The Propertisation of Knowledge: Leaving the Owner out

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RESÜMEE[1]

Der Aufsatz untersucht am Beispiel der Propertisierung traditionellen Wissens die sozialen und politischen Konsequenzen der Erweiterung des geistigen Eigentums auf Gegenstände, die bis dahin primär einer kulturellen Logik unterstanden. Der Autor analysiert die Komplexität und Kontingenz einer *global governance* geistiger Eigentumsrechte, sobald diese mit den Anforderungen einer globalen Informationsgesellschaft und der Privatisierung und Ökonomisierung weiter Teile der angewandten Forschung konfrontiert wird. Dabei skizziert er ein mehrdimensionales Spannungsfeld, das geprägt ist vom wirtschaftlichen und politischen Ungleichgewicht zwischen den Industrie- und Entwicklungsländern, von Interessenskonflikten zwischen den lokalen, nationalen, multinationalen und zwischenstaatlichen Akteuren, von nicht hinreichend aufeinander abgestimmten Problemlösungsstrategien und von unterschiedlichen kulturellen Bewertungen des Verhältnisses von Gemeinschaft und Individuum. Der Beitrag führt zu zwei Erkenntnissen: Das Beispiel Indien zeigt, dass staatliche und private Akteure sich nicht notwendigerweise als Interessengemeinschaft im Kampf gegen die Propertisierungswut westlicher Unternehmen begreifen. Zweitens zeigt er, wie die Institutionalisierung des westlichen Modells einer exklusiven Eigentümerschaft an Erfindungen und technischen Innovationen in internationalen Konventionen und handelspolitischen Abkommen eine Situation geschaffen hat, in der nur noch die Rahmenbedingungen, aber nicht mehr die Propertisierung traditionellen Wissens verhandelt werden kann.

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The ownership of knowledge has expanded dramatically – moving even into nature.[2] At the same time, knowledge held in the commons, including the traditional knowledge of indigenous people has been rapidly moved into the realm of private property, or the "propertisation" of knowledge.[3] Currently, the benefit sharing model – where indigenous people are given a share in the commercial benefits that emanate from products created using their knowledge – is seen as an ideal way to compensate the holders of traditional knowledge for products created using their know-how. However, this paper contends that this model, though hailed widely, fails to redress issues of equitable distribution and instead creates new paradigms of property. It argues that current intellectual property rights (IPR) models are deeply rooted in a western cultural conception of IPR, that puts property at the centre of the debate and fails to address the protection of rights and claims over intangible assets such as traditional knowledge and that even well meaning activists who labour for indigenous people are confined by this cultural paradigm.

The extant literature is quite unbalanced with too much attention paid to conflicts over international rules and legal provisions and very little empirically grounded analysis of the actual social, political and cultural conflicts that the propertisation of knowledge along western standards causes in non-western societies. Moreover, knowledge is treated just like any other form of property, even though knowledge is inexhaustible and property is not.[4] How do historically marginalised communities react to the propertisation of their knowledge? This paper looks at one such agreement – the deal between the Tropical Botanic Garden and Research Institute (TBGRI),[5] in Kerala, India, with the Kani tribe who live in the Agastya forests of Kerala state, whose traditional knowledge of the invigorating properties of the "arogyapacha" (*Trichopus zeylanicus*, eng.trans. evergreen strength) was used to create an invigorating drug, "Jeevani". The resulting commercial benefits were shared with the tribe, and fulfilled recommendations of the World Intellectual Property Organization (WIPO) for a just and equitable benefit sharing agreement.

Benefit sharing agreements were first conceptualised by well meaning activists who rallied against bio piracy as a form of neo-colonial exploitation.[6] In the 1990s, and especially following the success of the benefit sharing agreement between the San tribe of South

2 Nearly 20 per cent of human genes are explicitly claimed as U.S. IP. The largest single patent owner of some 2000 human genes was Incyte Genomics, a US corporation. L. Palombi, (ed.) Gene Cartels Biotech Patents in the Age of Free Trade, Cheltenham 2009, p. 250.

3 C. Hann, Die Bauern und das Land. Eigentumsrechte in sozialistischen und postsozialistischen Staatssytemen im Vergleich, in: H. Siegrist/ D. Sugarman, (eds.) Eigentum im internationalen Vergleich (18.-20. Jahrhundert), Göttingen 1999, pp. 161-184; H. Siegrist, Die Propertisierung von Gesellschaft und Kultur. Konstruktion und Institutionalisierung des Eigentums in der Moderne, in: ibid. (ed.), Entgrenzung des Eigentums in modernen Gesellschaften und Rechtskulturen, Leipzig 2007 (Comparativ 5-6/2007), pp. 9-52.

4 S. Haunss, K. C. Shadlen (eds.) Politics of Intellectual Property: Contestation Over the Ownership, Use, and Control of Knowledge and Information, Cheltenham, U.K./ Northampton, Mass. 2009.

5 TBGRI is an autonomous research center established by the Government of Kerala in 1979. It has been accorded the status of a Center of Excellence in Conservation and Sustainable Utilisation of tropical plant diversity by the Ministry of Environment and Forests, Government of India. The key aim of the Institute is the conservation and sustainable utilisation of plant diversity in tropical India and the "arogyapacha" case has made it famous. For more see at URL: http://www.tbgri.in.

