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Organic Agriculture and Poverty Reduction in Asia:

China and India focus

Daniele Giovannucci

for IFAD Office of Evaluation

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India Advisory Panel

Shri P. Bhattacharya, National Centre of Organic Farming; Shri Satish Chandar, Joint Secretary; Dr. M.L. Choudary, Horticulture Commissioner; Dr. D. K. Das, Professor Emeritus, Indian Agricultural Research Institute; Daniel Gustaffson, Resident Representative, FAO Delhi; Dr. G. Kalloo, Indian Council of Agricultural Research (ICAR); Mr. C. D. Mayee, Agricultural Commissioner; Mr. Tej Partap, Vice Chancellor of Hill Agriculture University in India; Mr. R. K. Pathah, Director of CISTR, Lucknow; Mr. Vijay Sardana, Executive Director, Centre for International Trade in Agriculture; Shri A.K. Singh, Additional Secretary, Ministry of Agriculture (MoA); Ms. Radha Singh, Secretary, MoA; Mr. Sompal, Chairman of National Commission for Farmers; Shri Dr. N. Tripati, Additional Commissioner; K.S. Gopal, Centre for Environment Concerns; Mr. L.P. Jena, Centre for International Trade in Agriculture; Dr. Madhav Karki, Regional Programme Coordinator, Medicinal and Aromatic Plants Program in Asia, International Development Research Centre; Dr. R.K. Pathak, Director, Central Institute for Subtropical Horticulture; Mr. Gokul Patnaik, Managing Director, Global Agrisystem; Dr. R.A. Ram, Central Institute for Subtropical Horticulture; Prof. Santosh Satya, Professor and Head, Centre for Rural Development and Technology, Indian Institute of Technology; Dr. Noves Sabir, National Centre for Integrated Pest Management; Dr. Gurbachan Singh, Assistant Director General (Agronomy), ICAR; Dr. P.D. Sharma, Assistant Director General (Soils), ICAR; Dr. S.K. Sharma, Project Director, Directorate for Cropping Systems Research, ICAR.

Principal Researchers

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Acronyms

APEDA	Agricultural and Processed Food Products Export Development Authority
CGFDC	China Green Food Development Center
CIMS	Sustainable Markets Intelligence Center
CNAB	China National Accreditation Board
CNCA	Committee for National Certification and Accreditation
CNPAP	China Netherlands Poverty Alleviation Project
CNGFDC	China National Green Food Development Center
EARF	Eco-Agri Research Foundation
FAO	Food and Agriculture Organization
FIBL	Research Institute of Organic Agriculture (*Forschungsinstitut für Biologischen Landbau)*
GATT	General Agreement on Tariff and Trade
HACCP	Hazards Analysis at Critical Control Points
ICS	Internal Control Systems
IFAD	International Fund for Agriculture Development
IFOAM	International Federation of Organic Agriculture Movements
IFPRI	International Food Policy Research Institute
IIRD	Institute for Integrated Rural Development
IPM	Integrated Pest Management
ISO	International Standards Organization
IWDP	Integrated Watershed Development Project
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
OFDC	Organic Food Development Center China
OTRDC	Organic Tea Research and Development Center China
OFCC	Organic Food Certification Center (Huaxia)
PDS	Peermade Development Society
SASA	Social Accountability and Sustainable Agriculture
SEPA	State Environment Protection Administration China
SOEL	Stiftung Oekologie und Landbau (Foundation of Ecology and Agriculture)
SPS	Sanitary Phytosanitary Agreement (WTO)
TBT	Technical Barriers to Trade Agreement (WTO)
UNESCAP	United Nations Economic and Social Commission for Asia and Pacific
UOCB	Uttaranchal Organic Commodity Board
WTO	World Trade Organization

Currencies and Measurements and Weights

1 USD = 8.3 RMB for China in mid 2004
1 USD = 45.8 Rupee for India in mid 2004

1ha = 15 mu Traditional “mu” is used in some tables when discussing small landholdings that are fractions of a hectare.

Weights are metric kg or ton

ORGANIC AGRICULTURE AND POVERTY REDUCTION IN ASIA:
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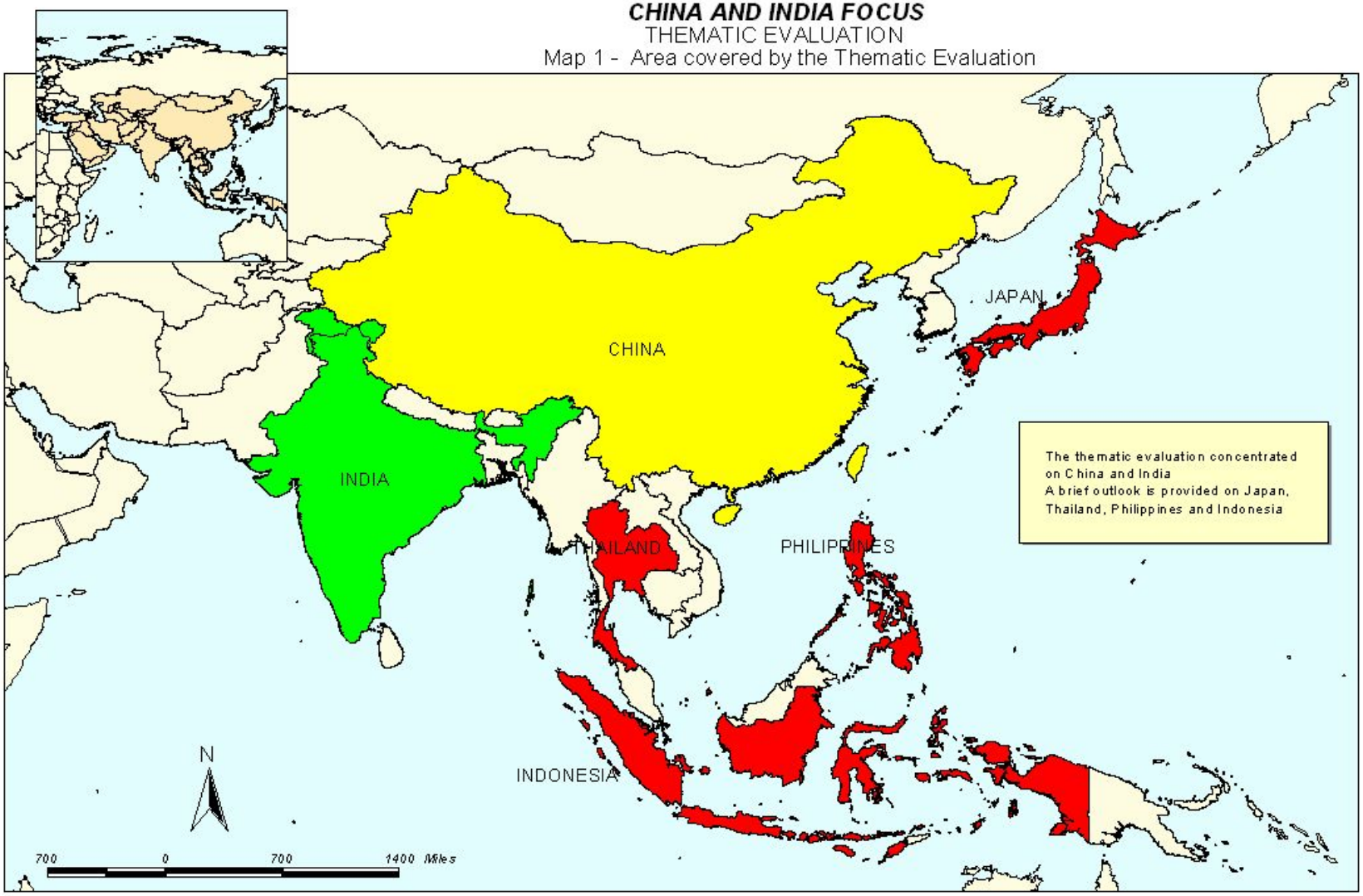
THEMATIC EVALUATION

Map 1 - Area covered by the Thematic Evaluation



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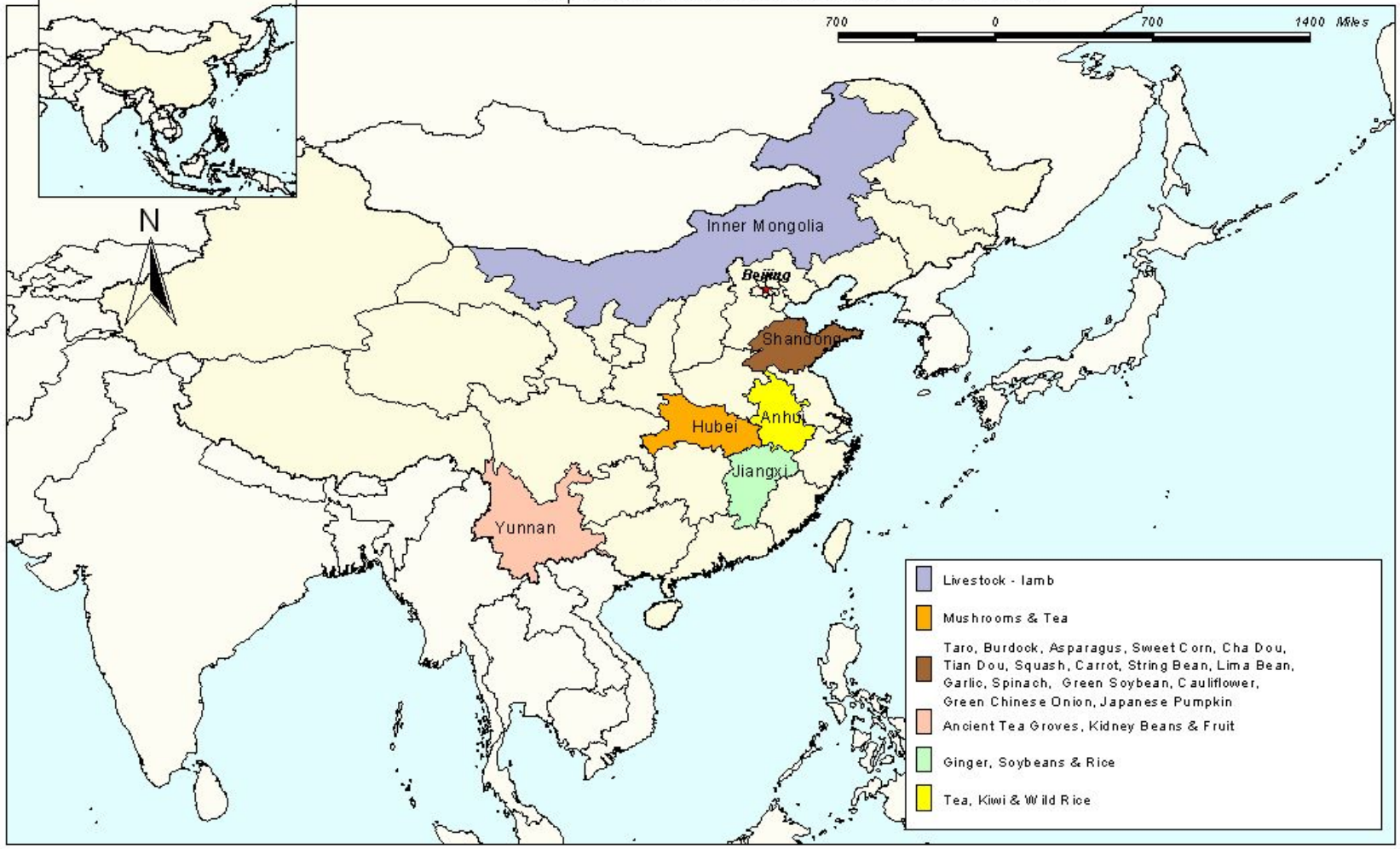
ORGANIC AGRICULTURE AND POVERTY REDUCTION IN ASIA:
CHINA AND INDIA FOCUS
THEMATIC EVALUATION
Map 2 - Location of case studies in China Provinces



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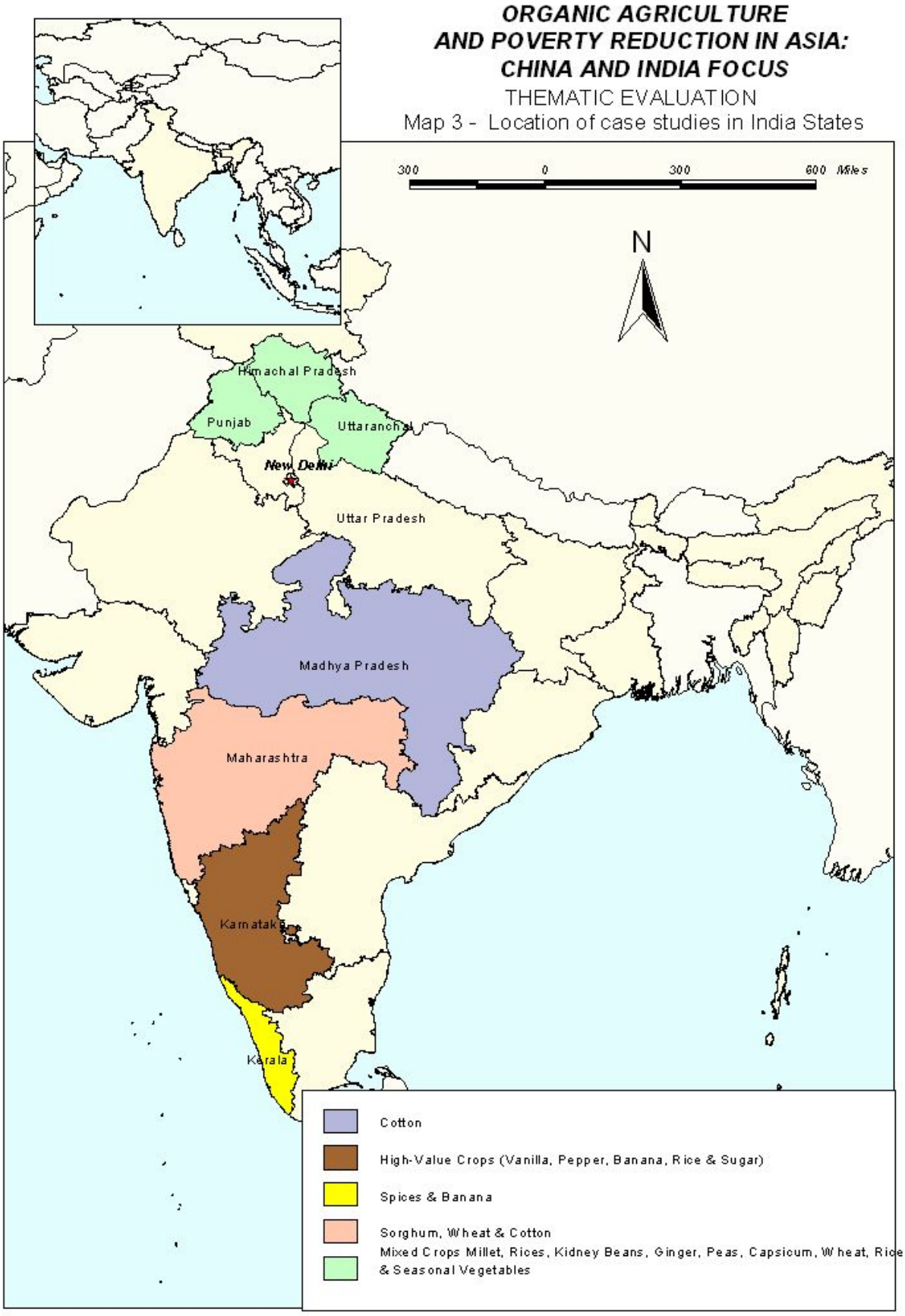

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Preface

The emerging and increasing market opportunities for organics are conducive for the adoption of organic agriculture among small scale farmers in India and China. However, some studies suggest that major constraints exist for small scale farmers to reach these markets and at the same time secure a price premium (Janz et al., 2003; Kotschi, 2003), while other evidence suggests that it is possible to support farmers to access organic markets and benefit, especially in terms of increased premiums (UNESCAP 2003, IFOAM 2003). For the International Fund for Agricultural Development (IFAD) to consider including organic farming in the projects it supports in these countries, it is essential to understand the factors that allow small farmers to resolve the most common problems related to the production and marketing of organic agricultural products.

The primary goal of this evaluation is to enable a better understanding of organic agriculture in Asia, where two-thirds of the world's poor live (IFAD 2002 p.3). In particular this evaluation aims to understand the potential value of organics to farmers — especially small or poor ones — and the role of organics as an option in development programs. It is organized into six chapters.

The first chapter provides an introduction to the characteristics of the farmers, products, and situations studied. It includes a brief synopsis of the 14 cases and offers an overview of the current situation in India and China.

Chapter 2 offers an overview of key market-related issues with an update on the regional and international situation of organic agriculture and its trade statistics.

Chapter 3 evaluates the key characteristics of organic production and marketing. It begins with a critical look at the conversion process, issues of fertility and plant protection. The organizational aspects are reviewed to better understand the value of different kinds (farmer-led, company-led, and government or non-governmental organization-led) in smallholder projects. Cost of production and yields under organic systems are compared to the costs and yields of both traditional or rustic systems and those using conventional methods with synthetic fertilizers and agrochemicals. To go beyond the snapshot view of a complex multi-year process, this section offers a view of the temporal impact of conversion from both conventional systems and traditional systems to organic methods. The second part of this chapter looks at the post harvest issues. This covers both domestic and export markets and the market channels available for small farmers. It also looks at China's Green Foods, one of the most important success stories in Asian agriculture. Finally, the chapter closes with a view of pricing and the premiums received for organic produce.

Chapter 4 reviews the key impacts — both positive and negative — that are associated with the adoption of organic methods. These include: food security, health issues, direct value to producers, externalities that affect both local communities and government and natural resource conservation. Because such impacts have universal relevance, they are discussed at both the macro and micro levels

Chapter 5 covers the public sector roles and how these are affecting organic agriculture. It explores how institutions, both public and private, serve as a component of organic adoption.

Chapter 6 closes with a series of concise conclusions to highlight the most important lessons of the case studies and to identify the factors that are most important to facilitate the adoption of organic agriculture. This section wraps up with the key success factors extracted from project experience and the criteria for selecting or designing suitable organic projects. This includes some best practice approaches for developing public-private sector partnerships around organics.

A series of appendices deepen some of the lessons gathered from the projects and from international experience.

Basic Definitions for the Report

Organic agriculture is defined in a number of documents, two of which are recognized here.

