innovation and discovery, the breadth of prior art¹⁷⁰ sources that patent examiners should use, the extent to which derivatives or isolates can be considered novel and patentable, when and how to share benefits with providers of the materials

¹⁶⁹ This also raises questions about the extent to which biological resources can be considered to be under sovereign state control, as opposed to a situation of interdependence or even "commons," especially in the case of crop germplasm.

¹⁷⁰ That is, already invented or created items of innovation.

(whether they are state bodies or local communities), who from and how consent should be obtained. The *kwao krua* case also highlights the fact that intellectual property (in plant varieties or patents) may cause perverse incentives to over-cultivate a plant to meet the demands they raise.

These cases all involve the extraction of biological resources beyond state boundaries. The Chiang Mai School of Pharmaceuticals bioprospecting incident in Samoeng highlights the fact that institutionalized reductionist approaches might also be followed by scientists domestically in Thailand, without adequate consideration of the consent of locals and respect for their customary protocols. This sort of activity is fairly common, and is likely to alter the local knowledge domains associated with different plants.

Knowledge in Thailand is regulated in various ways. The above-mentioned formal legal and technical mechanisms are reactive and imported forms of regulation, despite their "*sui generis*" label. Truly self-generating and unique systems already exist, but are made up of more complex culturally derived norms and practices, often influenced by religion (i.e. Buddhism and Animism) and historically derived value systems. Traditional knowledge in Thailand exists in two main forms: public domain and "folk knowledge" forms, and these can be broken down into smaller domains.¹⁷¹ While public domain knowledge (including traditional knowledge) is open and accessible, there are components of it becoming increasingly regulated by imported western legal forms (intellectual property, confidentiality, and consent). There has been public resentment of this, and it was even evident in the reactions of people when I approached them for interviews.

Thailand has developed a number of unique legal provisions and mechanisms for the regulation of biodiversity and related traditional knowledge. These laws are unparalleled in other countries and present useful examples for like-minded nations to follow. The laws received considerable input in their development from farmers' groups, NGOs, academics and related stakeholders. Although Thai authorities prefer to only directly recognize the generic nationalist forms of "Thai

¹⁷¹ Notably these forms are also politicized. They may be utilized to support political aims in either case. Generic "traditional Thai knowledge" claims are often made with regards to the need for a "self-supporting economy," whilst some local communities emphasize the inalienability of their traditional knowledge systems to assert community rights.

traditional knowledge” (e.g. in national reports to the CBD), rather than more locally culturally and environmentally specific forms, their laws do allow provisions which could benefit local communities (e.g. local, domestic and wild plant variety protection). What is important to note though, is that the formalization of regulatory measures for ownership rights over replicable quantities of plants and associated knowledge, seems entirely at odds with past and present customary norms of Thai farmers and many traditional local communities. Moreover, there is a widespread distrust of the centralized Thai bureaucracy, which is particularly prominent in rural areas, in regional NGO rhetoric, and in mass demonstrations like those by the Assembly of the Poor or the Coalition of People Living with AIDS. As a result the implementation of these laws has been slow. Certain regulatory aspects still remain unclear, such as whether authorities will actually abide by their policies of requiring prior informed consent where access transactions involve local communities, and how potential benefits (if or when they arise) will be shared from the funds administered under the PVP and TTMI Acts.

One approach with considerable merit is the development of People’s Biodiversity and Traditional Knowledge Registers, based on the system currently being devised in India. In-built into the technical concept of a prior art database/registration system, are mechanisms which allow local communities to control their knowledge of biodiversity. The register could be linked to a national system that is accessible to patent examiners, where appropriate. At the local level, communities control an information system which allows them to withhold secret, taboo or sacred knowledge, to control consent procedures, and to ensure consistency with their own customary protocols. This approach deserves research into implementation, stakeholder expectations and concerns, community conceptualization, and related technical practicalities. It would be prudent for Thai authorities to closely watch the implementation of the Indian system for possible replication in Thailand. This approach is particularly useful because of its extension of recognition to local communities and forms of “folk knowledge.” However, as found in the village case studies, this again raises another question of scale relating to who the community “gatekeepers” are (e.g. individuals, leaders, elders, households, NGOs, or representative officials).

“Folk knowledge” or the traditional knowledge domains of local communities, on the other hand, is often portrayed or regarded as inalienable from local customary protocols and practices. There are often spiritual and ideological bases which underpin the use, application, sharing, taboo and secrecy that may surround knowledge of plants used in medicines and agriculture. These will affect the distribution of this knowledge, how the knowledge is used, and may in some cases (where knowledge is communally held or secret) also affect the distribution of the resource. In order to conceptualise these variable parameters, I have suggested the term “knowledge domains” as useful for describing and distinguishing the overlap of physical and intangible realms of situated knowledge systems. Customary or local knowledge domains exist where knowledge is applied in observance with customary practices, and are underpinned by different value systems and ways of seeing the world. Customary or local knowledge domains may be quite separate (essentially, conceptually and politically) from public domain knowledge, and again from the knowledge domains of epistemic communities including reductionist researchers (e.g. functional gene isolating biotechnologists or active compound isolating bio-pharmaceutical researchers), or the most dominant kind of intellectual property proponents – proprietarians.¹⁷²

Despite the existence of jurisdictional scales (e.g. local, national, international) regulating knowledge and biological resources, this depiction of knowledge domains encourages us to envisage other scales of regulation. There is a need to accept other ways of seeing scale that go beyond these normative structures, to others much more intimate (embodied, personified and internal) and infinite (afterlife/re-birth). To date, the dominant international and national regulatory structures have made little, if any, acknowledgement of these other regulatory forms.¹⁷³ Their non-recognition may lead to exploitations of the sort that have been seen throughout history, and continue – as evident in the bioprospecting and biopiracy case studies. Gradually, forums such as the CBD 8(j) Working Group on traditional knowledge, the UN Permanent Forum on Indigenous Issues, some actions by WIPO, and indigenous rights movements are building these necessary recognitions. The recognition of these domains, as distinct from just knowledges, also encourages a rights-based response to the broader threats (i.e.

¹⁷² Notably here, I am drawing extremes between the dominant knowledge systems in this debate. It is important to note the inherent adaptability and potential overlaps between knowledge systems.

¹⁷³ One exception at the national level is the Philippines Indigenous Rights Act, which should be referred to as a potential template for other countries.

persecution, eviction from lands, resource-based exclusion) facing these local groups, without which their traditional knowledge would be lost.

Although this research was able to investigate customary knowledge domains in a number of communities in Thailand, this represents only an indicative fraction of what might be encountered in different locales. Further research on the customary protocols surrounding knowledge sharing and traditional practice needs to be undertaken in Thailand, on a broader scale throughout Asia and beyond. This needs to be approached carefully, such that it does not offend local communities, but rather empowers them. Ideally it needs to be undertaken *by local communities* or to at least involve them and in the process researchers must respectfully observe their customary norms. It also needs to be recognized that these customary norms are not fixed and formal codified rules. They may at times be variable and adaptive to their environments and imposed conditions.

As a final note, I would like to extend a challenge to the academic research community to heed the lessons of this thesis in the development of ethical regulatory standards, and determining the parameters of doctoral research. Given that many of the controversies discussed in this thesis resulted from the unfair or inequitable extraction of knowledge and biodiversity from *in situ* locations and knowledge domains, the reductionism, potential inappropriateness, and shortcomings of ethical research guidelines need to be addressed. In academic ethics specifically, there is an urgent need to address the investigative treatment of knowledge, legitimate authority to provide consent, approaches for cultures of law avoidance, to consider alternate perspectives on plant research, and the situatedness of ethics committee knowledge.

REFERENCES

Note: Thai authors have been cited by their first name in the body text and are therefore presented here in the format 'first name, last name' according to Thai custom.

- Abubakar, M.S., Abdurahman, E.M., Nock, I.H., Haruna, A.K., and Garba, M. (2001) 'The evaluation of pest control properties of *Steganotaenia araliacea*' *Journal of Herbs, Spices and Medicinal Plants*, Vol.8(1):51-57
- Alcorn, J. (1993) 'Indigenous Peoples and Conservation' *Conservation Biology*. Vol.7:424-426.
- Anderson, E.F. (1993) *Plants and People of the Golden Triangle: Ethnobotany of the Hill Tribes of Northern Thailand*, Dioscorides Press, Portland, Oregon.
- ANDES, IIED, FIELD and Netherlands Ministry of Foreign Affairs (2006) *ABS and Poverty: Practical Approaches for Reducing Poverty through ABS*. Side Event at ABS Working Group, 3rd February 2006. Available at: <http://www.iied.org/NR/agbioliv/documents/ABSandPovertysideevent.pdf> (Acc: 9/3/2007).
- Antons, C. (2006) 'Specialised Intellectual Property Courts in Southeast Asia', in: A. Kur, S. Luginbuhl and E. Waage (eds.) "... und sie bewegt sich doch!" - Patent Law on the Move, Festschrift in Honour of Gert Kolle and Dieter Stauder, Carl Heymanns Verlag; Berlin, pp. 287-299.
- Antons, C. (2005) 'Traditional Knowledge and Intellectual Property Rights in Australia and Southeast Asia' in Heath, C. and Kamperman Sanders, A. (eds) *New Frontiers of Intellectual Property Law: IP and Cultural Heritage, Geographical Indications, Enforcement and Overprotection*. Hart Publishing, Oregon, pp37- 51.
- Antons, C. (2003) 'Legal Culture and History of Law in Asia' in Heath, C. (ed) *Intellectual Property Law in Asia*. Kluwer Law International, London, pp13-35.
- Anan Ganjanapan (2000) *Local Control of Land and Forest: Cultural Dimensions of Resource Management in Northern Thailand*. Regional Centre for Social Science and Sustainable Development, Chiang Mai University.
- Anderson, E.F. (1993) *Plants and People of the Golden Triangle: Ethnobotany of the Hill Tribes of Northern Thailand*, Dioscorides Press, Portland, Oregon.
- Ariyanuntaka, V. (1999) 'TRIPS and the Specialised Intellectual Property Court in Thailand.' *IIC* Vol. 30: 360-376.
- Baimai, Visoot (1995) *Status of Biological Diversity in Thailand*. Thailand Biodiversity Research Fund, Bangkok (in Thai only)
- Baker, C. and Pasuk Phongpaichit (2005) *A History of Thailand*. Cambridge University Press, New York.
- Baker, C. and Pasuk Phongpaichit (2002) *Thailand: Economy and Politics*. (2nd edn) Oxford University Press, Malaysia.
- Barnes, R.H. Gray, A. and Kingsbury, B. (1995) *Indigenous Peoples of Asia*. Association for Asian Studies, Ann Arbor, Michigan.
- Barrera-Bassols, N. and Zinck, J.A. (2003) 'Ethopedology: A Worldwide View on the Soil Knowledge of Local People' *Geoderma*. Vol.111:171-195.
- Barrett, C. B. and Lybbert, T.J. (2000) 'Is Bioprospecting a Viable Strategy for Conserving Tropical Ecosystems?' *Ecological Economics*, Vol. 34:293-300.

- Becker, C.D. and Ghimire, K. (2003) 'Synergy between traditional ecological knowledge and conservation science supports forest preservation in Ecuador' *Conservation Ecology* Vol.8(1): 1.
- Benjavan Rerkasem (2003) 'Biotechnology and Agriculture' in Kaosa-ard, M. and Dore, J. (eds) *Social Challenges for the Mekong Region*. White Lotus, Bangkok.
- Bently, L. and Sherman, B. (2001) *Intellectual Property Law*. Oxford University Press, Oxford.
- Berkes, F. (1999) 'Role and Significance of 'Tradition' in Indigenous Knowledge' *Indigenous Knowledge and Development Monitor*. Vol.7(1).
- Bhundit Piyasilp and Areewan Kusanthia (c2002) 'Local Rice Genetic Diversity in Northeastern Thailand.' *Growing Diversity – Asia Series*. Available at www.grain.org/gd/en/case-studies/asia.cfm.
- Biber-Klemm, S. (2006) 'Origin and Allocation of Traditional Knowledge and Landraces' in Biber-Klemm, S. and Cottier, T. (eds) *Rights to Plant Genetic Resources and Traditional Knowledge. Basic Issues and Perspectives*. CABI, Oxfordshire, England, pp157-172.
- Biber-Klemm, S. and Szymura Berglas, D. (2006) 'Problems and Goals' in Biber-Klemm, S. and Cottier, T. (eds) *Rights to Plant Genetic Resources and Traditional Knowledge. Basic Issues and Perspectives*. CABI, Oxfordshire, England, pp3-51.
- Blakeney, M. 'Bioprospecting and Biopiracy' in Ong, B. (ed) (2005) *Intellectual Property and Biological Resources*. Marshall-Cavendish, Singapore, pp393-424.
- Blakeney, M. (2002) 'Agricultural Research: Intellectual Property and the CGIAR System', chapter in Drahos, P. and Mayne, R. (eds) *Global Intellectual Property Rights: Knowledge, Access and Development*. Palmgrave Macmillan, Hampshire UK, pp108-124.
- Blomley, N. (2003) 'From 'What?' to 'So What?': Law and Geography in Retrospect' in Holder, J. and Harrison, C. *Law and geography* Oxford University Press, Oxford, pp17-33.
- Blomley, N., Delaney, D. and Ford, R.T. (2001) *The Legal Geographies Reader: Law, Power and Space*. Blackwell Publishers, Malden Mass.
- Blomley, N. (2000) 'Law, geography of' in Johnston, R.J., Gregory, D., Pratt, G., and Watts, M. (eds) *The Dictionary of Human Geography*. 4th edn. Blackwell Publishing, Malden, MA.
- Blomley, N. (1994) *Law, Space and the Geographies of Power*. The Guildford Press, New York.
- Bohannon, P. (1967) 'The Differing Realms of the Law' in Bohannon, P. (ed.) *Law and Warfare: Studies in the Anthropology of Conflict*. The Natural History Press, New York.
- Boyle, J. (2004) 'A Manifesto on WIPO and the Future of Intellectual Property' *Duke Law and Technology Review*. No. 9:1-12.
- Boyle, J. (1997) 'A Politics of Intellectual Property: Environmentalism for the Net?' *Duke Law Journal*. Vol.87(1):87-116.
- Boyle, J. (1993) 'The Second Enclosure Movement and the Construction of the Public Domain' *Law and Contemporary Problems*. Vol. 66:33-74.
- Braithwaite, J., and Drahos, P. (2000) *Global Business Regulation*. Cambridge University Press, Cambridge
- Breman, J. (1987) *The Shattered Image: Construction and Deconstruction of the Village in Colonial Asia*. Comparative Asian Studies No. 2, Centre for Asian Studies, Amsterdam.

- Brett, J.A. (1998) 'Medicinal plant selection criteria: The cultural interpretation of chemical senses' *Journal of Applied Botany*, Vol. 72(3-4):70-74.
- Brockelman, W.Y. (1998) 'Bioprospecting in Thai Forests: is it Worthwhile?' *Pure and Applied Chemistry*. Vol. 70(11):2117-2126. Available from IUPAC at:
<http://www.iupac.org/symposia/proceedings/phuket97/brockelman.html>
- Brokensha, D., Warren, D.M. and Werner, O. (eds)(1980) *Indigenous Knowledge Systems and Development*. University Press of America, Lanham, MD.
- Brown, M.F. (2003) *Who Owns Native Culture?* Harvard University Press, Cambridge Mass.
- Brown, M.F. (1998) 'Can Culture be Copyrighted?' *Current Anthropology*. Vol.39:193-222.
- Brownlie, I. (ed)(2002) *Basic Documents in International Law*. 5th Edn. Oxford University Press, Oxford.
- Brun, V. and Schumacher, T. (1994) *The Traditional Herbal Medicine of Northern Thailand*, White Lotus, Bangkok.
- Brush, S.B. (1996) 'Whose Knowledge, Whose Genes, Whose Rights?' in Brush, S.B. and Stabinsky (eds) (1996) *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights*. Island press, Covelo, CA, pp1-21.
- Brush, S.B. and Stabinsky (eds) (1996) *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights*. Island press, Covelo, CA.
- Brush, S.B. (1993) 'Indigenous Knowledge of Biological Resources and Intellectual property Rights: The Role of Anthropology' *American Anthropologist*. Vol. 95(3):653-686.
- Buntoon Srethasirote and Chanisa Klomtong (2005) 'Public policy process in free trade agreements of Thailand', chapter in Health Systems Research Institute, *Toward Healthy Society: Healthy Public Policy and Health Impact Assessment in Thailand*. Nonthaburi, Thailand.
- Buntoon Srethasirote and Jade Donavanik, (2005) *Questionnaire Results on Traditional Knowledge and Folklore Protection*. Unpublished document, distributed at a Traditional Knowledge -Folklore meeting, Bangkok (in Thai only).
- Burnam, P., Gillard, K., Grant, W. and Layton-Henry, Z. (2004) *Research Methods in Politics*. Palmgrave Macmillan, New York.
- Cantuarina Marin, P.L. (2002) *Providing Protection for Plant Genetic Resources. Patents, Sui Generis Systems, and Biopartnerships*. Kluwer Law International, New York.
- Castree, N. (2004a) 'Comments' on Greene, S. 'Culture as Politics, Culture as Property in Pharmaceutical Bioprospecting (Indigenous People Incorporated?).' In *Current Anthropology*, 45(2):211-238.
- Castree, N. (2004b) 'Differential Geographies: Place, Indigenous Rights and "Local" Resources' *Political Geography*. Vol.23:133-67.
- Castree, N. (2003) 'Bioprospecting: From Theory to Practice (and Back Again)' *Transactions of the Institute of British Geographers* Vol. 28:35-55.
- Castree, N. and Braun, B. (2001) *Social Nature: Theory, Practice and Politics*, Blackwell, London and New York.
- Center for Conservation Biology (2004) *Thailand Environment Monitor 2004: Biodiversity*. Center for Conservation Biology, Mahidol University, Bangkok.

- Chadwick, D.J. and Marsh, J. (eds) (1994) *Ethnobotany and the Search for New Drugs*. John Wiley and Sons, Chichester, England.
- Chen, J. (2005) 'There is no such thing as biopiracy... and it's a good thing too'. *McGeorge Law Review*. Vol.36.
- Chiba, M. (ed) (2002) *Legal Cultures in Human Society – A Collection of Articles and Essays*. Shinzansha International, Tokyo.
- Chiba, M. (ed) (1986) *Asian Indigenous Law – In Interaction with Received law*. KPI, London and New York.
- Chouchena-Rojas, M., Ruiz Muller, M., Vivas, D. and Winkler, S. (2005) *Disclosure Requirements: Ensuring mutual supportiveness between the WTO TRIPS Agreement and the CBD*. IUCN, Gland, Switzerland and Cambridge, UK and ICTSD, Geneva, Switzerland.
- Clapp, R.A. and Crook, C. (2002) 'Drowning in the Magic Well: Shaman Pharmaceuticals and the Elusive Value of Traditional Knowledge' *Journal of Environment and Development*. Vol.11(1):79-102.
- Clark, G.L. (1989) 'The Geography of Law' in Peet, R. and Thrift, N. (eds) *The New Models in Human Geography*. Unwin Hyman, London, pp310-337.
- Clifford, J. (1988) *The Predicament of Culture: Twentieth-Century Ethnography, Literature and Art*. Harvard University Press, Cambridge, Mass.
- Coates, K.S. (2005) *A Global History of Indigenous Peoples*. Palmgrave Macmillan, New York.
- Conklin, H. (1961) 'The Study of Shifting Cultivation.' In *Current Anthropology*. Vol. 2 pp27-61.
- Conklin, H. (1954) *The Relation of the Hanunuo Culture to the Plant World*. PhD Dissertation, Yale University.
- Connors, M.K. (2005) 'Democracy and the Mainstreaming of Localism in Thailand' in Loh Kok Wah, F. and Öjendal, J. (eds) *Southeast Asian Responses to Globalisation: Restructuring Governance and Deepening Democracy*. NIAS Press, Copenhagen, and ISEAS, Singapore, pp259-286.
- Coombe, R. (1998) *The Cultural Life of Intellectual Properties: Authorship, Appropriation and the Law*. Duke University Press, London.
- Coombe, R. (1999) 'Intellectual Property, Human Rights, and Sovereignty: New Dilemmas in International Law Posed by the Recognition of Indigenous Knowledge and the Conservation of Biodiversity' *Indiana Journal of Global Legal Studies*. Vol.6:59-116.
- Correa, C.M. (2001) 'Access To Plant Genetic Resources And Intellectual Property Rights' in Blakeney, M. and Drahos, P. (eds) *Intellectual Property in Biodiversity and Agriculture: Regulating the Biosphere*. Sweet & Maxwell, London, pp101-129.
- Correa, C.M. (2000) *Intellectual Property Rights, the WTO and Developing Countries: The TRIPS Agreement and Policy Options*. Zed Books, London.
- Correa, C.M. (1994) 'Sovereign and Property Rights over Plant Genetic Resources' Commission on Plant Genetic Resources Background Study Paper No. 2. FAO, Rome.
- Cotton, C.M. (1996) *Ethnobotany: Principles and Applications*. John Wiley and Sons, New York.
- Cowan, J.K., Dembour, M.B., and Wilson, R.A. (2001) "Introduction" in Cowan, J.K., Dembour, M.B., and Wilson, R.A. (eds) *Culture and Rights: Anthropological Perspectives*. Cambridge University Press, Cambridge, pp1-15.