6 V. Shiva, Biopiracy: The Plunder of Nature and Knowledge, Cambridge, Mass. 1997.

Africa and the Pfizer pharmaceutical company[7] (the Hoodia case), in which, for the first time, an indigenous community shared the profits emanating from a product based on their traditional knowledge,[8] benefit sharing agreements were seen as an equitable way of sharing the benefits of commercial exploitation of indigenous knowledge. However, such agreements were usually made by non indigenous people, took an idealised conception of indigenous people that did not correspond to reality, and ignored the voice of the tribes themselves who were "spoken for". Indigenous people, denied agency, became mere subjects to be acted upon.

I analyse the benefit sharing agreement as a process that shapes the governance of intellectual property examining how such agreements influence the self perception of tribes, their behaviour, and the dynamic nature of cultural practices regarding traditional knowledge. The paper argues that, rather than allay the inequities that the propertisation of knowledge and the exclusivity that this entails means for traditional communities, benefit sharing agreements themselves are complex instruments that come with their own baggage. After briefly sketching the theoretical perspectives on traditional knowledge and intellectual property rights, I look at the lacunae in international agreements that address the issue, and then present the empirical evidence regarding the arogyapacha case.

Terms: local people, traditional knowledge and benefit sharers

In this paper, "local people" are defined as people who live in tropical forest habitats, whether indigenous or of mixed descent; the key question concerning them is how they can be provided reciprocal benefits for their traditional knowledge.[9] According to the International Intellectual Property Institute, traditional knowledge (TK) includes "tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields".[10] I use the definition of benefit sharers as "the conservers of biological resources, their by-products, creators and holders of knowledge and information relating to the use of such biological resources, innovations and

7 For an extensive analysis see G. Dutfield, Intellectual Property, Biogenetic Resources and Traditional Knowledge, London 2004, pp. 52-55; R. Chennels, Ethics and Practice in Ethnobiology: The Experience of the San Peoples in South Africa, London 2007, pp. 413-427; G. Moon/ A. Aneesh, Intellectual Property Protection for Traditional Knowledge: The Case of the Hoodia Gordonia, Stanford 2005.

8 K.H. Mohai, Copyright in the Digital Era and Some Implications for Indigenous Knowledge, in: T. Pradip/ I. Ncube Mazonde (eds.), Indigenous Knowledge Systems and Intellectual Property in the Twenty-First Century: Perspectives from Southern Africa, Dakar 2007, pp. 66-77.

9 S. R. King et al., Biological Diversity, Indigenous Knowledge, Drug Discovery and Intellectual Property Rights: Creating Reciprocity and Maintaining Relationships, in: Journal of Ethnopharmacology 51 (1996), p. 46.

10 G.-W. and E. Garduno, Treading and Independent Course for Protecting Traditional Knowledge, in: International Intellectual Property Institute, URL: http://www.iipi.org (accessed February 2, 2008).

practices associated with such use and application".[11] However, as the "arogyapacha" case will show, this is hardly a simple matter. Trying to identify the benefit sharer, often when it comes to financial recompense, is something that challenges the definition and image of the tribe. Moreover, addressing concerns that stem from the propertisation of traditional knowledge is a process with its own set of contradictions.

Traditional knowledge and modernity

Globalisation has meant that traditional knowledge, which was of limited relevance, has suddenly become extremely important. This includes the key role of biotechnology[12] in an emerging knowledge economy,[13] the powerful position that the private sector has in the emerging "nan-cog-bio-info"[14] knowledge society,[15] and a denationalisation of science, a phenomenon evident in academic and policy-making circles after 1960, when the term "multinational" was first coined.[16] The consolidation and integration of pharmaceutical, chemical, industrial and other sectors, symbolised by a wave of mergers and acquisitions driven by competitive pressures, prohibitively expensive biotechnology research and development (R&D),[17] the potential for knowledge conglomerates and the super research university,[18] all underline this process. IPR practices also privilege broad patents that have the effect of driving competitors out of the market and, by deterring entry, increase consolidation.

What makes traditional knowledge significant is that pharmaceutical research is increasingly based on indigenous knowledge, especially in identifying beneficial plants. All plant based drugs in use are derived from fewer than 90 plant species. With more than 250,000 species of plant on Earth the commercial potential is enormous.[19] However, modern science is based on the "propertisation"[20] of knowledge, which breaks easily

11 S. R. King et al., Biological Diversity (annotation 9), p. 46.

12 C. Hamilton, Biodiversity, Biopiracy and Benefits: What Allegations of Biopiracy tell us about Intellectual Property, in: Developing World Bioethics 6 (2006), no. 3, p. 158.

13 See for example, E. K. Drexler, Engines of Creation: Challenges and Choices of the Last Technological Revolution, Garden City, NY 1986.

14 The convergence of information technology, bio technology, nano-technology, and cognitive sciences (Nano-Bio-Info-Cogno or NBIC).

15 J. D. Gaisford et al., The Economics of Biotechnology, Cheltenham 2003; K. E. Maskus, Intellectual Property Rights in the Global Economy, Washington DC 2000, p. 5; P. Pringle, Food Inc: Mendel to Monsanto – The Promises and Perils of the Biotech, Harvest, NY 2005.

16 S. M. Horrocks, The Internationalisation of Science in a Commercial Context: Research and Development by Overseas Multinationals in Britain before the Mid-1970s, in: British Journal for the History of Science 40 (2007), no. 2, pp. 227-250.

17 P. Newell, Globalisation and the Governance of Biotechnology, in: Gobal Environmental Politics 3 (2003), no. 2, pp. 56-71.

18 D. P. Baker, Privatisation, Mass Higher Education, and the Super Research University: Symbiotic or Zero Sum Trends?, in: Die Hochschule 2 (2008), pp. 36-53.