> … the term ‘ organic’ is best thought of as referring not to the type of inputs used, but to the concept of the farm as an organism, in which all the components — the soil minerals, organic matter, microorganisms, insects, plants, animals and humans — interact to create a coherent, self-regulating and stable whole. Reliance on external inputs, whether chemical or organic, is reduced as far as possible. (Lampkin *et al.* 1999).
>
> Organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibers. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimize quality in all aspects of agriculture and the environment. Organic agriculture dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilizers, pesticides, and pharmaceuticals. Instead it allows the powerful laws of nature to increase both agricultural yields and disease resistance. Organic agriculture adheres to globally accepted principles, which are implemented within local social-economic, climatic and cultural settings. As a logical consequence, the International Federation of Organic Agriculture Movements (IFOAM) stresses and supports the development of self-supporting systems on local and regional levels. (IFOAM 2000).

There is no single definition for organic farming. Although the Codex Alimentarius and IFOAM definitions are widely accepted, countries and projects tend to have their own, albeit usually minor, variations. While a single definition is important in terms of harmonized standards to facilitate international trade and consumer acceptance, organics also -- by their very definition -- lend themselves to the inherent variations of a particular place and set of conditions. This is certainly the case with the countries examined for this evaluation. For this reason and in order to avoid burdening the on-farm research with cumbersome definitions, we have adopted an admittedly simple definition of organic agriculture that is both in keeping with the spirit of more complete ones and also practicable for clear distinctions at the research level. We use the term “certifiable” to indicate farming systems that meet many of the criteria for certification, especially an internal control system, or that meet local systems of certification but have not applied for internationally recognized certification.

Important parts of the farming systems in China and India have similarities to organics. Certified Green Foods (China) are produced in volumes that are more than ten times greater than organics and India's Jaivic Krishi (or Vedic Krishi) systems are similarly far more widespread. If the interests of farmers are a foremost priority, these related systems cannot be disregarded. Consequently, the research for this evaluation acknowledges these farming systems and accordingly defines them below.

- **Organic Farming** – internationally certifiable (with controls and traceability) farm management system that is in harmony with local environment using land husbandry techniques such as soil-conservation measures, crop rotation and the application of agronomic, biological and manual methods instead of synthetic inputs.
- **Green Foods** - are domestically certified and labeled to be safe from chemical contamination and whose production and processing use environmentally friendly processes with reduced use of synthetic inputs.
- **Jaivic Krishi** - traditional holistic farming system based on ancient techniques for soil and animal management that eschew synthetic inputs and are in harmony with natural on-farm inputs and cycles. This system is not certified and is sometimes referred to as Vedic Krishi.
- **Traditional Farming** – this natural farming tends to be subsistence oriented using few or no purchased inputs.

- **Conventional or Intensive (External Input) Farming** – Green revolution methods designed to maximize profit often by extracting maximum output using external purchased inputs, especially mineral fertilizers and synthetic agro-chemicals (pesticides, herbicides, veterinary, etc.) and irrigation to support production.

Methodology and Case Study Selection

The primary goal of this report is to enable a better understanding of organic agriculture in Asia. In particular, its potential value for farmers -- especially small or poor ones -- and the role of organics as an option in development programs.

Consistent with international evaluation practice, three main criteria were assessed in general terms: impact on rural poverty; performance of the projects; and roles of the partners. The evaluation criteria were designed to clarify what happened in the projects studied and to answer questions, such as: "What works and what doesn't?" and "What are the main ingredients responsible for the success or failures?" Most of the cases focused on those poor that earn less than USD 1 per day. Since the evaluation considers a very diverse set of case studies that mostly lack adequate baseline data for the purposes of evaluation, the intent is not to determine precise differences in measures of poverty or performance but rather to generate lessons and insights about whether organics should be a part of future projects. And, if so, under what circumstances or conditions it should be fostered so as to optimize benefits and avoid problems.

The document investigates the main factors (agro-ecological, socio-economic, and institutional) that hinder or contribute to the development of organic farming. It explores the realistic pros and cons of organic adoption in terms of poverty reduction (as measured by improved income, reduced risk, and food security), food safety, and trade. Taking a market-oriented value-chain focus, it also addresses key project investment issues and the organizational forms of organic agriculture such as adoption of standards, certification, civil organizations, and marketing channels.

The findings presented in this evaluation come primarily from the extensive fieldwork conducted in Asia's two largest agricultural producers: China and India between May and July of 2004. Both countries have a considerable amount of organic or ecologically friendly agriculture. However both are distinct in their history, approaches, and impact. A series of case studies, at varying levels of success, were selected to be representative of a broad variety of situations. The selection parameters therefore included diversity in: agro-ecological zones, product types, organizational structures, geographic areas, and market orientation.

Table A. General case study selection parameters

Agro-ecological zone	Size of farm	Organizational structure	Crops	Value adding operations	Number of farmers involved	Market orientation
Temperate, tropical, arid, mountainous, flat land	Mostly < 1 hectare some much larger	Farmer group, NGO, company, government agency	Diverse representation of the most important	Post harvest storage and processing	Average thousands. Range from 70 - 10 000	Local or subsistence, domestic, export

These selections align in broad terms with the IFAD strategies in India and China as noted in recent strategy documents and in staff discussions. Cases were selected from recognized poverty areas including some of the most vulnerable segments of society: ethnic minorities, tribal people, and women. In India, for example many of the cases included tribal populations since these comprise only 8% of the total population but account for 40% of the internally displaced, a major characteristic of

poverty (IFAD 2004). Most of the counties where the case studies are situated are ranked among the lowest poverty areas by several measures (UN 2003 p 26-27). In China, for example, many of the cases are in relatively remote mountainous areas where almost all of the 65 million officially recognized income-poor live (IFAD 2002 p.4). They are located where ecological issues such as soil erosion, water shortage and even desertification are prevalent. They concentrate on both staple foods as well as new high-value options. The cases address a variety of institutional structures and the relative merits of each.

The case studies were a vital element to fill the information gap about the measurable detriments or benefits of organic agriculture. Some data such as that for yields results from a combination of interviews with farmers, middlemen, non-governmental organizations (NGOs), government extension agents. Although the case studies provide primary evidence, this is supplemented with information from a number of recent reports (published and referenced). Some of anecdotal evidence is also considered when it is consistently reported and credible – this is necessary due to the lack of existing baseline studies and sound measurement techniques. In order to provide a broader context in which to frame this evaluation a more cursory research was also conducted in a handful of other Asian countries. These countries have a history in organics (i.e. Japan and Thailand), provide important regional markets for Asian organics (Korea and Japan), or have substantial agricultural sectors where future organic approaches could be significant. In addition to this primary data, the evaluation has made use of more than 100 relevant publications that have been released in recent years and unpublished information from researchers in several Asian countries as well as from institutions such as the FAO.

The initial approach paper, the methodology, and the planned output were individually reviewed and developed by an international team that comprises the Core Learning Partnership (CLP) and the Team Leader. The final evaluation was vetted by the five-member Scientific Committee and commented on by the CLP and an International Advisory Panel of experts that include representation from the private sector. Conferences in India and Beijing, under the guidance of Advisory Panels of eminent agricultural experts and farmer representatives in each country, reviewed and discussed the findings.

Organic Agriculture and Poverty Reduction in Asia:
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Thematic Evaluation

Executive Summary

Introduction and methodology

1. The primary goal of this report is to enable a better understanding of organic agriculture in Asia and to clarify how organics can serve or hinder small farmers and rural communities -- especially poor ones. The International Fund for Agricultural Development commissioned this evaluation to determine the role of organics in development programs and under what circumstances they should be integrated into future strategies.

2. Organic produce is a fast-growing USD 27 billion segment of the food industry and is increasingly drawing the attention of farmers, governments and development agencies. Organic farming as a systematized and certifiable approach to agriculture is a relatively new phenomenon. It is no surprise that its adoption faces some challenges among both farmers and the public sector. Policymakers tend to be polarized in their views of organic farming; they see it either as a very lucrative modern niche or as a traditional and perhaps backward approach used by the poorest farmers. This interesting dichotomy reflects the somewhat different experiences and approaches taken in different countries.

3. This study evaluated organic initiatives that are diverse in terms of: agro-ecological zones, product types, institutional structures, geographic areas, and market orientation. Taking a market-oriented focus, the document also addresses key investment issues and the organizational forms of organic agriculture such as adoption of standards, certification, civil organizations, value-chains, and marketing channels. It draws primarily from the work of nine researchers on 14 case studies in China and India, as well as reviews of several other countries and more than 100 related studies and documents. Some anecdotal evidence is included when it is consistently reported and credible – this is necessary due to the lack of baseline studies and useful measurements in many small farmer projects. India and China are the dominant focus countries since these two together have more than half of the world's farming households. The methodology and output were reviewed by an international team that comprises the Core Learning Partnership. The final evaluation was critically reviewed by the five-member Scientific Committee and an International Advisory Panel (See Acknowledgments for details).

4. For the purposes of this evaluation, clear distinctions are made between different farming methods. Briefly, *Organic Farming* is a certifiable farm management system (with controls and traceability) that is in harmony with the local environment using land husbandry techniques such as soil-conservation measures, crop rotation and the application of agronomic, biological and manual methods instead of synthetic inputs. *Traditional Farming* is often subsistence oriented using few or no purchased inputs. *Conventional or Intensive Farming* utilizes Green revolution methods designed to maximize profit often by extracting maximum output using external purchased inputs, especially mineral fertilizers and synthetic agro-chemicals and irrigation to support production.

Organic context

5. In many countries, governments have initially adopted a position of benign neglect toward what is typically perceived as a marginal agricultural segment. However, estimates for India suggest that most of its farming community relies on traditional or organic methods. China recognized the economic and ecological benefits of organic agriculture at the early stages and its local and provincial governments invested in a number of successful export-oriented enterprises.

6. In many parts of Asia, conventional farming approaches have made considerable inroads using potent fertilizers, pesticides, and herbicides along with new hybrid varietals and irrigation. For many small farmers, especially those in sub-optimal or more remote areas, such conventional methods are less relevant and traditional farming methods have changed little from the centuries-old practices of their forebears. Organics may be especially relevant for them. Organic agriculture has seen two primary avenues of expansion: among the smaller farmers - often poor - who either chose to eschew or could not afford Green revolution approaches and among the commercially oriented farmers who perceived new market opportunities in certified organic products. Consequently, projects and policies designed to support organic or eco-friendly agriculture must respond to these distinctions.

Overview of markets and marketing

7. Global organic sales have achieved double-digit annual growth for more than a decade. The domestic organic market in China is valued at approximately USD 150 million retail; less than 1% of the total market. The value of exports has expanded from less than USD 1 million in the mid-1990s to about USD 142 million in 2003. Estimates for 2004 approach USD 200 million. In India organic development has —until very recently— focused predominantly on farmer welfare and localized benefits rather than market development. A number of organic products are sold informally but the domestic market for certified organics is no more than a couple million US dollars. India's 2003 organic exports are officially estimated at USD 15.5 million. China’s certified Green Foods are one of the most successful eco-labeling programs in the world, because of their rate of growth in the past decade, their similarities to organics, and their sheer volume, and are well worth understanding since they set a precedent for organics. Annual Green Food sales should reach close to USD 12 billion in 2004; nearly matching the size of the world’s largest organic sector: the U.S.

8. We estimate that China has 600 000 - 700 000 hectares of certified organic land (all uses) in 2004 and 1 100 companies and farms are being certified. India's certified organic farming area has recently surged to 2.5 million ha (all uses) and 332 certifications have been issued in the past year. For both, this represents a very dramatic rate of growth.

Characteristics of Organic Production and Markets

9. The switch to organic farming from a traditional or rustic form of cultivation tends to increase labor costs but has positive consequences in terms of yields and profitability. For traditional producers organic systems provide better incomes. When switching from intensive forms of agriculture to organic farming, labor costs are higher, input costs are lower, yields may be reduced, and overall income is higher. First-year losses in yields were often considerable. By the third year, yields had typically stabilized. Although some stabilized at a yield level lower than before, some of the more sophisticated farmers were able to actually improve yields with organic methods. Measuring total farm yields is more appropriate than measuring single crops since some diversification away from dependence on a single cash crop is a characteristic of organic farming. Organic systems, primarily because of price premiums, are generally more profitable than conventional and more than make up for yields or productivity losses that may occur during transition.

10. Greater income is the reason most farmers give for converting to organic agriculture, followed by health, ideological, and environmental reasons. First movers tend to be farmers using rustic or traditional methods of cultivation and farmers with access to certification and marketing.

11. Domestic market channels for organic products are limited in China, and even more scarce in India. Many farmers are primarily oriented toward export sales. However, a surprising number — while not eschewing the market — are primarily focused on the intrinsic local benefits of organic production. In such cases, lower production costs, improved soils, fewer toxic chemicals, self-reliance in inputs, and harmony with nature were cited as the most important reasons for being organic.

12. Many market-oriented organic farmers have some support systems for certification and marketing to induce their adoption of strict organic practices. The most difficult hurdle for small farmers to surmount is the lack of adequate technical advice (extension) on production technology.

The second most important requirement is market information or promotion. Its importance reflects the typically modest success of the firms or NGOs that undertake marketing and sales. Financing for transition or expansion was ranked next in importance followed by lower cost of certification and then assistance with quality management and internal control systems.

13. It is important to note that the markets for quality safe foods —for which organic products are particularly well-suited — are large and are likely to continue growing strongly. This demand makes safety and quality increasing prerequisites for entry to the market but, as the Green Food experience in China has shown, price premiums can be limited. While organic premiums are very high in a few markets, the global experience is somewhat less promising as more and larger producers enter this lucrative niche. Established organic commodities like rice and sugar and coffee have already seen considerable reductions in price premiums. Promises to farmers about enormous market profits may prove to be misleading, especially after the 2-3 years it typically takes to be certified.

14. While this absence of synthetic agrochemicals is one component of organic farming, there are also significant other requirements such as meeting a number of production and environmental standards and keeping adequate records that must be satisfied in order to be certified as organic. For farmers, developing and managing their own Internal Control Systems is a way to both minimize compliance costs and improve their association's responsibility and management skills and so become better prepared to manage the plethora of other standards that are increasingly mandated for trade. Certification is costly for small farmers and often not in the name or control of the farmers that are certified. This limits their market options to those dictated by the certificate owner—usually a firm—and possibly diminishes their interest and commitment to organic farming.

15. There is generally adequate availability of organic inputs and most organic projects did not suffer from negative plant health or soil fertility issues. Instead, many noted improved soil characteristics. Organic systems work particularly well with livestock components, especially in less fertile areas. Livestock can facilitate fertilization, provide power and fuel, and are an excellent source of food security and income diversification.

16. Given that labor requirements are generally higher than in conventional systems, organic agriculture can prove particularly effective in bringing redistribution of resources in areas where the labor force is underemployed. This can help contribute to rural stability, especially where labor is abundant and migration occurs.

Impacts of organic agriculture and the pros and cons of adoption

17. Organics have not cornered the market on good agricultural practices. Other farming systems such as Integrated Pest Management and certification systems such as EUREP-GAP share common processes with organics. Organic agriculture, as a systemic development package, fits into the approach of 'new growth economics', that stresses knowledge and innovation as factors in production combined with new institutional models (e.g. agro-industry clusters, forward-backward linkages, etc.). Organic farming systems embody many elements of sustainability that make them suitable tools to reduce poverty:

- long-term commitment to the fertility of the soil, particularly addressing soil erosion and degradation or desertification
- reduction of external energy consumption and water requirements
- knowledge-intensive rather than capital and resource-intensive; coupling traditional knowledge with modern methods such as bio-controls and efficient nutrient management
- integration of traditional knowledge, joint problem solving, and farmer to farmer exchange can improve community relations and lead to greater involvement and commitment of producers

18. For small and poor farmers, organic farming can be an effective risk management tool that reduces their input costs, diversifies their production, and improves local food security. For rural

communities it can provide improved incomes, better resource management, and more labor opportunities. For agricultural competitiveness, it meets the increasing demands for improved food safety methods and traceability that are becoming the hallmark of high-value agricultural trade. For governments, organics reduce the possibility of environmental contamination, reduce the use of chemical inputs (often imported), and minimize the public health costs of pesticide poisoning. For nearly everyone involved in its production, processing, and trade, organic agriculture quite simply earns more money.

19. Today, the shifting regulatory, business, and consumer environments are inducing fundamental changes in the global trade regime that increase the demand for quality and safety standards. This in turn has profound implications especially for small and medium producers. Since organics intrinsically meet many emerging trade standards, organic methods can actually help producers to overcome barriers to entry that are presented by such standards.

Workable solutions: public sector roles in each country

20. In many countries agricultural policies have not favored organic agriculture. However this is changing as the fiscal and risk benefits are increasingly realized at the government level. Both China and India have a considerable amount of organic or ecologically friendly agriculture and like many countries are working to adopt appropriate organic standards and policies. However both are somewhat distinct in their development and approaches.

21. Today, much of the market-oriented organic farming is an arrangement between trading companies and farmers in which the companies are clearly dominant. This model is particularly pervasive in the developed coastal regions of China and has provided useful opportunities for farmers in these areas where agriculture is under intense pressure from industrialization and urban expansion. The same corporate model now also prevails in poorer regions as well but puts farmers at a disadvantage since most of them labor with weak farmer organization, few production scale efficiencies, and limited market orientation; consequently they receive only a small part of the benefits of organic production. Providing opportunities for the strengthening of farmer associations and NGOs could help remedy some of the shortcomings.

22. The market aspect is most often a primary factor for farmers. Today's development professionals (government, NGOs, international agencies) are often not adequately trained to help farmers develop a strong market orientation and therefore it must be sought elsewhere. The most efficient way to do this is by inviting the private sector to provide marketing services. However some caution is warranted since at least some of a firm's goals, such as maximizing their profits, may be in opposition to the best interest of farmers. The public sector, including government and NGOs, can support farmer organizations at the outset and help ensure equity in their partnership with private companies as well as foster adequate contract-farming laws. Ultimately, a market-oriented value chain can be developed that takes full advantage of each partner’s strength in order to fortify competitiveness while also ensuring a fair share for producers. India's NGO sector and some of its state governments have already begun taking this approach to strengthen their farmers.

23. The quality of certification systems is very uneven and in both countries, the domestic verification and certification systems that could be the most accessible to farmers, often lack the necessary checks and balances to ensure credibility. In both India and China, since landholdings can be very small, farmers must organize in order to apply for group certification that can significantly reduce their individual costs and enable them —by owning their certification rather than having a firm own it— the independence to negotiate their own terms of sale.

24. India, through its NGOs and state governments, has now begun to disseminate organic information more broadly and directly to farmers while China’s dissemination to its farmers is still in the nascent stages. This may hinder adoption of organic agriculture. China's notable development of Green Food may provide a basis for domestic organic development whereas India's domestic markets are very marginal. Domestic market development can be an important factor in order to stimulate farmers to improve their practices and adopt organic methods in both countries. Improved consumer education efforts in regard to standards and what they represent could stimulate this considerably.

Consumer confidence in both nations is underdeveloped and, particularly in some Chinese cases, consumers already doubt label claims.