- Craig, D. (2005) 'Biological Resources, Intellectual Property Rights and International Human Rights: Impacts on Indigenous and Local Communities', chapter in Ong, B. (ed) (2005) *Intellectual Property and Biological Resources*. Marshall Cavendish Academic, Singapore.
- Cullet, P. (2005) *Intellectual Property Protection and Sustainable Development*. Nexis Lexis/ Butterworths, New Delhi.
- Cunningham, A. (1996) *People, Park and Plant Use: Recommendations for Multiple Use Zones and Development Alternatives Around Bwindi Impenetrable National Park, Uganda*. People and Plants Working Paper Number 4. UNESCO, Paris.
- Daes, E.I. (2003) 'Globalisation, Intellectual Property and Indigenous Peoples' in Jentoft, S., Minde, H. and Nilsen, R. (eds) *Indigenous Peoples: Resource Management and Global Rights*. Eburon Press, Delft, UK.
- Daes, E.I. (2000) 'Defending Indigenous Peoples' Heritage' in *Protecting Knowledge: Traditional Resource Rights in the New Millennium*, Union of British Columbian Indian Chiefs.
- David, P. (1993) "Intellectual property institutions and the panda's thumb: patents, copyrights, and trade secrets in economic theory and history". M.B.Wallerstein, R.A.Schoen and M.E.Mogee. *Global Dimensions of Intellectual Property Rights in Science and Technology*. Washington DC, National Academy Press, pp19-61
- Dean, M. (1999) *Governmentality*. Sage Publications, London.
- De Laet (2000) 'Patents, Travel, Space: Ethnographic Encounters with Objects in Transit' in *Environment and Planning D: Society and Space*. Vol.18:149-168.
- Delaney, D., Blomley, N., and Ford, R.T. (2001) 'Preface: Where is Law?' in *The Legal Geographies Reader: Law, Power and Space*. Blackwell Publishers, Malden Mass. At xiii-xxii
- Delaney, D. (2003) 'Beyond the Word: Law as a Thing of this World' in Holder, J. and Harrison, C. *Law and Geography*. Oxford University Press, New York.
- Dhar, B. (2002) *Sui Generis Systems for Plant Variety Protection: Options Under TRIPS*. Geneva: Quaker United Nations Office.
- Dhillion, S.S and La-aw Ampornpan (2000) 'Bioprospecting and Phytomedicines in Thailand: Conservation, Benefit Sharing and Regulations.' In Svarstad, H. and Dhillion, S.S. *Responding to Bioprospecting: From Biodiversity in the South to Medicines in the North*. Spartacus Forlag AS, Oslo, pp 57-76.
- Downes, D.R. (2002) 'How Intellectual Property Could be a Tool to Protect Traditional Knowledge' in Gallagher, K.P. and Werksman, J. *The Earthscan Reader on International Trade and Sustainable Development*. Earthscan Publications, London, pp372-395.
- Drahos, P. with Braithwaite, J. (2003) *Information Feudalism: Who Owns the Knowledge Economy?* New Press, New York.
- Drahos, P. and Mayne, R. (eds) (2002) *Global Intellectual Property Rights: Knowledge, Access and Development*. Palmgrave Macmillan, Basingstoke and N.Y.
- Drahos, P. (2005a) 'Cities of planning and cities of non-planning: a geography of intellectual property' in *World Information - IP city edition*. World-information.org, Vienna, p10.
- Drahos, P. (2005b) 'Intellectual Property Engineering: The Role of the Chemical, Pharmaceutical and Biotechnological Industries' in Ong, B (ed) *Intellectual Property and Biological Resources*. Marshall Cavendish Academic, Singapore, pp258-283.

- Drahos, P. (2001) 'BITs and BIPs. Bilateralism in Intellectual Property' *Journal of World Intellectual Property*. Vol. 4(6):791-808.
- Drahos, P. (1997) 'Thinking Strategically About Intellectual Property Rights' in *Telecommunications Policy*. Vol.21(3):201-211.
- Drahos, P. (1996) *A philosophy of intellectual property* Dartmouth, Aldershot, UK and Brookfield, US.
- Duke, K. (2002) 'Getting Beyond the "Official Line": Reflections on Dilemmas of Access, Knowledge and Power in Researching Policy Networks.' In *Journal of Social Politics*. Vol. 31(1):39-59.
- Durkheim, E. (1997 [1893]) *Division of Labour in Society*. Free Press, New York.
- Dutfield, G. (2006) *Protecting Traditional Knowledge: Pathways to the Future*. Geneva: ICTSD Issue Paper No.16.
- Dutfield, G. (2005a) 'Disclosure of Origin: Time for a Reality Check?' in Chouchena-Rojas, M., Ruiz Muller, M., Vivas-Eugui, D. and Winkler, S. (eds) *Disclosure Requirements: Ensuring Mutual Supportiveness between the WTO TRIPS Agreement and the CBD*, IUCN & ICTSD, Gland and Geneva, pp43-45.
- Dutfield, G. (2005b) 'Legal and Economic Aspects of Traditional Knowledge,' in Reichman, J. and Maskus, K.E. (eds) *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime*, Cambridge University Press, Cambridge, pp495-520.
- Dutfield, G. (2004) *Intellectual Property, Biogenetic Resources and Traditional Knowledge*. Earthscan, London.
- Dutfield, G. (2003) *Intellectual property and the life science industries: a twentieth century history*. Ashgate, Aldershot UK.
- Dutfield, G. (2002) *Protecting Traditional Knowledge and Folklore: A review of progress in diplomacy and policy formulation*. International Centre for Trade and Sustainable Development: Geneva.
- Dutfield, G. and Suthersanen, U. (2005) 'Harmonisation or differentiation in intellectual property protection? The lessons of history' *Prometheus* Vol. 23(2):131-147
- Embree, J.F. (1950) 'Thailand – A Loosely Structured Social System' *American Anthropologist* Vol. 52:181-193.
- Engel, D.M. (2005) 'Globalisation and the Decline of Legal Consciousness: Torts, Ghosts, and Karma in Thailand' *Law and Social Inquiry*. Vol.30:469-514.
- Engel, D.M. (2001) 'Injury and Identity: The Damaged Self in Three Cultures' in Goldberg, D.T., Musheno, M., and Bower, L.C. *Between Law and Culture: Relocating Legal Studies*. University of Minnesota Press, Minneapolis, pp3-21.
- Engel, D.M. (1978) *Code and Custom in a Thai Provincial Court: The Interaction of Formal and Informal Systems of Justice*. The University of Arizona Press, Tucson.
- Engel, D.M. (1975) *Law and Kingship in Thailand During the Reign of King Chulalongkorn*. University of Michigan, Ann Arbor, Mich.
- England, K.V.L. (1994) 'Getting Personal: Reflexivity, Positionality, and Feminist Research' *Professional Geographer*. Vol. 46:80-89.
- Erdelen, W.R., Kusnaka Adimihardja, H. and Moesdarsono, S. (1999) 'Biodiversity, Traditional Medicine and the Sustainable Use of Indigenous Medicinal Plants in Indonesia' in *Indigenous Knowledge and Development Monitor*. Vol. 7(3).

- Faden, R.R., Beauchamp, T.L. and King, N.M.P. (1986) *The History and Theory of Informed Consent*. Oxford University Press, New York and Oxford.
- Farooquee, N.A. and Nautiyal, A. (1999) 'Traditional Knowledge and Practices of Bhotiya Pastoralists of Kumaon Himalaya: the Need for Value Addition' *International Journal of Sustainable Development and World Ecology*. Vol. 6(1):60-67.
- Finston, S.K. (2005) 'The Relevance of Genetic Resources to the Pharmaceutical Industry: The Industry Viewpoint' *Journal of World Intellectual Property*. Vol. 8(2):141-155.
- Fisher, W. (1997) 'Doing Good? The Politics and Antipolitics of NGO Practices.' *Annual Reviews of Anthropology*. Vol. 26:439-464.
- Foale, S. (1999) 'Local Ecological Knowledge and Biology of the Land Crab *Cardisoma hirtipes* (Decapoda: Gecarcinidae) at West Nggela, Solomon Islands' *Pacific Science*. Vol. 53(1):37-49.
- Forsyth, T. (2004) 'Social Movements and Environmental Democratization in Thailand' in Jasanoff, S. and Martello, M.L. (eds) *Earthly Politics: Local and Global in Environmental Governance*. MIT Press, Cambridge, Mass, pp195-216.
- Freeman, M.M.R. (1992) 'The Nature and Utility of Traditional Ecological Knowledge' *Northern Perspectives*. Vol. 20(1).
- Freeman, M.M.R. and Carbyn, L.N. (eds) (1988) *Traditional Knowledge and Renewable Resources Management in Northern Regions*. Occasional Paper No. 20, Boreal Institute for Northern Studies, Edmonton.
- Freeman, M.M.R. (1985) 'Appeal to Tradition: Different Perspectives on Wildlife Management' in Brosted, J. and Dahl, J. (eds) *Native Power: The Quest for Autonomy and Nationhood of Aboriginal Peoples*. Universitetsforlaget, Oslo, pp265-281.
- Gardner, S., Sidisunthorn, P., and Anusarnsunthorn, V. (2000) *A Field Guide to Forest Trees of Northern Thailand*, Kobfai Publishing, Bangkok.
- Geertz, C. (1983) *Local Knowledge: Further Essays in Interpretive Anthropology*. Basic Books, USA.
- Geertz, C. (1973) *The Interpretation of Cultures: Selected Essays*. Basic Books, New York.
- Gibson, C. (1999) 'Cartographies of the Colonial/Capitalist State: A Geopolitics of Indigenous Self-Determination in Australia' *Antipode*. Vol. 31(1):45-79.
- Gibson, J. (2004) 'Indigenous Resources and the International Context for Protection' *SCRIPT-ed*. Vol. 1(1):48-82.
- Gibson-Graham, J.-K (1994) 'Stuffed if I Know! Reflections on Post-Modern Feminist Social Research' *Gender, Place and Culture*. Vol. 1:205-224.
- Gilmore, M.R. (1932) 'Importance of Ethnobotanical Investigation' *American Anthropologist*. Vol. 34:320-327.
- Gilmore, M.R. (1991[1919]) *Uses of Plants by the Indians of the Missouri River Region*. University of Nebraska Press, London.
- Glenn, H.P. (2004) *Legal Traditions of the World: Sustainable Diversity in Law*. 2nd edn. Oxford University Press, New York.
- Gluckman, M. (1955) *Custom and Conflict in Africa*. Blackwell: Oxford.

- Goldberg, D.T., Musheno, M., and Bower, L.C. *Between Law and Culture: Relocating Legal Studies*. University of Minnesota Press, Minneapolis.
- Greaves, T. (ed) (1994) *Intellectual Property Rights for Indigenous Peoples: A Sourcebook*. Society for Applied Anthropology, Oklahoma.
- Greaves, T. (1996) 'Tribal Rights' in Brush, S.B. and Stabinsky (eds) (1996) *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights*. Island press, Covelo, CA, pp25-40.
- Greene S. (2004) 'Culture as Politics, Culture as Property in Pharmaceutical Bioprospecting (Indigenous People Incorporated?).' In *Current Anthropology*, Vol. 45(2):211-238.
- Greene, S. (2002) "Intellectual Property, Resources or Territory? Reframing the Debate over Indigenous Rights, Traditional Knowledge, and Pharmaceutical Bioprospection," in Bradley, M. and Petro, P. (eds) *Truth Claims: Representation and Human Rights*. Rutgers University Press, New Brunswick, pp229-49.
- Grenier, L. (1998) *Working with Indigenous Knowledge: A Guide for Researchers*. International Development Research Centre, Ottawa.
- Gupta, A.K (c2004) *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Associated Traditional Knowledge*. WIPO, Geneva; and UNEP, Nairobi. Available at: <http://www.wipo.int/tk/en/publications/index.html>
- Gupta, A.K. (2001) *How Can Asian Countries Protect Traditional Knowledge, Farmers Rights and Access to Genetic Resources through the Implementation or Review of the WTO TRIPS Agreement?* Paper from the Joint ICTSD/CEE/HBF Regional Dialogue for Governments and Civil Society: Chiang Mai, 29-30 March, 2001.
- Gupta, A. (ed.) (1989) *Honey Bee, A Quarterly Newsletter*. Indian Institute of Management, Ahmedabad, India.
- Hann, C.M. (ed) (1998) *Property Relations: Renewing the Anthropological Tradition*. Cambridge University Press, Cambridge.
- Haraway, D. (1996) 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective' in Agnew, J., Livingstone, D.N. and Rogers, A. *Human Geography: An Essential Anthology*. Blackwell Publishers, Cambridge Mass, pp108-128.
- Haraway, D. (1991) *Simians, Cyborgs and Women: The Reinvention of Nature*. Routledge, London.
- Harshberger, J.W. (1896) 'The Purposes of Ethnobotany,' in *Botanical Gazette*. Vol. 21:146-154.
- Haugen, H.M. (2005) 'Traditional Knowledge and Human Rights' *Journal of World Intellectual Property*. Vol. 8(5):663-677.
- Hausler, S. (1993) 'Some Reflections on the Use of Indigenous Knowledge in Strategies to Curb Environmental Degradation.'" in Stiles, D. (ed.). *Listening to the People: Social Aspects of Dry-Land Management*. UNEP, Nairobi, Kenya, pp 47-53.
- Hayden, C (2003a) *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico*. Princeton University Press, Princeton NJ.
- Hayden, C (2003b) 'From Market to Market: Bioprospecting's Idioms of Inclusion.' *American Ethnologist* Vol. 30(3):1-13.
- Hegel, G.W.F. (1967[1821]) *Philosophy of Right*. Clarendon Press, Oxford.

- Heineke, C. and Wolff, F. (2004) 'Access to Genetic Resources and the Sharing of Benefits: Private Rights or Shared Use for Biodiversity Conservation?' *Environmental Law Network International*. No.2/2004, pp26-33.
- Helfer, L.R. (2002) *Intellectual Property Rights in Plant Varieties: An Overview with Options for National Governments*. FAO Legal Papers Online No.31. FAO, Rome.
- Hettinger, E.C. (1997) 'Justifying Intellectual Property' in Moore, A.D. (ed) (1997) *Intellectual Property: Moral, Legal, and International Dilemmas*. Lanham, Md.: Rowman and Littlefield.
- Hewison, K. (1997) 'Introduction: Power, Oppositions and Democratisation' in Hewison, K. (ed) *Political Change in Thailand: Democracy and Participation*. Routledge, London and New York, pp1-20.
- Hirsch, E and Strathern, M (eds) (2004) *Transactions and Creations: Property Debates and the Stimulus of Melanesia*. Berghahn Books, New York.
- Hirsch, P.H. (1996) 'Dams and Compensation in Indo-China' in Howitt, R., Connell, J. and Hirsch, P. *Resources, Nations and Indigenous Peoples: Case Studies from Australasia, Melanesia and Southeast Asia*. Oxford university Press, Melbourne, pp212-222.
- Hirsch, P.H. (1996) 'Introduction: Seeing Forests for Trees' in Hirsch, P.H. (ed) *Seeing Forests for Trees: Environment and Environmentalism in Thailand*. Silksworm Books, Chiang Mai, pp1-14.
- Hirsch, P.H. (1993) 'Bounded Villages and the State on the Thai Periphery' in Hirsch, P.H. (ed) *The Village in Perspective: Community and Locality in Rural Thailand*. Social Research Institute, Chiang Mai, pp39-54.
- Hooker, M.B. (ed) (1986) *The Laws of South-East Asia. Volume I: The Pre-Modern Texts*. Butterworth, Singapore.
- Hossain, M.G. (2002) *The Protection of Community Rights and Plant Varieties: The Experience of Bangladesh*. Issue paper presented in Bangladesh as part of an ICTSD Regional Dialogue on Asia: 18-21 April 2002. Available at: <http://www.ictsd.org/dlogue/>
- Howitt, R. and Stevens, S. (2005) 'Cross-Cultural Research: Ethics, Methods, and Relationships' in Hay, I. *Qualitative Research Methods in Human Geography*. 2nd Edn. Oxford University Press, Melbourne.
- Howitt, R. (2002) 'Scale and the Other: Levinas and Geography' *Geoforum*. Vol. 33:299-313.
- Howitt, R. (2001) *Rethinking Resource Management: Justice, Sustainability and Indigenous Peoples*. Routledge, London.
- Hubicki S. and Sherman, B. (2005) 'Terminator Genes as "Technical" Protection Measures for Patents?' In Heath, C. and Kamperman Sanders, A. (eds) *New Frontiers of Intellectual Property Law: IP and Cultural Heritage, Geographical Indications, Enforcement and Overprotection*. Oregon: Hart Publishing.
- Hunn, E.N. (1993) 'What is Traditional Ecological Knowledge' in Williams, N.M. and Baines, G. (eds) *Traditional Ecological Knowledge: Wisdom for Sustainable Development*. Australian National University, Canberra, pp13-15.
- Huntington, H.P. (1999) 'Traditional Knowledge of the Ecology of Beluga Whales (*Delphinapterus leucas*) in the Eastern Chukchi and Northern Bering Seas, Alaska' *Arctic*. Vol. 52(1):49-61.
- Huxley, A. (ed) (1996) *Thai Law: Buddhist Law. Essays on the Legal History of Thailand, Laos and Burma*. White Orchid press, Bangkok.
- Indian National Biodiversity Authority (June 2006) *People's Biodiversity Registers Meeting Recommendations*. Available at: <http://www.nbaindia.org/pbr/pbr.htm> (Acc: 8/2/2007).

Ingold, T. (1995) 'Building, Dwelling, Living: How Animals and People Make Themselves at Home in the World' in Strathern, M. (ed) *Shifting Contexts: Transformations in Anthropological Knowledge*. Routledge, London and New York, pp57-80.

Ishii, Y. (1986) 'The Thai Thammasat (with a Note on the Lao Thammasat)' in Hooker, M.B. (ed) *The Laws of South-East Asia. Volume I: The Pre-Modern Texts*. Butterworth, Singapore, pp143-203.

Islam, M.M. and Kashem, M.A. (1999) 'Farmers' Use of Ethno-Veterinary Medicine (EVM) in the Rearing and Management of Livestock: and Empirical Study in Bangladesh' *Journal of Sustainable Agriculture*. Vol. 13(4):39-56.

Ivarsson, S. (2001) 'Man, Nature and Environmentalism in Thailand: The Role of Buddhism' in Poulsen, E., Skov, F., Sureetna Lakanavichian, Sornprach Thanisawanyangkura, Borgtoft, H., and Hoiris, O. *Forest in Culture – Culture in Forest. Perspectives from Northern Thailand*. Research Centre on Forest and People in Thailand, Denmark.

Jackson, P.A. (1997) 'Withering Centre, Flourishing Margins: Buddhism's Changing Political Roles' in Hewison, K. (ed) *Political Change in Thailand: Democracy and Participation*. Routledge, London and New York, pp75-93.