19 N. R. Farnsworth, Screening Plants for New Medicines, in: E. O. Wilson/ F. M. Peters (eds.), Biodiversity, New York 1988, pp. 61-73.

20 H. Siegrist, Die Propertisierung (annotation 3).

accessible knowledge held in the commons into IPR law protected fragments. Simultaneously, the juxtaposition of culture, property and rights, (cultural property, cultural rights, property rights) and the "indigenous" or "traditional" character of knowledge has given rise to a wave of well meaning efforts aimed at "protecting" indigenous people from capitalist exploitation, a trend that one author calls "a phenomenon little short of a global civil movement".[21] All this means that the policy response to a global tendency to propertise traditional knowledge and competing claims and protests will be crucial.

Traditional knowledge and the IPR regime: approaches

At its core, intellectual property is a system of permission-based restrictions. Those who "own" property set the default limits for those who wish to use it, subject to certain public policy constraints such as fair use.[22] Current debates around the propertisation of knowledge revolve around how knowledge should be dealt with – whether to make it exclusive and propertised, or to have an idealistic "knowledge is free" paradigm. Yet, while traditional wisdom remains unpatented and is open to access, most pharmaceutical firms have patented knowledge, arguing that they are not responsible for the poverty of their countries that have indigenous knowledge at their disposal but cannot exploit them commercially.[23]

In effect, this means building walls around knowledge that was previously in the public domain, in effect a modern enclosure movement.[24] Consequently, activists in the Third World have generally opposed the Western paradigms of intellectual property rights, coining the term "biopiracy"[25] to describe the activities of pharmaceutical companies who create expensive products based on traditional knowledge held in common with no single identifiable owner, and then patent them so as to create an exclusivity of knowledge – a new form of exploitation, akin to the conquest of the "New World" by colonialists.[26] For instance, in 1998, a coalition of two hundred non-governmental organisations challenged a series of U.S. and European patents involving local plant species. In each case, the charges were based on some form of "bio-piracy".[27] On the other hand, given

21 E. Hirsch / M. Strathern, Transactions and Creations: Property Debates and the Stimulus of Melanesia, New York, 2004, p. 4.

22 E. C. Kansa / J. Schultz / A. N. Bissell, Protecting Traditional Knowledge and Expanding Access to Scientific Data: Juxtaposing Intellectual Property Agendas Via a "Some Rights Reserved" Model, in: International Journal of Cultural Property 12 (2005), pp. 287-289.

23 I. Mgbeoji, Global Biopiracy: Patents, Plants and Indigenous Knowledge, Ithaca, NY 2006.

24 See for example, A. Mushita / C. B. Thompson, Biopiracy of Biodiversity: Global Exchange as Enclosure, Trenton, NJ 2007. Shiva argues that instead of seeing nature as self-balancing and as having integrity of its own, corporations and many scientists view it as a source of raw materials leading to the „ownership" of nature, as well as of knowledge: V. Shiva, Biopiracy (annotation 6).

25 The term, with its connotations of plunder and illegality, is quite common in activist literature. See for example, V. Shiva, Biopiracy (annotation 6); A. Mushita / C. B. Thompson, Biopiracy (annotation 24); I. Mgbeoji, Global Biopiracy (annotation 23).

26 V. Shiva, Biopiracy (annotation 6).

27 S. Prakash, WTO Rules: Do They Conserve or Threaten Biodiversity?, in: The Journal of World Intellectual Property 3 (2000), no. 1, p. 160.

the intricate pattern of traditional knowledge, if such knowledge has to be paid for, this will lead to extremely expensive and complicated agreements with regard to the use of traditional knowledge. The debate in its essence revolves around what may rightfully be the subject of private ownership and both activists and bio prospectors follow practices that have deep roots in colonial modes of cultural perception. Thus, activists see indigenous communities as helpless and in need of protection, romanticising indigenous people, while bio prospectors see the rich resources of tribes as ripe for commercial exploitation. Both reflect a Western discourse about the "Other"[28] – reducing the tribe to mere bystanders who cannot actively engage with the current intellectual property paradigm. In both, the indigenous community is merely acted upon. What this shows is that property can culturally be conceived differently – the Western cultural mode of propertisation of knowledge, and the other in a community oriented perspective that gives importance to the commons.

Benefit sharing agreements were initially regarded as one way in which this gap could be bridged. If only indigenous tribes were trained to recognise the commercial value of their knowledge,[29] the argument ran, they could benefit enormously. Opponents saw such commercialisation of knowledge as destroying the tribe by eroding notions of communal property that are closely tied to tribal identity. Complicating the picture are systemic factors that disadvantage indigenous people: registering and defending a patent is complicated, prohibitively expensive, and rooted in an alien culture. Finally, the commons approach of indigenous communities is in direct opposition to the western paradigm that puts the individual, profit, and initiative at the centre of human activity. This in itself is not a reflection of an objective legal regime, but rather a cultural construct, with roots in European, and more specifically US, innovation culture – the American belief in individualism engendered by a pioneering spirit. Unsurprisingly, the first dedicated patent office in the world was in the United States. Thus, going beyond legalism, it is essential to see the cultural roots of IPR conflicts.

There have been other attempts to reconcile traditional knowledge and the rights of communities within the current paradigm. One example is the adoption of a "sui generis" mode that puts the nation state as the custodian of intellectual property rights in traditional knowledge, emphasising issues such as biodiversity protection, community rights, and sustainable uses.[30] Another approach has been the "some rights reserved" notion that falls between these two paradigms, making traditional knowledge accessible, but with some restrictions.[31] This approach tries to protect community owned knowledge paradigms from unfair commercial exploitation. Knowledge that is essential to scientific

28 The classic work on Western constructions of the "Other" remains E.W. Said, Orientalism, New York 1979. See also M. Sarup / T. Raja, Identity, Culture and the Postmodern World, Edinburgh 1996.