25. Public investment in organic agriculture is very limited and in order to advance, it will be important to overcome the systemic biases in public expenditures that favor conventional agricultural systems. China lacks significant research in organic technology and organic extension services to reach farmers. India has already begun to invest in organic research but its extension services also have little preparation or experience in modern organic methods. Since radical changes in extension services are difficult, providing farmer-friendly databases based on a consortium of national and international learning institutions - including those that deliver market knowledge - could be very cost-effective. India's subsidies to the fertilizer industry serve as an example of disincentives that may limit the adoption of organic agriculture and make them less competitive.

Conclusions and recommendations for developing organic initiatives

26. Generally speaking, there is no significant evidence that organic methods would be deleterious to small farmers. In fact, most of the cases clearly noted a number of benefits from which it is reasonable to conclude that the promotion of organic agriculture among small farmers can contribute to poverty alleviation and is well warranted.

27. In the context of development, the role of organic agriculture cannot be fairly assessed in the narrow economic terms of market premiums. Its value does not rest merely in the fact that it can provide higher incomes, but in that it can potentially contribute to long-term resilience and stability particularly in terms of resource conservation, crop diversification, food security, and a number of positive environmental externalities.

28. Further growth and meeting the demands for certification, quality, and consistency of increasingly mainstream distribution channels like supermarkets will be difficult for most producers and will require the organization of small farmers and a combination of public and private support. Local farmer associations can facilitate the exchange of knowledge, support farmers through the early conversion processes, improve production and post-harvest controls, achieve scale economies, improve farmers' bargaining position, and play an important role in organic product marketing. For small farmers, external private firms or NGOs can fill some of the gaps but may not be an ideal permanent substitute for farmer associations.

29. Poorer small farmers seem to experience more significant outcome from organic farming. For many small farmers practicing rustic or traditional methods of agriculture, transition to organic results an increase in both yields and overall incomes. The implications for converting conventional farmers that practice intensive cultivation methods would necessarily be different and more dependent on careful analysis of the probable outcomes. Transitional periods can mean uncertainties and even a decline in yields for those farmers that employ intensive agricultural methods and are dependent on external inputs because the benefits of organics are not usually immediate in such cases. In most cases overall farm incomes — though not always yields — soon recover. In the long run, organic methods can be more cost-effective and even more profitable, but only if properly applied. The transition process and the time it takes are a barrier to many conventional farmers and they require various types of support.

30. Organic production requirements, the sometimes lengthy conversion process, and the realities of sometimes shallow organic markets can surprise farmers and development professionals alike. Those farmers that adopt a holistic understanding of organics and are focused on local benefits such as improved soils, fewer toxic chemicals, and self-reliance in inputs rather than just on the premium price for the crop are likely to better withstand setbacks, reduced premiums, and difficult periods especially during the conversion stages. It is risky for a project to work with farmers that convert only because of the promise of higher prices since such price premiums may not be readily available. Without adequate motivation and recognizable rewards for the positive environmental externalities they generate, farmers are more likely to only participate in a perfunctory manner, not adhere to the standards, and receive only limited benefits.

31. Organic farming is primarily knowledge intensive whereas conventional farming is more chemical intensive. Accordingly, it is difficult to establish a one-size-fits-all approach since conditions will vary in different zones. Organic projects require that time be built into the process for farmers to test and learn new technology and methods. Knowledgeable extension service is critical. Local know-how, especially from experienced farmers and knowledgeable elders, can smooth the transition and reduce risks. It is also important to provide farmers good access to sources of knowledge about the application of organic methods to their crops and agro-ecological conditions. Nevertheless, holistic methods don't often provide a quick fix and require a longer-term commitment. Therefore, government and local institutions such as NGOs need to be committed to supporting a multi-year process. Such a commitment might require: acquisition of organic production technology and training, especially for extension service agents; preparation for certification and initially covering its costs; and very limited subsidies to cover possible reduced income during the transition period.

32. Perhaps the single most important factor for successful organic adoption is the availability of a reliable institutional support system that can initially help provide the many components that farmers find difficult to access. These include technology, initial financing for certification and input production, and marketing. Capacity-building at the farmer level (local farmers associations, local training and advisory services) should be a central aspect of any strategy aimed at using organic agriculture as a tool for poverty alleviation in rural areas.

33. The process of certification can be difficult and costly but in most of the cases NGOs and partnering firms facilitated the process and even offset the initial costs for farmers. Nevertheless, improving access to certification by keeping costs low and facilitating Internal Control Systems will enable small farmer groups to have their own certification and thereby greatly improve their market position.

34. Development policies must recognize the critical need to integrate professional marketing support. Helping farmers to first assess their market orientation and then access targeted organic markets requires business and marketing skills that many NGOs and farmer associations often lack. It is not necessary to turn a farmer into a trader but an apex body or a network of organizations can be fortified with outside support and training in order to take advantage of scale economies, improve bargaining, and significantly reduce transaction costs. A private sector partner can also fulfill this role provided that the arrangement secures a measure of equity for participating farmers. Any strategy to promote organic agriculture among the poor ought to also consider crop choices. Local varietal adaptability is important and so is the exercise of caution regarding commodities such as coffee or tea whose international markets are inherently volatile.

35. On the surface, it appears that conversion can be an easier process where agro-ecological conditions are favorable for farming and environments are more pristine. However, some of the more dramatic examples of success have occurred under much more difficult conditions such as semi-arid or degraded landscapes. In such cases, because organic agriculture builds soil quality and is generally less water intensive than conventional agriculture, it can be particularly productive where conventional farming would be impractical or too costly.

Key recommendations for IFAD

36. It is useful for IFAD initiatives to foster and encourage farmers associations as a central aspect of any strategy aimed at using organic agriculture as a tool for poverty alleviation in rural areas. These can be critical to ensure participation and equity for small farmers and can take up responsibility for critical aspects of the supply chain such as marketing, certification, and integration of a good internal quality management system to help ensure quality, traceability, and organic compliance.

37. IFAD can play a useful role fostering reliable institutional support systems that can initially help provide the many components that farmers find difficult to access. These include capacity building and the acquisition of adequate technology and training, marketing, and initial financing for certification and localized input production.

38. In order to take advantage of scale economies (marketing, production, certification, etc) and significantly reduce transaction costs, IFAD can help to organize apex bodies or a network of organizations that can then be fortified with professional support and training. IFAD and partner agencies can play important roles to provide mutually beneficial partnerships between farmers and private firms and can even facilitate market relations by facilitating farmer groups to jointly engage in contract farming arrangements.

39. In order to improve the likelihood of success, IFAD and its partners must assure that planning and implementation integrate appropriate sequencing and pre-assessments and that any organic strategies build adequate time—at least 3-5 years – into the learning process.

40. Negative biases in public expenditures that favor conventional agricultural systems and discriminate against smallholders and organic systems can be improved at the government level using IFAD's proven experience with poverty mapping systems and farmer assessments in order to ensure that the selection criteria adequately identify high-poverty areas with smallholders and thereby reach farmers that most need support.

Organic Agriculture and Poverty Reduction in Asia:
China and India Focus

Thematic Evaluation

Main Report

I. INTRODUCTION

1. Asian agriculture is dominated by small farmers and herders, with very few exceptions (notably large extensions of rangeland and grains in places such as Kazakhstan, Mongolia and Northern China). While many are directly benefiting from the dramatic urban-oriented growth that characterizes many parts of Asia, a far greater number still struggle to produce sufficient food and income (IFAD 2004; UNESCAP 2002; IFPRI 2002, Janz, Shanxi and Jacobi 2003; Scialabba and Hattam 2003). Many millions of Asia's poorest farmers live in mountainous or semi-arid areas where both economic and agricultural opportunities are limited. While a great many migrate to industrial and urban areas, many more must depend on their agricultural endeavors to provide both food and a basic income for clothing, education, and healthcare.

2. Small and poor farmers have a unique set of needs that, in many cases, are not adequately satisfied by conventional modern agricultural paradigms. Green Revolution approaches have certainly been effective in dramatically increasing crop yields in many parts of Asia. The Green Revolution has, in part, enabled countries to address the pressing macro-level need for food security that plagued them until recently. Using hybrid seed, irrigation, and agrochemicals to fuel intensive farming, these methods have in a few short decades become embedded in the educational, policy, and extension systems of most countries. While most Asian countries — certainly the larger ones — have achieved food security at the macro level, pockets of poverty and malnutrition persist. It is here that IFAD is committed to being effective and also at this level that Green Revolution methods have most been called into question (IFAD 2002 and 2004; Shiva1992).

3. So, to what extent do smaller farmers who are the recipients of development assistance require the methods and inputs that have come to be associated with the Green Revolution in order to optimally achieve their needs? While it is true that Green Revolution inputs have successfully raised yields in many irrigated and agriculturally optimal areas, they have been much less effective in marginal farmlands, rain-fed areas, and where farmers do not have the income and/or skills to make use of these approaches. Recent studies about rice — Asia's most important crop — and the subject of considerable rigorous and published research makes the point succinctly. The long-term research by Cornell University's International Institute for Food, Agriculture and Development in a number of countries[1], shows that dramatic increases in rice crop yields (50% in China and up to 700% elsewhere) were possible without the use of conventional agrochemicals (Uphoff 2002a and 2002b).

4. Development professionals increasingly posit that organic agriculture could be a useful tool to meet farmers' needs (UNESCAP 2002; Scialabba and Hattam 2002; Damiani 2003). In some areas, organic agriculture methods appear to show considerable promise for fulfilling these basic needs of small farmers and also allegedly providing positive externalities such as ecological benefits. Yet, there has been little data collection and external analysis to understand what works and what doesn't. Relatively little information is available about the mechanics of implementing organic agriculture with smallholders in developing countries. As the popularity of organic projects grows, it will be useful to recognize the inherent risks and benefits of converting to organics. Rural development projects can determine whether and how to integrate organic approaches if they better understand the drivers of success and the pitfalls of such projects.

[1] In Asia these include Bangladesh, Cambodia, China, Indonesia, Myanmar, Nepal, Philippines, and Sri Lanka.

5. This evaluation seeks to offer lessons and insights about whether organic methods ought to be a part of development programs and strategies for small farmers. And if such methods are valid, then under what circumstances or conditions should they be fostered so as to optimize their benefits and minimize potential difficulties. To better determine the role of organics for small farmers in Asia, the evaluation used a diverse series of 14 case studies to better understand several key areas:

- The characteristics of organic production and marketing
- The impacts of organic production on small farmers and their communities
- The specific constraints and opportunities faced by organic producers
- The role of institutions and the public sector

6. The evaluation explores the pros and cons of organic adoption in terms of poverty reduction, food security, and also trade. The format addresses the organizational forms of organic agriculture such as civil organizations, marketing channels, adoption of standards, and certification and also follows a modified value-chain analysis to uncover the key factors at every step of the organic journey. From this work, a set of conclusions synthesizes the most important lessons and the factors that motivate the adoption of organic agriculture. The key success factors are identified in the final section along with recommendations for identifying and designing projects in which organic methods could be a useful component.

Characteristics of the farmers, conditions, and products

7. This evaluation of Asian organics has considered research from a number of countries but the dominant focus is on India and China. These two have more than half of the world's farming households[2]. The 14 case studies documented herein were chosen according to a broad set of parameters designed to capture lessons from diverse circumstances. Cases were selected to reflect different social situations including women's' participation and indigenous or tribal people. They reflect experience in four different agro-ecological zones and looked at more than two dozen different products (See Appendix 1). The major ones include: rice, beans, livestock, tea, cotton, sorghum, fruits, vegetables, wild rice, ginger, wheat, mushrooms, soybeans, spices, sugarcane, and medicinal plants. The cases illustrated the common organizational structures prevalent in their countries; these ranged from local farmer associations to private companies to non-governmental organizations (NGOs) and even government participation. They covered a range of representative geographic areas from the semi-arid steppe of Inner Mongolia to the moist tropical hills of Kerala. Of course, they also researched organic projects with very distinct market orientations: some were for local consumption and benefit; some were oriented toward larger and domestic markets, and others focused on exports. A few cases were mini studies looking at key issues and relying primarily on existing secondary data.

8. Perhaps even more than conventional agriculture, organic agriculture in Asia is very much a smallholder-oriented endeavor. India for example, classifies 81% of its farmers as small and China's average farm size is less than 0.5 hectare per household. There are of course some organic plantations and extensive tracts of company-owned lands but sometimes even these are leased or manned by small farmers. As Rundgren notes (2002 p.6) "Broadly speaking there are two different kinds of organic farms in the world: certified organic farms producing for a premium price market and non-certified organic farms producing for their own households and for local markets." With small farmers in Asia this distinction is sometimes blurred as they straddle the two categories or sometimes slide between them from year-to-year.

9. The case study subjects are primarily small farmers. Most depend entirely, or almost so, on their agricultural production. The majority are relatively poor. There is an even mixture of those that previously practiced traditional or rustic forms of agriculture and those that practiced more conventional methods (using agrochemical inputs, hybrid seed, etc.). A few practiced more intensive and market-oriented forms of production. The majority sell their products as raw materials. Of those that add value, most do so via the application of basic grading and primary processing methods such

[2] Swaminathan personal communication Oct 1, 2004 in advisory capacity as Scientific Committee member.

as dehydration or washing. A few have access to primary processing facilities. Most lack direct access to markets other than local ones.

10. The market orientation of farmers in the 14 cases varies considerably. Naturally, many are primarily oriented toward sales, especially export sales. However, a number of those in India — while not eschewing the market — are primarily focused on the intrinsic local benefits of organic production. In such cases (Maharashtra, Kerala, Karnataka) improved soils, fewer toxic chemicals, self-reliance in inputs, and harmony with nature were cited as the most important reasons for being organic. Those farmers that are appreciative of such local benefits appear to be more likely to withstand setbacks and difficult periods especially during the conversion stages (Uttaranchal mixed crops). Although it is too early to tell in many of the case instances, the events to date indicate that the vast majority of organic adopters continue with organic methods. In some cases (Yuexi Kiwi) as farmers become more familiar with organic methods in their environment, they become more confident and more willing to adopt organic methods in other crops.

Getting a new type of knowledge to farmers

11. As Swaminathan (2004) has noted, organic farming is primarily knowledge intensive whereas conventional farming is more chemical and capital intensive. Accordingly, farmers can take longer to adapt, especially if they had been practicing conventional agriculture using external inputs. Organic farmers need to learn the rhythms and natural responses of their farm environment in order to deal with them effectively. Experienced and older farmers can sometimes find this easier whereas younger farmers can require more guidance. Many projects share the experience of the farmers studied in southeastern China *(Jianxi)*. Once farmers began conversion, their main challenges were how to enhance their understanding of organic agriculture so as to develop appropriate production techniques especially for soil fertilization and pest and disease control and to facilitate the integration of animal husbandry into the system.

12. Training is required, of course, but this may be more difficult than the chemically-oriented training that help established conventional agriculture in recent decades. Agricultural education in organic or sustainable agriculture is rarely available, particularly at the university level, where it is usually focused on Green Revolution models of farming. Most public extension services are only beginning to provide training to their agents in organic practices. In some cases (Madhya Pradesh cotton, Maharashtra field crops), the contracting firm or the farmers' support networks such as NGOs, must provide specialized extension services. Unless these have local experience, they can find it difficult to help farmers surmount challenges when ideal approaches are often dictated by the particular ecological and climactic conditions in different zones. Farmer-to-farmer learning models are perhaps best suited for this situation, especially when linked to broader sources of research and knowledge about organic methods. Government policy can clearly play a large role.

Overview of the policy and institutional situation

13. In many countries organic agriculture has sprouted and grown as a result of grass-roots efforts. In most cases governments have initially adopted a position of benign neglect. This changes when the number of constituents participating become vocal and numerous, when the superior financial or ecological benefits become evident, or in response to the needs of businesses or consumers for product standards and labeling. China is a notable exception.

14. Recognizing the economic and ecological benefits at the early stages, Chinese local and provincial governments invested in a number of successful export-oriented enterprises. While local policies and regulations were adapted as necessary for this development, there was not a coordinated policy approach toward organic agriculture.

15. At the ministerial level in China the primary proponent of organics until 2004 was the State Environmental Protection Administration (SEPA). More positive policy and regulatory approaches did not emerge from the Ministry of Agriculture at that time since it was involved with Green Foods, its own set of agricultural standards that in some cases parallel organic standards. This Green Food

certification and labeling program has by most measures been a great success. It was initially adopted by number of state-owned and state affiliated agricultural organizations whose size, market linkages, and competitiveness have made Green Foods one of the most successful eco-labeling programs in the world. Its annual sales should reach close to USD 10 billion (measured at the wholesale level) in 2004.

16. India's long tradition of ecological agriculture in many different forms has been rooted in community level approaches. As in China, India's private sector assessed its many competitive advantages in certain crops and developed and export orientation. Only later, as the potential benefits of organic agriculture for small farmers became more widely appreciated, did the government participate more actively in its development. The strongest components of this early development were several state level initiatives that have developed standards, research, and support systems for their farmers. India's approaches have been characterized as being more farmer-oriented than market-oriented. The focus has been on food security, health, and environmental welfare benefits that are perceived as intrinsic to the organic systems. More recently, market oriented approaches have emerged in the form of public marketing supports such as retail outlets and commodity boards promotions. There have been relatively few public private linkages between governments and companies involved in the sector.

Box 1.1. Brief on Organic Agriculture in China

Certified organic agriculture, as it is internationally understood, began around 1990 when the rural ecological research section of Nanjing Environment Science Institute became China's first IFOAM member (1989). Since then organic agriculture in China has grown rapidly.

Organic agricultural products are produced in two different types of areas. First, in the developed coastal regions and around cities, farmers convert from high-external-input conventional agriculture and sometimes face contaminated land and water needing longer time for conversion. Second, in the more remote and often less affluent mountain regions with fewer pollutants and traditional low-external-input farming systems, conversion to organic is often fast and easier.

At first, most organic farming initiatives were organized and managed by government. With recent edicts mandating more market orientation, local governments are moving away from direct ownership and have transferred these rights to private firms. In some cases, the process has been noted as less than transparent and has allegedly left some of the former public companies in the private hands of local government leaders. These firms sometimes enjoy unique advantages and government support for their contracted farmers in the form of inputs, extension, and even product collection. Given the difficult circumstances of some poorer remote areas, certain subsidies for firms and farmers are warranted and necessary to overcome the disadvantages of those poorer areas.

Today, most organic farming volumes are managed as an arrangement between trading companies and farmers in which the companies are clearly dominant. They typically initiate, provide technical advice, input access, and marketing. Unlike early development in many other countries, farmers have not been the primary engine of growth in this case. This model is particularly dominant in the developed coastal regions where it is likely that only trading companies and government had both the necessary connections to market their products and the financial capacity to convert polluted land for organic farming. This has provided useful improvements and opportunities for farmers in these areas where agriculture is under intense pressure from industrialization and urban expansion. The same corporate model also prevails in poorer regions as well where most farmers labor with few production scale efficiencies, weak farmer organization, and limited market orientation. Providing opportunities for the farmer associations and NGOs to develop could help remedy such shortcomings.