Jakkrit Kuanpoth, Jade Donavanik, Surawit Vanakorod, Jaroen Compeerapap, and Buntoon Srethasirote (2004) *Report on the International Treaty on Plant Genetic Resources for Food and Agriculture* Thailand Research Fund, Bangkok.

Jakkrit Kuanpoth (2006) *Harmonisation of TRIPS-Plus IPR Policies and Potential Impacts on Technological Capability: A Case Study of the Pharmaceutical Industry in Thailand*. ICTSD-UNCTAD and IDRC, Geneva.

Jakkrit Kuanpoth (2005b) 'Intellectual Property-Related Technical Assistance: The Thai Experience' in ICTSD *Technical Cooperation for Intellectual Property Policy in Developing Countries – ICTSD Dialogue*. ICTSD, Geneva.

Jakkrit Kuanpoth (2005a) *Current Developments and Trends in the Field of Intellectual Property Rights: Harmonisation through Free Trade Agreements*. Paper presented at the ICTSD Regional Dialogue on Intellectual Property Rights (IPRs), Innovation and Sustainable Development, University of Hong Kong, 8 – 10 November.

Jakkrit Kuanpoth (2004) *Negotiations Towards a Free-Trade Agreement: US Demands for Greater IPR Privileges*. Discussion Paper, available at <http://www.grain.org/rights/tripsplus.cfm>. Accessed, 4/5/04.

Jakkrit Kuanpoth (2003a) 'The Political Economy of the TRIPS Agreement: Lessons from Asian Countries', in Bellman, C. Dutfield, G. and Melendez-Ortiz, R. (eds) *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability*. Earthscan, London.

Jakkrit Kuanpoth (2003b) 'Thailand' in Heath, C. (ed) *Intellectual Property Law in Asia*. Kluwer Law International, London, pp337-362.

Jakkrit Kuanpoth (2002) 'US Tropical Forests Conservation Fund: Its Implications to Thailand.' In *Right Angle*, Vol 1, 1. National Human Rights Commission of Thailand, Bangkok. Available at www.nhrc.or.th.

Janes, C.R. (1999) 'The Health Transition, Global Modernity and the Crisis of Traditional Medicine: The Tibetan Case' *Social Science and Medicine*, Vol. 48(12):1803-1820.

Janke, T. (1999) *Our Culture, Our Future: Report on Australian Aboriginal Indigenous Cultural and Intellectual Property Rights*. Australian Institute of Aboriginal and Torres Strait Islander Studies, and the Australian and Torres Strait Islander Commission, Canberra.

Jaran Cosananund (2003) 'Human Rights and the War on Drugs: Problems of Conception, Consciousness and Social Responsibility' in *Thailand Human Rights Journal*, V1. National Human Rights Commission of Thailand, Bangkok.

Jaroen Compeerapap (2003) *A Forward Step for the Thai Traditional Medicine*. Unpublished paper provided by the author.

Jeffery, M.I., (2005) 'Intellectual Property Rights and Biodiversity Conservation: Reconciling Incompatibilities Between the TRIPS Agreement and the Convention on Biological Diversity.' Chapter in Ong, B. (ed) (2005) *Intellectual Property and Biological Resources*. Marshall Cavendish Academic, Singapore.

Johnson, M. (1992) *Lore: Capturing Traditional Ecological Knowledge*. IDRC, Ottawa.

Johnson, C. and Forsyth, T. (2002) 'In the Eyes of the State: Negotiating a "Rights-Based Approach" to Forest Conservation in Thailand' in *World Development* Vol. 30(9):1591-1605

Johnston, R.J., Gregory, D., Pratt, G., and Watts, M. (2000) *The Dictionary of Human Geography*. 4th edn. Blackwell Publishing, Malden, MA.

Juma, C. (1989) *The Gene Hunters: Biotechnology and the Scramble for Seeds*. Princeton University Press, Princeton.

Kalinoe, L. (2004) 'Legal options for the Regulation of Intellectual and Cultural Property in Papua New Guinea' in Hirsch, E and Strathern, M (eds) (2004) *Transactions and Creations: Property Debates and the Stimulus of Melanesia*. Berghahn Books, New York, pp40-59.

Kampe, K. 1997 'Introduction: Indigenous Peoples of Southeast Asia.' In McCaskill, D. and Kampe, K. (eds) *Development or Domestication? Indigenous Peoples of Southeast Asia*. Silkwork Books, Chiang Mai, pp1-25.

Kanniah, R. (2005) 'Plant Variety Protection in Indonesia, Malaysia, the Philippines and Thailand.' *The Journal of World Intellectual Property*. Vol. 8(3):283-310.

Kaosa-ard, M.S. (1995) 'Sharing the Benefits and Costs of Forest Conservation.' *Thailand Development Research Institute Quarterly*. Vol. 10(4):11-19.

Kaosa-ard, M.S. (1991) 'Patent Issues in Thailand' *Thailand Development Research Institute Quarterly*. V.6(3):13-15.

Kemp, (1993) 'On the Interpretation of Thai Villages' in Hirsch, P.H. (ed) *The Village in Perspective: Community and Locality in Rural Thailand*. Social Research Institute, Chiang Mai, pp81-96.

Kermel-Torres, D. (2004) *Atlas of Thailand: Spatial structures and development*, Silkwork Books, Chiang Mai.

Kerr, W.A. and Revadee Yampoin (2000) 'Adoption of Biotechnology in Thailand and the Threat of Intellectual Property Piracy' *Canadian Journal of Agricultural Economics*. Vol.48:597-606.

Keyes, C.F. (1977) *The Golden Peninsula: Culture and Adaptation in Mainland Southeast Asia*. Macmillan Publishing, New York, and Collier Macmillan Publishing, London.

Khor, M. (2002) *Intellectual Property, Biodiversity and Sustainable Development: Resolving the Difficult Issues*. Third World Network and Zed Books, Penang, and London.

Kidder, R.L. (2000) 'Exploring Legal Culture in Law-Avoidance Societies' in *Studies in Law, Politics and Society*. Vol. 19.

King R. and Kendall, G. (2004) *The State, Democracy and Globalisation*. Palmgrave Macmillan, New York.

Kingkorn Narintarakun and Leonard, R. (2003) *Chronology of the Community Forests Bill of Thailand*. Northern Community Forests Network and Northern Farmers Network, Chiang Mai.

Klausner, W.J. (1993) *Reflections on Thai Culture*. The Siam Society, Bangkok.

Kloppenber, J. (1988) *First the Seed: the Political Economy of Plant Biotechnology*. Yale University Press, New Haven.

Kohler-Rollefson, I. (2001) 'Intellectual Property Rights Regime Necessary for Traditional Livestock Raisers' in *Indigenous Knowledge and Development Monitor*. Vol. 9(1).

Kraemer-Bayer, G. (1999) 'Indigenous autonomy in Mexico and the transformation of traditional agricultural practices (Indigene autonomie in Mexiko und die transformation traditioneller agrarpraktiken)' *Journal fur Entwicklungspolitik*, Vol. 15(2):137-152 (abstract English, article in German)

Laird, S. (ed) (2002) *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice*. Earthscan, London.

Laird, S.A and Noejovich, F. (2002) 'Building Equitable Research Relationships with Indigenous Peoples and Local Communities: Prior Informed Consent and Research Agreements.' Chapter in Laird, S. (ed) (2002) *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice*. Earthscan, London

Lall, S. (2003) *Indicators of the Relative Importance of IPRs in Developing Countries*. Issue Paper No.3. ICTSD-UNCTAD, Geneva.

Langton, M. & Ma Rhea, Z. (2003) *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity*. CBD Secretariat. Available at: <http://www.biodiv.org/programmes/socio-eco/traditional/documents.asp>.

Lee, O. (1978) *Legal and Moral Systems in Asian Customary Law: The Legacy of the Buddhist Social Ethic and Buddhist Law*. Chinese Materials Center, Inc. San Francisco.

Lerson Tanusagarn (1999) 'When patent rights may not be enforceable: The case of the Kwao Krua patent.' In the *Intellectual Property and International Trade Law Forum Special Issue*, Central Intellectual Property and Trade Court, Bangkok

Lerson Tanusagarn (1998) 'Jasmine Rice Crisis: A Thai Perspective.' In the *Intellectual Property and International Trade Law Forum Special Issue*, Central Intellectual Property and Trade Court, Bangkok.

Leskien, D. and Flitner, M. (1997) *Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System*. Issues in Genetic Resources No.6. Rome: International Plant Genetic Resources Institute.

Lessig, L. (2004) *Free Culture: How Big Media uses Technology and the Law to Lock Down Culture and Control Creativity*. The Penguin Press, New York.

Lessig, L. (1999) 'The Law of the Horse: What Cyberlaw Might Teach' *Harvard Law Review*. Vol. 113:501-549.

Lewis, D. (1999) 'Revealing, Widening, Deepening? A review of the Existing and Potential Contribution of Anthropological Approaches to "Third Sector" Research.' in *Human Organisation* Vol 58(1):73-81.

Locke, J. (2002[1690]) 'The Second Treatise of Government,' *The Treatises of Government*. Dover Thrift, Devon, England.

Louafi, S. and Tobin, B. (2005) 'User Measures to Resolve Potential Conflicts Between the WTO and the CBD' in Chouchena-Rojas, M., Ruiz Muller, M., Vivas, D. and Winkler, S. *Disclosure Requirements: Ensuring mutual supportiveness between the WTO TRIPS Agreement and the CBD*. IUCN, Gland, Switzerland and Cambridge, UK and ICTSD, Geneva, Switzerland.

- Love, J. (2002) 'Access to Medicine and Compliance with the WTO TRIPS Accord: Models for State Practice in Developing Countries' in Drahos, P. and Mayne, R. (eds) (2002) *Global Intellectual Property Rights: Knowledge, Access and Development*. Palmgrave Macmillan, Basingstoke and N.Y., pp74-89.
- Luong Anusarn Sunthorn (1931) *Kwao Krua Tuber Medicine Text*. Upatipong Printing House (in Thai only).
- Machlup, F. and Penrose, E. (1950) 'The Patent Controversy in the Nineteenth Century' *Journal of Economic History* Vol. 10(1):1-29.
- Machlup, F. (1958) *An Economic Review of the Patent System*. Study no. 15 of the Subcommittee on Patents, Trademarks, and Copyrights of the Committee on the Judiciary. United States Senate, 85th Congress, Second Session. US Government Printing Office, Washington D.C.
- Maikhuri, R.K., Nautiyal, S., Rao, K.S. and Semwal, R.L. (2000) 'Indigenous Knowledge of Medicinal Plants and Wild Edibles Among Three Tribal Subcommunities of the Central Himalayas, India' in *Indigenous Knowledge and Development Monitor*. Vol. 8(2).
- Markowitz, L. (2001) 'Finding the Field: Notes on the Ethnography of NGOs' in *Human Organisation*. Vol 60(1):40-46.
- Maskus, K. (2000) *Intellectual Property Rights in the Global Economy*. Institute for International Economics, Washington D.C.
- Massey, D. (2005) *For Space*. Sage Publications, London.
- Massey, D. (1992) 'Politics and Space-Time' *New Left Review*. No. 196: 65-84.
- Massey, D. (1991) 'The Political Place of Locality Studies' *Environment and Planning A* Vol. 23:267-81.
- Mateo, N. (2000) 'Bioprospecting and Conservation in Costa Rica' in Svarstad, H. and Dhillon, S.S. *Responding to Bioprospecting: From Biodiversity in the South to Medicines in the North*. Spartacus Forlag AS, Oslo, pp45-55.
- May, C. (2001) *A Global Political Economy of Intellectual Property Rights*. Routledge, London.
- McAfee, K. (2003) 'Neoliberalism on the Molecular Scale. Economic and Genetic Reductionism in Biotechnology Battles' *Geoforum*. Vol. 34:203-219.
- McAfee, K. (1999) 'Selling nature to save it?' *Environment and Planning D: Society and Space*. Vol. 17:133-54.
- McCargo, D. and Krisadawan Hongladarom (2004) 'Contesting Isan-ness: Discourses of Politics and Identity in Northeast Thailand' *Asian Ethnicity*. Vol. 5(2):219-234.
- McCaskill, D. (1997) 'From Tribal Peoples to Ethnic Minorities: The Transformation of Indigenous Peoples – A Theoretical Discussion.' In McCaskill, D. and Kampe, K. (eds) *Development or Domestication? Indigenous Peoples of Southeast Asia*. Silkwork Books, Chiang Mai.
- McDowell, L. (1992a) 'Doing Gender: Feminism, Feminists and Research Methods in Human Geography' *Transactions of the Institute of British Geographers*. Vol.17:399-416.
- McDowell, L. (1992b) 'Multiple Voices: Speaking From Inside and Outside 'the Project'' *Antipode*. Vol. 24(1):56-80.
- McKinnon, J. (1997) 'The Forests of Thailand: Strike up the Ban' in McCaskill, D. and Kampe, K. (eds) *Development or Domestication? Indigenous Peoples of Southeast Asia*. Silkwork Books, Chiang Mai.
- McMakin, P.D. (2000) *Flowering Plants of Thailand: A Field Guide*, White Lotus, Bangkok.

- Missingham, B.D. (2001) *The Assembly of the Poor in Thailand*. Silkworm Books, Chiang Mai.
- Mooney P.R. (2000) 'Why we call it biopiracy' in Svarstad, H. and Dhillion, S. (eds) *Bioprospecting: From Biodiversity in the South to Medicines in the North* Spartacus Forlag AS Oslo, pp37-44.
- Mooney, P.R. (1979) *Seeds of the Earth: Public or Private Resource?* Canadian Council for International Cooperation and International Coalition for Development Action, Ottawa.
- Mulder, N. (1978) *Everyday Life in Thailand: An Interpretation*. Editions Duang Kamol, Bangkok.
- Mulholland, J. (1988a) *Medicine, Magic and Evil Spirits: Study of a Text on Thai Traditional Paediatrics*. Faculty of Asian Studies Monographs, Australian National University, Canberra.
- Mulholland, J. (1988b) 'Ayurveda, Congenital Disease and Birthdays in Thai Traditional Medicine,' in *Journal of the Siam Society* Vol.76.
- Murdoch, J. (2006) *Post-structuralist Geography: A Guide to Relational Space*. Sage Publications, London.
- Mushkat, R. (2004) *International Environmental Law and Asian Values: Legal Norms and Cultural Influences*. UBC Press, Vancouver.
- Myer, L. (1998) 'Biodiversity Conservation and Indigenous Knowledge: Rethinking the Role of Anthropology' in *Indigenous Knowledge and Development Monitor*. Vol. 6(1).
- Nelken, D. (1997) 'Comparing Legal Cultures: An Introduction' in Nelken, D. (ed) *Comparing Legal Cultures*. Dartmouth, Aldershot, England.
- Neumayer, E. (2002) 'WTO Rules and Multilateral Environmental Agreements' in Gallagher, K.P. and Werksman, J. *The Earthscan Reader on International Trade and Sustainable Development*. Earthscan Publications, London, pp137-165.
- Northern Development Foundation, (2005) 'Hno (river source)' document on the Khan Watershed, Chiang Mai.
- Office of Natural Resources and Environmental Policy and Planning (2006; 2005; 2004) *National Report on the Implementation of the Convention on Biological Diversity*. ONEPP, Bangkok.
- Office of Technology Assessment, US Congress (1990) *New Developments in Biotechnology: Patenting Life*. Marcel Decker, Inc. New York.
- Oguamanam, C. (2004) 'The Protection of Traditional Knowledge: Towards a Cross-Cultural Dialogue on Intellectual Property Rights' *Australian Intellectual Property Journal*. Vol. 34:34-59.
- Oliva, M.J. and Perrault, A. 'Prior Informed Consent and Access to Genetic Resources' in Chouchena-Rojas, M., Ruiz Muller, M., Vivas, D. and Winkler, S. (2005) *Disclosure Requirements: Ensuring mutual supportiveness between the WTO TRIPS Agreement and the CBD*. IUCN, Gland, Switzerland and Cambridge, UK and ICTSD, Geneva, Switzerland. Available at www.iprsonline.org.
- Ong, B. (2005) 'Harnessing the Biological Bounty of Nature: Mapping the Wilderness of Legal, Socio-Cultural, Geo-Political and Environmental Issues' in Ong, B. (ed) *Intellectual Property and Biological Resources*. Marshall Cavendish Academic, Singapore, pp1-27.
- Orlove, B. and Brush, S.B. (1996) 'Anthropology and the Conservation of Biodiversity' *Annual Review of Anthropology*. Vol. 25: 329-352.

- Oxley, A. (2006) 'Two Myths – "Green Gold" and "Biopiracy"' *The Curitiba Report*. Vol. 1(2), Australian APEC Study Centre, Melbourne.
- Oxley, A. (2005) *Retarding development: compulsory disclosure in IP law of ownership and use of biological or genetic resources* Australian APEC Study Centre, Melbourne.
- Palmer, T.C. (1997) 'Intellectual Property: A Non-Posnerian Law and Economics Approach' in Moore, A.D. (ed) (1997) *Intellectual Property: Moral, Legal, and International Dilemmas*. Lanham, Md.: Rowman and Littlefield.
- Parinya Boonridrerthaikul (2004) *Impacts of Intellectual Property Rights (IPRs) on the Right to Self-Determination of Local Communities: A Case Study of Rice Farmers in Thailand*. Unpublished Masters thesis, Mahidol University, Bangkok.
- Parry, B. (2002) 'Cultures of Knowledge: Investigating Intellectual Property Rights and Relations in the Pacific.' In *Antipode*. Vol. 34:679-706
- Parry, B. (2000) 'The Fate of the Collections: Social Justice and the Annexation of Plant Genetic Resources' in Zerner, C. (ed) *People, Plants, and Justice: The Politics of Nature Conservation*. Columbia University Press, New York, pp374-402.
- Pasuk Pongpaichit, Sungsidh Piriyarangsarn, and Nualnoi Treerat (1998) *Guns, Girls, Gambling and Ganja: Thailand's Illegal Economy and Public Policy*. Silkworm Books, Chiang Mai.
- Pearsal, J. (ed) (2002) *Oxford English Dictionary*. 10th edn. Oxford University Press, Oxford.
- Pecharaply, D. (1994) *Indigenous Medicinal Plants of Thailand*, Department of Medical Sciences, Ministry of Public Health.
- Pennapa Subcharoen, Ubon Luanratana, Jakkrit Kuanpoth, and Suradet Assawin Tharang Kung. (2001) 'Indigenous Knowledge and Intellectual Property – a Thai study'. Unpublished document from the Thai Department of Public Health, Bangkok.
- Pennapa Subcharoen (2003) *Thai Traditional Medicine*. Department of Public Health, Bangkok.
- Pennapa Subcharoen (1999) *Thai Traditional Medicine Intellectual Property Rights Protection: From the Convention on Biological Diversity to Self-Protection*. Department of Public Health, Bangkok.
- Penth, H. (1994) *A Brief History of Lān Nā: Civilisations of North Thailand*. Silkworm Books, Chiang Mai.
- Pinkaew Luangaramsri (2003) 'Ethnicity and the Politics of Ethnic Classification in Thailand' in Mackerras, C. (ed) *Ethnicity in Asia*. Routledge Curzon, London, pp157-173.
- Pinkaew Luangaramsri (2001) *Redefining Nature: Karen Ecological Knowledge and the Challenge to the Modern Conservation Paradigm*. Earthworm Books, Chennai.
- Posey, D.A. (Plenderleith, K. ed) (2004) *Indigenous Knowledge and Ethics: A Darrell Posey Reader*. Routledge, New York.
- Posey, D.A (ed) (1999) *Cultural and Spiritual Values of Biodiversity*. United Nations Environment Programme, Nairobi.
- Posey, D.A. (1996) *Traditional Resource Rights: International Instruments for Protection and Compensation for Indigenous Peoples and Local Communities*. IUCN
- Posey D.A. and Dutfield, G. (1996) *Beyond Intellectual Property: Towards Traditional Resource Rights for Indigenous Peoples and Local Communities*. International Development Research Agency, Ottawa.