29 World Intellectual Property Organisation, Intellectual Property Needs and Expectations of Traditional Knowledge, Geneva 2001.

30 S. Ragavan / J. Mayer / O. Shields, Has India Addressed Its Environmental Woes? A Story of Plant Protection Issues, in: Georgetown International Environmental Law Review 20 (2007), no. 1, pp. 97-127.

31 E. C. Kansa et al., Protecting (annotation 22).

progress, such as patents in biotechnology, can be designated as "club goods"[32] permitting shared access to the information and its utilisation under conditions that emulate those of the public domain, but which may be enforced by invoking the rights of the original intellectual property owners – a contractually constructed, IPR-based "information commons".[33] Some authors have called for scientifically advanced nations to take explicit steps to take into account the pre-existing knowledge on which the patentable innovation might be based, before granting patents.[34]

Another way is to empower communities,[35] by vesting local communities with "custodianship rights of innovation" either through local community leaders who are nominated or appointed to act as trustees of traditional knowledge for the community, or through government custody of relevant intellectual property rights in trust for the local community.[36] The Indian government has toyed with the idea of Community Biodiversity Registers[37] that document the knowledge of conservation, as well as economic uses of biodiversity resources that rest with India's local communities. Local communities collaborate with high school and college students, and local NGOs, to collect information in a register. The information can be used or shared only with the knowledge and consent of the local community who, when consenting to the access, can charge fees. Decisions on how to disburse the funds are to be made through village community meetings. However, such a register means that hitherto secret knowledge moves into the public domain where corporate and research interests can freely access them.[38] However, the mechanisms of such empowerment, especially in countries such as India, where great gulfs exist in education and wealth, and tribal populations are among the most disadvantaged, have not been clearly thought out.

The state and IPR: the 1998 Convention on Biological Diversity (CBD) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

The modern state also lays claim to property that was in the communal sphere, such as forests and traditional knowledge. This practice has roots in colonial times, when the

32 R. Cornes / T. Sandler, The Theory of Externalities, Public Goods, and Club Goods. Cambridge / New York 1996, pp. 33-35.

33 P. A. David, Using IPR to Expand the Research Commons for Science: New Moves in 'Legal Jujitsu', in: Conference Intellectual Property Rights for Business and Society, London 2006.

34 I. Muzu, Intellectual Property Rights and Biotechnology: How to Improve the Present Patent System, Venice 2006, p. 1.

35 J. D. Gaisford et al., The Economics of Biotechnology, Cheltenham 2003; V. Shiva, Biopiracy (annotation 6).

36 M. Blakeney, Communal Intellectual Property Rights of Indigenous People in Cultural Expressions, in: The Journal of World Intellectual Property 1 (1998), no. 6, pp. 985-1002.

37 Sustainable Use of Biodiversity Program Initiative International Development Research Centre, Canada, "Community Biodiversity Registers as a Mechanism the Protection of Indigenous and Local Knowledge", URL: http://idrinfo.idrc.ca/Archive/Corpdocs/114621/community.doc (accessed March 18, 2008).

38 A. V. Anuradha et al., Experiences with Biodiversity Policy-Making and Community Registers in India, London 2001.

state took over land or resources that were held in common.[39] International agreements recognise countries that seek increased access to genetic resources as the "user" countries and those holding the genetic resources and associated traditional knowledge as the "provider" countries.[40]

The Convention on Biological Diversity (CBD),[41] signed by 192 nations, has three main objectives: (a) The conservation of biological diversity (b) The sustainable use of the components of biological diversity and (c) The fair and equitable sharing of the benefits arising from the utilisation of genetic resources. However, a closer examination of the protocol reveals that it allows *nations* and *not* communities that own traditional knowledge to benefit from biotechnological innovation. The state often – either as the government or as a research organisation such as the TBGRI – is the intermediary in the interaction between traditional knowledge and its commercialisation. Thus, though developing countries have been vociferous in their opposition to the propertisation of traditional knowledge, usually the state claims ownership over traditional knowledge, while indigenous communities are reduced to mere bystanders.

Moreover, with near universal approval of the sanctity of private property, commercial entities have found it easy to propertise knowledge, giving rise to a powerful movement to draw the lines of the IPR debate, the battle ground of which is culture – whether music, movies, or traditional knowledge. Pharmaceutical companies have effectively lobbied for worldwide adaption of IPR paradigms based on the exclusivity of knowledge and an emphasis on the product rather than the process. India, which, after independence, followed a process-based patent system ensuring cheap drugs by manipulating the manufacturing process, had to switch to a product-based patent system that hiked the prices of essential drugs, although this did increase the profit of Indian pharmaceutical companies. In line with the TRIPS agreement, the Indian Patent Act of 1970 has been amended twice. The 1970 Act provided a process patent for five to seven years, while in the US and Europe product patents of 15-20 years were the norm. The first amendment in 1999 changed this to a product patent, and in December 2004 India changed its patent law again to meet a January 2005 deadline to allow patents on the chemical molecules used in drugs.[42]

As western IP law is based on individual property ownership, its aims are often incompatible with, if not detrimental to, those of traditional communities. What makes traditional knowledge resistant to propertisation is that it is too deeply rooted in the communities. Whether as part of the tribe's folklore, its medicinal knowledge, or its symbols, traditional knowledge was always part of the community. Until recently what

39 Ken-ichi Abe / Tuck-Po Lye / Wil de Jong, The Political Ecology of Tropical Forests in Southeast Asia, Kyoto 2003; M. Gadgil / R. Guha. This Fissured Land: An Ecological History of India, Berkeley 1993.