Adapted from contribution of Zong, Huilai and Meng, Franqiao

Box 1.2. Brief on Organic Agriculture in India

India is one of the world's most agriculturally significant countries. It ranks among the world's largest producers of rice, tea, fruits and vegetables, various spices, pulses, medicinal plants, and cashew nuts. Its first internationally certified organic products began emerging in the mid 70's, supported by UK's Soil Association.

India has evolved a rich history of agricultural practices and continues to adapt technologies like biodynamic and other systems into its organic practices. India's organic farmers have been at the forefront of developing field based technologies ranging from vermi-composting to integrated livestock practices that facilitate their ability to improve soil fertility even in semi-arid or barren areas. Different parts of India have developed their own local or regional systems for ecological agriculture such as *agnihotra* and *panchakavya* that are now gathered in one umbrella term: '*Jaivic Krishi'.*

Civil society, primarily in the form of NGOs and farmer groups, play a primary role in India's organic sector. They have helped to evolve basic cultivation practices in the poorer and remote areas where extension services and improved agricultural technologies rarely reached. As organizations, they have served a vital role of disseminating information and knowledge as well as facilitating the access to markets. More recently, as business opportunities have emerged in the organic field, private companies have increasingly taken a role in organic development.

Recognizing that India's rain fed agriculture — that accounts for 60 percent of planted area (Government of India's Economic Survey) — can potentially make good use of organic methods, the Government has recently taken a number of steps to promote and regulate organic production and marketing. The Ministry of Agriculture has set up a special working committee for organics and the Ministry of Commerce set up a National Steering Committee that prescribed The National Standards of Organic Produce (NSOP). Several state governments have also established their own organic policies and programme implementation guidelines. Still in the early stages, the public sector is beginning to respond to the increasing demand for information on organic production and marketing. Twelve of the Indian Council of Agricultural Research Institutes have been given the mandate lately to move into organic production either as a main focus or as a sideline to their mainstream research. The discussion on how to overcome the knowledge gap is now focused on quickly providing basic information tailored to various soil and ecological zones of the country, on developing integrated packages of organic crop production practices, improved input production and utilization, and certification issues.

Adapted from contribution of S.Mehta

17. None of the small farmers studied were able to successfully initiate organic conversion projects on their own. All needed some form of support, especially in the early stages. This support took many different forms. In India it tended to come from NGOs and also from the private sector and lately from government as well. In China government has been a primary driver working together with private companies that are increasingly taking a primary role.

18. Local certification has been an important step in both countries although only a few of the national certifiers have sought international (IFOAM) accreditation. For local markets, there are emerging domestic certifiers. International certifiers from Europe, the U.S., Japan, and Australia certify nearly all organic exports. An increasing number of these overseas certifiers are establishing local offices as the certification business continues to grow.

19. Organics is now gradually more coming to the attention of both provincial and central government policymakers because it aligns well with the increasing international trade demand for recognizable safety standards. Since organic agriculture intrinsically involves stringent traceability measures and record-keeping —besides its prohibition of a most dangerous agrochemicals — it

perfectly fits the bill for both corporations and governments that are progressively more cautious in the arena of food safety.

Overview of the case studies

20. In order to reduce a bias that might incorrectly represent only the positive aspects of organic agriculture, case studies were selected — and researchers were mandated — to clearly reflect, where possible, the less positive or negative aspects. Selecting cases for the diversity of their experience was also a primary goal. The selection parameters therefore included diversity in: agro-ecological zones, product types, organizational structures, geographic areas, and market orientation.

21. Following is a list of the case studies analyzed. Although all of the products are produced or processed in the referenced projects, not all are the subject of direct analysis in the report.

China

Inner Mongolia (Livestock-Lamb)
Anhui (Tea)
Jianxi (Ginger, Soybeans and Rice)
Yunnan (Ancient Tea Groves)
Yunnan (Kidney Beans and Fruit)
Anhui (Kiwi and Wild Rice)
Shandong Food Company (a broad variety of vegetables and beans)
Hubei (Mushrooms and Tea)

India

Himachal Pradesh, Punjab, and Uttaranchal Integrated Watershed Development Project (Ginger, Peas, Capsicum, Wheat, Rice and Seasonal Vegetables)
Maharashtra (Sorghum, Wheat, and Cotton)
Kerala (Spices and Banana)
Uttaranchal Mixed Crops Millet, Rice, and Kidney Beans
Karnataka High-Value Crops (Vanilla, Pepper, Banana, Rice and Sugar)
Madhya Pradesh (Cotton)

22. It is not simple to classify these cases as successful or unsuccessful, even aside from elaborating definitions of success. Certainly, some of them are quite successful by almost any measure but a number of them also demonstrate significant shortcomings and can only be called successful to the extent that they still exist. While most offer farmers distinct improvements a number of these cases under perform in terms of potential small farmer benefits. The factor that perhaps most skews the statistical interpretation is that for practical research reasons we endeavored to select cases that were operational for more than two years. We found that most — even those currently operating — kept very limited records and had conducted few if any objective measurements. This therefore automatically eliminated the inclusion of projects that had failed or no longer existed because of the intrinsic difficulty in measuring *ex post*.

II. OVERVIEW OF MARKETS AND MARKETING

23. In most Asian countries, the trade in organic agriculture has not been well tracked or measured. Many countries don't have tracking codes for organic trade since it represents a relatively small portion of agricultural trade. Although Japan has separate codes for some organic products, there is no international trade classification for organics in either the Standard International Trade Classification to or the Harmonized Commodity Coding Systems. Estimates in the region typically put certified organic sales at less than one percent of a nation's agricultural sales. Of course, many organically grown but uncertified products enter local market channels without organic labeling and identification and these volumes or values, although likely to be considerably greater, are much more difficult to estimate.

Marketing requirements

24. Being certified as organic is often a very useful distinction that helps to differentiate an organic farmer's products from the conventional competition. Markets that recognize this and will pay a premium for organics are often not readily available, especially to remote small farmers. Nearly all of the case studies mentioned this. Marketing is often a constraint for any kind of farmers and it can be especially difficult for organic farmers. Of course, organic products can be marketed as conventional products, and often are. But frequently, opportunities exist to capture higher value for the organic process. As organic products increasingly find their way into the most common market channels, including supermarkets, the discovery process becomes easier while the demands become more difficult. In Uttaranchal, the attempt of a loose conglomeration of farmers to deal directly with an urban retailer ended poorly because neither they nor the government agents facilitating the transaction were familiar with the business requirements of this trade. A number of the cases learned to use traders to facilitate such transactions since small farmers are typically constrained in three distinct areas of marketing.

25. First, farmers should assess their specific market orientation by honestly evaluating what they have to offer. For example, the types of products, quality levels, presentation or processing capabilities, and the quantities available. They must also evaluate the level of risk they are prepared to tolerate since, for example, exporting can be intrinsically riskier than dealing with a known local company. That assessment helps them to segment the market analysis to determine whether to focus on export or domestic markets and then select the appropriate market channel(s) within those markets in order to develop a marketing plan that leads to productive contacts with potential buyers. The Yunnan tea study showed that experience was first gained in the domestic markets and, recognizing the challenges of export, the local organization decided to use the fair trade network to facilitate exports. While this particular alternative will certainly have only limited applications, it served to give the organization some assurance of having reasonably safe and fair foreign transactions.

26. Second, farmers must learn the requirements needed to access their targeted organic markets. By mapping out market channels, they can better understand purchasing patterns and behavior so as to ascertain the current and future market potential and its attractiveness. As with a conventional marketing effort, they must determine whether they can meet the prices required, arrange the contracts, meet certifications, fulfill the required quantities, ensure the agreed-upon quality, and deliver at the right time and in the right packaging. Producers in Uttaranchal and Karnataka are beginning to develop this understanding through their own retail outlets. Case experience suggests that local markets ought to be developed first, where possible, and that international orientation and certification should be pursued only when sufficient capacity, export crops, and interested buyers have been identified. Faced with a product that requires significant processing (Inner Mongolia livestock, Anhui tea) it can be difficult for the producers to acquire the necessary infrastructure and training necessary to access the certified organic market. In Anhui, a donor co-financed a local processing setup with village families and this was then linked to an existing organic tea company for their packaging, labeling and marketing expertise. In Inner Mongolia, the contracting company handled every step of the process leading local producers only the rearing component. An often underestimated part of this process is determining whether farmers can wait for payment (sometimes months) or undertake methods of guaranteeing it (e.g. Letter of Credit).

27. Third, farmers must recognize that these processes require dedicated attention and some training. This is especially true in situations like rural China where the government has had a dominant role in the marketing process. Getting beyond a local market is more than an occasional task that a few of the farmers can undertake in their spare time and that is especially true for export marketing. Can farmers hire a trained person in this field or, at the very least, assign one of their members with aptitude for this area to do the work? Can they afford to offer some remuneration, acknowledging that such a job would clearly conflict with time spent farming? Time and dedication are important because organic markets are not very deep. With relatively few buyers scattered in different countries and regions, the demand can be unsteady and finding a new buyer can take time. Even selling on the domestic market can be difficult. One Uttaranchal producers' group learned this lesson painfully as their crops languished in the field unsold after high expectations from the first

transaction. Most of the projects have experienced this difficulty. In Anhui one of the models studied (A) noted that the necessary steps to ensure the required quality and standards for organics can take much more time and skill; not surprisingly, many producers would prefer having a dedicated specialist handle the post harvest and marketing. Establishing a market orientation can be difficult and contracting with a dedicated professional i.e. trader or private company can often be necessary, especially as producers are occupied learning new requirements for organic standards or for quality levels. In any case, consistent and experienced staffing is vital in order to sustain long-term marketing efforts that gradually move farm products up the value chain, progressing from simple raw materials toward value-added products.

Demand in the domestic markets

28. In recent years, the local demand for organic products has grown along with consumers' incomes and their increased concern for food safety. The domestic markets in India, China, and neighboring developing countries offer considerable opportunities given the significant size of the population with significant disposable income.

29. Both markets are, however, still modest in size. India's domestic market is small and mostly informal with only a few shops dedicated to organic products. Much of the organic produce reaches consumers without being subject to organic identification or specific labeling. Even formal distribution channels — primarily through traders to individual retailers — are difficult to monitor and measure. Therefore there are no credible or complete estimates for the size of the domestic market. One survey notes that more organic products in India are sold through the supermarket channels (31%) and to the processing industry (30 %) than through any other (Garibay and Jyoti 2003). The same document cites a recent Mumbai survey noting that organic products sold at retail were about twice the cost of conventional products (Garibay and Jyoti 2003 p.17). There have been several attempts to establish chains of shops in India specializing in organic products (i.e. Green Foundation, AME, Yardi and Soree) but none have succeeded.

30. China similarly has only a few dedicated organic food stores but there is growth through conventional distribution channels. According to the Ministry of Agriculture, Li (2004) and the China National Green Food Development Center (CNGFDC) the domestic market in China is valued at approximately USD 107 million at wholesale or USD 150 million retail[3]. According to China's Ministry of Commerce, organic produce is estimated to be less than 0.1% of the total food in the domestic market. In urban areas this market share is estimated to be considerably higher but still not more than 1%.

31. One of the more dynamic sources of business and food standards are large multiple-store retailers, particularly supermarkets, whose unprecedented rates of growth are quickly giving them dominant positions in many developing countries, and especially China (Hu *et al*. 2004). By intrinsically incorporating some of the more important aspects of the dominant food standards that are in demand, organic products have a unique advantage. While meeting standards is an important step, many organic products and producers are still in the learning stages of how to integrate smoothly into these new global-scale distribution channels. For more on supermarkets see Chapter 3 "Market Channels for Organics".

32. Most of the organic food retailers in China and India are located in urban areas where food availability and sales have outpaced the growth of rural food supplies. See Table 2.1. These more affluent consumers have the disposable income to afford the higher price of organic products but sales volumes are still quite modest. This is in part due to:

- modest availability and selection in stores exacerbated by limited prominence
- inconsistent supply from farmers

[3] Based conservatively on a 37% estimated average markup on organic sales from wholesale to retail in China 2004.

- sometimes exorbitant prices
- poor consumer understanding of organics

Table 2.1. Urban-Rural Distribution of Food Expenditures in China

Food expenditures (USD per capita)				
	1990	**1995**	**2000**	**2001**
Urban	694	1 766	1 958	2 014
Rural	344	768	821	831

*Source: China National Bureau of Statistics.*although it is not clear whether the CNBS figures are adjusted for exchange rate fluctuations, they would nevertheless reasonably represent the differences between rural and urban.*

33. In parts of India traditional markets provide outlets for products produced in an ecological manner. These markets operate on trust enforced by local familiarity and none are certified per se, but they can require significant standards that are comparable, and in some cases more demanding than organics. These kinds of products have many different names depending on the regions, culture, and even religious application. To facilitate discussion, they have recently come to be classed under one term: *"Krishi"*.

China's Green Food phenomenon

34. In China several thousand different products are sold nationally under the Green Food label. This government certification applies to products that are grown in a safe and ecologically sound manner. This market, because of its rate of growth in the past decade, its similarities to organics, and its sheer size, is well worth understanding since it sets a precedent for organics. The retail sales of certified Green Foods make it one of the largest such sectors in any country of the world, approximating the retail value of the United States' USD 12 billion organic market. See Figure 2.1 using wholesale/farm gate values[4]. The total turnover of 2003 reached approximately USD 11.9 billion[5] or USD 8.7 billion (wholesale) for the domestic market. Of this, about 12% or USD 1.1 billion was exported to Japan and Europe (See Figure 2.2).

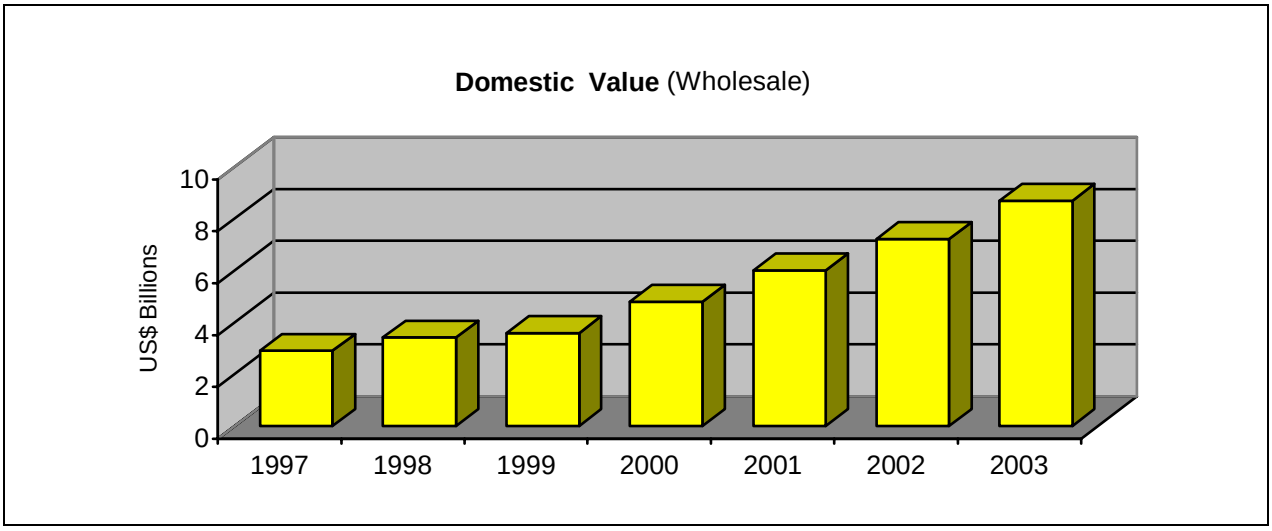
35. China’s 1980s policies of opening to the outside world and economic reform led to an unprecedented growth in the varieties of food available. However, food safety and quality problems also increased, in part due to misuse of chemical inputs in food production, and in 1990 the Ministry of Agriculture (MoA) initiated the Green Food Program.

36. In 1991, the Green Food label was successfully registered as the first such certification in China. The CNGFDC, affiliated to the MoA, owns the registered label and is the certifier. Its popularity has soared and by the end of 2003, there are 2047 certified Green Food enterprises producing more than 4000 products that are available in many parts of the country, especially in urban areas. Most are significant enterprises rather than small farmers. Certified land covers 5.14 million hectares and the total annual output is 32.6 million metric tons. Companies in Australia and France are among the first to be recently Green Food certified to export barley and dairy whey to China.

[4] Officials of the China National Green Food Development Center do not track retail statistics. They use the farm gate price for unprocessed products and the wholesale price for processed products and these two combined form the "turnover" or wholesale value of Green Foods.

[5] Based conservatively on a 37% estimated average markup on organic sales from wholesale to retail in China in 2004.

Figure 2.1. Domestic Value of Green Food

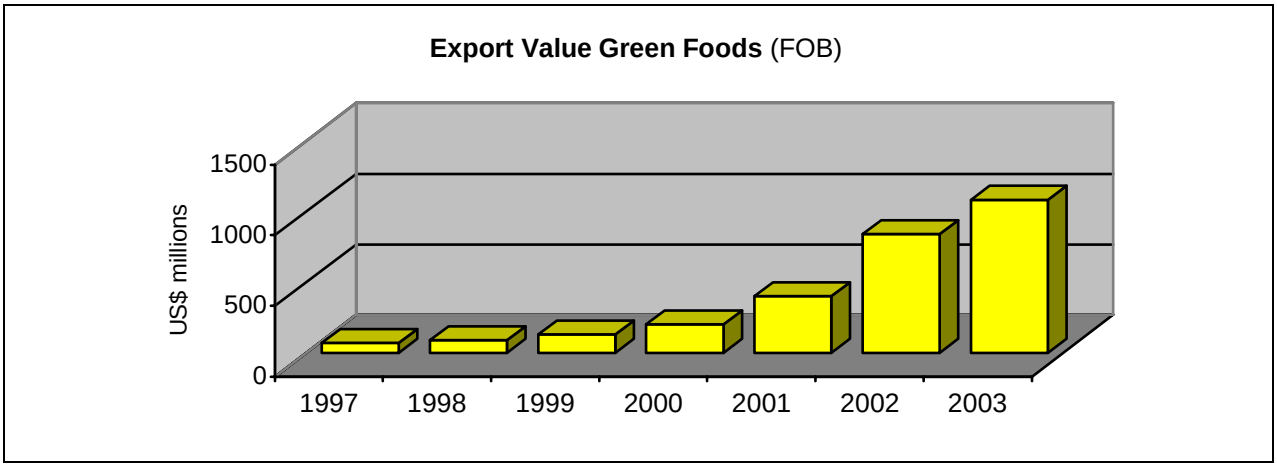


Source: China National Green Food Development Center

Note: domestic company sales, not retail

37. AA-Grade Green Food products are somewhat comparable to organic products but there are distinct differences. Green Foods use product standards rather than process standards as organic products do. See Table 2.2. For example, the Green Food Program makes extensive use of modern test methodologies to ensure that the production environment and the characteristics of the final products meet its benchmarks. Green Food production is dominated by larger companies and farms that can more readily manage the standards of environment and food quality. Organic products — rather than testing a product or soil/water sample — require the management of the production and post harvest processes that assume many of the same parameters, plus a number of others. Organics do not regularly require environmental or sample tests unless problems are suspected. Green Foods have an end-product orientation born of consumer and government concern for safe foods whereas organic farming historically developed more to meet farmers' needs. In this sense, rather than simply refraining from polluting the crops or environment, organic farmers employ active measures to seek to improve their soils and ecological environment. In this sense, organic production internalizes public benefits such as biodiversity and natural resource conservation by bundling both a product and an environmental service that are paid for by consumers whenever organic products are sold at a premium. This creates an undistorted market incentive for farmers to conserve public goods even if consumers might be less willing to pay for the public services independently.