- Posey, D.A., Dutfield, G. and Plenderleith, K. (1995) 'Collaborative Research and Intellectual Property Rights' *Biodiversity Conservation*. Vol. 4(8):892-902.
- Posey, D.A. (1994) 'International Agreements and Intellectual property Right Protection for Indigenous Peoples' in Greaves, T. (ed) *Intellectual Property Rights for Indigenous Peoples: A Sourcebook*. Society for Applied Anthropology, Oklahoma City, pp223-251.
- Posey, D.A. (1990) 'Intellectual Property Rights and Just Compensation for Indigenous Peoples' *Anthropology Today*. Vol. 6(4):13-16.
- Pospasil, L. (1971) *Anthropology of Law. A Comparative Theory*. Harper and Row Publishers, New York.
- Pottage, A. and Mundy, M. (ed) (2004) *Law, Anthropology and the Constitution of the Social: Making Persons and Things*. Cambridge University Press, Cambridge.
- Prasert Trakarnsaphakorn (1997) 'The Wisdom of the Karen in Natural Resource Conservation' in McCaskill, D. and Kampe, K. (eds) *Development or Domestication? Indigenous Peoples of Southeast Asia*. Silkwork Books, Chiang Mai.
- Preedee Kasemsup (1986) 'Reception of Law in Thailand – A Buddhist Society' in Chiba, M. (ed) *Asian Indigenous Law in Interaction with Received Law*. KPI, London,
- Ramanna, A. and Smale, M. (2004) 'Rights and Access to Plant Genetic Resources Under India's New Law.' *Development Policy Review*, Vol. 22(4): 423-442.
- Rangnekar, D. (2000) *Plant Breeding, Biodiversity Loss and Intellectual Property Rights. Economics Discussion Paper 2000/5*, Kingston University – Faculty of Human Sciences, Kingston upon Thames.
- Rappaport, R.A. (1984[1968]) *Pigs for the Ancestors: Ritual in the Ecology of a New Guinea People*. Yale University Press, London.
- Reid-Henry, S. (2003) 'Under the Microscope. Fieldwork Practice and Cuba's Biotechnology Industry: A Reflexive Affair?' in *Singapore Journal of Tropical Geography*. Vol 24(2):184-197.
- Reid, W.V., Laird, S.A., Meyer, C.A., Gamez, R., Sittenfeld, A., Janzen, D.H., Gollin, M.A., Juma, C. (1993) *Biodiversity prospecting: using genetic resources for sustainable development* World Resources Institute, Washington DC.
- Reid, W.V. (1992) *Genetic Resources and Sustainable Agriculture: Creating Incentives for Local Innovation and Adaptation*. Biopolicy Series 2. African Centre for Technology Studies, Nairobi.
- Reynolds, C.J. (2002) 'Introduction: National Identity and its Defenders' in Reynolds, C.J. (ed) *National Identity and its Defenders: Thailand Today*. Silkwork Books, Chiang Mai.
- Reynolds, C.J. (2001) 'Globalisers vs Communitarians: Public Intellectuals Debate Thailand's Futures' *Singapore Journal of Tropical Geography*. Vol.22(3): 252-269.
- Richards, P. (1985) *Indigenous Agricultural Revolution*. Unwin Hyman, London.
- Robinson, D. (2007) *Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia*. ICTSD-UNCTAD and IDRC, Geneva and Ottawa. Available at: www.iprsonline.org.

- Robinson, D.F. (2006) *Governance and Micropolitics of Traditional Knowledge, Biodiversity and Intellectual Property in Thailand: Research Report*. National Human Rights Commission of Thailand, Bangkok, UNSW and University of Sydney. Available at: <http://www.iprsonline.org/resources/docs/>
- Rose, G. (1997) 'Situated Knowledges: Positionality, Reflexivities and Other Tactics' *Progress in Human Geography*. Vol. 21(3):305-320.
- Rose, G. (1993) *Feminism and Geography: The Limits to Geographical Knowledge*. Polity Press, Cambridge.
- Rouland, N. (1994) *Legal Anthropology*. The Athlone Press, London.
- Rowlands, J. (1995) 'Field research in Kenya on genetics of resistance to trypanosomiasis in East African cattle' *Livestock Research in Development* Vol. 1(2): 4-5.
- Roy, R.D. (2005) *Traditional Customary Laws and Indigenous Peoples in Asia*. Minority Rights Group International, London.
- Royal Forests Department of Thailand (Aniwat Chalermpongse) (c2002) *Access and Benefit Sharing Relating to Forest Genetic Resources and Traditional Knowledge in Thailand*. Royal Forests Department, Bangkok.
- Ruddle, K. and Johannes, R. (eds) (1990) *The Traditional Knowledge and Management of Coastal Systems in Asia and the Pacific*. 2nd edn. Jakarta: UNESCO.
- Said, E.W. (1978) *Orientalism: Western Concepts of the Orient*. Penguin Books, London.
- Saneh Chamarik (2004) *Community Rights in the Global Perspective*. National Human Rights Commission of Thailand, Bangkok.
- Saneh Chamarik (2002) 'The Community Right in Thailand', In *Right Angle*, Vol 1, 1. National Human Rights Commission of Thailand, Bangkok. Available at www.nhrc.or.th
- Saneh Chamarik (1982) *Buddhism and Human Rights*. Thammasat University, Bangkok.
- Saneh Chamarik and Yos Santasombat (1993) *Community Forestry in Thailand: Development Perspectives*. Local Development Institute, Bangkok (in Thai).
- Santita Ganjanapan. (1996) 'Indigenous and Scientific Concepts of Forest and Land Classification in Northern Thailand', chapter in Hirsch, P. (ed) *Seeing Forests for Trees: Environment and Environmentalism in Thailand*. Silkworm Books, Chiang Mai, pp247-267.
- Salguero, C. P. (2003) *A Thai Herbal: Traditional Recipes for Health and Harmony*, Silkworm Books, Chiang Mai.
- Santos, B.D.S (2002) *Toward a New Legal Common Sense: Law, Globalisation and Emancipation*. 2nd edn. Butterworths Lexis Nexis, London.
- Santos, B.D.S. (1995) *Toward a New Common Sense: Law, Science and Politics in The Paradigmatic Transition*. Routledge, New York and London.
- Saralamp, P., Chuakul, W., Temsiririrkkul, R., Clayton, T., and Paonil, W. (Vol 1- 1996; Vol 2 – 1997) *Medicinal Plants in Thailand*, Mahidol University, Bangkok.
- Scheyvens, R., and Storey, D. (eds) (2003) *Development Fieldwork: A Practical Guide*. Sage Publications, London.
- Segaller, D. (1995) *Thai Ways*. Post Books, Bangkok.

- Seidenfaden, E. (1967) *The Thai Peoples Book 1. The Origins and Habitats of the Thai Peoples with a Sketch of their Material and Spiritual Culture*. The Siam Society, Bangkok.
- Sell, S. K. (2003) *Private Power, Public Law: The Globalisation of Intellectual Property Rights*. Cambridge University Press, Cambridge, England.
- Sell, S. K. (2002) 'Intellectual Property Rights', in Held, D. and McGrew, A. *Governing Globalisation: Power Authority and Global Governance*. Polity Press, Cambridge, England, pp171-188.
- Sell, S.K. (1998) *Power and Ideas: North-South Politics of Intellectual property and Antitrust*. State University of New York Press, Albany, NY.
- Setboonsarng, S., Wattananutchariya, S. Phutgorn, B. (1991) *The Structure, Conduct and Performance of the Seed Industry in Thailand*. Thai Development Research Institute, Bangkok.
- Shiva, V. (2001) *Protect or Plunder: Understanding Intellectual Property Rights*. Zed Books, London and New York.
- Shiva, V. (1997) *Biopiracy: The Plunder of Nature and Knowledge*. South End Press, Cambridge Mass.
- Shiva, V. (1993) *Monocultures of the Mind*. London: Zed Books.
- Shiva, V. (1991) *The Violence of the Green Revolution*. Zed Books, New York, and Third World Network, Penang.
- Shu-Min, H. (2005) 'The articulation of culture, agriculture, and the environment of Chinese in northern Thailand' *Ethnology*, Vol. 44(1):1-11.
- Siebenhuner, B., Dedeurwaerdere, T. and Brousseau, E. (2005) 'Introduction and Overview to the Special Issue on Biodiversity Conservation, Access and Benefit-Sharing and Traditional Knowledge' *Ecological Economics*. Vol. 53:439-444.
- Singer, P. (2004) *The President of Good and Evil: The Ethics of George W. Bush*, Dutton, New York.
- Sinha, R.K. (1996) *Ethnobotany: The Renaissance of Traditional Herbal Medicine*. Ina Shree Publishers, Jaipur, India.
- Siraporn Nathalang (2004) 'Conflict and Compromise Between the Indigenous Beliefs and Buddhism as Reflected in Thai Rice Myths' in Siraporn Nathalang (ed) *Thai Folklore: Insights into Thai Culture*. 2nd edn. Chulalongkorn University Press, Bangkok, pp99-121.
- Smith, L.T. (2005) *Decolonising Methodologies: Research and Indigenous Peoples*. Zed Books, London and New York, and University of Otago Press, Dunedin.
- Smolders, W. (2005) *Disclosure of Origin and Access and Benefit Sharing: The Special Case of Seeds for Food and Agriculture*. Quaker United Nations Office Occasional Paper, Geneva.
- Srinivasan, C.S. (2003) 'Concentration in ownership of Plant Variety rights: some implications for developing countries.' *Food Policy* Vol. 28:519 – 546.
- Starr, J. and Goodale, M. (eds) (2002) *Practicing Ethnography in Law: New Dialogues, Enduring Methods*. Palmgrave Macmillan, New York.
- Strathern, M. (2004) 'Transactions: an Analytical Foray' in Hirsch, E and Strathern, M (eds) *Transactions and Creations: Property Debates and the Stimulus of Melanesia*. Berghahn Books, New York, pp85-109.

- Strathern, M. (1999) 'What is Intellectual Property After?' in Law, J. and Hassard, J. *Actor Network Theory and After*. Blackwell Publishers, Oxford,
- Strathern, M. (1999b) *Property, Substance and Effect: Anthropological Essays on Persons and Things*. Athlone Press, London.
- Strathern, M. (ed) (1995) *Shifting Contexts: Transformations in Anthropological Knowledge*. Routledge, London and New York.
- Strathern, M. (1985) 'Discovering Social Control' in *Journal of Law and Society*. Vol.12(2):111-134.
- Sunait Chutintaranond and Baker, C.J. (eds) (2002) *Recalling Local Pasts: Autonomous History in Southeast Asia*. Silkworm Books, Chiang Mai.
- Supachai Lorlowhakarn and Sasithorn Teth-uthapak (eds) (2003) *Science and Technology in Thailand*. National Science and Technology Development Agency, Bangkok.
- Sutawan Satienthai (2005) 'Traditional Knowledge and Folklore Domains' paper presented at a TK-FL meeting, Ministry of Foreign Affairs, May 2005. Good Governance for Social Development and the Environment Institute (GSEI), Bangkok.
- Suthiwong Pongpaiboon (2004) *Southern Thai Cultural Structures and Dynamics Vis-à-vis Development*. The Thailand Research Fund, Bangkok.
- Suvanna Kriengkraipetch (1989) 'Thai Folk Beliefs About Animals and Plants and Attitudes Toward Nature' in Siam Society *Culture and Environment in Thailand: A Symposium of the Siam Society*. Siam Society, Bangkok, pp195-209.
- Svarstad, S.S. (2000) 'Local Interests and Foreign Interventions: Shaman Pharmaceuticals in Tanzania.' In Svarstad, H. and Dhillion, S.S. *Responding to Bioprospecting: From Biodiversity in the South to Medicines in the North*. Spartacus Forlag AS, Oslo, pp145-153.
- Svarstad, H. and Dhillion, S. (eds) (2000) *Bioprospecting: From Biodiversity in the South to Medicines in the North* Spartacus Forlag AS Oslo.
- Swanson, T., and Goschl, T. (2000) 'Property rights issues involving plant genetic resources: implications of ownership for economic efficiency', *Ecological Economics*, Vol. 32:75-92.
- Swyngedouw, E. (1997) 'Neither Global or Local: "Glocalisation" and the Politics of Scale' in Cox, K. *Spaces of Globalisation: Reasserting the Power of the Local*. Guildford Press, New York. pp137-166.
- Sykes, K. (2004) 'Negotiating Interests in Culture' in Strathern, M. and Hirsch, E (2004) *Transactions and Creations: Property Debates and the Stimulus of Melanesia*. Berghahn Books, New York, pp132-149.
- Tansey, G. (2002) *Food Security, Biotechnology & Intellectual Property: Unpacking some Issues around TRIPS*. Quaker United Nations Office, Geneva.
- Tansey, G. (1999) *Trade, Intellectual Property, Food & Biodiversity. Key Issues & Options for the 1999 review of Article 27.3(b) of the TRIPS Agreement*. Quaker United Nations Office, Geneva.
- Taubman, A. 'Saving the village: Conserving jurisprudential diversity in the international protection of traditional knowledge' in Maskus, K.E. and Reichman, J.H. (2005) *International Public Goods and Transfer of Technology Under a Globalised Intellectual Property Regime*. Cambridge University Press, Cambridge, UK, pp521-564.

- Taylor, J. (1996) 'Thamma-chaat: Activist Monks and Competing Discourses of Nature and Nation in Northeast Thailand' in Hirsch, P.H. (ed) *Seeing Forests for Trees: Environment and Environmentalism in Thailand*. Silkwork Books, Chiang Mai, pp37-52
- ten Kate, K. and Laird, S. (1999) *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing*. London: Earthscan.
- Thanit Changtavorn (1998) 'Legal Protection for Plant Varieties', in *Intellectual Property and International Trade Law Forum Special Issue*, Central Intellectual Property and Trade Court, Bangkok.
- Thongchai Winichakul (1994) *Siam Mapped: A History of the Geo-Body of a Nation*. University of Hawaii Press, Honolulu.
- Thom, B. and Bain, D. (2004) *Aboriginal Intangible Property in Canada: An Ethnographic Review*. Industry Canada, Ottawa.
- Thomas, Y. (2004) 'Res Religiosae: on the Categories of Religion and Commerce in Roman Law' in Pottage, A. and Mundy, M. (ed) (2004) *Law, Anthropology and the Constitution of the Social: Making Persons and Things*. Cambridge University Press, Cambridge, pp40-72.
- Thrift, N. (1996) 'Flies and Germs: A Geography of Knowledge' in *Spatial Formations*. Sage Publications, London, pp96-124.
- Tobin, B. (c2005) *Customary Law as the Basis of Prior Informed Consent of Local and Indigenous Communities*. United Nations University – Institute of Advanced Studies, Tokyo.
- Tobin, B. (1997), "Certificates of origin: A role for IPR regimes in securing prior informed consent", in *Access To Genetic Resources: Strategies for Sharing Benefits*, ACTS Press, Nairobi.
- TK-FL Working Group (2005) *A summary of the questionnaire on traditional knowledge and folklore protection*. Unpublished document, distributed at a Traditional Knowledge -Folklore meeting, Bangkok (in Thai only).
- Twarog, S. and Kapoor, P. (eds) (2004) *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions*. United Nations Conference on Trade and Development, Geneva. Available at www.iprsonline.org
- UNCTAD/ICTSD (2005) *Resource Book on TRIPS and Development*. Cambridge: Cambridge University Press.
- United Nations Convention to Combat Desertification (2005) *Promotion of Traditional Knowledge: A Compilation of UNCCD Documents and Reports from 1997-2003*. UNCCD, Bonn.
- Uraivan Tan-Kim-Yong (1997) 'The Karen Culture: A Co-Existence of Two Forest Conservation Systems' in McCaskill, D. and Kampe, K. (eds) *Development or Domestication? Indigenous Peoples of Southeast Asia*. Silkwork Books, Chiang Mai, pp219-236.
- Urbas, G. (2005) 'Criminal Enforcement of Intellectual Property Rights: Interaction Between Public Authorities and Private Interests' in Heath, C. and Kamperman Sanders, A. (eds) *New Frontiers of Intellectual Property Law: IP and Cultural Heritage – Geographical Indications – Enforcement – Overprotection*. Hart Publishing, Oxford and Portland, Oregon, pp303-322.
- Varaluk Chaitap (c2003) *The Biodiversity of Rotational Land Farming in an Indigenous Karen Community at Ban Mae Lankhum, Chiangmai*. Northern Farmers Network, Chiang Mai. Available at www.grain.org/gd/en/case-studies/asia.cfm. (Acc 8 Feb. 2007).
- Vickery, M. (1996) 'The Constitution on Ayutthaya: the Three Seals Code' in Huxley, A. (ed) *Thai Law: Buddhist Law. Essays on the Legal History of Thailand, Laos and Burma*. White Orchid press, Bangkok, pp133-210.

- Visser, B., Eaton, D., Louwaars, N., van der Meer, I., Beekwilder, J., and van Tongeren, F. (c2002) *Potential Impacts of Genetic Use Restrictions Technologies on Agrobiodiversity and Agricultural Production Systems*. Background Study Paper 15. Rome: Commission on Genetic Resources for Food and Agriculture.
- Vivas-Eugui, D. and Ruiz, M. (2005) 'Toward and Effective Disclosure Mechanism: Justification, Scope and Legal Effects' in Chouchena-Rojas, M., Ruiz Muller, M., Vivas, D. and Winkler, S. *Disclosure Requirements: Ensuring mutual supportiveness between the WTO TRIPS Agreement and the CBD*. IUCN, Gland, Switzerland and Cambridge, UK and ICTSD, Geneva, Switzerland.
- Vivas-Eugui, D. (2002) *Issues Linked to the Convention on Biological Diversity in the WTO Negotiations: Implementing Doha Mandates*, (CIEL: Geneva)
- Waldram, J. (1986) 'Traditional Knowledge Systems: The Recognition of Indigenous History and Science' *Saskatchewan Indian Federated College Journal*. Vol. 2(2):115-124.
- Walker, A. (2001) 'The 'Karen Consensus', Ethnic Politics and Resource-Use Legitimacy in Northern Thailand' in *Asian Ethnicity*. Vol. 2(1):145-162.
- Walker, S. (2001) *The TRIPS Agreement, Sustainable Development and the Public Interest: A Discussion Paper*, International Union for the Conservation of Nature and Natural Resources: Gland and Cambridge, and Centre for International Environmental Law: Geneva.
- Warren, D.M. (1996) 'Comments on Article by Arun Agrawal' *Indigenous Knowledge and Development Monitor* Vol. 4(1).
- Warren, D. M., and Rajasekaran, B. (1993) 'Putting local knowledge to good use' *International Agricultural Development* Vol. 13(4):8-10.
- Whatmore S (2003) 'De/re-territorializing possession: the shifting spaces of property rights' in Holder J and Harrison C *Law and geography* Oxford University Press, Oxford, pp211-223
- Whatmore S 2002 *Hybrid geographies: natures, cultures, spaces*. Sage Publications, London.
- Whatmore, S. (1999) 'Hybrid Geographies: Rethinking the "Human" in Human Geography' in Whatmore, S., Massey, D., Allen, J., and Sarre, P. *Human Geography Today*. Polity Press, Cambridge, pp22-39.
- Whatmore, S. (1997) 'Dissecting the autonomous self: hybrid cartographies for a relational ethics' *Environment and Planning D: Society and Space* Vol. 15:37-53
- Whittlesey, D. (1935) 'The Impress of Central Authority upon the Landscape' *Annals of the Association of American Geographers*. Vol. 25:85-97.
- Wilaiwan Khanittanan (1989) 'The Order of the Natural World as Recorded in Tai Languages' in Siam Society *Culture and Environment in Thailand: A Symposium of the Siam Society*. Siam Society, Bangkok, pp233-242.
- Williams, N.M. and Hunn, E.S. (eds) (1982) *Resource Managers: North American and Australian Hunter-Gatherers*. Westview press, Boulder, CO.
- Wisut Baimai (1995) *Status of Biological Diversity in Thailand*. Thailand Biodiversity Research Fund, Bangkok (in Thai only).
- Witmeyer, D.M. (1997) 'The North-South Politics of Genetic Resources: Issues and Implications' in Hoagland, K.E. and Rossman, A.Y. (eds) *Global Genetic Resources: Access, Ownership, and Intellectual Property Rights*. Association of Systematics Collections, Washington D.C.