40 M. Chouchena-Rojas / M. Ruiz Muller / D. Vivas/ S. Winkler (eds.), Disclosure Requirements: Ensuring Mutual Supportiveness Between the WTO Trips Agreement and the CBD, Gland, Switzerland 2005.

41 For more details see URL: http://www.cbd.int/convention/ (accessed January 15, 2010).

42 E. S. Smith, Opening up to the World: India's Pharmaceutical Companies Prepare for 2005, Stanford, CA 2000, pp. 17-19.

protected it was its inaccessibility.[43] By contrast, the propertisation of knowledge is key to western science. Over the past century, "organised innovation"[44] and patent processes have become the hallmark of industrial Western science.[45] Despite claims to objectivity and value neutrality, the current legal regime is a cultural product of modernity and the West. Such a paradigm that favours the propertisation of knowledge is inherently hostile to traditional knowledge. For instance, take the definition of innovation – what is traditional is not new; there is no identifiable author or inventor; there is no documentation; and finally, traditional knowledge is already in the public domain.[46] Such requirements make it difficult for traditional knowledge – generally handed down from generation to generation – to obtain IP protection.

For many traditional communities, intellectual property is a means of developing and maintaining group identity and survival, rather than promoting individual economic gain. Moreover, memories of colonial exploitation have given rise to resentment over a Western paradigm of knowledge creation that stresses exclusivity and profit garnering as opposed to the open infrastructure of traditional communities.[47] Nevertheless, the rapid expansion of pharmaceutical research makes tribal communities "stakeholders" in the process of knowledge acquisition.[48] And in such a milieu, romanticising traditional knowledge and keeping it open and accessible would only mean that the most organised and the best qualified, which usually are private or organised government interests, can successfully exploit such knowledge. Thus the question is not one of access, but of how some domains of culture attain a proprietary cast, especially when they are protected by patent and inaccessible to the original owners of the knowledge.

The issue is as much cultural as legal. Attempts to address the issue from the perspective of the current IPR regime have, as an inherent weakness, the cultural and legal emphasis that is given to the propertisation of knowledge and organised innovation in the Western system. Thus the emotionally charged term "bio-piracy," by imposing a victimisation/exploitation paradigm, does not capture the complexity of the issue, especially the nuances of differing property paradigms, and the changes that are produced when one cultural paradigm is incorporated into another.

43 E. C. Kansa et al., Protecting (annotation 22), p. 289.

44 R. Landau / N. Rosenberg, The Positive Sum Strategy: Harnessing Technology for Economic Growth, Washington DC 1986, p. 302.

45 S. M. Horrocks, The Internationalisation of Science in a Commercial Context: Research and Development by Overseas Multinationals in Britain before the Mid-1970s, in: British Journal for the History of Science 40 (2007), no. 2, p. 228.

46 T. Greaves, The Intellectual Property of Sovereign Tribes, in: Science Communication 17 (1995), no. 2, pp. 201-213.

47 V. Shiva, Biopiracy (annotation 6).

48 E. C. Kansa et al., Protecting (annotation 22), p. 296.

The "arogya pacha" case[49]

"Arogya Pacha" is a plant (*Trichopus zeylanicus ssp. Travancoricus*)[50] which the TBGRI[51] used, in combination with three more ingredients, to synthesise and patent the Ayurvedic invigorating drug "Jeevani".[52] Significantly, the discovery of the plant was accidental rather than the result of an institutionalised process of benefit sharing. In 1987, an ethno-botanical expedition led by Pushpangadan, then a senior scientist of the Regional Research Laboratory (RRL), Jammu, under the aegis of the All India Coordinated Project on Ethno-biology (AICRPE),[53] was cataloguing the culture and bio-resource utilisation of the Kani. Trekking in the Western Ghat mountains, Pushpangandan noticed that his Kani tribal guides never seemed to grow tired. After being given the promise that they too would benefit if the "arogyapacha" could be commercially exploited, they revealed the closely guarded tribal secret that munching the unripe fruits of the "Arogyapacha" invigorated them.

As Pushpangadan already had access to high class laboratories under the AICRPE program, primary studies were carried out at the Ethno-pharmacology Division of Regional Research Laboratory (RRL), Jammu, leading to the isolation of active compounds from the leaves of the plant.[54] However, as the gestation period for a modern drug from a single compound was up to 15 years, Ayurvedic pharmaceutical methods, for which clinical trials are not legally required, were used to create and patent a multi-herbal formulation

49 For the technical details of the agreement I heavily draw upon A. V. Anuradha et al., Experiences (annotation 38); S. Chaturvedi, Kani Case: A Study for Genbenefit (2007), URL: http://www.ris.org.in/Kani_Case.pdf (accessed August 9, 2010); D.P. Agrawal, The Jeevani Elixir of the Kani Tribes of Kerala and Their Intellectual Property (IP) Rights, URL: http://www.infinityfoundation.com/mandala/t_es/t_es_agraw_jeevani_frameset.htm; N. D. Bijoy, Access and Benefit Sharing from the Indigenous Peoples' Perspective: The Tbgri 'Model, in: Law, Environment and Development Model 3 (2007), no. 1, pp. 1-23; and the official form submitted to the ***Equator*** Initiative ***Prize*** 2002 at the Earth Summit held in Johannesburg that nominated this benefit sharing agreement for the prize.