Figure 2.2. Export Value of Green Food



Source: China National Green Food Development Center

38. With more emphasis on initial field test and then only laboratory test of products, the field inspection of Green Food is not as traceable as organic which follows the whole production process of each crop down to individual farmers. The inspection of standard A Grade Green Food relies more on the production and control records of Green Food enterprises while the inspection of AA Grade Green Food products is reportedly similar to organic agriculture. As Table 2.2 indicates, organic does not require tests of the environment and final residue (although these can be done when indications warrant). Organic production relies more on the verification of processes at each stage to indicate whether an environment or product might be contaminated.

39. The credibility of CNGFDC's certification procedures for Green Food has been called into question (Smith 2002; Xu 2001) primarily on the basis that it manifests conflicts of interest stemming from the fact that it certifies the products, draws its income from their sale, and inspects their compliance. Organic products are likely to remain more recognized on the international market because of their independent inspection system and considerable presence as a legally defined global brand in many nations.

Table 2.2. Comparison of Green Foods and Organics

	Certification	Environment test	Residue test of final products	Synthetic Chemicals permitted	Traceability	Conversion Period	International recognition	Market Premium
Green A	☑	☑	☑	☑				Limited
Green AA	☑	☑	☑		☑		Limited	Limited
Organic	☑				☑	☑	☑	☑

Box 2.1. China's Green Food: certifying safety

The Green Food certification process includes tests and field inspections of growing and processing environment, food quality, and processing procedures. To bear the Green Food label, raw materials should be cultivated in a pollution-free environment and manner:

- Area should meet the highest grade of air standards in China
- Heavy mineral residues are restricted in irrigation water and soil (tests for mercury, cadmium, arsenic, lead, chrome, etc.)
- Processing water must meet the National Drinking Water Standard
- Chemical applications are restricted and regulated, and some of the most poisonous pesticides and herbicides are banned

Samples of the final products are tested, not only for content and hygiene, but also for banned residues and substances. About 80 Environmental Monitoring Stations and Food Quality Monitoring Stations across China are designated to conduct such tests.

CNGFDC receives a fee for the certification and its Green Food certificate is valid for a period of three years. During the certified period, annual scheduled inspection is conducted by the CNGFDC and local Green Food Management Offices, where products are reportedly sampled.

In response to domestic and international market needs, CNGFDC introduced a more rigorous grading in the late 1990s called AA-Grade Green Food that is comparable — but not the same as — organics. This is now distinguished from the standard A-Grade Green Food by requiring traceability and the absence of any synthetic agro-chemicals. There are more than one hundred firms now certified.

40. Green Food is strongly promoted by the Chinese government and is of great significance in improving overall food quality in China. However, when exported it is usually as conventional and does not necessarily receive a premium price as is the case for organic products. There is a demand for Green Food in countries like Japan, primarily because Green Food is more likely to meet the basic import requirements of such developed markets in ways that China's non-certified exports may not.

Asia and International Organic Agriculture and Trade

41. Worldwide, nearly 130 countries produce certified organic products in commercial quantities, including more than 90 developing countries (Kortbech-Olesen, 2000). Yet almost all of the certified organic production is sold in OECD countries with approximately 46% of these sales in Europe, 37% in North America and about 16% in Asia (Yussefi and Willer 2002). According to UNESCAP (2003), the demand for a wide range of Asia's traditional and non-traditional organic products has been expanding rapidly since the late 1980s. In addition to European and North American demand, markets in the region are also growing, particularly in Japan, Australia, Singapore, South Korea, Taiwan and Hong Kong. According to Janz *et al.* (2003) in India and mainland China, domestic markets for organic products whether certified or not, are small but emerging and this is supported by the example of China's enormous success with the domestic markets for their Green Foods that experienced a 25% average annual growth rate through the 1990s. These developments align with growing demand for safe foods and point not only to the continued potential for exports, but also to new opportunities in intra-Asian trade and to potential for increased domestic markets. The lack of harmonization of standards between countries adds to the burden for farmers and traders who must select and sometimes use multiple certifiers and naturally it hinders their access to the international markets.

42. Global sales of organic food and drink increased by 10.1 percent to USD 23 billion in 2002 (Organic Monitor 2003) clearly confirming a slowdown from the stronger double-digit growth rates of the previous decade[6]. Strong EU sales growth has slowed somewhat in several countries and totaled USD 10.5 billion in 2003 while the North American market, according to the Organic Trade Association (2004), continued strong 20% expansion to USD 10.4 billion in 2003. Based on conservative growth estimates, global markets should reach near to USD 30 billion in 2005. Although organics represent less than 2% of food business, there are countries and sectors that have proven to be much more successful. In Munich, Germany for example, organic baby food has an 80% market share and organic bread has a 30% share.

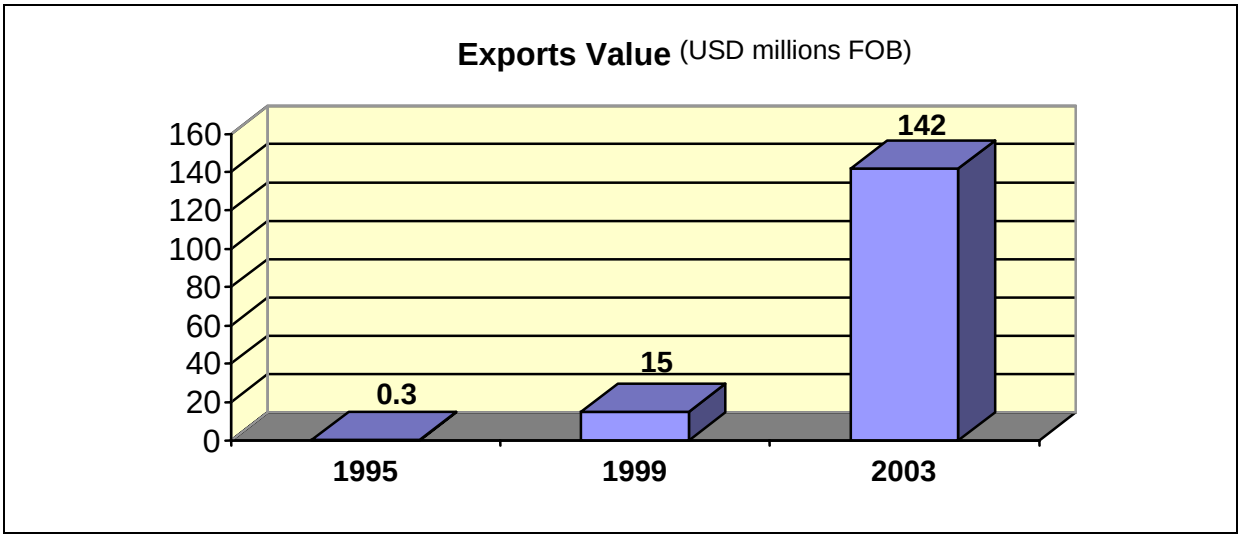
43. Past history is not necessarily a good indicator of future trends but based on this recent experience and data, organics growth is a safe bet. Although it is difficult to generalize about all organic products, it is useful to characterize them in terms of product lifecycles theory (Giovannucci 2003). Organic market characteristics in Europe and United States indicate that these products have gained considerable consumer awareness and have already moved out of the introductory stage and into the growth stage. The growth stage is typically characterized by increasing product variations and competition that begins to stress competitive differences. The tendency of this stage is to dramatically increase distribution, expand market channels, and begin to shift the pricing strategy away from price skimming to more competitive pricing in order to gain market share. The experience of some leading organic products in today's marketplace (i.e. coffee and soy beverages) would support this observation.

44. From the first organic tea product certified for export in 1990, more than 200 kinds of organic agricultural products have been certified in China. Most certified products are export-oriented with primary markets in North America, Japan, and Europe. Most middle income and upper-middle income countries in the Asia region have also received organic exports but these are still very modest. The value of exports has skyrocketed from less than USD 1 million in the mid-1990s to about USD 142 million in 2003 (See Figure 2.3). Estimates for 2004 approach USD 200 million. Approximately

[6] Earlier figures, based on less exact estimates are likely to have skewed previous growth rates. For example, the re-estimation of Japan's market from approximately USD 3 billion to USD 350 million after stricter application of organic labeling guidelines.

USD 40 million of this is also certified as Green AA Foods indicating the progressive merging of these under one organic label.

Figure 2.3. China's Certified Organic Agricultural Exports



Source: OFCC Directorate

45. For India, 31 organic products are currently exported and the organic value for 2003 is estimated at USD 15.5 million (710 million Indian Rupees) with strong double-digit growth projected in 2004 [Agricultural and Processed Food Products Export Development Authority (APEDA)]. Its primary destination markets are the US, Switzerland, Germany, Japan, Denmark, France, the Netherlands, and the UK.

Certified land area for organics

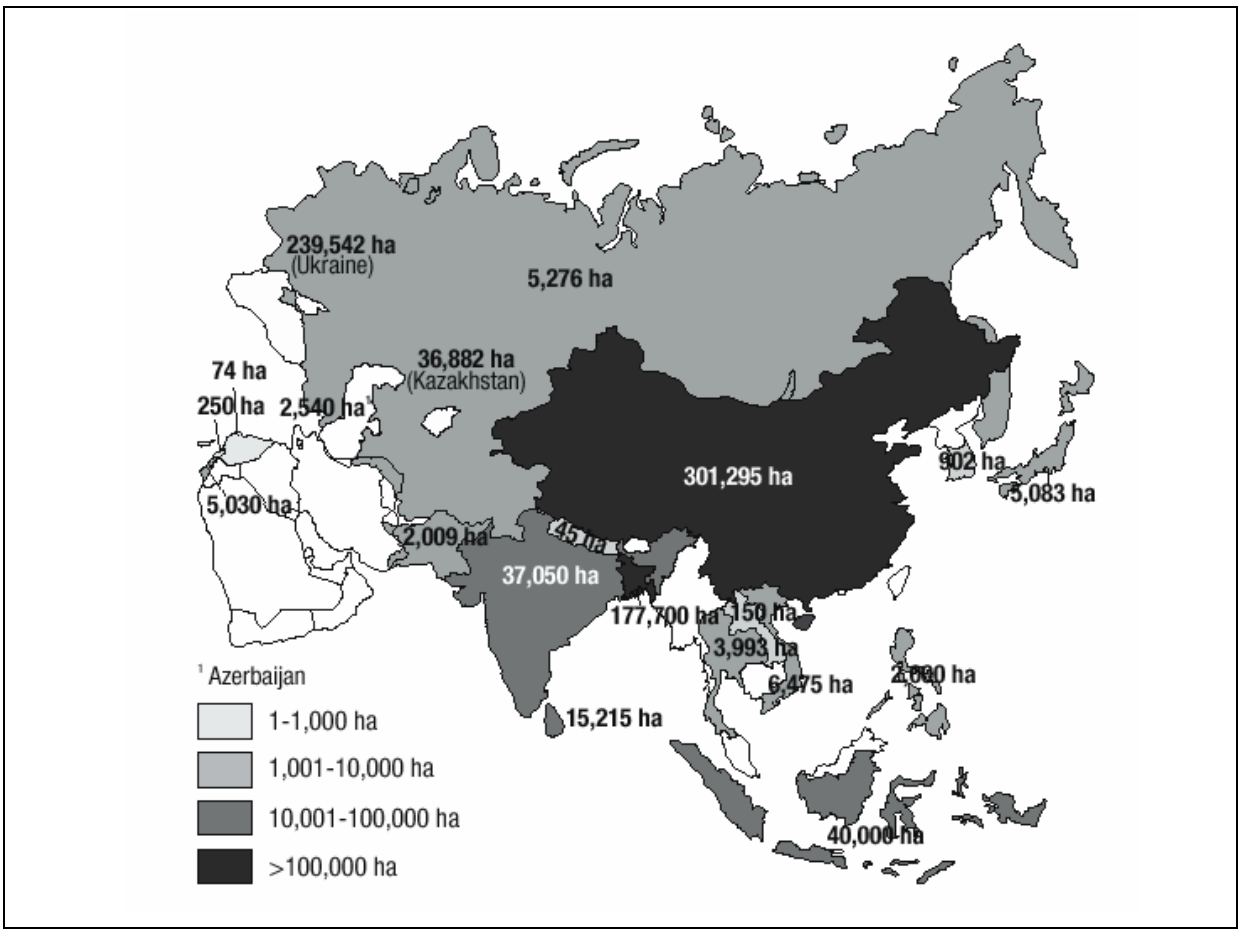
46. There are statistics for the amount of certified farms and acreage in many Asian countries but there is little data available on non-certified farms – that are likely to be far more numerous. According to estimates gathered by Willer and Yussefi (2002, 2004) there are more than 24 million hectares of certified organic land today. The countries with the largest areas of organic land (most is grazing land) are: Australia, Argentina, Italy, Canada, and the USA. Some countries have reached a substantial proportion (close to or more than 10%) of certified organic land; these include Sweden, Austria, Switzerland, Finland and Italy.

47. According to Willer and Yussefi (2004), Asia has a surprisingly small proportion of the world's certified organic land (approximately 3.7%) or about 880 000 hectares and more than 61 000 farms are under organic management. Most of these farms (40 000 plus) are in Indonesia and about 80% of the land area sits in three countries: China, Ukraine, and Bangladesh. Bangladesh may be the only one with more than one percent of its agricultural land certified as organic.

48. Our estimates, from official sources in mid 2004, are very much higher. In China there are 600 000 - 700 000 hectares of certified organic land in 2004 according to the Organic Food Certification Center (OFCC). This includes natural harvesting areas, aquaculture, croplands, and pasturelands that are certified or in conversion. For perspective, China has 130 million hectares of arable land, 227 million hectares of forest and 226 million hectares of grassland (UN 2003). It is estimated that 1 100 companies and farms have been certified or are in process of certification and about half are locally certified. India's APEDA that tracks organic data from some of the certifying agencies notes that 332 certifications have been issued in the past year and the area certified under organic farming totals 2 508 826 ha in early 2004. This is a dramatic rate of growth from the earlier data of 37 000 ha. collected for 2001-2002 by The Foundation of Ecology and Agriculture (SOEL) shown in the Figure 2.4 below. The new figure can be misleading because it includes 2 432 500 ha

(confirmed with certifiers SGS and IITA) that are mostly forest area used for collecting wild herbs and medicinal plants and so it may not be considered as part of India's 180 million hectares of agricultural land. Most of this certified area (2.3 million) is in Madhya Pradesh and Uttar Pradesh also has a considerable amount: nearly 100 000 ha. These are two of India's poorest states. Excluding the considerable area in Madhya Pradesh and Uttar Pradesh, the remaining 76 000 certified hectares would still easily double the area estimated in 2001-02.

Figure 2.4. Certified Organic Acreage in Asia



Source: SOEL-Survey (February 2004) of 1998-2002 data; Graph: M. Yussefi, SOEL

III. THE CHARACTERISTICS OF ORGANIC PRODUCTION AND MARKETS

49. Observing a farmer that uses no pesticides or fertilizers, one could easily assume that this is organic practice. To many observers, organic practices appear very simple on the surface. The common understanding that organic standards merely mandate the absence of synthetic agrochemicals is widespread and leads to the perception that most poor or remote farmers are organic by default — and some certainly are. However, while many such farmers may come close to the organic ideal of integrating their farming practices into the greater biological system and its cycles, there are nevertheless a number of clearly defined standards that their methods must meet if organic certification is a goal. Although these requirements are usually not onerous, they do necessitate a measure of preparation and attention for most farmers.

> "In the first year of conversion, they just had an obscure understanding and thought that using no pesticide and fertilizer was equal to organic farming, in the second year organic farming was becoming gradually clear to them and in the third year they could have a deep recognition of the essence of organic agriculture and begin to master organic production techniques." *Field report from Anhui Kiwi Case.*

50. For farmers practicing more intensive cultivation methods these requirements also require radical changes that may be costly in terms of both time spent learning and initial crop yield response. Adjustments will be necessary in cultivation methods, the production and use of organic inputs such as fertilizers and pesticides, and the use of labor.

51. The promise of higher prices is often the primary driver used to induce adoption of organic methods. It is often farmers who bear the shock of realizing that the market for their organic product may not be so easy to access or may not pay much of a premium. As many of the case studies point out, the organic requirements and the realities of those markets sometimes surprise farmers and development professionals alike, and lead to a first useful lesson: it can be devastating to unfairly raise expectations that any farmer can readily convert to organic and earn considerably more.

52. While organic adoption may require more than refraining from the use of synthetic agrochemicals, it also offers many other benefits beyond the simplistic chemical-free caricature. The more successful farmers appear to convert for several reasons that go beyond earning a higher price for their crops. While income considerations are predominant, there are at least five major reasons why farmers choose to adopt organic practices:

- to earn more for their production
- to reduce or eliminate the need for purchased inputs
- to avoid potentially harmful agrochemicals
- to reduce their risks through crop diversification and improved soil quality/stability
- to maintain or improve valuable local natural resources and biodiversity

A. Production

Who converts

53. Although a few cases demonstrated that farm groups or communities converted their entire production to organic (i.e. Jianxi, China and Maharashtra, India), the majority did not. Some farmers took a cautious approach and converted one product or field first. The comparison between farms in marginal conditions and those in comparatively better conditions illustrate some of the differences in farmers' willingness to undertake a shift to organics if that shift is perceived as a risk. The early adopters tend to be the more resourceful, better skilled, and typically better educated farmers (Madhya Pradesh cotton, Uttaranchal). They tend to have a higher tolerance for risk and are sometimes leaders in the community. Once identified, they can be useful as pilot or demonstrations plots early in a project.

54. Reducing the perception of risk certainly tends to increase the adoption of organic methods. The strong institutional support for some projects clearly facilitated the adoption. The complete converters shared having both the firm leadership of a strong organization (external in both Jianxi and Maharashtra) and its full financial support and guidance. The other cases proceeded more cautiously with conversion. Such risk aversion can be expected when neither farmers nor their project organizers have a full understanding of the potential benefits or disadvantages of organic conversion.