Wongsatit Chuakul, Promjit Saralamp, Wichit Paonil, Rungravi Temsiririrkkul, and Clayton, T. (1997) *Medicinal Plants in Thailand, Volume II*. Amarin Printing and Publishing, Bangkok.

World Intellectual Property Organisation (2005) *Customary Law and the Intellectual Property System in the Protection of Traditional Cultural Expressions and Knowledge (Draft)*. WIPO Secretariat, Geneva. Available at: http://www.wipo.int/tk/en/consultations/customary_law/index.html (Acc. 27 March 2006).

World Intellectual Property Organisation (c2002) *Traditional Knowledge, Cultural Expressions and Folklore*. Global Issues Booklet No.2. WIPO Secretariat, Geneva.

World Intellectual Property Organisation (2001) *Intellectual Property Needs and Expectations of Traditional Knowledge Holders: WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)*, WIPO Secretariat, Geneva.

Wright, S. (2005) 'Knowing Scale: Intellectual Property Rights, Knowledge Spaces and the Production of the Global' *Social and Cultural Geography* Vol. 6(6):903-921.

Wynberg, R. (2004) 'Rhetoric, Realism and Benefit Sharing: Use of Traditional Knowledge of *Hoodia* Species in the Development of an Appetite Suppressant.' *Journal of World Intellectual Property*, Vol. 7(6):851-876

Yenchai Laohavanich (1989) 'A Thai Buddhist View of Nature' in Siam Society *Culture and Environment in Thailand: A Symposium of the Siam Society*. Siam Society, Bangkok, pp259-263.

Yongyuth Yuthavong (2003) 'Future Vision for Science and Technology in Thailand', in Supachai Lorlowhakarn and Sasithorn Teth-uthapak (eds) (2003) *Science and Technology in Thailand*. National Science and Technology Development Agency, Bangkok.

Yos Santasombat (2004) 'Karen Cultural Capital and the Political Economy of Symbolic Power' *Asian Ethnicity*. Vol. 5(1):105-120.

Yos Santasombat (2003a) *Biodiversity Local Knowledge and Sustainable Development*. Regional Centre for Social Science and Sustainable Development, Chiang Mai University.

Yos Santasombat (2003b) 'Customary Rights, ethnicity and the politics of location' *Thailand Human Rights Journal*, VI. National Human Rights Commission of Thailand, Bangkok.

Yos, Santasombat (1998) 'Sui Generis Rights: History of a Struggle' Conference Presentation article from the BioThai/GRAIN International Seminar on Sui Generis Rights. Available at the GRAIN website: <http://www.grain.org/briefings/?id=181> (Acc. 29 March 2005).

Zerner, C. (2000) 'Introduction: Toward a Broader Vision of Justice and Nature Conservation' in Zerner, C. (ed) *People, Plants, and Justice: The Politics of Nature Conservation*. Columbia University Press, New York, pp3-20.

Zurcher, S. (2005) 'Public Participation in Community Forest Policy in Thailand: The Influence of Academics as Brokers' *Geografisk Tidsskrift, Danish Journal of Geography*. Vol. 105(1):77-88.

Newspaper Articles

Bangkok Post (28 Feb 2006), 'Crisis Deepens' (Acc 1/3/2006)

Bangkok Post (27 Feb 2006), 'Lively protest draws 100,000' (Acc 1/3/2006)

Bangkok Post (26 Feb 2006), 'Snap Election' (Acc 1/3/2006)

Bangkok Post (Achara Ashayagachat) (9 Feb 2006), 'Draft Amendments to Patent Law a "Sell-out"' (Acc 9/2/2006)

Bangkok Post (Achara Ashayagachat) (26 May 2005) 'Law Needed to Protect Thai Knowledge, Food, Customs'. (Acc 26/5/2005).

Bangkok Post (Jade Donovanik) (29 April 2005) 'Thailand has little to gain in trade pact with US' (Acc 9/05/2005).

Bangkok Post (Jade Donovanik) (22 Nov. 2004) 'Traditional Knowledge Exploited'. (Acc 9/05/2005).

Bangkok Post, (Hargrove, T.) (11 Dec. 2003) 'Jasmine Rice for US farmers' (Acc 15/7/2005)

Bangkok Post (Prangtip Daoreung) (27 Aug. 1998) 'Thailand: tussle over fungi strains brings painful lessons' (Acc15/7/2005).

Matichon Weekly (Jade Donovanik) (2003) 'Patented Rice'(in Thai)

Matichon Weekly (23 July 1998) 'Farmers Mob Demand the American Embassy to Revoke the Jasmati Patent' (in Thai)

Matichon Weekly, (July 18-24, 1995) 'Karen Plant Collecting Scandal' (in Thai)

Manager newspaper (June 30, 1995) 'Riche Monde Project Found Foul?'

The Nation (Chara Pongvuthitham) (18 January 2006) 'Free Trade: Top FTA official throws in towel' (Acc 1/3/2006).

The Nation (Jeerawat Na Thalang) (12 July 2005) 'Thailand should resist US attempt to link FTA with crop treaty: TDRI' (Acc 28/7/2005).

The Nation (15 June 2005) 'FTA Confidentiality Agreement' (Acc 28/7/2005).

The Nation (Duangkamon Sajirawatthanakul) (18 May 2005) 'Cultivation of Kwao krua to be limited' (Acc 9/2/2006)

The Nation (Petchanet Pratuangkrai) (9 April 2005) 'Free trade talks with US not likely to end this year' (Acc 1/7/2005).

The Nation (Petchanet Pratuangkrai) (6 April 2005) 'Big crowd of protesters outside trade talks venue' (Acc 9/05/2005).

The Nation (2 March 2005) 'Local herb "tarnished by breast stunt"' (Acc 9/2/2006).

The Nation (14 Feb. 2004), 'US: Much to be gained by an FTA with Thailand' (Acc 1/7/2005).

The Nation (6 Nov. 2001) 'Eating into the food chain' (Acc 3/3/2005)

National Laws and Bills¹

Bangladesh National Committee on Plant Genetic Resources (1998, Draft) *the Biodiversity and Community Knowledge Protection Act of Bangladesh* [Proposed Text] Accessed from GRAIN Website: www.grain.org/brl/ (Acc: 22/12/2006).

Bangladesh National Committee on Plant Genetic Resources (1998, Draft) *Plant Varieties Act of Bangladesh*. [Proposed Text] Accessed from GRAIN Website: www.grain.org/brl/ (Acc: 22/12/2006).

Government of Malaysia (2004) *Protection of New Plant Varieties Act*. (Act 634).

Government of Pakistan (2004, Draft) *Legislation on Access to Biological Resources and Community Rights* [Draft]. Accessed from GRAIN Website: www.grain.org/brl/ (Acc: 22/12/2006).

Kingdom of Thailand (2003) *Act on Protection of Geographical Indications*. [B.E. 2546]

Kingdom of Thailand (1999) *The Act on the Promotion and Protection of Thai Traditional Medicinal Intelligence*. [BE 2542]

Kingdom of Thailand (1999) *Plant Variety Protection Act*. [BE 2542]

Kingdom of Thailand (1992, Draft) *Community Forests Bill*. [Draft B.E. 2535]

Kingdom of Thailand (1979, as amended 1992 and 1999) *Patents Act*. [B.E. 2522]

Kingdom of Thailand (1975) *Plants Act* [B.E. 2518]

Peoples Republic of China (1999) *Regulations of the People's Republic of China on the Protection of New Varieties of Plants*. (And associated implementing rules).

Republic of India (2001) *The Protection of Plant Varieties and Farmer's' Rights Act*. (Act 53 of 2001).

Republic of India (2002) *The Biological Diversity Act*. (Act No. 18 of 2003; Bill No. 93-C of 2000).

Republic of Indonesia (2000) *Plant Variety Protection Act*. (No. 29 of 2000).

Republic of the Philippines (2002) *Plant Variety Protection Act*. (Republic Act 9168).

Republic of the Philippines (2001, Draft) *The Community Intellectual Rights Protection Act* [Draft]. Accessed from GRAIN Website: www.grain.org/brl/ (Acc: 22/12/2006).

Republic of the Philippines (1997) *The Indigenous Peoples Rights Act* (Short title; Republic Act 8371). Accessed from GRAIN Website: www.grain.org/brl/ (Acc: 22/12/2006).

Republic of Singapore (2004) *Plant Varieties Protection Act*.

Socialist Republic of Vietnam (2004) *the Ordinance on Plant Varieties*. (Order No. 03/2004/L-CTN of April 5, 2004).

¹ Most national law documents were obtained from the WIPO Collection of Laws for Electronic Access (CLEA) at <http://www.wipo.int/clea/en/> between 2005 and 2006 unless otherwise specified. Other laws were obtained directly from the departments or their websites by the author. Where possible, the author has attempted to determine the current status of the laws.

International Laws and Related Documents

ASEAN Secretariat (2000) *Draft ASEAN Framework Agreement on Access to Biological and Genetic Resources and fair and Equitable Sharing of Benefits*. Acc: www.grain.org, 1/6/2005.

Food and Agriculture Organisation (2001) *International Treaty on Plant Genetic Resources for Food and Agriculture*. Rome: Secretariat of the Food and Agriculture Organisation.

Food and Agriculture Organisation (1980) *International Undertaking on Plant Genetic Resources for Food and Agriculture*. Rome: Secretariat of the Food and Agriculture Organisation.

Secretariat of the Convention on Biological Diversity (2002) *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*. Montreal: Secretariat of the Convention on Biological Diversity.

Secretariat of the Convention on Biological Diversity (1992) *Convention on Biological Diversity (1992)*. Montreal: CBD Secretariat.

World Trade Organisation (1994) *Agreement on Trade Related Aspects of Intellectual Property Rights – Annex 1C of the Final Act of the Uruguay Round Agreement*. Geneva: WTO.

UPOV Secretariat (2006) *Members of the International Union for the Protection of New Varieties of Plants*. Geneva: UPOV Secretariat. Status on November 24, 2006.

UPOV Secretariat (2002) *General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants*. Document TG/1/3. Geneva: UPOV Secretariat.

UPOV Secretariat (1978; 1991) *International Convention for the Protection of New Varieties of Plants*. Geneva: UPOV Secretariat.

Patent and Trademark Documents

IPIC Thailand (1999) Thai Patent Number 052443 – ‘Patent application on Kwau krua.’

IPIC Thailand (1999) Thai Patent Number 048605 – ‘Patent application on Kwau krua.’

IPIC Thailand (1998) Thai Patent Number 046779 – ‘Patent application on Kwau krua.’

IPIC Thailand (1998) Thai Patent Application 08912 ‘Medicinal herbal Composition from Kwao krua.’

USPTO Patent No. 5,208,063 ‘Process that yields fluffy and tender cooked rice’. www.uspto.gov (Acc 24/02/2006)

USPTO Patent No 6,352,685 ‘External preparation for the skin’. www.uspto.gov (Acc 24/02/2006)

USPTO Patent No. 4,260,551 ‘Polyprenyl derivatives...useful as medicines for treating peptic ulcer’. www.uspto.gov (Acc 24/02/2006)

USPTO Patent No 6,673,377 ‘Extracts derived from Pueraria mirifica, Butea superba and/or Mucuna collettii and extraction thereof’. www.uspto.gov (Acc 24/02/2006)

USPTO Patent No. 5,879,916 ‘Geranylgeraniol-18-hydroxylase from croton sublyratus’ www.uspto.gov (Acc 24/02/2006)

USPTO Patent No. 5,264,638 'Process for extraction and purification of Plaunotol' www.uspto.gov (Acc 24/02/2006)

USPTO Patent No. 6,730,333 'Nutraceutical mangosteen composition' www.uspto.gov (Acc 28/03/2007).

USPTO Patent No. 7,135,164 'Andrographis paniculate gel as an adjunct in the treatment of periodontitis' www.uspto.gov (Acc 28/03/2007).

USPTO Patent No. 5,484,889 'Plant protein useful for treating tumors and HIV infection' www.uspto.gov (Acc 28/03/2007).

USPTO Patent No. 5,929,047 'Anti-viral agent prepared by basic and acidic extraction of mangraves' www.uspto.gov (Acc 28/03/2007).

USPTO Trademark Registration number 1807817 and Serial Number 74372314. Trademarks Electronic Search System (TESS) at <http://tess2.uspto.gov/>. (Acc 24/02/2006)

Website Articles and Documents

African Group (2003) 'Taking forward the review of Article 27.3(b) of the TRIPS Agreement' (WTO Doc: IP/C/W/404) http://www.wto.org/english/tratop_e/trips_e/intel6_e.htm.

Australian Government, *Human Research Ethics Handbook*. <http://www.nhmrc.gov.au/publications/synopses/e42syn.htm> (Acc. 28/3/07).

Bilaterals.org (2006) *IPR text Proposed by US to Thailand*. <http://www.bilaterals.org> (Acc 9/2/2006).

CGIAR, *Research and Impact: Genebanks and Databases*. (<http://www.cgiar.org/impact/genebanksdatabases.html>). (Acc 1/7/2005)

CGIAR, *Material Transfer Agreement (MTA)*. On the Genebanks and Databases page of the CGIAR website at: (http://www.cgiar.org/pdf/mta2003_en.pdf)

GRAIN (2 Nov, 2000) 'Basmati Rice Campaign Action' *Bio-IPR* www.grain.org/bio-ipr/?id=45 (Acc 29/3/2007)

GRAIN, BioThai and Thammasat Resolution Parties (1997) *Thammasat Resolution*, Available at: <http://www.grain.org/seedling/?id=129> (Acc 20/3/2007)

ICTSD (2006) 'WTO Interim Ruling on EU GMO Case Delayed Until February' in *Bridges Weekly Trade News Digest* Vol. 10(1), 18 Jan 2006. <http://www.ictsd.org>

ICTSD (Oct. 2005) 'WIPO to Continue Work on Genetic Resources, Traditional Knowledge' in *BRIDGES Trade BioRes*, Vol. 5(18), 14 October 2005.

ICTSD (April 2006) 'COP-8 Focuses On Process, Charts Next Steps On ABS and Incentives' in *BRIDGES Trade BioRes*. Vol. 6(6), 3 April, 2006

ICTSD (May 2006) 'WIPO Committee Considers Mechanism to Protect TK' in *BRIDGES Trade BioRes*. Vol. 6(9), 19 May 2006.

ICTSD, (May 2006) 'Transfer Agreement for Genetic Resources Receives Tentative Support' in *BRIDGES Trade BioRes*. Vol. 6(9), 19 May 2006.

ICTSD (March 2006) 'Access And Benefit-Sharing Discussions Kick Off At COP-8' in *BRIDGES Trade BioRes. Special CBD COP-8 Update*, No. 1, 22 March 2006.

ICTSD (Dec. 2005) *Doha Round Briefing October 2005: Intellectual Property Rights*. ICTSD, Geneva.

ICTSD (Dec. 2005) *Doha Round Briefing October 2005: Trade and Technology Transfer*. ICTSD, Geneva.

ICTSD, *CBD considers way to support Traditional Knowledge*, in *Bridges Trade BioRes*, Vol 5 no 14, 22 July 2005, Available from www.ictsd.org.

ICTSD 2006 Taro patents to be given back to Hawaii's indigenous people in *Bridges Trade BioRes* 6, 1. 16 June.

IIED 'Protecting Community Rights over Traditional Knowledge'
http://www.iied.org/NR/agbioliv/bio_liv_projects/protecting.html (Acc. 29/3/2007).

IRRI (2001) *IRRI Welcomes Rice Research Debate in Thailand*. Press release dated 6 Nov, 2001.
www.irri.org/media/press/press.asp?id=14 (Acc 17/6/2005, 1/7/2005).

Royal Forests Department (RFD) *Forest Herbarium: Collections Prior to 1932*.
<http://www.forest.go.th/botany/BKF/> (Acc 31/07/2006).

USTR (2005) *National Trade Estimate Report on Foreign Trade Barriers*. www.ustr.gov.

USTR (Undated) *Section 301 Table of Cases*.
http://www.ustr.gov/assets/Trade_Agreements/Monitoring_Enforcement/asset_upload_file985_6885.pdf (Acc 7/6/2005).

USTR *Mission of the USTR*. http://www.ustr.gov/Who_We_Are/Mission_of_the_USTR.html (Acc 7/6/2005).

WIPO *General Information*. <http://www.wipo.int/about-wipo/en/gib.htm> (Acc. 20/5/2005)

WIPO *Summary of the Patent Law treaty (2001)* http://www.wipo.int/treaties/en/ip/plt/summary_plt.html (Acc. 20/5/2005).

WIPO *Summary of the Patent Cooperation Treaty (1970)*
http://www.wipo.int/treaties/en/registration/pct/summary_pct.html (Acc 20/5/2005)

WIPO *Traditional Knowledge Genetic Resources and Folklore*. <http://www.wipo.int/tk/en/> (Acc 23/6/2005)

WTO *Trips Issues: Article 27.3b, Traditional Knowledge and Biodiversity*.
http://www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm (Acc 20/5/2005)

WTO *Work of the TRIPS Council*. (http://www.wto.org/english/tratop_e/trips_e/intel6_e.htm)
(Acc 20/5/2005).

Personal Communications

Dutfield, G. (1/12/2005). Researcher, Queen Mary Intellectual Property Institute, London. From comments at the *Patenting Lives Conference*, Queen Mary Intellectual Property Institute, London.

Quinton, E. (5/3/2006) Researcher, the University of Birmingham. Correspondence on observations at the Granada meeting of the ABS Working Group of the CBD.

Rachun Pooma (29/8/2005) Royal Forests Department Official, Bangkok. Email correspondence relating to *plao noi*.

Other

Biotechnology Alliance Association (2006), *Biotechnology Alliance Association* Promotional Brochure. Bangkok

Institute for Agriculture and Trade Policy, letter to Madeleine Albright, Secretary of State, United States Department of State. Co-signed by a long list of concerned parties – dated 30 June 1997.

Appendices

APPENDIX 1 – COMPARISON OF SUI GENERIS PLANT VARIETY PROTECTION AND TRADITIONAL KNOWLEDGE LAWS IN ASIA

Note: The material in this Appendix comes from a report which I wrote in 2006-2007 that was commissioned by ICTSD-UNCTAD and IDRC:

Robinson, D. (2007) *Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia*. ICTSD-UNCTAD and IDRC, Geneva and Ottawa. The full report is available at www.ictsd.org or www.iprsonline.org

There are numerous different interpretations of what *sui generis*¹ can mean due to the ambiguous scope allowed under the TRIPS Agreement. Throughout Asia there are a range of different *sui generis* approaches to PVP. Some countries have ratified UPOV, many countries have developed UPOV-style PVP systems, and a few countries have drafted *sui generis* systems which differ considerably from the UPOV model (truly unique systems). These systems may also include elements for the protection of agricultural TK, and additionally there may be other *sui generis* laws which cover related areas such as traditional medicines, agro-biodiversity, agro-forestry, community or indigenous rights. This chapter introduces a range of these laws in brief, with further discussions in subsequent chapters.

UPOV-Style Sui Generis Systems

There are a range of PVP laws in Asia that model themselves on the UPOV 1978 or 1991 systems. Some have done this with ratification of the Agreement, but others have simply reproduced many of the concepts for their own law without actually becoming a signatory. Bilateral treaties and FTAs with developed countries are increasingly coercing countries towards UPOV protection or similar.

Asian countries which have become members of UPOV² include China (1978 Act, not including Hong Kong Special Administrative Region), Japan (1991 Act), Kyrgyzstan (1991 Act), Republic of Korea (1991 Act), Singapore (1991 Act), Uzbekistan (1991 Act), and Viet Nam (1991 Act).

¹ *Sui generis* means “unique”, derived from Latin meaning “of its own kind” according to the *Concise Oxford English Dictionary*, 10th edn.

² Status on November 24, 2006 (UPOV, 2006).

Notably the most technologically advanced economies in the region are members of the 1991 Act. Dhar (2002) also notes that a high proportion of UPOV signatories have a relatively low share of their economically active population in agriculture. Asian UPOV members, China and Viet Nam are notable exceptions. The majority of East, South and Southeast Asian countries who have not signed on to UPOV have large agricultural populations and therefore important rural constituencies and livelihoods for policymakers and politicians to consider.