50 Belonging to the family Trichopodaceae, the plant was a herbaceous, perennial, rhoizomatous plant and was also known as "varahi" – one of the 18 divine herbs mentioned in the ancient Ayurvedic treatises, Charaka Samhita and Susruta Samhita.

51 Tropical Botanic Garden & Research Institute. For more details see annotation 5.

52 Jeevani is claimed to have anti-fatigue, anti-tumour, antioxidant, antiallergic, aphrodisiac, immunomodulatory and hepatoprotective actions. Details of the product can be seen at URL: http://www.jeevani.com/.

53 The AICRPE, a multidisciplinary and multi institutional project initiated in 1982 under the Man and Biosphere Program (MAB) was initially under the Department of Science & Technology, but later transferred to the Ministry of Environment & Forests (MoEF), of the Indian government. Dr. Pushpangadan was the Chief Coordinator of this ambitious programme which operated at 27 centres in India and lasted for 16 years (1982–1988). The AICRPE project documented the use of over 10,000 wild plants used by tribals on a day to day basis. The MoEF played a pivotal role in the TBGRI Benefit Sharing Experiment by providing administrative and financial support through the AICRPE.

54 In total, 12 active compounds were isolated from arogyapacha, and five process patent applications were filed after 1994, the most important being the process of preparing an immune system enhancing anti-fatigue, anti-stress and hepato-protective herbal drug, "Jeevanii" (P. Pushpangadan/ S. Rajasekharan/ V. George, Patent application number 959/MAS/96, 4 June 1996); a process for the Isolation of a Glycolipid Fraction from Trichopus Zelyanicus Possessing Adpatogenic Activity (K. K. Butani / D. K. Gupta / B. S. Taggi / K. K. Anand / R. S. Kapil / P. Pushpangadan / S. Rajasekharan, Patent application number 8/Del/94 (1994)); a patent application for a diabetes medicine (957/MAS/96, June 4, 1996), the second a sport medicine, Vaji (958/MAS/96, 4 June 1996) and third, a process to prepare a herbal preparation for cancer (MAS/650/2001).

"Jeevani" with the Arogyapacha leaf as one of the key ingredients. "Jeevani" was patented as an anti-fatigue, immune-enhancing and liver-protective drug. In November 1995, after a competitive process, exclusive rights for the manufacture and sale of the drug was given to one of India`s largest ayurvedic firms, the Coimbatore-based Arya Vaidya Pharmacy (AVP), for an initial period of seven years at a cost of US$ 50,000 (36,000 euros) for the licence plus two per cent royalty.[55] Several drugs were patented using the leaf.
The TBGRI received Rs 10 lakh (around 16,000 euros) as licence fee and two per cent royalty on ex-factory sales. The TBGRI decided that the Kani tribes would receive 50 per cent of the licence fee, as well as 50 per cent of the royalty obtained by TBGRI on sale of the drug. A seven year tech-license agreement was signed between TGBRI, the Kani trust that was subsequently set up, and the AVP.
A benefit sharing agreement, perfectly in line with the benefit sharing initiatives of Article 8(j) of the UN Convention of Biological Diversity, was signed with the Kani tribe.[56] It respected, preserved and maintained the traditional lifestyle of the Kani. It took their knowledge with their permission and shared the proceeds of the agreement with them. The tribe was financially rewarded, its contribution to the creation of the drugs was acknowledged, and it was marked by an "informed consent" of tribals, sustainable harvesting, bio-diversity conservation and benefit sharing. Hailed widely, the director of the TBGRI in Kerala, P. Pushpangadan, and the Kani tribal leader Kuttimathen Kani, were short listed for the United Nations Equator Initiative Prize 2002 at the Earth Summit held in Johannesburg, for their role in the agreement.

The impact of the benefit sharing agreement

In accordance with the agreement, two of the tribal guides on the 1987 expedition, Kuttimathan and Mallan Kani, were employed as consultants to the project. A trust, The Kerala Kani Samudaya Khshema Trust (Kerala Kani Community Welfare Trust), was set up and registered in November 1997. The trust was comprised of a General Body with adult tribals elected from the 30 Kani settlements, which were brought under a single organisational framework, an Executive Committee, and a 14-member Governing Council. The trust received half the licence fee (Rs 5 lakh 7 or 500 euros) and a share of the royalty which was used to build schools and hospitals, insure the tribes, pay for education and marriage, and also to buy coveted TV sets! Commercialising the drug impacted the Kani community. Traditionally poor and marginalised, they suddenly had

55 Response of Smt. Panabaka Lakshmi, Minister of State for Health & Family Welfare in a written reply to a question by Shri Raghuveer Singh Koshal in the Lok Sabha (Indian Parliament), Press Information Bureau, Government of India, Patenting of Traditional Medicine by USA, March 8, 2006.