The organizational structure and its usefulness

55. Without exception all of the case studies demonstrated the importance of strong organizational structures. These are vital for disseminating information, supporting farmers through the early adaptation processes that encouraged many to undertake conversion, as well as for continuity and for successful marketing. It has been argued that operating on a small scale within the partially privatized common property regime, the Chinese farmers are too poor, too weak and too isolated to embark on conversion to organic agriculture, and that some form of collective organization is necessary to reach a minimum efficient scale of production and marketing (Sanders, 2001). All of the case studies in India and China generally concur with this conclusion insofar as conversion for marketing purposes is concerned. Since marketing can be one of the more alien undertakings for a

typical farmer, government, NGOs or private companies are typically required to help. Given the distinct national contexts of India and China, a central issue is what kinds of organizational forms and institutional arrangements are more appropriate for learning and more economically effective in coordinating tasks and helping farmers to reach organic markets. The studies found that the organizational structures supporting smallholder organic agriculture took four primary forms and had distinct outcomes:

- farmers organized by a company
- farmers organized through an NGO
- farmers organized by government
- farmers forming their own organization

Company Organizations

56. In China, contractors and trading companies play the biggest role in concentrating land under organic farming. Many of these farmers had not converted to organic agriculture of their own initiative, but because of initiatives from trading companies, and they may have a limited understanding of the concepts of organic agriculture. Some experiences suggest that this limited understanding leaves little incentive for farmers' own establishment of organic production systems (Zong, 2002). In some cases farmers had little voice about their role and the benefits they receive. Occasionally, where companies have seen business opportunities in organics, they may use farmers merely as tools of production. In cases where farmers are unorganized, they receive very little training and support and/or only marginally higher income for being organic (Yunnan beans, Inner Mongolia). It is not clear whether it correlates with lack of training or the lack of farmer organization, but one of these cases also showed incomplete compliance with organic standards. Where the companies studied are particularly benevolent (e.g. Madhya Pradesh) farmers receive considerable benefits. All of the companies involved in case studies were very effective at reaching organic markets. Private companies are more likely to have the marketing experience but also to have their own profit motives and these may not correspond with the farmers' needs. In contract farming situations that are common in Asian organics, private firms typically take on this role. While it facilitates getting farmers to the market, the trade-off is that it often also prevents them from learning the process and leaves them wholly dependent on the company.

Non Governmental Organization (NGO)

57. In India, private companies also play a major role in organizing larger-scale conversions to organic systems. The firm involved in the Madhya Pradesh case, as noted above, is regarded as a considerable asset for its farmers However, India also has a strong NGO sector promoting organic agriculture among small-scale farmers operating under various forms of collective organization (Mahale, 2002). NGO-led organizations were more prominent among the India cases. These indicate that NGOs are also successful at marketing although many have undergone a sometimes difficult and costly learning process in the past. Unless they have experience, often hard earned, NGOs may not have the necessary business skills to succeed at marketing. NGOs appear to excel at the learning aspects of organic agriculture and all established demonstration farms and supported practical research that was reportedly very beneficial for local farmers, particularly Karnataka. NGOs in all cases also seemed to excel at issues of farmer equity and resource management. Sustainability is not clear since some NGOs encourage farmers' organizations to develop while others tend to retain their position paternalistically.

Government as organizer

58. Organizations tend not to be formally encouraged by government bodies, particularly in China (Yunnan Tea, Jianxi Ginger Soybeans and Rice) where government support is usually channeled to private companies or to the village leadership. In many cases, local government has been very supportive of organic farmers and in some Chinese cases the organic initiative emanated from local government itself and utilizes the government's resources (Yunnan Kidney Beans, Jianxi,

Uttaranchal). In at least one case (Jianxi) it was evident that the government-run structure was very beneficial to farmers, especially for marketing, but given the strong trend of government disengagement from marketing, such an approach would be difficult to recommend.

59. The Uttaranchal government, recognizing that its organic farmers would have many unmet needs, particularly in marketing their products, established the Uttaranchal Organic Commodity Board (UOCB). In its second year of operation, it has already conducted research on the availability of organic products in the state and their demand both nationally and internationally, assessed potential areas/crops for development, and has helped to establish retail outlets as well as export opportunities.

Farmer organizations

60. Both governments (Uttaranchal) and NGOs (Kerala) have used farmer organizations known as self-help groups (SHG) that are already established in rural areas as a base and help them to integrate professional services such as extension services to leverage extra value and reduce duplications or redundancies between similar groups in rural areas. The state of Karnataka is considering the potential supporting the establishment of farmer-owned companies that can serve as full-time managers of the post harvest, processing, and marketing needs, thereby allowing farmers to concentrate on farming.

61. Where farmer organizations are directly involved, they appear to more wholly adopt organics and consequently appear to have better results in the field (Karnataka, Maharashtra, Madhya Pradesh, Kerala). Those cases where farmer organizations were clearly evident and encouraged were also among the ones to receive a higher percentage of the selling price (Karnataka, Maharashtra, Kerala).

62. Where farmer organizations have been formed, they have required considerable support on a number of levels. In Anhui, IFAD and Dutch donor funding provided tangible assistance for the association's start-up costs, operational expenses, tea processing machines, and training. By training the organization to manage its own processes and to provide value for its members, it set a useful best practice example.

63. Farmer led organizations, even when they required a fee from their members (Anhui Tea), were well accepted by farmers as a means to improve both their cultivation and marketing. The Anhui Kiwi case study usefully summarizes the farmers' perception of their association's function and is representative of others:

- Creates a platform for farmers to exchange experiences and ideas
- Improves quality control
- Serves as an information and technology center for local organic production. Illiterate or poorly educated farmers can receive technical support from the association
- Has introduced useful techniques and varieties.
- It plays an important role in organic products marketing
- it ensures that farmers own the benefits of their labors i.e. the association has registered a brand for its organic products

Reasons for conversion and the consequences

64. Common reasons given for the decision to convert to organic systems include farmer and community health, environmental benefits, and community solidarity. More than one project noted that farmers converted because the reduced yields of conventional production (i.e. rice and sugarcane) have been exacerbated by increasing cost of agrochemicals inputs to maintain soil fertility. But economic benefit was by far the most common reason given for converting to organic agriculture. In some cases the economic benefit was perceived as the result of reducing dependence on costly external inputs. In most cases conversion occurs because of promise of higher market prices for

organic produce. This may however be one of the least sustainable reasons for doing so (see Price Premiums and their Trends).

65. Farmers in India were more likely to have a fundamentally distinct approach to organic conversion from those studied in China. Nearly all of China's cases prioritized a market-driven orientation and rationale for being organic while acknowledging as secondary the environmental benefits. India's cases also valued the economic aspects but were more likely to put primary emphasis on the environmental, health, and farmer empowerment aspects of organic agriculture. This concurs with the findings of the UNESCAP studies (2003).

66. For many, but not all, the first step in accepting organic principles is to forego the 'science conquers nature' approach in favor of a view that 'science works with nature'. Several of the case study authors note that without this sort of basic conceptual understanding, the conversion process tends to be more difficult and conversion may be less likely to last. For example, Anhui Kiwi farmers were initially impatient at the beginning of conversion, but after several years' practice, they recognized that three years' conversion period was actually necessary; otherwise they couldn't have achieved a useful and integrated understanding of organic methods. Farmers in Jianxi said that adopting new farming ideas was only part of the change and that time and practice were required in order to recognize the benefits of organic farming. Studies in northern India indicated that when the promise of higher prices did not materialize quickly enough, some farmers that converted strictly based on that factor reverted to earlier methods.

67. Not unlike the switch decades ago to chemically-oriented products during the Green Revolution, the conversion to organic also requires a fundamental shift. Likewise, the shift must include systematic training in the use of a new technology. The failure rate is higher where there is not adequate training for farmers and also for their support systems i.e. extension services and technology providers. Some of the Chinese cases note only partial adoption of organic standards and the Uttaranchal study notes that some farmers reverted to conventional methods due to failures stemming from the lack of training and support in organic methods. Conversely, a model farm in Karnataka conducts research and development for testing and standardization of organic practices and provides both on-site and off-site training. This practical component improves the success of farmers and encourages both the adoption and maintenance of organic methods.

68. There are a number of good lessons from the successful adoption of Green Revolution technologies. Just as hybrid seeds and synthetic agrochemicals were then a necessary part of adoption, so now are organic planting materials, fertilizers, and bio-pesticides necessary for organic adoption. Fortunately, from a sustainability point of view, many of these inputs can initially or eventually be produced right on the farm or shared between neighbors rather than being purchased. Similar to the way that investment in irrigation was often required for Green Revolution technologies, investment in certification and secure (non-contaminated) storage, processing, and transport is necessary for organics.

69. Since the switch to organics from a traditional or rustic form of cultivation rarely has negative consequences in terms of yields or output, little direct financial help is necessary to bridge conversion. However, when switching from intensive forms of agriculture, the potential natural resource advantages i.e. biodiversity and reduced contamination, must be paid for during the interim phase when many crops show significant yield reductions at least until the natural soil tilth and fertility are sufficiently developed. The Karnataka case illustrates conversion from a conventional high-input cropping system wherein first-year losses in yields were considerable ranging from 21% in rice, 27% in sugarcane and 31% in banana although it must be noted that conventional crops also suffered significant yield reductions in those same years. By the third year yields had stabilized and beginning with the fourth year after conversion they consistently surpassed the current conventional yields. Organically managed banana actually surpassed the highest yields that were earlier achieved (pre-conversion) under conventional management.

The availability and cost of organic inputs

70. There is no evidence that small-scale organic farms typically face input shortages when they are trained in organic methods, especially when some animals are introduced to the system. A few of the cases registered the difficulty of some farmers occasionally producing sufficient on-farm inputs (Yunnan Tea, Anhui Kiwi, Hubei Tea) even with livestock, but all of them were otherwise able to procure sufficient low-cost local materials to meet their needs. For farmers in upland or more remote areas that need external fertilization sources, the cost difference for fertilizers can be substantial if they are not locally available. The Anhui Tea case notes that the difference can be as much as three times more. Surprisingly, a number of cases did not prioritize the on-farm production of inputs. These cases (Northern India, Jianxi) preferred to rely on local markets for inputs and put modest emphasis on improving farmers' own composting or natural pest management abilities. Although local organic fertilizer was readily available, it was sometimes substantially more costly on the market (Uttaranchal).

71. In many cases, pest control methods such as the bio-pesticides were also readily available. One distinct advantage of organics' localized approaches is the production of such aids at the local level thereby creating new sources of non-farm rural enterprise. Farmers were able to profit by selling their excess compost and other self-made inputs i.e. vermi-wash, biodynamic preparations, natural pesticides, etc. to other farmers. Such local enterprises can take advantage of traditional indigenous knowledge and have immediate feedback from their clients. These small enterprises tend to be effective at providing a necessary service otherwise their local client base quickly evaporates.

72. Since small organic farms typically do not face input shortages, one proposed plan under India’s former government to subsidize fertilizer manufacturers to produce "organic fertilizer" would therefore appear to offer only modest tangible benefits to the majority of Indian farmers who are small-scale. It is not clear whether large-scale farmers would find that having sufficient inputs would be a constraint. The plantation-style operations (i.e. tea) that were studied did not register this as a problem nor did the intensive operations around the Shandong area. Intensive horticultural projects typically require the most fertilization and would do well to assess local input availability.

73. The recycling of farm nutrients is a primary feature of organic agriculture and is well demonstrated to significantly reduce input costs. This cost reduction is partly offset by an increase in labor to produce the inputs. Avoiding pre-season cash outlays for inputs is recognized as important to small farmers in several of the cases and is a particularly important feature of several projects (Maharashtra, Karnataka, Kerala).

74. Even for nutrient-intensive crops such as cotton, organic inputs are not only sufficient but can actually improve output. The evidence in such cases is that good organic management can also significantly reduce costs. For example, both of the cotton projects (Maharashtra and Madhya Pradesh), even under different conditions, noted lower production costs and higher yields once the organic systems had been established. These effects were significantly more pronounced in the Maharashtra case studying poorer farmers. See Table 3.1 below. Irrigation requirements in Madhya Pradesh were reduced because of the increased moisture retaining capacity of the soil after intensive cropping systems were converted to organic.

Table 3.1. Cost and Yield Comparisons For Three Production Systems Of Resource-Poor Farmers

(ha)

Crop	Year	Traditional cost	Organic cost	Intensive cost	Traditional yields	Organic yields	Intensive yields
Cotton	**2002**	3 085	3 500	7 575	450 kg	650 kg	800 kg
	2003	3 355	3 805	8 235	450 kg	650 kg	800 kg

Note: costs consider all inputs and labor.

Source: Maharashtra case

Soil fertility and plant health issues

75. Only one of the 14 cases noted a fertility decline; and it was temporary as farmers learned. The cotton study (Madhya Pradesh) used the most sophisticated measures and recorded that after several years, organic soils required half the application of nitrogen to produce similar or better yields than conventional soils. For most cases, there was no evidence of formal soil testing so the studies based their assessment on farmer observations and yield changes. Most of the cases noted very significant improvements in soil conditions and fertility although some of these only measured a few years. One case literally resuscitated barren land into what is now productive farming area (Maharashtra). Other cases (Karnataka, Madhya Pradesh) recorded that just a few years after starting organic practices, farmers' fields no longer became waterlogged during heavy rains. The Karnataka case notes a reduction in irrigation requirements while getting higher yields. Their improvement of soil tilth and organic content has increased the soil's water holding capacity such that requirements for irrigation water have dropped by approximately 25%.

76. In two cases, already certified organic farmers admitted to occasionally, although rarely, using chemical pesticides as a shortcut. Both cases were modified forms of contract farming where the farmers' only incentive was a simple contract to deliver the agreed-upon crops to the contracting enterprise. There was no farmer organization or peer trust group. These farmers received only minimal training and supervision and were certified but neither managed nor owned the certification. They demonstrate the potential danger of working only with a price incentive. One of the Scientific Committee reviewing this work (de Janvry) notes that “shocks due to pest attacks could be managed through temporary use of synthetic chemicals. Because vulnerability is such an important aspect of poverty, the relation between organic production and risk would require further analysis.”

77. The introduction of methods such as interplanting with different varieties rather than monocropping, have helped farmers in Yunnan China to reduce the spread of disease and nearly double their yields. By interplanting different varieties they were able to overcome serious problems with rice blast that did not respond to conventional agro-chemical methods (Zhu et al. 2000). The intensive cotton production case (Madhya Pradesh) requires less expense and about half the time for pest management compared to conventional cotton farming in the region. And yet they maintain similar or even higher yields when compared to the conventional systems. The occurrence of difficulties with pests or disease caused some farmers concern. Yet in all of the cases the incidence is were more or less as manageable as conventional methods after farmers were taught organic control methods.

Livestock components: fertility and risk management

78. Livestock play an important role in the socio-economic life of India and China (see Appendix II) and they also play a vital role in providing farms with necessary balanced nutrients. Organic systems work particularly well with livestock components. This is especially true in less

fertile areas (Shiva 1996). Models of integrated agriculture, based on the principles of animal integration have always existed in Asian traditional agriculture. Livestock is part of a self-sustaining system of production of organic manure that is needed for organic cultivation ranging from fertilizing crops to fish ponds. It also provides valuable proteins to the rural poor. Livestock provides a number of higher value products such as milk and eggs, yogurt, and cheeses and also by-products (i.e. skins, fats) that guarantee cash income to farm families offer employment not only to producers in the rural areas but also to large numbers of people engaged in secondary and tertiary enterprises related to the livestock business.

79. Organic livestock development promotes the diversification of production and hence diversification of incomes sources among small poor farmers especially in remote or marginal farmlands (see Appendix II). For smallholders, the most likely possibility for organic rearing is with ruminants, due to the high cost of organic cereal feeds for monogastric species (Harris, Browne, Barrett and Gandiya 2003). The organic production of small ruminants and their by-products (e.g. wool) has great potential to create livelihood improvement among small-scale farmers. Women are extensively involved in livestock rearing. It is an important occupation and a source of family income also for women in the villages (Bhagirath 2000). They collect fodder, feed, clean sheds for these animals, and handle animal health.

80. Organic or integrated farming systems can be very efficient. For example, pigs are reared for five basic purposes: (i) as garbage disposers to eat everything that humans do not want; (ii) as a power station providing biogas energy which is easily converted into electricity; (iii) as a fertilizer factory to supply nutrients to for fish culture and soil; (iv) as a feed mill, as the crop and processing residues are used as livestock feeds; and (v) as a meat producer.

81. In India, two thirds and more of the power requirements of villages are met by the 80 million work animals (Shiva 1996). Indian cattle excrete 700 million tons of recoverable manure, according to the same source half of this is used as fuel, saving 27 million tons of kerosene or 68 million tons of wood annually.

82. One-half of all the world's pigs are born and die in China according to FAO figures (2002). In China, rearing pigs and chickens is common in farm households and the FAO notes that currently only 20% of Chinese animal agriculture uses intensive technology and the remaining 80% is produced on small family-owned farms.

83. Although organic livestock production can offer useful fertility and risk management benefits for small farmers, it also presents other opportunities. Organic production on large-scale commercial farms can increase rural employment opportunities and can thus increase incomes for the resource poor. Typically, large-scale commercial farms undertake most organic livestock production for exports (Harris, Browne, Barrett and Gandiya 2003). Both China and India have potential for exporting (Inner Mongolia Lambs) at least throughout Asia. Trade in organic livestock products however is likely to be a risky business for most producers because of the increasing sanitary regulations and the difficulty of gaining access to an assured marketing chain. Although Japan has no regulations yet for organic livestock, both the U.S. and the EU regulations for organic livestock constitute a considerable barrier to entry in those markets. Although domestic markets are presently underdeveloped, these too show signs of potential given that livestock products already fit into the same higher value food category. In India, organic dairy products are already gaining acceptance (Karnataka) and prominent examples such as New Delhi's Mothers Dairy chain exist in several cities.

84. There is sound evidence that organic livestock methods produce relatively less food and at a higher cost than industrial style intensive methods (see Appendix II). However, the food safety aspects of organic livestock production (when systematically managed) may offer viable economic alternatives to intensive factory farming. This is primarily because organics emphasize a proactive health management programme to address environmental factors that can reduce stress and prevent

diseases such as Avian Flu[7] that are becoming increasingly threatening to some rural and even national economies (FAO, 2002) (and see Appendix II).

Box 3.1: Factory farming vs. Organic farming

In the organic farming systems, cow dung is a source of fertility in the farm and not of pollution. Intensive production is not integrated, and the animal waste turns into pollutant. For example, factory farming of cattle for beef leads to concentration of organic waste from livestock in one place. Nitrogen from cattle waste is converted into Ammonia and Nitrates which leach into and pollute the surface and ground water. For example, a feedlot of 10 000 cattle produces as much waste as a city of 110 000 people and this waste is often untreated. Since intensive factory farming of cattle goes hand in hand with intensive feeding and feed production which in turn can require heavy use of fertilizers and pesticides, the cattle waste from factory farms can also be contaminated with chemicals. It is because it is unable to reintegrate this toxic animal waste into its own agricultural systems that the Netherlands has exported its intensive production cow dung to India (Shiva 1996). Cow dung is a fertilizer only in small scale integrated farm-dung systems.