UPOV laws tend to be quite similar in drafting. UPOV 1978 and 1991 Acts indicate that the grant of the breeder's right shall not be subject to any further or different conditions than the novelty and DUS requirements, provided that "the applicant complies with the formalities provided for by the law of the Contracting Party." The extent to which members may get away with additional conditional "formalities" is not clear. But it seems that some additional specifications may be required under national law. For example, the Plant Varieties Protection Act of Singapore (2004), for local examination of a plant variety, requires a description of "the origin and breeding of the plant variety concerned" (Art. 17.a.i.). Provisions such as this could be useful for determining if appropriate transfers of genetic materials have been made (i.e. by MTA or with PIC).

The Vietnamese Ordinance on Plant Varieties (2004), based on the 1991 UPOV Act, was influenced by US and European trade agreements and pressures. The Ordinance has a similar requirement for documentation of the origin of new plant variety assays prior to protection, including details of its origin (Art. 15.4.). The law thoroughly details rules for the management and conservation of plant genetic resources (Ch.II), including access rules and authorisation required for extraction of genetic resources and rare plants. The law also prohibits "destroying or misappropriating plant gene sources, illegally exporting gene sources of precious and rare plants", which seems an obvious response to "biopiracy" and bioprospecting misappropriation concerns. Additional elements in the law, but which are often parts of other state plant or seed laws, include labelling requirements (Art. 39), management of the quality of plant varieties (Ch.VI), and prohibition of misleading advertisements of false information on plant varieties or plant variety qualities (Art. 9.7.). The Vietnamese law therefore provides a good example of the potential breadth of a PVP law.

China has a fairly standard UPOV-style law, but splits regulations into those which relate to agricultural crops, and forest varieties. Notably the regulations also cover herbaceous medicinal materials (in the agriculture part) and woody medicinal materials (forestry part), clarifying an aspect of the food-medicines conceptual overlap which occurs in many Asian countries.³

Some countries which have not signed or ratified UPOV, but have UPOV-style laws include: Indonesia (2000), the Philippines (2002), Taiwan (Province of China – 2004), Hong Kong (SAR of China – 1997), Sri Lanka (draft), Malaysia (2004) and Pakistan (2000). It is likely that countries draft laws in this way but do not sign on to UPOV in order to be close to international norms whilst still maintaining flexibility in the development of their own unique legal apparatus'. These actions may allow some elements that are different to the UPOV texts, creating a broader space for future lawmaking flexibilities.

Other Unique PVP and TK Systems

Countries which have truly unique plant variety protection laws include India and Thailand. Bangladesh also has drafted a potential PVP law that has fairly unique characteristics, but it has been amended a number of times and remains in draft format.⁴

The Indian Protection of Plant Varieties and Farmers' Rights Act (PVPFR, 2001) has a number of interesting elements. First it accords extant (domestic and existing) and farmers' plant varieties an equivalent exclusive protection right to that which it accords new plant varieties (Art. 15). This accords an equal value to the incremental innovations and contributions that go into development of extant and farmers' plant varieties, as it does to the innovations of new plant varieties. Problems may arise here when trying to reflect the huge range of potential contributions on a plant variety from different parties, in which case it will be registered by a specific

³ Thailand, on the other hand, separates jurisdiction between a health authority and an agriculture authority which has caused some teething problems for the implementation of their laws.

⁴ See Hossain, M.G. (c2003). The development of the Bangladesh PVP law (and related laws) has been interrupted by technical assistance consultants suggesting amendments to the law, as well as bilateral negotiations and pressures from the EU and the US.

individual or cooperative (Art.14;16).⁵ How this registering entity will be held accountable is unclear. If this will mean that traditional exchange of seeds and farmers' plant varieties will come to a rapid halt, is also another key issue. Second, it explicitly provides for the protection of farmers' rights (Art. 15) including the ability to save, use, sow, resow, exchange, share, or sell their farm saved seed, and the ability to receive rewards from a National Gene Fund. It also accords rights to communities to receive compensation if the community is found, by the PVP Authority or from registration details, to have made a significant contribution to the evolution of a protected variety (Art. 41). Other interesting features of the law include a requirement for the disclosure of complete passport (transfer) data relating to the source of the genetic material, and all information relating to the contribution of any farmers, villages or communities in the breeding of the variety, as well as a declaration that the genetic or parental material was obtained through lawful means (Art. 18). The law also prohibits the registration of genetic use restriction technologies as a plant variety.

The Thai Plant Variety Protection Act (PVP Act, 1999) provides different kinds of protection for general domestic and wild varieties, as well as local plant varieties. It is an objective of the law that all plant varieties within Thailand are subject to state sovereignty, and can be protected under one of the specific categories (new or local varieties) or under one of the general categories (domestic or wild varieties). Rather than attempting to formalise exclusive protections across all varieties like in India, which may turn out to be a complex and controversial undertaking, Thailand has sought to provide other forms of incentives to breeders of domestic and farmers' varieties (i.e. it is closer to a liability regime than a property rights regime).⁶ For general domestic and wild varieties the Thai PVP Act (Ch.5) details access and benefit sharing rules, but does not allocate exclusive protection like those available in the Indian PVPFR Act. The Thai PVP Act does allow more specific protection rights for registered local community varieties (Ch. 4). These communities then receive exclusive rights to conserve, use, research, sell, and commercialise if so desired, in a similar manner to a new plant variety right. The PVP Act also requires disclosure

⁵ Note that the rules for persons who may make application under Article 16 are quite broad. It seems inevitable that there will be some disputes over who has legitimate authority to register an extant or farmers' variety and how they can be held accountable to the diverse number of other potential contributors to the breeding of the variety. The Regulations under the Act and the registration forms, only recently released, include documents attempting to clarify authority and proof of right to represent a community, and only with approval of the concerned Panchayat Biodiversity Management Committee, or District Agricultural Officer, or District Tribal Development Officer.

⁶ See Section 3.3 for a more detailed discussion of the main differences between the laws.

of the origin of the new plant variety or the genetic materials used in the breeding of the variety as a registration requirement (Sec. 19(3)). The Act also establishes a PVP Fund which accrues income from the collection, use, research or commercialisation of general domestic or wild varieties, registration fees, and other sources (Ch. 6). The Fund is used to assist in the conservation and development of plant varieties by communities, as well as to cover other administrative expenses. The Thai PVP Act and Indian PVPFR Acts are discussed in more depth throughout this paper.

It should be noted that many of these *sui generis* laws are not yet fully implemented and therefore there is only limited experience in their administration. Many of the practicalities of their implementation, especially where new concepts are introduced, are only half-realised. Where possible, this paper draws together the implementation experiences of these countries and makes recommendations that could expedite the process.

Additional related laws are worth mentioning and are briefly discussed throughout the paper. These include the Indian Biological Diversity Bill (2002); the Act on the Promotion and Protection of Thai Traditional Medicinal Intelligence (1999); the Biodiversity and Community Knowledge Protection Act of Bangladesh (Draft, 1998); the Pakistan Draft Law on Access and Community Rights (2004); the Community Forests Bill of Thailand (Draft, 1992; Last amended 2006); The Community Intellectual Rights Protection Act of the Philippines (Draft, 2001); the Philippines Indigenous Peoples Rights Act (1997).

APPENDIX 2 – LIST OF INTERVIEWEES

Interviews

41 formal interviews of experts, officials and stakeholders in Thailand:

- Saneh Chamarik, Chairman, National Human Rights Commission of Thailand (2 interviews, 19 April 2005 and 2 March 2006)
- Buntoon Srethasirote, Project Director, Strategic Policy Project on Natural Resource Base, National Human Rights Commission; and FTA-Watch coordinator (numerous interviews, February 2005-December 2006)
- Yos Santasombat, Academic, Chiang Mai University (17 May 2005)
- Chawewan Hutachareern, Research Director, National Parks, Wildlife and Plant Conservation Department (18 and 28 August 2005)
- Komong Pragtong, Forest Conservation Officer, National Parks, Wildlife and Plant Conservation Department (18 August 2005).
- Wichar Tithipraesert, former director, Plant Variety Protection Division, Department of Agriculture (6 May 2005)
- Chamaiparn Santikarn ('Cha'), Thai Traditional and Alternative Medicines Institute, Department of Public Health (May 2005).
- Ubon Yuwaa, Farmer/activist, Alternative Agriculture Network, (25 April 2005)
- Surawit Vanakorod, Academic/consultant to the PVP Committee, Kasetsart University, (5 July 2005 and 5 February 2006)
- Jade Donovanik, Academic and Practicing Lawyer, Mono-Thai, Jade and Associates, and former Biotec Official, (27 April 2005 and 5 February 2006)
- Wisut Bai Mai, Academic, Mahidon University; Head of the Biodiversity and Research Training Program; and Chair, Intellectual Property and Genetic Resources Sub-Commission, National Human Rights Commission (2 August 2005).
- Tanit Changtavoom, Intellectual Property Consultant, Biotec; Associate Judge, Intellectual Property and trade Court (1 June 2005).
- Waraluk Chaitap, Researcher/NGO staff, Northern Development Foundation (21 March 2005 and on other dates)
- Suradet Assawin Tharang Goon, Head of Patents Division, Department of Intellectual Property (9 June 2005, 21 February 2006)
- Thosapone Dansuputra, Department of Intellectual Property and former WTO delegate (July 2005).
- Mr Kawin Nitrimantree, Department of Intellectual Property (July 2005).
- Witoon Lianchamroon, Director, BioThai NGO; Coordinator, FTA-Watch; Leader, Alternative Agriculture Network (February 2005, and numerous other dates to December 2006).
- Channida Bamford, Focus on the Global South (March 2005).
- Sajin, Focus on the Global South (March 2005).
- Somkiat Tangkitwanitch, Research Director, Thai Development Research Institute (16 February 2006).

- Wichai Chokevivat, Director, Thai Traditional and Alternative Medicines Institute, Department of Public Health (August, 2005).
- Daycha Siripat, Director, Kwao Kwan Rice Research Foundation; Former PVP Committee member; and activist (29 April 2005; June 2005).
- Jakkrit Kuanpoth, Academic, University of Wollongong; Former Researcher, National Human Rights Commission; Research Affiliate, International Centre for Trade and Sustainable Development (numerous interviews from Feb. 2005)
- ‘Pii Yung’, Karen Village Leader, Baan Mae Ka Pu, Samoeng; NGO staff, Northern Development Foundation (interview and discussions, 26-28 March 2005)
- ‘Pii Huay’, NGO Director, Northern Development Foundation, (interview and discussions, 26-28 March 2005)
- ‘Ka-le’, Karen Villager and activist, Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- Pathi Dang, Karen village elder, Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- Pathi Taa Ye, Karen village elder/healer, Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- Pha Mur, Karen village elder Baan Soplan, Mae Lan Kham, Samoeng, (13 -15 February).
- ‘Leng’, Hmong villager and tourist trail guide, Baan Khun Khlang, Amphoe Jom Thong. (12 -13 February 2006)
- ‘Mee-leng’, Hmong elder and traditional healer, Baan Khun Khlang, Amphoe Jom Thong (13 February 2006)
- Jaroen Compeerapap, Vice President, Silapakorn University (for Intellectual Property and Traditional Knowledge).
- ‘Kwaam Bak Lai’, Northeast Thai Farmer/activist, Roi et (25 April, 2005)
- ‘Watasana (Dej)’, Northeast Thai Farmer, Roi et (25 April 2005)
- Suwanna Wadapikun, Academic, Northern Research Center for Medicinal Plants, Chiang Mai University (21 February 2006)
- Prapoj Peetragaart, Project Director, Thai Traditional and Alternative Medicines Institute (May, 2005 and numerous other dates)
- Anonymous Seed Industry Official (22 February 2006)
- Appassorn, Somboonwattanakun, NGO staff, Thai Volunteer Service; Research assistant and translator (13 February 2006)
- Pearmsac Mokharibhirom, Academic, Kasetsart University; Former Community Forests Bill Committee member (August 2005)
- Surakrai Sungkabuan, Director, Plant Variety Protection Division, Department of Agriculture (December 2006).
- Dr Songkhran, Former Rice Research Director, Department of Agriculture (December 2006).

12 Interviews of officials and delegates in Geneva, Switzerland.

- Christoph Spenneman, IPRs and Technology Transfer, UNCTAD (Nov. 2005).
- Victor Konde, IPRs and Technology Transfer, UNCTAD (Nov. 2005).
- Anonymous WTO official (Oct-Dec. 2005).
- Antony Taubman, Head, Traditional Knowledge Division, WIPO (informal, Nov. 2005).
- Shakeel Bhatti, Traditional Knowledge Division, WIPO (informal, Nov. 2005).
- Chumpichai Svasti-Xuto (Nov. 2005)
- Atul Kaushik, Indian Delegate to the WTO (Oct-Dec, 2005).
- Leonardo Athayde, Brazilian Delegate to the WTO.
- John Scott, Programme Assistant, Indigenous Knowledge, CBD Secretariat.
- Two anonymous African Delegates to the WTO.
- Anonymous Asian Delegate to the WTO/WIPO.

APPENDIX 3 – DRAFT MODEL PRIOR INFORMED CONSENT GUIDELINES

PROPOSED MODEL GUIDELINES OF PRIOR INFORMED CONSENT FOR SEEKING RESEARCH ACCESS TO HERBS, PLANTS, BIOLOGICAL RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE IN THAILAND.

DRAFT V.2, MARCH 2006 (MIINAAKHOM 2549)

NOTE: These proposed guidelines should be understood as a draft measure for the consideration of the Government of Thailand and others. It should not be misconstrued as a legal instrument unless it meets Government approval. In the interim, Government departments have their own respective policies about research access and these bodies should be consulted independent of these guidelines. Subsequent versions of this guideline will be developed and made available for comment.

Recognising: the contributions of traditional knowledge holders and the custodians of herbs, local plant varieties and biological resources, in conservation, sustainable use, knowledge development, sharing of such knowledge for broader societal benefits, and the threats posed to traditional knowledge systems, there is a need to promote and protect traditional knowledge and related biological resources.

Objective: To facilitate a practical mechanism of prior informed consent (PIC) of traditional knowledge holders and the custodians of herbs, plants and other biological resources when researcher access is sought to such materials and knowledge.

This guideline should be recognized as a first step towards the development of a system of providing fair, equitable and appropriate benefits to traditional knowledge holders and biological resource custodians, arising from such research.

Regulatory Framework: These guidelines are put forward for consideration by relevant officials of the Government of Thailand. It is intended that they be considered for provisional implementation as part of the Ministerial Regulations under the Act on Protection and Promotion of Traditional Thai Medicinal Intelligence B.E. 2542 (1999) as administered by the Department for Development of Thai Traditional and Alternative Medicines (TTAM Department), Ministry

of Public Health; and the Plant Variety Protection Act, B.E. 2542 (1999) as administered by the Plant Variety Protection (PVP) Division of the Department of Agriculture.

It is *recommended* however that due to the interest of various departments and groups, the gradual establishment of an independent government body called the 'National Biodiversity Agency' or similar. Such a body would be preferential for the facilitation of the regular cross-department issues.

Supplementary Policy Developments: These model guidelines could be supplementary to a Ministerial Order or similar, on the implementation of a patent requirement for the disclosure of origin of the source of origin of genetic resources and associated traditional knowledge, as has been considered by the Department of Intellectual Property.

Practical Considerations: A handbook detailing in clear language, in both Thai and English, should be developed to help inform local communities of their rights to PIC, problems associated with knowledge sharing, and issues of research access. The handbook should be distributed with the assistance of NGOs and farmers or traditional healers' networks and could be coupled with information meetings.

International Obligations: These guidelines should be considered to be supplementary to international agreements and laws that have been signed and ratified by Thailand. Nothing in the requirements of these guidelines is in conflict with the United Nations Convention on Biological Diversity (1992) or the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS) – Annex 1C of the Final Act of the Uruguay Round Negotiations establishing the World Trade Organisation (WTO).

Definitions:

Providers/Custodians – Individuals, organizations or communities who are owners of biological resources whether existing in *in situ* environmental conditions or *ex situ*, or who can otherwise prove they have a history of conservation and sustainable use of such biological resources for more than one generation (or a period of 20 years).

Users – May be individuals, companies, research institutions, universities, their faculties or divisions thereof, or other organizations seeking access to biological materials for research purposes, whether academic or commercial.

Community – A *sui juris* person or people, residing, commonly inheriting and passing over culture continually, who takes part in the conservation or development of herbs, plant varieties and biological resources.

In situ biological materials – are materials which exist in their natural environment or where human interaction with the materials is limited. Natural environments may include national parks and wilderness, parklands and agricultural land.

Ex situ biological materials – are materials which exist in simulated environments including herbariums genebanks, museums, warehouses, glasshouses and other non-natural settings.

Source owners or custodians – the individuals, organisations or communities in ownership, immediately prior to the provider obtaining the biological materials and/or traditional knowledge.

SECTION ONE – PIC COORDINATION

a. In order to facilitate these guidelines, the TTAM Department and the PVP Division will each employ a PIC Coordinator (and appropriate support staff). The PIC Coordinator will be deemed to be a prominent expert in the use and/or conservation of medicinal herbs and local (or wild) plant varieties under the TTAM Department and PVP Division respectively. The individuals should have a thorough knowledge and experience in the traditional use of herbs and local plant varieties respectively, as well as a good knowledge of research activities on biological resources and related laws. As the individuals will be working with local communities and peoples they

should already have a working history of involvement with local healers or local farmers' networks in Thailand.

b. The groups discussed in Section 1.a. should work towards the establishment of a 'National Biodiversity Agency' or similar which operates as an independent government body for the facilitation of cross-departmental activities on biodiversity, including prior informed consent activities.

c. The PIC Coordinators are responsible for organizing and chairing meetings, working closely in cross-department collaborations with each other and with other relevant departments such as the Royal Forests Department, the Biotec Department and the National Parks, Wildlife and Plant Conservation Department on matters of research access, receiving and investigation complaints about access to biological materials without adequate PIC, and acting as a visible contact point for researchers, both foreign and local, who are seeking research access.

d. A PIC Coordinator must not hold the position for more than 5 years. At the end of the 5 year contract the appropriate departments must seek a replacement PIC Coordinator.

e. Ideally, a number of Regional PIC Coordination Officers could also operate at the regional level to facilitate the dissemination of information to groups in geographically isolated locations.

SECTION TWO – PIC COMMITTEE

a. A Prior Informed Consent Committee (hereafter PIC Committee) shall be established to be chaired by either or both of the PIC Coordinators. The PIC Committee shall be made up of the PIC Coordinators and one representative of each of the following Government Departments: the Department of Agriculture, the Department of Public Health, the Royal Forests Department, the Biotec Department, the National Parks, Wildlife and Plant Conservation Department and the National Human Rights Commission. The PIC Committee shall also comprise two representatives of a traditional healers' network, two farmers' representative involved in the

cultivation of local varieties, one academic involved in research on the conservation and sustainable use of traditional medicines, one academic involved in research on the conservation and sustainable use of local agricultural varieties, one pharmaceutical or biotechnology industry representative, one academic anthropologist working on the customary laws of community groups, and one representative of community forests or other community rights non-government organisations or networks.

b. The PIC Committee shall meet at least once every six months or more often as demands of research access or complaints require. A majority must be obtained in the PIC Committee to approve an access application in its decision-making processes. Where even votes are made, the PIC Coordinators have a further vote or may call for continued review of the case until the PIC Committee can reach a majority agreement.

SECTION THREE – RESEARCH ACCESS

a. When access to biological materials and associated traditional knowledge is sought by foreign or Thai researchers, the research parties must provide a ‘Notification of Research Intent’ to the relevant PIC Coordinator, depending upon whether it is *medicinal* biological materials (and associated knowledge) being sought or biological materials related to *food* and *agriculture* or both. It should be noted that some plant products may be considered both food and medicine. In the Notification of Research Intent, the research party must indicate whether it is seeking *ex situ* or *in situ* biological materials and/or associated knowledge, and must specify the location of the materials and/or knowledge being sought as detailed in Section Four and Five.