56 The Kani tribals belong to a traditionally nomadic community, who now lead a primarily settled life in the forests of the Agast-Hymalai hills of the Western Ghats, a mountain range along south-western India, in the Thiruvananthapuram district of Kerala, India. The Kanis, numbering around 16,000, live in several tribal hamlets, each consisting of 10 to 20 families dispersed in and around the forest areas of the Thiruvanathapuram district. The Kanis are traditional collectors of non-timber forest products from the forest.

access to a nominal amount of money. At 1996 rates, one kilogram of the berries cost Rs. 150 (about three euros), and with an annual yield of 200 kg this meant about Rs 60,000 (about 1,000 euros). This did not convert into wealth but enabled the tribe to have access to a marginally better form of life with better schools, a water supply and a few television sets. Moreover, to meet the demand for a regular supply of the plant to the manufacturing unit, the "arogyapacha" which had traditionally been grown wild, was commercially cultivated. The TBGRI suggested that as only leaves of the plant were needed, several harvests could be made from the perennial plant without actually destroying it. Therefore, in October 1997, a proposal to the Forest Department and Tribal Welfare Department stated that it was willing to pay Kanis seed money for cultivation of the plant, and would subsequently buy leaves harvested from these plants. This was not only a sustainable use of the natural resource, but the sale of leaves would also give the Kanis an extra source of income. The TBGRI also assured the state department that no private parties would be involved in cultivating the plant. Thus, in 1995, the government's Integrated Tribal Development Project (ITDP) in Nedumangad initiated a scheme in collaboration with TBGRI to help the Kanis grow medicinal plants in their settlements. Under the project, 50 select families received Rs 2,000 each (about 30 euros), with 20.25 hectares coming under cultivation. The TBGRI bought five tonnes of the leaves every month from the Kanis, paying Rs 30 (0.50 euro) per kg for the chemical trial and for pilot production. The model eventually benefitted over 16,000 Kani people, comprising over seven hundred families, or roughly half the tribe.[57] Finally, in consultation with TBGRI, the Executive Committee of the Trust rewarded the three Kani tribesmen who provided the information about Arogyapacha. Rs. 20,000 each (about 330 euros) were given to Sri. Mallan Kani and Sri. Kuttimathan Kani, and Rs. 10,000 to Eachan Kani – the three guides on the original expedition.

The creation of new paradigms

The aftermath of the agreement shows that even well meaning attempts at equitable distribution of resources can lead to unanticipated problems concerning questions of ownership. This was evident in rival concepts for the institutionalisation of ownership that affected the actual implementation of the agreement.

Even though the agreement had been hailed internationally, it came into conflict with how the *state defined ownership of indigenous resources*. Under the 1927 Indian Forests Act, forests and anything that belonged to it were state property, and only minor produce could be taken out. Kani tribals taking leaves out were stopped at forest checkpoints under the pretext that "arogyapacha" was not classified as "micro-produce". Prices shot up, and smuggling and illegal cultivation of the plant became rife. The state's response was a blanket ban on taking the plant out of the forest. This made it difficult to distinguish

57 Official reports from the Forest Department of Kerala State, available at URL: http://www.forest.kerala.gov.in/.

between illegally and legally sourced fruits and plants from the licensed cultivations. The AVP claimed that they used only legally sourced produce in Jeevani. However, unscrupulous middlemen had used the loopholes in the agreement to smuggle out the herb and, given its popularity, it is possible that both legally and illegally sourced leaves were used. This indicates a key gap in the current intellectual property paradigms, that tries to address the basic issue of inequity in property relations by measures such as benefit sharing – unless colonial era laws that restrict property rights are annulled or changed, traditional communities will not be able to benefit commercially from their knowledge, since any physical manifestation of that knowledge – in this case the actual arogyapacha plant belongs to the state.

Moreover, state organs dealing with tribal welfare themselves disagreed on the best way in which to help the tribes. Though the TBGRI, and especially Director Pushpangandan, who had tried to ensure that the tribes were considered stake holders in the system, the official body for tribal welfare – the Kerala Institute for Research, Training and Development of Scheduled Castes and Scheduled Tribes (KIRTADS) – clashed with the TBGRI, which it saw as an interloper. Supported by NGOs, KIRTADS argued that the TBGRI was devaluing traditional knowledge. In September 1995, claiming that "purity of the practitioner" was central to tribal culture, a group of nine Kani healers wrote a letter to the chief minister of Kerala opposing the sale of their knowledge. Non-tribal activists tried to dissuade the Kanis from entering into the deal with TBGRI and selling "arogyapacha". The Kani case thus demonstrates a clash between differing paradigms on how best to look after indigenous people – a contradiction that was prominent in the disagreement inherent in the official paternalistic approach to tribal welfare as well as the efforts of activists to discourage what *they* saw as an undermining of the cultural ethos and sacred nature of tribal knowledge.

The propertisation of its traditional knowledge divided the Kani. Community knowledge often relies on a shared cultural perception of belonging, something that monetary incentives, rooted in western intellectual property law with its emphasis on the individual owner, can destroy. As Hirsch and Strathern point out, "ownership claims emerge in a world of owners".[58] The tribal knowledge that the "Jeevani" was based on was fairly widespread, but the TBGRI made agreements with only one section of the tribe – the section that the tribal guides who had accompanied the 1987 expedition, and who were personally known to the director, belonged to. Since the other Kani groups protested their perceived exclusion, the trust funds could not be distributed for a few years.

Finally, the agreement itself fell foul of changing paradigms in intellectual property law. According to the pre-1999 process patent system, the TBGRI applied for the patent in 1996, patenting only the process but not the actual product. However, after India signed the WTO the product patent paradigm was accepted as the cornerstone of Indian intellectual property law. This hit the Kani tribe. Since the original process patent on Jeevani's

58 E. Hirsch / M. Strathern, Transactions (annotation 21), p. 4.

formulation has now expired, the AVP and other companies do not have to pay royalties anymore. On the other hand, the mounting popularity of the drug that is now sold at Rs 160 (about 3 euros) for a 75gm container, has meant that the AVP has profited. The trust has become dysfunctional and the tribals have been left high and dry. Newspapers carried the poignant story of how the tribal guides who had revealed the sacred knowledge have now fallen into poverty.[59] The "arogyapacha" case illustrates how, although in theory traditionally marginalised communities can profit from the interaction of their communities with a global knowledge society, the tribes themselves are unable to profit from the demands of a modern knowledge economy – instead, they need someone to help them navigate. Thus, the indigenous community does not have the role of agency – this is given to an external actor, such as a well meaning coalition of NGOs in the case of the San tribe and the Hoodia cactus, and a research agency such as the TBGRI in the case of the "arogyapacha".