A comparative energy audit of inputs and outputs between U.S. and Indian cattle shows that Indian cattle are more efficient than their counterparts in the industrial economy when it comes to using energy. They use 22% of the energy value fed to them while the intensive cattle industry in the U.S. uses only 7%. Similarly Indian cows use 29% of organic matter provided to them and in contrast US cows use about 9%. In intensive systems such as that used in the U.S., 6 times as much edible food is fed to the cattle as is obtained from them. Organic systems strive to avoid such considerable waste of energy and resources.

Adapted from Shiva (1996) by F. Ambrosini

Does organic use more labor

85. The case studies clearly demonstrate that in many — but not all — cases, organic agriculture does require more labor. Madhya Pradesh cotton represents one of the more sophisticated adoptions of organics and by using less labor than before is a notable exception. A typical average, as in the Jianxi Rice example is 30% more. Some of the extra labor estimates, especially those at the high end of the range, can be misleading. Often, a significant portion of that labor difference is due to initial adaptation work and for newer and more demanding methods of cultivation and harvesting that are specifically necessary in order to meet the required standards of the organic buyer that is paying a considerable premium for that higher quality. For example, the Karnataka example shows 40% more labor and this includes labor for increased harvests while the Hubei Tea data shows the conventional labor comparison to be 63% less than organic mostly due to the new quality requirements of the harvest. Similarly, an independent study in 2002 (Bao) found that more than 90% of conventional farms that convert to organic increase their labor input.

86. In most rural areas labor availability is not a limiting factor. But in areas where this is a constraint, organic methods can be at a disadvantage since most farm households have labor opportunity costs. Even in nations with much higher labor costs and very limited labor availability such as the U.S. and Europe, small organic farmers are profitable. However, if organic agriculture ceases to be more remunerative, farmers can easily adopt conventional methods or return to traditional agriculture without complications. Some of organic farmers have come to perceive the labor component as a way of adding value at the local level to a crop, rather than using purchased inputs for the job that accrue value elsewhere. Several of the cases mentioned that the increased labor provided women with more earning opportunities. In Jianxi China some of the women interviewed claimed that

[7] Example of this is the Swine Fever in November 1999 in Andhra Pradesh, India, where tons of pigs were slaughtered to combat an outbreak of Japanese encephalitis that killed more then two thousand children. Intensive chicken production leaded to the largely spread Avian Flu in Asia (2003-2004). There are also risks from emerging diseases such as BSE/vCJD.

this provided them, for the first time, with a feeling of great worth for their contribution. See section VI on women and organics for more on this topic.

87. Since organics tends to at least initially require more labor, it also creates labor opportunities for the landless population who are often the poorest. In areas where there is not sufficient work for farmers to earn a living, there is a tendency toward emigration to urban centers. Therefore, organics can contribute to rural stability.

The issue of organic soils and yield stability

88. Because many organic projects are relatively new, there was insufficient temporal data to make a decisive conclusion on whether organically managed soils can actually help minimize long-term yield volatility due to adverse climactic occurrences i.e. droughts, torrential rains, windstorms, etc. There are however some reasonable indications. The Jianxi ginger example offers some evidence of this and longer-term observations in Madhya Pradesh's cotton case indicate that this holds true for them. When marginal soils are organically managed, they tend to more noticeably respond in this fashion as noted most prominently in Maharashtra and Madhya Pradesh.

89. According to the records of a former revenue inspector in Karnataka, during the 2001-02 drought, rice farmers using high-yielding varieties and chemical fertilizers saw their crops reduced by more than 50% whereas the region’s organic farmers lost less than 20%. Similarly, sugarcane losses were 58% compared to 1% respectively. These developments got the attention of other farmers who began to adopt organic methods and convert the following year.

Comparison of production costs and yields

90. Because organic agriculture involves polycultures and crop rotations that often alter the farm economics, it is difficult to measure and compare these in terms of simple economic indicators against conventional agriculture that is more likely to be monocrop focused. Even comparisons with traditional agriculture can be difficult since shifts to organic practices like soil fertility management, water resource management, and other environmental undertakings involve complex and multidimensional concepts that are not easy to measure on a cardinal scale (Pender 2004).

91. Although it can be difficult to specifically predict whether production will increase or decrease after conversion to organic methods, some general lessons can be drawn from the case studies. Yield reductions are more likely when conversion is from intensive agricultural methods that rely heavily on external agrochemical inputs. These yield reductions are greater in the first years of conversion as soils and crops adjust and farm management adapts its skills. After the first years, in some cases they rebound to the conversion levels or occasionally supersede them (Madhya Pradesh; Dankers and Liu 2003 p.50) and in other cases they remain somewhat below those levels. The single most important reason for these differences appears to be the farmers' level of understanding and application of organic methods. At the other end of the spectrum, conversion from traditional or rustic methods of agriculture in rain-fed areas to organic agriculture will tend to raise the yields. See table 3.4.

92. Bao's (2002) look at conversion from conventional farms practicing intensive agriculture found that nearly two-thirds of conversions to organics consequently increased their production cost by 18%. Only 46% decreased their income during conversion. Most of these (nearly 80%) recovered to increase their income after conversion while less than 20% did not and suffered a decrease.

93. In some cases organic costs can be significantly higher than conventional costs even when organic yields are markedly less. The Hubei Tea and Mushroom case is the most dramatic example of this. A comparison of yields showed that the organic system's yields were nearly 30% less. Its production costs, due primarily to labor, were double those of conventional production (109%). Although organic inputs were less expensive, the conventional farm used 63% less labor by substituting chemical fertilizer, herbicides, and less selective picking. For the organic farm, the higher costs were in part due to the increased care and selective harvesting (60% higher cost for harvesting)

necessary to improve the quality for a premium organic market. Nevertheless, in this case the organic farm was three times more profitable since the market price it received was nearly 400% higher.

94. The reverse is true for costs in Karnataka where the costs of production were significantly reduced for a number of crops as a result of conversion to organic. Rice production costs were reduced by an average of 16% by the 4th year of conversion. Converting their sugarcane to organic management reduced total production costs by 15%. Bananas showed an even more significant reduction of approximately 33% after conversion was completed.

95. It is likely that — to a significant extent at least — the shift in production costs may depend on the producers' ability to fully adopt and take advantage of the management techniques of organic farming. There is a correlation between those cases where farmers and their support structure (i.e. NGOs) can access and develop the technology of organic farming, and their success in achieving soil fertility, pest management, low costs, and high productivity. Accordingly, in cases where there appeared to be little education or incentives to fully adopt organic methods, and little support with technology and methods, yield declined or showed only modest improvement and costs tended to be higher. The following analogy comes to mind; a student that is given resources, support and a collegial team environment to learn a new subject vs. a student that is left to his own devices and told that he would pass just so long as no one caught him using any chemicals. Both may "pass" to sell their products but will end up with rather different results.

96. In some cases part of the productivity increases may be due to nothing more than improved cultivation methods and care when a crop's value increases significantly. For the traditional kidney bean farmers in Yunnan, yields improved 15% while input costs went down primarily because of improved seeds and cultivation methods since little else changed in their traditional system. Much of this change was driven by premiums of up to 50% for their organic beans. But as Rundgren (2002) notes, organic agriculture can increase productivity through a number of mechanisms. The case studies have noted these:

- Developing the biodiversity in the farming system through crop rotation, intercropping and polyculture tends to lower the risk of heavy pest and disease-related losses while improving fertility. Intercropping and appropriate cover crops can reduce erosion, improve moisture levels, and also reduce the need for weeding as well as providing fodder and additional sources of income.
- Effectively optimizing resources such as forest area, livestock, and water (micro-catchments and retention) and recycling on-farm nutrients by composting serve to improve the soil's fertility and tilth and can also reduce both costs and a farmer's vulnerability

97. Table 3.2 shows a typical example of key comparisons points between three different production systems: a) traditional or rustic; b) certified organic; and c) conventional agriculture. Three of the crops (rice, ginger, soy) are grown in highland areas of China and for contrast, the bananas, plains rice, and sugarcane are cultivated in a dry central Indian valley. These examples adapted from the Jianxi and Karnataka cases illustrate not only two different agro-ecological environments but also two different levels of institutional support and farmer training in organics. The Karnataka case has developed a broad institutional support system that includes on-farm research and ongoing programs of farmer training. As a result, it has managed to actually reduce the costs of production while elevating yields to levels that are even superior to those of local conventional farmers.

98. The table notes how costs of production have risen modestly for all three types of cultivation in China in part due to rising labor costs. Costs typically increased for both the traditional and the conventional systems in India as well although the cost of production for organic banana, sugarcane, and valley rice gradually declined. Yields are remarkably stable for both of the established systems of traditional and conventional production. Organic yields have steadily improved in all cases as both soil tilth and farmer experience have progressed. As noted in the table below, the Indian organic yields have clearly surpassed those of conventional and traditional systems. Prices for organics also tend to be higher but in some cases, such as Chinese rice where production is for local markets, there is little or no price differentiation for being organic, and pricing is at par for all three systems. Other

case study examples (Uttaranchal, Anhui tea) show results — at least in their early phases — that are more like the Chinese example where intensive systems yield considerably more than organics. In these cases, farmer training and local institutional support are still quite modest and the lack of organic technology and modest application of organic methods may be a determining factor.

Table 3.2. Comparison of Cost and Yield of Traditional, Organic, and Intensive Farming Systems
(kg, ha, USD)

		Production Cost (USD / Ha.)			**Yields** (kg / ha)			**Price** (USD / kg)		
Crop	**Year**	**Tradi-tional**	Organic	*Conven-tional*	**Tradi-tional**	Organic	*Conven-tional*	**Tradi-tional**	Organic	*Conven-tional*
Hill Rice (China)	01	330	710	580	3 750	5 250	6 750	0.10	0.10	0.10
	02	370	730	600	3 375	6 000	6 700	0.12	0.12	0.12
	03	400	767	640	3 750	6 375	6 750	0.15	0.15	0.15
Ginger (China)	01	n/a	1 812	1 620	n/a	15 000	18 000	n/a	0.12	0.07
	02	n/a	1 849	1 680	n/a	22 500	29 250	n/a	0.15	0.07
	03	n/a	1 885	1 740	n/a	12 000	1 4400	n/a	0.17	0.08
Soy (China)	01	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	02	n/a	310	600	n/a	3 750	7 500	n/a	0.24	0.09
	03	n/a	320	675	n/a	3 750	7 500	n/a	0.34	0.12
Valley Rice (India)	00	220	415	360	3 250	4 500	5 750	n/a	n/a	n/a
	01	230	410	385	3 100	4 650	5 000	n/a	n/a	n/a
	02	235	380	410	3 100	4 900	4 850	n/a	n/a	n/a
	03	250	365	435	3 150	5 350	4 900	n/a	n/a	n/a
Sugar cane (India)	00	665	1 040	835	105 000	112 000	155 000	n/a	n/a	n/a
	01	680	1 020	970	87 500	116 000	137 000	n/a	n/a	n/a
	02	695	965	1 020	102 000	121 500	108 000	n/a	n/a	n/a
	03	705	880	1 035	92 000	128 000	97 000	n/a	n/a	n/a
Banana (India)	00	1 940	2 015	2 845	17 500	22 500	31 000	n/a	n/a	n/a
	01	1 120	1 210	1 490	18 000	28 000	29500	n/a	n/a	n/a
	02	1 135	1 180	1 510	20 500	33 000	27500	n/a	n/a	n/a
	03	1 140	1 095	1 640	21 000	36 000	23000	n/a	n/a	n/a

Source: adapted from the Jianxi, China and Karnataka, India cases

Notes: (1) The yields are an average. Rice yields are similar among fields, but ginger and soybean yields vary considerably. (2) The production cost includes seed, fertilizer, pesticide and labor. For organic production, it includes an estimate of the actual cost of any subsidized fertilizer and pesticide but not the cost for training and organic certification.

99. Ginger is a relatively new market crop and in Jianxi was not produced in the traditional manner. It was introduced for its marketability and typically produced only by either conventional or organic methods. Organic production costs are marginally higher by about 10% and yields are significantly lower. In average years overall organic yields were 15-23% lower. 2003 was a difficult

year when production suffered dramatic losses. Organic systems appeared to be marginally more resilient to the climactic stress. Even with cost and yield disadvantages, the market prices for this cash crop dramatically tip the economics in favor of organic ginger.

100. Soy is another significant cash crop. In this case, organic input management is half as much as conventional methods and the yields parallel that. Once again, where the market is available, the economics tip strongly in favor of organic production with prices two to three times higher than those for conventional soy.

101. In the semiarid settings where valley rice, sugarcane, and bananas are cultivated, years of conventional monocrop management have reportedly resulted in progressively higher input costs in order to manage pests and maintain yields. Adapting these soils to organic management at first caused very significant drops in the yields for all three products (average 20-30% loss). By the third year the reductions stabilized and then climbed to surpass the output of the conventional systems.

102. In some cases further distinctions were made when these were significant. Affluent farmers' use of labor and inputs can also shift the production economics. For example the Anhui Tea case notes differences between farmers in hill areas and those in the plains.

103. There were significant cost and yield distinctions between wealthier farmers and poor farmers. Poor or remote farmers use fewer updated methods and technologies. For example, a distinction was noted in their tea harvesting skills in Anhui and this was exacerbated by their financial inability to contract necessary harvest labor thereby suffering both reduced quality and reduced yields.

104. Similarly, some poor farmers lack farm animals for fertilization and do not have sufficient resources to procure external inputs, resulting in lower yields (Madhya Pradesh cotton). The Anhui Tea case also found that farmers had limited alternatives. For example, if the farmers own labor costs are accounted for, then the organic villages (because of higher prices) enjoyed positive net income while three traditional non-organic villages experienced a negative real net income.

B. Outcomes of converting small farmers to organic

105. While it is impossible to distill the diverse experiences of farmers into a simple graphic, there are nevertheless some typical characteristics of conversion to organics that are often shared. The tables below characterize key developments after organic adoption in order to better understand farmers' experience over a period of time.

Converting from conventional to organic agriculture

106. Generally speaking, small conventional farmers with more resources, have a slightly greater tendency to convert their entire cropping area due to a greater tolerance for risk and a better understanding of the potential rewards. In most cases the farmers' income improved considerably. Table 3.3 illustrates one of the common results that were found in the case studies where conventional farmers converted. Cost of production went up considerably (about 30%) since, despite some cost savings in farm inputs, labor costs were higher. It can be misleading to compare these with previous costs because a significant portion of the new costs result from process changes in quality control and harvesting that can be considered as new investments in order to meet the standards of a new and higher paying market. Costs for conventional systems also increased, but only slightly. Organic yields often showed a considerable early decline of more than 30% but climbed back up as soils improved and the farmer adapted to the cultivation practices. The better practices enabled a return to previous yields by the fourth year while conventional yields did not change significantly. Prices began to climb almost immediately as the buyers responded to the better quality that was evident as a result of better care and improved harvesting techniques (more labor) and the farmer received the certified price after the second year. Conventional tea prices went up across the same time frame but only marginally. The strong market demand for a higher quality crop made a considerable difference. Although sales volumes initially declined as production yields fell, these volumes quickly recovered as the improved quality became evident and buyers responded to its organic cultivation. In this case, the farmer was encouraged to use more labor and increase harvest quantities. The non-farm costs for processing were

greater than for conventional but mostly due to larger quantities and the demand for improved quality as well as the segregation from conventional tea that required farmers to perform their own early stage processing that adds value and is a separate profit making stage for them. As a result of the community's success with conversion, their Tea Farmers Association began to take on their marketing thereby relieving them of that burden and helping to ensure higher prices with communal marketing.

Table 3.3. Temporal Effects Of Small Farmer Conversion From Conventional To Organic Methods

Conventional to Organic Tea (Huoshan Huangya)					
	Pre-conversion	Conversion era			*Certification era*
		Yr 1	Yr 2	Yr 3	Yr 1
Farm cropping area (in Mu)	1	1	1	1	1
Costs of production* (USD per Mu)	37.3	Slightly less than certification era as labor needed is lower because harvest is smaller during transition			48.3
Yields (kg per Mu)	20	13-14	14-15	14-17	15-20
Prices to farmer (US/kg)	7.2-9.6	8.4-9.6	16.9-24.1	24.1	24.1-28.9
Sales Volumes (USD/mu)	145-193	110-135	219-337	313-337	337-578
Type of Market/Buyer: consumer, trader, wholesaler, retailer (lg. or sm.) exporter	Consumers, retailers, wholesalers	Consumers retailers, wholesaler	Consumers retailers, wholesaler	Consumers retailers, wholesaler	Tea Farmers' Association and consumers

15 mu = 1ha

* Includes inputs, labor (both farmer and hired workers), and services.

Source: interviews with farmers in Qingtangou Village, Huoshan County, Anhui province, China, June 2004.

107. A number of factors influence the outcomes of farmers' conversion. Thus, some situations are better while others are worse than the example given above. In order to have a better picture of the overall experience for the cases studied, Figure 3.1 represents the average experience across the different projects when small farmers converted from conventional input use to organic systems.

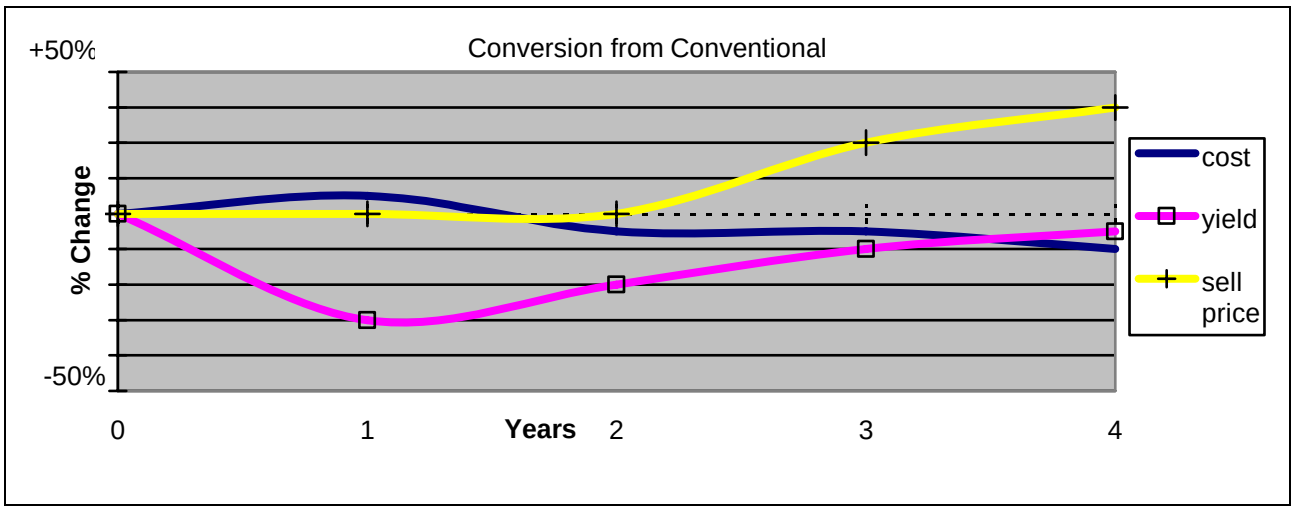
108. As the Figure shows, costs tend to initially be slightly higher as farmers invest (mostly labor) to adjust their fields to organic standards. This can include field contouring/water retention works, new planting to expand diversity or reduce erosion, and setting up composting or vermiculture. For farmers practicing more intensive agriculture, yields have tended to suffer by about one-third immediately after conversion as both farmer and soils adapt. Projects that are technically better managed have much lower reductions while the cases with poor technical support have initially suffered even greater yield reductions. After the first year of conversion, yields climbed steadily and tend to approach the baseline yields of the previous system after the third year. Although several technically well-managed cases can match or even exceed previous yields, most did not. Initially, the selling price tends not the change since organically managed crops can always be sold as conventional. Price may initially suffer for some high value crops for which aesthetic appearance is important in the marketplace (fruits and vegetables) as pest and disease control measures are learned.