SECTION FOUR – EX SITU BIOLOGICAL MATERIALS AND KNOWLEDGE

a. If research access is sought to *ex situ* biological materials and associated traditional knowledge, then the provider must produce evidence of the source of the materials and indicate that the materials and associated traditional knowledge were obtained with some form of PIC of

the source owners or custodians of said resources. This may include a proof of legal acquisition contract, material transfer agreement, or other form of evidence of consent. Where PIC was not sought in obtaining the materials and/or associated knowledge, PIC should be sought retrospectively of the original source owners, custodians or their descendants, and provided that they are adequately informed of the reasons for research access, potential future uses, potential for commercialization and an indication of whether intellectual property rights will be sought on product, processes or derivative arising as a result of the research. The PIC Coordinator or the PIC Committee may demand that the provider should trace back the source and obtain PIC from previous owners if the materials and knowledge have been repeatedly moved between ex situ locations.

b. If the original source owners or custodians cannot be identified and consulted then the provider must notify the relevant PIC Coordinator. The PIC Committee must then decide whether to approve access with the possibility of later complaint by the original source owners if they do exist.

SECTION FIVE – IN SITU BIOLOGICAL MATERIALS AND KNOWLEDGE

a. If access is sought to in situ biological materials and associated traditional knowledge then the providers/custodians of such materials must be consulted and PIC obtained. The means through which consultation occurs depends upon the extent to which a biological resource and any associated traditional knowledge is distributed, whether localised or broadly. In the case of National Parks and protected areas, the same conditions should apply to the relevant authority so as not to conflict with the laws administered by such authorities.

b. Where the in situ biological resource and associated traditional knowledge is only found in localised areas, the provider or custodian individuals or communities should be invited to a meeting of the PIC Committee. If the providers or custodians cannot afford to travel to the PIC Committee meeting then transport funding should be drawn from the PIC-ABS Fund.

c. At the PIC Committee meeting the providers or custodians will be informed by the PIC Coordinator of the Notification of Research Intent, of the reasons for research access, potential future uses, potential for commercialization and an indication of whether intellectual property rights will be sought on any product, processes or derivative arising as a result of the research.

d. The providers or custodians may then opt to allow, refuse or place terms on the access to the biological materials and any associated traditional knowledge. The rights of the providers or custodians must be respected by the PIC Committee and the researchers seeking access.

e. Where the in situ biological resource and associated traditional knowledge is found in broad areas across many different groups or communities, then the PIC Coordinators should organise a 'Special Consultative Meeting'. The meeting should be held in the region where the resource is predominantly found for the convenience of providers and custodians attendance. The Special Consultative Meeting should be widely advertised in which the attendance of representatives of provider and custodian groups is encouraged.

f. The PIC Coordinators will chair the Special Consultative Meeting with the attendance of the rest of the PIC Committee. The providers or custodians will be informed by the PIC Coordinators of the Notification of Research Intent, of the reasons for research access, potential future uses, potential for commercialization and an indication of whether intellectual property rights will be sought on any product, processes or derivative arising as a result of the research.

g. The PIC Coordinators should allow and encourage providers and custodians to indicate relevant customs, rituals, practices, taboos and local customary rules associated with the use of biological materials and associated traditional knowledge in the Special Consultative Meeting. These should be considered and reflected in the drafting of options and terms on the research access.

h. The PIC Committee should provide a number of options to allow, refuse or place terms on the research access being sought to the biological materials and associated traditional knowledge. Terms may include a requirement for appropriate benefit sharing arrangements, and/or a

requirement that the material and associated knowledge being accessed is not patented. A range of benefit sharing options are provided as an appendix. The representatives of communities are then invited to vote on their preferred option. The PIC Committee should ensure that an even spread of voters can be achieved and representation from as many stakeholders as possible is attained.

i. It is likely that the voting process will have to be refined with further meeting experience and condition 5.h. may be revised by the PIC Committee to facilitate fair and equitable representation.

j. A tally of the votes shall be made following the meeting. The majority-vote option shall be adopted as the 'Conditions of Research Access'. The rights of the providers or custodians must be respected by the PIC Committee and the researchers seeking access.

SECTION SIX – ABS-PIC FUND

a. An 'Access and Benefit Sharing – Prior Informed Consent Fund' (ABS-PIC Fund) will be established, with the use of funds authorised by the PIC Committee under the guidance of the National Economic and Social Council.

b. The ABS-PIC Fund shall receive and accrue money from benefit sharing arrangements arising from the commercialisation of products that have been researched. The appropriate departments shall also make annual contributions to the ABS-PIC Fund. No more than twenty per cent of the annual income of the ABS-PIC Fund should be used in the administration of the PIC Guidelines and PIC Committee. Any additional funds required in their administration should be drawn from Department budgets.

c. Money accrued in the ABS-PIC Fund should be distributed or spent as per the terms of the 'Conditions of Research Access' of each case, with the primary intention being the promotion of

traditional knowledge of herbs and local plant varieties for the benefits of local custodians and providers as well as society more broadly.

SECTION SEVEN – COMPLAINT AND REMEDIES

a. If research access is made without the consultation of the PIC Coordinators or Committee, and the procedures in these guidelines adhered to, then the PIC Coordinators or Committee may seek to have research permits and visas revoked, they may seize any materials taken and they may seek compensation for any costs, inconvenience or disrespect caused to the PIC Committee, the relevant departments or to providers and custodians.

b. If the terms of the ‘Conditions of Research Access’ are breached, then the remedies indicated in Section 7.a. also apply. Consent may also be withdrawn upon a majority vote within the PIC Committee.

c. Providers and custodians may make complaints about unlawful research access, failure to acquire PIC through the guidelines, or breach of ‘Conditions of Research Access’ to the PIC Coordinator who should investigate and report such instances to the PIC Committee. Remedies may apply as indicated in Sections 7.a. and 7.b.

GUIDELINE APPENDIX.

Appropriate benefit sharing arrangements could include:

1. Profit-sharing arrangements based on royalty and profit flows of the commercialised product such that they are distributed in a fair and equitable manner to providers and custodians.
2. The establishment of traditional healers or traditional farmers networks for knowledge sharing, education, training about technological developments, advice about legal implications and other matters. This would be funded by the ABS-PIC Fund.

3. Mechanisms for appropriate technology transfer.
4. Establishment of conservation programs if the biological resource is rare or overexploited, which involve local conservation methods and allow the participation of providers and custodians.
5. Creation of schools or learning institutions to allow teaching of traditional knowledge related to medicines, agricultural varieties or methods, sustainable use and other relevant aspects.
6. Establishment of traditional and alternative medicines health clinics which involve traditional treatments and herbs.

APPENDIX 4 – INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE RECOMMENDATIONS

A research team of legal experts, academics and government officials researched the potential impacts of the ITPGRFA for Thailand (Kuanpoth et al, 2004). They outlined negative and positive aspects of the ITPGRFA for Thailand which have been described in Table 1 as follows.

Table 1: Review of the Potential Impacts of the ITPGRFA.

<p>Negative Aspects</p> <ul style="list-style-type: none">- There must be a revision of Thai laws governing the access and benefit sharing of plant genetic resources under control of the government and in the public domain for those plant genetic resources covered by Annex 1 of the ITPGRFA.- Thailand will lose the domestic sense of knowledge and resource sharing from the use of her plant genetic resources in the sense that it will justify their pilferage if it is done to obtain an exclusive right such as intellectual property right.- The membership of the International Treaty is a reduction of Thai sovereignty since Thailand needs to apply the management of her ex situ collection under the conditions set forth by the International Treaty, especially the use of the Multilateral System instead of the Plant Variety Act B.E. 2542 (1999).
<p>Positive Aspects</p> <ul style="list-style-type: none">- Thailand will receive the benefits arising from the utilisation of its genetic resources kept with the IARCs.- The country may have wider opportunity to obtain plant genetic resources in the public domain and under control of other member states.

Source: Kuanpoth et al, (2004)

Based on the above-mentioned positive and negative aspects, the report outlined recommendations for Thailand subject to review and the evaluation of developments. These recommendations are detailed in Table 2 overleaf.

Table 2: Recommendations for Thailand Regarding the ITPGRFA.

Recommendations for Thailand based on the Evaluation of the Report

- At this stage Thailand should not yet ratify ITPGRFA since the ratification of the International Treaty may have unconstructive effects on Thailand, especially when the constructive gains are not obvious.
- Thailand should accelerate its missions in accordance with the obligations for conservation and sustainable utilisation of plant genetic resources as appeared in the International Treaty (Articles 5 and 6) since these are all good practices. Besides the country should build her capacity in order to reduce the negative sides of the International Treaty if it was to become a member by delegating the control of the country's plant genetic resources in the public domain to communities so that these people would be the ones who actually make real decisions on the utilisation of plant genetic resources.

Thailand may change her decision to join the ITPGRFA by evaluating developments on the following specific features:

- The alteration of access and benefit sharing strategies of IARCs subsequent to their membership of the International Treaty.
- The criteria and conditions for access to plant genetic resources given to individual researchers or those working for companies following 2 years since the entry into force of the International Treaty.
- The movement of countries who possess a similar collection in comparison to Thailand in terms of quantity and diversity of plant genetic resources within the public domain and under the governmental control and IARCs in becoming members of the International Treaty.
- The interpretation of equivocal provisions of the International Treaty, in particular the clauses on Multilateral System (Article 11.2), protection of intellectual property rights (Article 12.3(d)) and the reconsideration of conditions for private sectors (Articles 11.3 and 11.4).
- The relationship between of CBD and ITPGRFA on management of plant genetic resources excluded from the Multilateral System of the International Treaty.

Source: Kuanpoth et al (2004)

APPENDIX 5 – TRADITIONAL KNOWLEDGE-FOLKLORE SURVEY RESULTS

Note: This Appendix text is based on a translation by a work associate (“Adnan”). The text has not been proofed by the authors, Buntoon Srethasirote and Jade Donovanik. However I have discussed the results with Buntoon, and from this conversation it can be assumed that the figures are accurate.

The Summarized Details from the Questionnaire On Traditional Knowledge and Folklore Protection

The questionnaire on TK-FL conference dated Thursday 21 April 2005 at Nonsi Room 1A, K.U. Home building, Kasetsart University

The 43 sets of questionnaire were distributed in the convention hall and the 25 sets of them could be collected back. They were from those who have first experience with the questionnaire and those who have ever filled out the questionnaire before, 17 sets and 8 sets respectively.

Question 1

Opinions and recommendations on the definitions of traditional Knowledge: TK, and Folklore: FL, as indicated by WIPO:

TK means “fundamental knowledge and capabilities, methods or technology passed from one generation to generation. This also includes any technology or methods using biological systems, or beings, or their derivatives to be improved for the product and service benefits.”

9 sets : agreed with suitability

16 sets : agreed with unsuitability

The following recommendations were provided:

- They should cover more articles especially plant and animal species
- They should be changed to the benefits of communities, societies and the nation rather than to the benefits of products and services
- They should encourage and instill a sense of TK knowledge, understanding as well as its utility in youth because the cultures from other countries have great influence on children. They are inclined not to be aware of TK and FL. The youth should be protected from foreign culture interference. The new generation has less knowledge about Thai history.
- They should include other arts and traditions commercially unrelated.
- They should be defined as ideas, knowledge; capabilities in every aspect of people enhanced by and passed on from one generation to generation. Any changes or developments could be alternatively done but they should not interfere or destroy our original identity.
- They should be expressed to the public in each locality.
- TK and FL are not used for any commercial purposes. They are used to create the harmony and uniqueness in each particular community as well as to strengthen

unity and cooperation among people in communities. When some benefits are involved, cultural losses are also involved.

- “To be improved for the product and service benefits” should not be included in the definition. TK is something unsuitable to be improved, if it is improved, it is not called as TK.
- The TK definition should end with the word “at present or present”. It helps make the meaning becomes broader and make TK to be abstract in meaning. However, those learnt concepts and the physical practice of them are technology and practical procedures.
- The protection of TK-FL is a crucial matter. The “Method” is suitable when it is changed to “What/How” Method may be suitable for one matter but may not for another and this may lead to some problems. This is because culture is something delicate and sensitive in meaning. Some other ways should also be implemented with careful consideration.
- There is no the meaning and definition of “locality”

Expression of Folklore

Means “any creative work of groups of people in a community based on cultural origins and has been created for the group’s benefits by reflecting the thoughts and expectations of such a particular community, and means a way to represent social and cultural uniqueness, the standards and values of a community either by means of verbal expressions, or imitations or other means, for example, traditional performances, stories, folktales, and dresses.”

20 sets agreed with suitability

3 sets agreed with unsuitability

The following recommendations were provided:

- The scholars of the field should be given opportunities on particular public sharing.
- Does not understand “community expectations” and “standard”. This is because cultural arts are not expectations. They should mean as the history of communities. “The standards and values” should not be used because each particular community has also had its own standards and values. The expression of FL is also a part of TK.
- Any laws implemented must not destroy TK. If there were laws negatively affecting TK or if communities have less or no power to protect TK, or if TK cannot be passed on to other communities, TK would disappear or be rarely seen. The laws should allow governmental sectors to have rights for TK conservation inheritance.
- Folklore is the community quality not the universal cultural arts.

Question 2

What should the TK and FL protection be aimed at?

(from the most to the least answered items)

20 sets: preventing people from inappropriately taking advantage of TK-FL

19 sets: restoring and promoting TK and FL

18 sets: preserving TK and FL for the social benefits

16 sets: developing and inheriting TK and FL

9 sets: making progress and creating economic benefits

2 sets: other additional recommendations

- The reasons may vary depending on the backgrounds of the respondents. If they are from business sectors, they will have economic focus. If they are from cultural backgrounds, they will take the conservation and sustainability into consideration.
- TK-FL helps create consciousness of communities to respect people rights.

Question 3

What type or field of TK and FL should be protected with systematic and effective supervision if they are used in commercial purposes?

- *Linguistic expression* (from the most to the least answered items)

14 sets: dialects

14 sets: legends

13 sets: folktales

10 sets: local practices and regulations

8 sets: philosophy

8 sets: belief

6 sets: proverbs

4 sets: puzzles

2 sets: other additional recommendations

-Dresses, literature originated from local traditions and cultures

- *Musical expression* (from the most to the least answered items)

17 sets: musical instruments

17 sets: entertainment; Thai theatrical performances

15 sets: folk songs

14 sets: traditional Thai dances

11 sets: some specific folk songs; Pleng Choy, Pleng Reong, Pleng E-Saew

5 sets: baby songs or lullabies

3 sets: other additional recommendations:

-Traditional Thai songs, religious songs

-Those related to Royal used are not specific traditions and should not be included traditional work

- *Physical expression*(from the most to the least answered items)

13 sets: sports, recreation such as boat racing

10 sets: traditional playing

- *Touchable expression*(from the most to the least answered items)

19 sets: traditional medicine

- 18 sets: paintings
- 17 sets: handicrafts
- 17 sets: architecture
- 16 sets: archaeological sites
- 16 sets: archaeological finds
- 13 sets: paintings
- 1 set : other additional recommendations
 - Thai food

Question 4

Do you agree or not if there is TK-FL protection with the current intellectual property systems such as special privilege systems, copyrights, trade marks, commercial secrets?

Disagree (from the most to the least answered items)

- 8 sets: gaps of protection in the currently used intellectual property laws
- 7 sets: create obstacles for the developments and inheritance of TK and local traditions
- 4 sets: problems in terms of being irrelevant to the behaviors and cultures of communities
- 2 sets: other reasons:
 - Should be prohibited only when used TK-FL in economic purposes
 - protective laws on cultures and TK should be specially separated from the systems of intellectual property laws, in practice, cultures and TK are taken advantage of by foreigners
 - only important issues should be done
 - The currently used intellectual property laws should be adjusted to be in accordance with the objectives of TK conservation and promotion because the present laws just lay emphasis on the individual rights protection
 - The fundamental philosophy of IPR and TK-FL are different
 - The mentioned systems do not cover all the procedures of TK, cultures and such TK values. More effective systems should be put into practice.
 - The present laws are tools of powerful profit seekers.

Agree and the protection should be for the following purposes: (from the most to the least answered items)

- 12 sets: to prevent TK and FL from being exploited or used without permission
- 12 sets: to certify and protect personal or community rights that have created and preserved the TK and FL.
- 9 sets: to prevent TK and FL from being registered for intellectual property protection by other third-parties or external people
- 6 sets: to promote and support the economic benefits of the owners or the community
- 2 sets: other additional recommendations
 - To protect, safeguard as well as promote the cultural rights of communities and people law
 - For more benefits , the two aspects should be re-summarized and TK-FL should be banned for only commercial use

- Department of Intellectual Property may have problems in using the intellectual property laws so the laws should be re-adjusted and re-implemented or law mechanisms should be updated.
- The passed laws are those for protecting the nation not such a community but community should be able to benefit from such laws.

Remark: there are many respondents who have answered both agree and disagree in question 4

Question 5

To protect TK-FL, apart from the use of the intellectual property laws, the following tools or measures should be considered
(In sequence of importance)

18 sets: the law development for TK-FL protection has the quality as **Sui Generis System**
13 sets: **The database preparation** used as evidence in arguments when TK-FL is misused.

6 sets: **Signing the contract on benefit and sharing access** between those who intend to use TK-FL in any commercial purposes and the communities.

3 sets: other alternative recommendations

- Cultural right acceptance of communities: it is accepted that anything that is taken care of, inherited, and preserved by any group of communities should be permitted and protected by laws as well as having an effect that the communities are the owners of the properties according to Article 40 of the constitution.
- A specific cultural center is established to look after the community. Proper permission must be made for any publications or use in commercial purposes under the supervision of qualified personnel.
- The social mechanism should be strengthened to promote and encourage people to know and be in charge of their own social responsibilities. This should preserve such heritage to prevent it from being taken by others.
- Promoting and strengthening the community conscience to love our cultures
 - prevent TK from registering IPR
 - modify the IPR system not affecting the use of TK-FL according to the original traditions

Question 6

When there is TK-FL protection, the right owner should:

(From the most to the least answered items)

11 sets: be the right of the creator, maker and developer of such TK-FL

(For the provable ones)

11 sets: be the rights of community

9 sets: be partial or overlapping rights systems such as some parts of the traditional Thai medicine TK belong to the nation, some belong to communities and some belong to individuals

9 sets: not be particularly fixed, should be variable according to types of TK-FL

3 sets: be the nation's rights

1 set: other additional recommendations

-There are many levels of human right aspects. In what level of community should be considered

-It is necessary to study each branch for conciseness

-The benefits are of communities. The communities can produce or make under the laws

-There are many repeated versions of laws. They should be modified in the same ways

Question 7

Opinions on some sorts of TK-FL protection which are considered as fundamental examples for the exploration and evaluation of the concerned people's aspects

Types of traditional woven cloth pattern

Right owners (From the most to the least answered items)

14 sets: communities

6 sets: individuals/ groups of people

4 sets: the nation

1 set: no one should be a right owner

Protective rights (From the most to the least answered items)

19 sets: distributions

11 sets: repetitive production

10 sets: exports

9 sets: modification

7 sets: transferring of rights

7 sets: publication

Protective exemption (From the most to the least answered items)

17 sets: Used for analytical study

15 sets: Used for public benefits

14 sets: Used following the current traditional practices

8 sets: Not used for commercial purposes

8 sets: Used by public organization

Types of painting on temple walls

Right owners (From the most to the least answered items)

14 sets: the nation

9 sets: communities (may have more than 1 community)

2 sets: individuals/ groups of people

1 set: no one should be a right owner

Protective rights (From the most to the least answered items)

14 sets: distributions

12 sets: modification
10 sets: repetitive production
10 sets: publication
9 sets: exports
7 sets: transferring of rights

Protective exemption (From the most to the least answered items)

15 sets: used for analytical study
15 sets: Used for public benefits
10 sets: Used following the current traditional practices
7 sets: Not used for commercial purposes
7 sets: Used by public organization

Types of musical expression

Right owners (From the most to the least answered items)

13 sets: the nation
13 sets: communities (may have more than 1 community)
6 sets: individuals/ groups of people
3 sets: no one should be a right owner
1 set: other recommendations

- Communities, individuals, groups of beneficiaries

Protective rights (From the most to the least answered items)

12 sets: modification
11 sets: distribution
9 sets: repetitive production
8 sets: publication
7 sets: exports
7 sets: transferring of rights

Protective exemption (From the most to the least answered items)

16 sets: used for analytical study
16 sets: Used for public benefits
12 sets: Used following the current traditional practices
8 sets: Used by public organization
7 sets: Not used for commercial purposes

Other recommendations in question 7

- There should not be protective rights for every item.
- There is no sufficient knowledge on this question. A study from the educated is necessary, for example, the traditional cloth. It is important to have a profound study on the history. Who or which community owns it should be carefully specified by specialists in each branch. After that, it is clearly summarized.
- Set laws to entitle the state or country as the right owner to protect benefits which belong to communities, individuals or groups of people (Thais).