The agreement also marked a key shift in the cultural ethos of the tribe – while earlier notions of exclusivity were defined by ritual status in the tribe or membership in it, now the knowledge could be bought. It became a "resource" and gave rise to new perceptions of assets and ownership over them. Thus for indigenous people who are marginalised and poor, it seems access to immediate tangible wealth is more important than the debate over cultural commoditisation or the exploitation of indigenous resources that dominates much of the literature. Such ownership conflicts, that emerged only after a monetary value had been put on traditional knowledge, challenge conceptions of indigenous tribes, and their perceived helplessness that has dominated activist literature and the literature of such organisations such as the North America-based Rural Advancement Foundation International (RAFI), the Europe-based Genetic Resources Action International (GRAIN) and the Asian activist group, the Third World Network. It is significant that the impetus behind the impulse to share the knowledge was not altruistic but essentially a way of making money. It is significant that the petition to the chief minister, written by the tribal leaders, revolved around the sacredness of tribal knowledge. Thus, unlike the activist narrative that sees indigenous people as undifferentiated victims, it is significant that one part of the tribe was more commercially inclined, and it was the tribal elders who were more Puritanical and more traditional resented this.

Patent law is closely tied to the monetisation of traditional knowledge. Thus the Kani tribals benefitted only when India was a signatory to the process paradigm of intellectual property law rights and they were the first victims when India switched to a product paradigm. The benefit sharing agreement was not updated when it lapsed, even though the tribes had given up their sacred knowledge, and the royalties came to a halt once the initial agreement had lapsed.

The Kani case also underscores how tribes in the developing world are individual citizens of the nation state and have no special privileges as indigenous people. The Kani where

59 K. A. Shaji, Herbal Wars, in: Tehelka Magazine, September 27, 2008.

persecuted by the Indian state for having taken out restricted forest produce, it was only mediation by external actors such as activists and state organs that enabled them to profit from their knowledge, and when the intellectual property rights paradigms changed as a result of action by the Indian state, they were among the first victims.

At the core of all these issues is how previously communal knowledge can be reconciled with the propertisation of knowledge that is integral to the globalised knowledge economy.

Who defines the tribe? Who should benefit from the commercialisation of traditional knowledge? How would tribes mediate their role both as indigenous people who have been kept outside the mainstream of modernity and yet who profit from the demands that modernity and globalisation give rise to? Can knowledge that has not been properly propertised benefit from its commercialisation? Answers to these questions are rarely simple, and are complicated by the propertisation of knowledge. For example, where does one draw the line when it comes to profit that comes from traditional knowledge? The Kani case demonstrated that benefit sharing agreements themselves mean a process of selection and exclusivity. Rather than being a straightforward agreement between the tribe and those who benefit from knowledge, the agreement itself is subject to changing property paradigms. Finally, there is the question of when indigenous people should commercialise their knowledge – must the benefits accrue only after the commercial potential of the drug has been utilised, or must agreements be drawn up even before the research begins? Or, going further, must the research potential of traditional knowledge be accessed before bio prospecting even begins?

The "arogyapacha" case shows that benefit sharing agreements are not simple tools, but are fundamentally complex, and much of this has to do with the different conceptions of property rights and the propertisation of knowledge that this entails. Benefit sharing agreements may be seen as a pioneering attempt to alleviate the inequities inherent in the commercialisation of traditional knowledge. In reality, as the arogyapacha case shows, intentions often fall short of actual empirical reality. Thus, ownership patterns remain a process and an arena of negotiation and contention in the global knowledge economy.

It marks an arena of arbitration between two very different concepts – an individualised, property oriented intellectual property paradigm, and an alternative commons paradigm, both with their own cultural roots. This goes against the perception of activist literature that revolves around a victim/ exploiter paradigm. Rather than idealise one and exercise the other, it is important to understand that negotiated settlements to ownership questions themselves throw up new paradigms of propertisation.

Current definitions of tribes and indigenous people are essentially constructions of the modern state rather than reflections of empirical reality underscoring the need to understand these categories analytically rather than legally. Issues such as who defines the tribe, the legacy of colonial attitudes to indigenous people as illustrated in the Indian Forest Act of 1927, and the paternalistic attitude of the TBGRI and other agencies such as KIRTAD, affect the operationalisation of benefit sharing agreements. The "arogyapacha" case also shows the sudden influx of financial wealth into a traditional community can

have a potentially destabilising effect that challenges accepted notions of culture, society, and the economy of these marginalised tribes.

Controversies that swirl around the propertisation of traditional wisdom bring to the fore the role of the nation state in the intellectual property rights debate, the impact of changing paradigms in the knowledge economy and intellectual property rights on historically marginalised indigenous people, and the crucial link between innovation and pre-knowledge, especially in emerging fields such as biotechnology and medical research. At the heart of the issue is the close relation between innovation and research, and the larger question of whether innovation is tied to the power of exclusion in knowledge. It remains to be seen whether challenges that are inherent in the propertisation of traditional knowledge can be addressed within the current paradigms of intellectual property rights.