APPENDIX 6 – THREATS TO LOCAL COMMUNITIES OF NORTHERN THAILAND

Threat	Description
Thai Government Policy	The Thai government has sought to intervene with increasing intensity since the 1950s in the affairs of the hill tribe peoples for a number of reasons. These are: increasing concern about slash and burn agriculture in watershed areas; the cultivation of opium poppies was outlawed in the 1950s; national security and border protection with the Laos and Burmese borders; and assimilation with the dominant Thai population.
Tourism	Tourism has introduced a range of outside influences to local communities and has diverted them from local activities into market oriented activities like the sale of handicrafts and even tours.
Land Shortgages	Caused by increasing population with western health care, immigration and natural increase. Also caused by encroachment of lowland agriculture into higher areas, logging and the sale of land to businesses and outsiders. This has had obvious effects on the ability to conduct shifting rotational cultivation, and thus there is more pressure to clear new areas.
Land Rights	The legal owner of most of the mountainous land of the north is the state, as administered by the Royal Forestry Department and the new Department of National Parks, Wildlife and Plant Varieties. Thus most tribal people do not own the land on which they farm and dwell, and the securing of land rights, though often promised by government officials, is infrequent and sometimes impossibly expensive because of bureaucratic "delays." In other cases people are excluded from their traditional homes for the establishment of protected areas or development projects such as large dams or tourist developments.
Lack of Citizenship	Many tribal peoples are legally entitled to citizenship, but often obstacles are created to deny them this coveted status. Two requirements are official house registration documents, which only half the tribal people have, and individual registration documents (ID cards), which slightly more than a third of them possess. Frequently the hill tribes cannot obtain these documents because perhaps they cannot prove where they were born, or their birth was not registered soon after the event, or they cannot prove how long they have lived in Thailand. Citizenship may even be blocked by officials who demand exorbitant payments for completing the process.
Poverty	The hill tribe economy is shifting from a subsistence economy to a cash economy in which people are becoming more dependent upon the lowland Thai markets and travelling merchants.
Social Dominance	Many dominant cultures are ethnocentric. This attitude leads to various forms of discrimination between competing cultures. This problem exists in Thailand where many Thai consider themselves to be more culturally advanced than the tribal people whom they feel are inferior subjects of Thailand. The clash of cultures may be particularly severe because the Thai and hill tribes are competing for limited land and resources.
Education and Language	Most tribal children now have the opportunity of a Thai education as schools are constructed throughout the mountains of northern Thailand and Thai teachers sent to teach at them. This provides an opportunity by which young tribal people may integrate into the dominant Thai society; it also means better chances of technical training, better paying jobs, and improved health. Yet this is also one of the most severe challenges to the perpetuation of tribal cultures and traditional ways. For example school uniforms are usually required instead of tribal clothes, and students are instructed in Thai language, rather than their own which is a great unifying factor among the tribes.
Loss of Biodiversity	The main problem has historically been logging, and illegal cutting operations in protected zones, as well as movement of lowland Thais up the hills. This has been slowed significantly by greater government control.

Source: Anderson, E.F. (1993) *Plants and People of the Golden Triangle: Ethnobotany of the Hill Tribes of Northern Thailand*. Dioscorides Press, Portland, Oregon., and Santasombat, Yos. (2003) *Biodiversity Local Knowledge and Sustainable Development*. Regional Centre for Social Science and Sustainable Development, Chiang Mai University.

APPENDIX 7 - CHRONOLOGY OF THE COMMUNITY FORESTS BILL

Date: AD/BE	Policy Milestone
1990 (2533)	People's version 1 of Community Forest Bill (CFB) drafted by NGOs, academics, and village leaders
1991 (2534)	In response, government version of CFB drafted by Royal Forest Department (RFD)
1992 (2535)	NGOs organize first annual conference on community forestry
1993 (2536)	NGOs organize second annual conference on community forestry RFD promotes National Forestry Master Plan, classifying forests into economic zones and conservation zones
1994 (2537)	Designation of national parks accelerated Northern Farmers Network (<i>KGN</i>) established, participates in government working group on community forestry
1995 (2538)	Working Group meets, government representatives unable to make decisions Demonstrations in Chiang Mai, march to Lamphun (estimate 20,000 people) Parliament dissolves Chuan 1 government, Banharn elected Assembly of Poor (AOP) formally established December 10
1996 (2539)	AOP organizes 29 day demonstration in Bangkok in March, part of learning process New people's version of CFB drafted, accepted in principle by Banharn cabinet April 30 Parliament dissolves Banharn government, Chavalit elected in November
1997 (2540)	AOP 99 day "Village of the Poor" demonstration in Bangkok begins in January Cabinet Resolutions April 17 and 29 accept in principle that communities existed in conservation zones prior to designation of protected areas, and established process for verifying related information through tri-partite teams Public hearings on draft CFB in May, with backlash from lowland villages and "deep green" urban environmentalists Government revises CFB, result is unacceptable to all parties Chavalit government dissolves, Chuan II government takes over in November Following a lengthy consultation and participatory process, new Thai Constitution is passed. Art 46 supports participation of local communities in the management of natural ecosystems.
1998 (2541)	Forest fires exacerbate conflicts between highlanders and lowlanders; arrests, road blocks New Cabinet Resolution June 30 reverts villages in protected areas to illegal status
1999 (2542)	Rally for Rights in Chiang Mai in May. Emergence of new networks (eg <i>SGN</i>), strategy to unite upland + lowland communities. Petition of 50,000 signatures of eligible voters collected by the Northern Community Forest Network. This entitles them to present the people's draft of CFB into Parliament.
2000 (2543)	People's draft of CFB introduced in February under Art 170 of the Constitution Election, Thaksin government replaces Chuan II
2001 (2544)	Parliamentary committee of 35, including 13 representatives of People's Organisations compromise to redraft the CFB; this passes the Lower House of Parliament in November.
2002 (2545)	3 articles of the Draft Bill are amended in the Senate in March, concerning the right to establish a community forest (Art 18), the procedure for changes to the boundaries of the community forest area (Art 29), and the right to gather forest products (Art 31). Amendments prohibit the establishment of community forests in protected areas, the expansion of all existing community forests, and require RFD permission for gathering all forest products. Amendments seriously change the content of the Bill, and so must be considered again in the House of Representatives.
2003 (2546)	MPs debated the issue and the MPs could not agree with the Senators on the text and content of many articles, thus it was sent for consideration in a joint committee of both Houses of Parliament. Communities continue to develop forest management plans, as if the Bill were passed.
2005 (2548)	Version 12 of the CFB was being considered by a joint committee of both Houses of Parliament. Local communities are still campaigning for the recognition of their rights.

Source: Kingkorn Narintarakun. and Leonard, R. (2003), with minor additions made by this author.

APPENDIX 8 – DOCUMENTATION OF USEFUL PLANTS IN THAILAND

There are however a growing number of documents which detail aspects of plant and animal biology in various ways in Thailand. “Biodiversity” is however a relatively new concept and thus the bulk of materials refer specifically to a topic area within the broad scope of this term (i.e. there are few biodiversity of Thailand textbooks per se⁷). There are however numerous English language books which document uses of plants for medicinal purposes and food in Thailand. The following list is not exhaustive:

- Anderson, E.F. (1993) *Plants and People of the Golden Triangle: Ethnobotany of the Hill Tribes of Northern Thailand*, Dioscorides Press, Portland, Oregon.
- Brun, V. and Schumacher, T. (1994) *The Traditional Herbal Medicine of Northern Thailand*, White Lotus, Bangkok.
- Gardner, S., Sidisunthorn, P., and Anusarnsunthorn, V. (2000) *A Field Guide to Forest Trees of Northern Thailand*, Kobfai Publishing, Bangkok.
- McMakin, P.D. (2000) *Flowering Plants of Thailand: A Field Guide*, White Lotus, Bangkok.
- Pecharaply, D. (1994) *Indigenous Medicinal Plants of Thailand*, Department of Medical Sciences, Ministry of Public Health.
- Salguero, C. P. (2003) *A Thai Herbal: Traditional Recipes for Health and Harmony*, Silkworm Books, Chiang Mai.
- Saralamp, P., Chuakul, W., Temsiririrkkul, R., Clayton, T., and Paonil, W. (Vol 1- 1996; Vol 2 – 1997) *Medicinal Plants in Thailand*, Mahidol University, Bangkok.

⁷ Probably the best text on biodiversity in Thailand is BaiMai, Visoot (1995) *Status of Biological Diversity in Thailand*. Thailand Biodiversity Research Fund, Bangkok (in Thai only).

APPENDIX 9 – ANNOTATED PHOTOGRAPHS FROM VILLAGE CASE STUDIES



Plate 1: Forest ordainment ceremony by Buddhist monks in the upper watershed area of the Mae Khan River Basin, near Baan Mae Ka Pu (Amphoe Samoeng, Chiang Mai).



Plate 2: *Khon pga k'nyau* (Karen) men cut down a vine that can be boiled to make a tea or tonic that can ail the stomach and prevent indigestion (Location: Baan Mae Ka Pu, Amphoe Samoeng, Chiang Mai).



Plate 3: A collection of more than 65 seeds and herbs on display to demonstrate the breadth of *Khon pga k'nyau* Karen local knowledge of plant based medicines and foods (Baan Mae Ka Pu, Amphoe Samoeng, Chiang Mai).

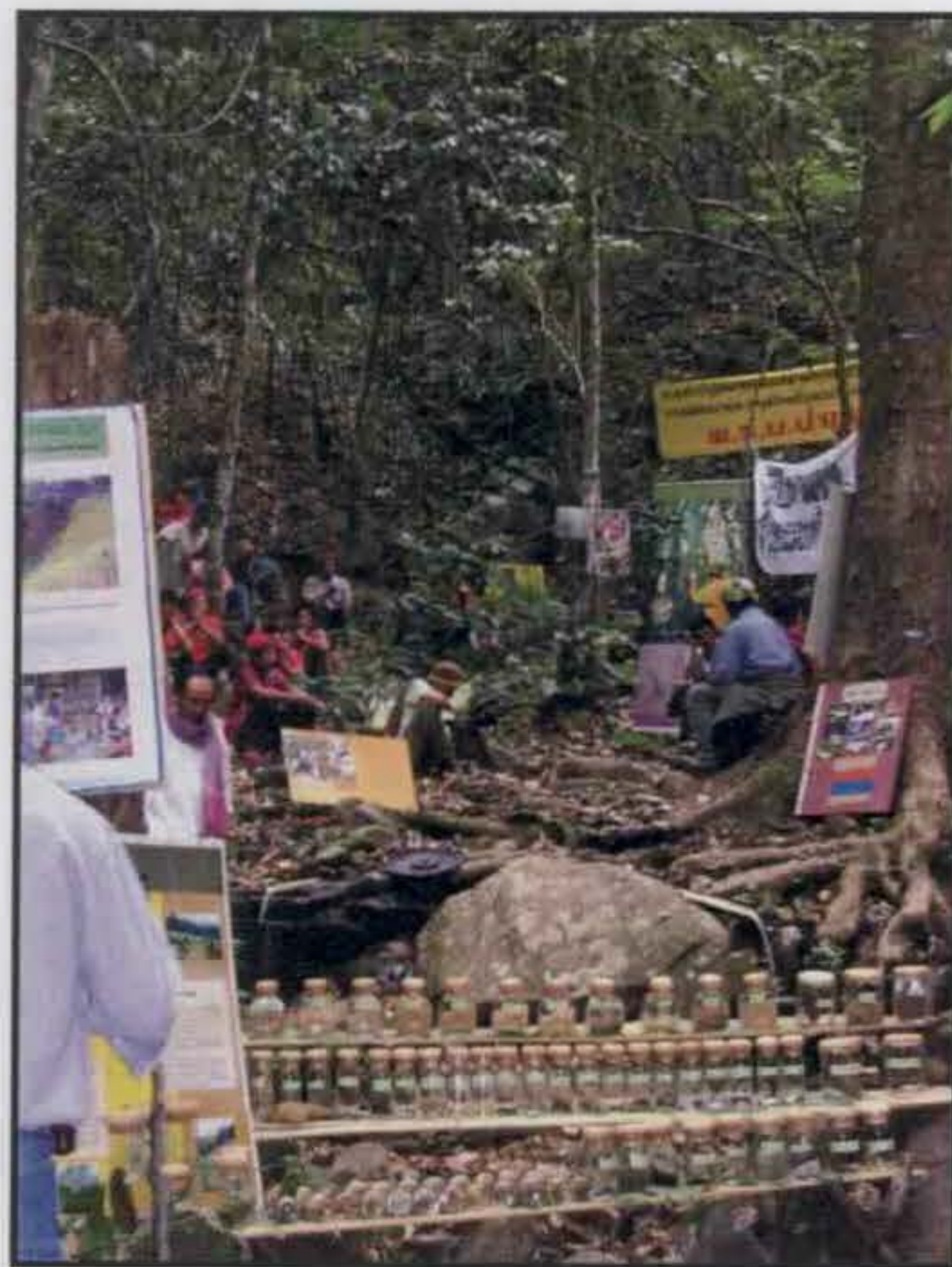


Plate 4: Promoting the cause: Chiang Mai NGO Northern Development Foundation, and two senators from Chiang Rai province discuss forest management issues, the right of local communities to use the forest, and the continuance of shifting rotational agricultural practices. Traditional knowledge of plants is emphasized (see jars in foreground). (Baan Mae Ka Pu, Amphoe Samoeng, Chiang Mai).



Plate 5: This chart shows four different customary practices of the *Khon pga k'nyau* in this village (Baan Mae Ka Pu, Amphoe Samoeng, Chiang Mai).



Plate 6: The vine in the foreground is White *Kwao Krua* (*Pureraria mifca*). The locals indicated that they only recently learnt some of the uses of the plant from people they had met in the Issan (northeast) region (Baan Soplan, Amphoe Samoeng, Chiang Mai).



Plate 7: Paa Mur is standing beside a fire shrine in a cleared field near Baan Soplan. These shrines were erected to ensure past burning in the area was watched by the spirits of the forest, and assumedly, so that the fire did not get out of control (Amphoe Samoeng, Chiang Mai).



Plate 8: The plant floating on the surface of the rice pond water is called *Azolla*. When the ponds dry up, the *Azolla* plant breaks down providing nutrients back into the soil, acting as a natural fertiliser (Suphan Buri, Suphan Buri Province).



Plate 9: Daycha is demonstrating the selection of seeds for replanting in the following season. The rice grain – Suphan Buri 60 – is a “modern” variety with native origins in this region (Suphan Buri, Suphan Buri Province).



Plate 10: Vegetables, nuts and herbs on display at the Ku Ka Singha Indigenous Seed Fair in Roi Et Province. These came predominantly from communities from Ku Ka Singha, but also from other provinces, and even other regions of Thailand.



Plate 11: This is a display of a farmers' variety (landrace) that has become rare and threatened. It can only be found in some disturbed areas, and on a few scattered farms (Ku Ka Singha, Roi Et Province).



Plate 12: Rice and grain seed primarily from the Issan region. Many of the varieties in this photo are used in rituals and customs, and some are newly bred local or "farmer's varieties" for consumption (Ku Ka Singha, Roi Et Province).



Plate 13: Traditional music, songs and stories celebrate the agri-culture of the people of Ku Ka Singha and Issan. This show of tradition is coupled with speeches by NGOs about the threats that the monopoly of intellectual property poses.

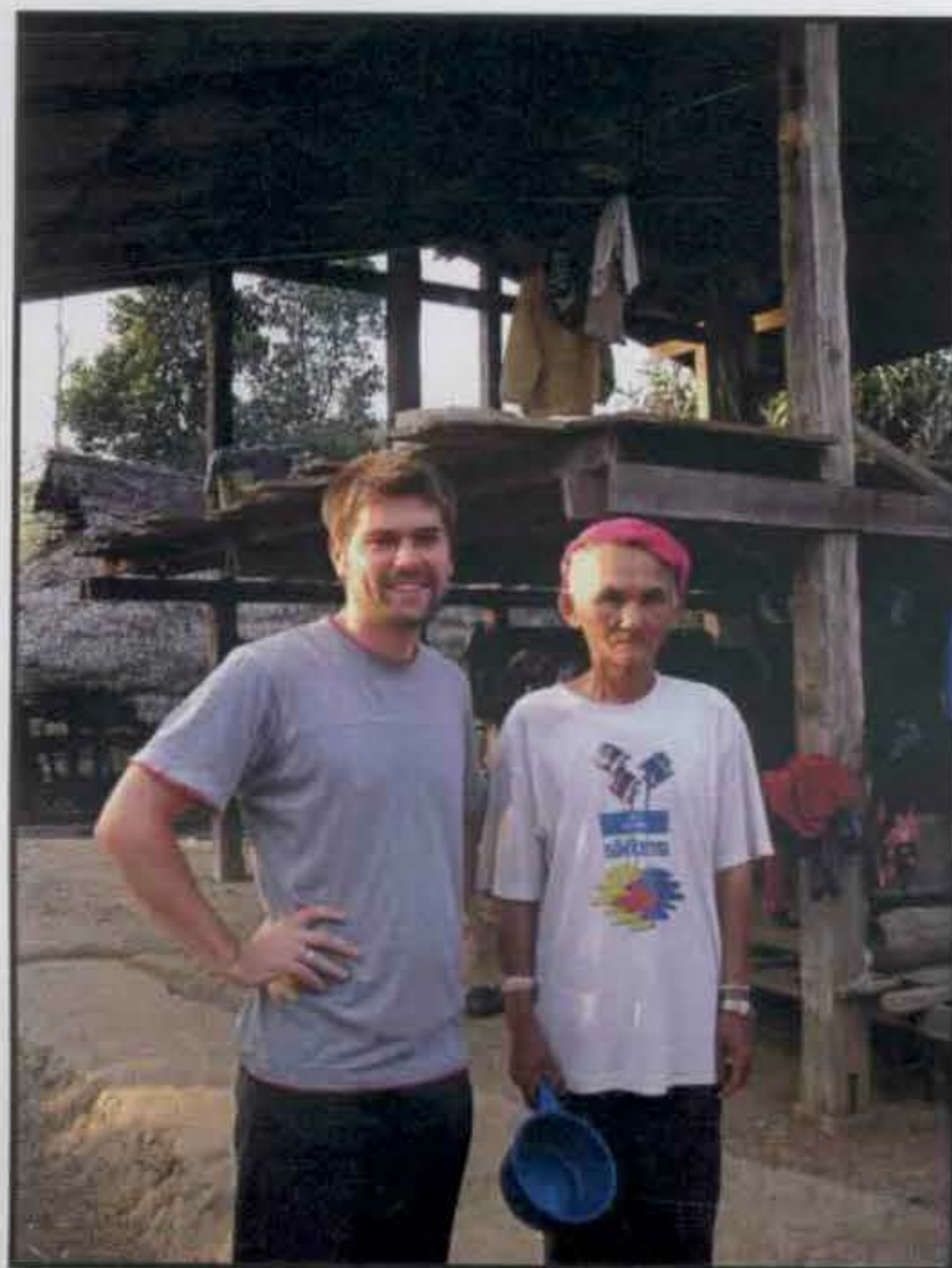


Plate 14: Patthi Dang, standing with me, has a diverse knowledge of the local environment including many useful plants. Despite this research, the person who is the true traditional knowledge “expert” is clear (Amphoe Samoeng, Chiang Mai).

RARE BOOKS LIB

14 AUG 2007

UNIVERSITY OF SYDNEY LIBRARY



0000000611229710

WORLD
OF PRINT

www.thesisonline.com.au

9212 4144

Shop 1, 180 Broadway BROADWAY