By the third and fourth years, when certification occurs farmers have received an average 20%-30% higher prices.

Converting from traditional to organic

109. Farmers converting from traditional to organic methods tend to be poorer than conventional farmers. In most cases incomes improve from a combination of improved yields, and similar or reduced costs. Those with access to organic markets, particularly exports, experienced further considerable improvements in their income (Karnataka, Yunnan tea, Maharashtra, Uttaranchal). In the data below (table 3.4) for a sugarcane farmer, the risk aversion is evident in the amount of land initially shifted to organic methods. As clear evidence of success emerged after the first year, the remaining area was also converted. The costs of conversion are primarily for increased labor and this levels out somewhat as efficiencies develop and initial works are established (establishing new varieties, green manure, soil and water conservation measures). The additional labor resulted in immediate yield improvements that gradually climbed as soil fertility improved and organic management methods were refined. Conversely, traditional and conventional farmers in this area showed an overall reduction in yields during the same time period. The higher prices received for the crop reflect both strong market demand and willingness of the accompanying NGO to help ensure that premiums were received even during the conversion stages prior to certification. The combination of improved yields and higher prices have resulted in dramatic improvements in income (net profit) that are only partially mitigated by the understanding that these do not reflect some of the external costs borne by the facilitating NGO i.e. extension, certification, and marketing. The market options have also opened up after conversion and while the option to sell to the local sugar mill still exists, the improved incomes have permitted outside marketing and investment in some primary processing facilities to add value. Prices for non-organic sugar increased modestly across the same time period. Apart from the initial learning curve and the potential costs of certification (if required), there is no evidence that conversion has any detrimental effects whatsoever. The impacts in terms of costs, yields, risks, and earnings noted in all of the applicable cases were positive. In many of these cases, there was notable mention of positive externalities although these were not usually measured. See chapter 4 for further elaboration of this.

Figure 3.1. Converting from Traditional to Organic Agriculture / Average Expected Effects of Small Farmer Conversion from Conventional to Organic



Source: extrapolation from case studies and related materials

Table 3.4. Temporal Effects Of Small Farmer Conversion From Traditional To Organic Methods

Sugarcane					
	Pre-conversion	Conversion era			*Certification era*
		Yr 1	**Yr 2**	**Yr 3**	**Yr 1**
Farm (cropping area) size in Ha.	1.20	1.20	1.50	1.50	1.60
Costs of production[1] (USD per Ha)	690	855	845	835	810
Yields (per Ha.)[2]	83	91	112	120	128
Prices to farmer (USD /metric ton)	12.5	13	13.25	19	25
Prices to farmer (USD /ha)	996	1 183	1 484	2 280	3 200
Sales Volumes (tons marketed successfully)	100	109	168	180	205
Net profit (USD/ha.)	316	298	639	1 445	2 390
Type of Market/Buyer: consumer, trader, wholesaler, retailer (lg. or sm.) exporter	Sugar mill	Sugar mill	Sugar mill	Own processing and marketing	Own processing and marketing

[1] Includes inputs and labor. Costs for non-converters also increased but only marginally during the same period (<7%)
[2] Yields for non-converters actually decreased slightly in this period by about 10%

Source: Adapted from Karnataka High-Value Crops case of the Eco-Agri Research Foundation (EARF).

C. Post-harvest and Markets

110. Although the higher standards typically required in organic markets intrinsically add value, organic farm produce is mostly sold as a raw material, with little or no added value. Few of the farmers have successfully explored this avenue although other processing and exporting enterprises certainly have (Shandong companies' case). Still, it is estimated that only a relatively small amount of higher value or finished products are exported such as cubed and candied ginger from the affiliated enterprise in Jianxi. Producer groups typically find that adding value and improving their marketing is constrained by three characteristics in the region:

- *The mechanics of processing* - Where producer groups have access to processing facilities, lack of technical capacity in areas such as manufacturing, packaging, quality control, harvesting and post harvest techniques, significantly hamper the possibility of producing competitive products.
- *Organization to access resources* - Most producers are unorganized and very few have the ability to operate within a complex value chain. Individually, they are largely incapable of pooling resources to add value or try to access new markets. Financing for individuals is rare.
- *Marketing know-how and experience* - There are few resources available to them including any reliable market information on organic products, trade, trends, quality requirements, and prices. Few could negotiate equitable transactions with outside buyers,

111. Some opportunities for organics are opening in the domestic markets especially as new market channels emerge. Supermarkets are growing quickly in China and are a natural fit for organic marketing as they strive to differentiate themselves and establish market positions. The Green Foods precedent bodes well for organics since they are targeting a similar client. For the moment at least, organics still earn considerable premiums and are highly regarded in the marketplace whereas Green Foods earn lower premiums. In India, domestic markets are following the early European and North American small-format retail models in the absence of a strong supermarket segment. For both countries, exports continue to be the focus and the source of the highest premiums. These appear to be quite healthy for a number of products although it is unlikely that premiums will remain at their current levels.

The market channels for organics

112. Some of the projects have tried to develop local channels either through direct sales to consumers (Karnataka and Yunnan Tea) or from farmer to retailer (Uttaranchal and Karnataka). These have experienced some success but it is on a very small-scale and it is too early to tell if it is sustainable. A number of projects have made efforts to expand their sales to promising urban centers (Maharashtra and China's tea projects). While some ship directly to stores, several prefer to utilize middleman who are more familiar with these markets and can facilitate the transactions. Several attempts have been made to explore alternative sales channels such as weekly markets in residential areas (Karnataka) but lacking the marketing and retail management abilities, these have been quite modest. A few of the projects primarily took an export orientation although they also use domestic markets, especially for their unsold or lower grade products (Yunnan beans, Jianxi, Inner Mongolia, Yunnan Tea). Most recognize that exporting requires the logistical and transactional support of brokers or export oriented companies and the farmers themselves have little or no direct involvement.

113. In most cases it is the project supporters — either NGOs, firms, or government — that have managed the contacts and transactions with processors, exporters, and other intermediaries. In China several of the projects with government involvement used the well-established network of government marketing channels that is beginning to dissipate and would be difficult to replicate. The NGOs access the markets through their own social and business networks. See "The Organizational Structure and Its Usefulness" in Chapter III, Section A.

114. As organic products increasingly flow-through the larger mass-market and conventional distribution channels (i.e. supermarkets and processors), new demands are placed on producers. With experienced farmer groups or large farmers this relationship can be direct. The capacity to organize farmers is therefore necessary in order to effectively satisfy this source of demand. More often, it is facilitated through a trader, broker, or a specialized wholesaler working directly for the retailer. There was no evidence of dedicated wholesalers or formal interest from wholesale markets, probably because organic channels are rather narrow and specific.

115. In some countries like China, the supermarket channel can be important for farmers to participate in — directly or indirectly — since it is growing faster than most other food retailers. In India, the smaller alternative market channels continue to be most viable as outlets, especially for small low-volume farmers. Although a recent survey indicates that supermarkets and processors account for more than half of organic sales in the Indian domestic market (Garibay and Jyoti 2003). China's pattern appears to be following a dominant paradigm in many advanced consumer economies and urban areas in developing countries wherein supermarkets quickly achieve primacy in food retailing. It is important to note that there are considerable costs and requirements that farmers must address prior to making substantial commitments with supermarkets or similar high-volume market channels. Reciprocally, it is difficult for supermarkets to work with small farmers. Especially where producers' organizations for marketing are very weak as they are in China.

Box 3.2. Supermarkets

The supermarket revolution has arrived in China and is spreading faster than anywhere in the world. From its start in the early 1990s, today the modern food retail sector has over D 55 billion in sales and more than a third of the urban food market. Supermarkets already sell to domestic consumers twice as much fresh fruits and vegetables as are exported from China. This development has been driven by factors shared by other developing countries (urbanization, income growth, and liberalization of foreign direct investment in retailing) as well as China-specific policies (government investment in the sector, and policies promoting conversion of wetmarkets to supermarkets).

There are signs that supermarket procurement systems have begun to shift away from the traditional wholesale system toward use of large, centralized distribution centers, specialized/dedicated wholesalers operating preferred supplier systems, and private standards for quality and food safety. The spread of supermarkets presents opportunities for Chinese agricultural producers to diversify into activities with higher income prospects.

For procurement systems to mature and spread over larger regions of China and move into dealing directly with farmers, however, supermarket managers face several unique challenges. The average farm size in China is small. Farmers are not well organized, since historically cooperatives and associations have not been encouraged. Hence, the typical farm family faces significant challenges in meeting demanding product and transaction attributes required by supermarkets. Thus the whole supply chain must be upgraded. Government agricultural policy and rural development programs have an important role in this, by helping small farmers gain access to the modern procurement systems that supermarket chains will use to dominate urban food markets of China.

Adapted from: Hu, Reardon, Rozelle, Timmer, and Wang 2004

116. While these domestic channels offer sales volume and a more direct communication of needs, requirements, and expectations due to the proximity of farmer to retailer, they also have their shortcomings, and these can be considerable. Supermarkets depend on volume and nearly constant supply and require producers to program their planting/harvesting schedules to accommodate their needs. Supermarkets can require large quantities over short periods such as holidays and much less at other times. Besides quantities and regular deliveries, supermarkets insist on specific agreed-upon quality levels that are not easy for small farmers to coordinate and this can result in considerable losses in a grading/sorting process. In addition to quality levels, supermarkets can also demand specific preparations i.e. cut and trimmed or pre-washed and packaged (bar-coded, shrink-wrapped, etc.) that require additional investments. Because of their size such markets have a well-known tendency to require credit terms so that they do not have to pay for the products received for several weeks. It is not uncommon for these terms to be unofficially stretched thereby forcing producers to wait as long as three months for payment in some cases. Perhaps the most onerous supermarket practices are those of fees and penalties that have become commonplace. Supermarkets often, for example, negotiate contracts that specify penalties for a supplier's non-performance. So if a farmer’s harvest fails, he not only loses the sale that also has to pay the supermarket a penalty to compensate it for its lost business opportunity or the costs of finding another supplier for that crop.

117. Upstream, at the wholesale or distribution level, it is difficult to say that organic markets are efficient since there are no reference points for pricing, labeling and certification are at best inconsistent and at worst non-existent, and competition is scarce with relatively few buyers. There are clearly market difficulties, if not market failures, in this sector. For example, one commonly expressed concern among most of the farmers is to find markets that will also pay a premium for their other organically produced food crops that are grown in rotation with the main crop. With small markets, this is difficult but as these markets develop, they can provide a substantial extra incentive for organic farmers who now primarily market only one crop at a premium.

Meeting quality, safety, packaging and labelling standards

118. There were relatively few mentions by farmers of any glaring or prolonged difficulties meeting quality standards. Quality compliance was in most cases handled by the intermediaries e.g. companies and NGOs usually conducting the market transactions. The intermediaries perform additional sorting, processing, and re-packaging before shipping to the exporter. Their role as a buffer can be valuable in the early stages when farmers are developing their capabilities. However such steps deprive the farmers of adding value and can reduce the feedback necessary in order to improve their quality.

119. As more producers enter the organic market and competition intensifies, quality will progressively become an important factor that organic projects must prepare farmers to handle. Increasingly more sophisticated quality standards (i.e. grading, visual presentation, level of maturity at harvest, packaging, etc.) are basic requirements when organics enter some of the higher volume channels of distribution.

120. None of the producers in the studies claim to have significant difficulties in meeting organic standards. And yet only a very few know more than the most basic aspects of certification requirements. All receive different degrees of assistance from government, companies, or NGOs. A number of the farmers interviewed complained about the tedious and time-consuming tasks of record-keeping and paperwork, claiming that these took away from the time they needed to manage their farms. In several cases (Inner Mongolia, Jianxi, Yunnan beans, Kerala) the companies or NGOs facilitated the record-keeping or interceded on the farmers' behalf so that they would not have to do much of it. There is a fine line between unnecessarily burdening a farmer and bypassing the tasks required of certification systems. While none of the farmers claimed to appreciate the record-keeping, a few mentioned that it helped them to be more aware of their costs and better able to manage their farms. Farmers should be able to better understand and participate in all aspects of their certification since it is a linchpin of their marketing effort. Considering that several of the cases indicated that farmers were not always compliant, farmer participation is an area that needs attention (see “The Cost of Not Complying with Certification Standards”).

121. Few of the projects have other types of certifications (tea in Yunnan China has fair trade certification). But a number have needed multiple organic certifications. The Yunnan bean project has had as many as five international certifications in order to satisfy its foreign buyers. Farmers are certainly not immune to the confusion inherent in managing different organic methods or requirements for different organic certifiers. Securing the certifications can be a costly process and for many projects or organizations it is not easy to learn the differences between certifiers and understand which certifiers are most accepted where. While the companies or intermediaries in nearly all of the cases handle much of this process, they also tend to hold title to the certificate itself meaning that it can only be used by them and not by the farmers on their own.

The basics of certification

122. Covering the costs of organic certification is difficult for any small farmer. Paying for the inspection and the accompanying certificate are only part of the challenge. Farmers also need to learn about organic methods and organic standards, keep detailed records of their farm management, and often make at least some changes in the way they farm for two to three years prior to achieving certification. For most, this requires a measure of guidance and support that are typically rendered by an NGO, a firm, or by government. In both India and China, since landholdings can be very small, farmers must organize in order to apply for group certification that can significantly reduce their individual costs (see more on ICS in Box 3.3).

123. Selecting the appropriate certification agency can be difficult to in the absence of a client's specific request. Some companies with clients in different countries have been forced to secure three or four additional certifications to meet the needs of their target country (Karnataka, Yunnan Beans). In the absence of a predetermined buyer's specifications, organic farmers are forced to assess the target market they are most likely to enter and pursue the standards and certifications of its certifiers.

In China the choice is more complex. There, as the delineations between Green Foods and organics are better established and the domestic situation settles, it will be easier for farmers to select their optimal form of certification. At the moment, Green Food products are primarily for the domestic market (although some considerable exports do occur) while organics are primarily for export markets and can capture significantly higher premiums. See more on Green Foods in Chapter 2 "China's Green Food Phenomenon". There are 25 organic certifiers accredited by China National Accreditation Board (CNAB) to certify organics and one to certify Green Foods.

Box 3.3. Standards And Certification Developments In China

Three relevant milestones for organic regulations have occurred recently. In 2001, the State Environmental Protection Agency issued Organic Food Certification and Management Measures (based on the standards developed by OFDC using IFOAM's basic standards). In 2003, China National Certification and Administration (CNCA) issued Guidelines of Accreditation for Organic Products Certification Agents. The current National Standard for Organic Farming is a Ministerial level edict that was developed by CNCA and China National Accreditation Board (CNAB) in May of 2004 (effective ca. end of 2004) and will serve as China's organic agriculture standard. In 2004, the management of organic certification and accreditation migrated from SEPA to the control of CNCA; and the Ministry of Agriculture is taking over a more active role in organic farming.

The Government intends to gradually rationalize the four current standards. The basic ("non-poisonous") standard will be the de facto basis of all Chinese agriculture. Green Foods "A" standard will continue as a recognized assurance of enhanced environmental and health safety. Green Foods AA will be phased out in favor of organic certification that will continue to be harmonized with international standards to improve its domestic and worldwide acceptance.

The standards being used by local certifiers and their field application and verification are not recognized as equivalent by EU, IFOAM, Japan and American organic regulations and are therefore not useful for export to most countries and regions. Local certification is conducted by domestic certifiers such as: Organic Food Development Center (OFDC) accredited by IFOAM in 2002; the Organic Food Certification Center (OFCC), and the Organic Tea Research and Development Center. There are about 20 certification bodies set up within a number of provincial environment protection bureaus. Certification for export products (and for some domestic supermarkets) is conducted by internationally accredited companies like IMO, ECOCERT, BCS, Soil Association, JONA and OCIA, some of which have set up representative offices employing local inspectors.

Who owns the certificate

124. Organic certification, in most of the cases studied, was applied for and issued in the name of either the marketing company or the NGO. Certification was not in the name of the farmers themselves, nor did they have control over it. If the certificate owner has made considerable investments in the conversion process than having the certificate provides a measure of control over the product. In some cases, where a farmer's organization is not legally recognized, such an approach might feasibly be appropriate.

125. However, if the certificate remains outside of the farmers' control, this propagates a paternalistic situation and is detrimental to them in several ways. Farmers are restricted from learning the details of such a vital process including the important details of record-keeping and management. Their lack of participation may reduce their interest and commitment to organics. It also eliminates the market options for farmers since they cannot present a potential new buyer with the certification owned by another entity even though it certifies them. Many farmer groups would be capable of managing their own certification. Indeed, having the direct responsibility for it and the costs involved in certification would better enable them to understand the true costs of their farming and could engender more dedication and caution in complying with the standards.

Certification: communicating the organic brand

126. Government rules and labeling guidelines in more developed countries are helping consumers to both identify and trust certified organic products. In most Asian countries this has yet to occur and may constrain or distort the real organic demand in those countries. Statistics for Japan's 'organic' sector declined dramatically after the Japanese Agricultural Standard for organics went into effect (Willer and Yussefi 2004). The case study researchers report that in domestic markets a number of foods are presented as organic though they have neither certification nor labeling to confirm it. While labeling guidelines can help, as do clear regulations, they are not sufficient to stem the confusion resulting from the variation in standards between certifiers and the absence of clear information (for both consumers and farmers) about what organics actually is.

127. One survey conducted in Beijing's organic retail outlets found that very few people actually know what organic food is and even 39% of regular purchasers did not quite know (Smith 2002). Markets in North America and Europe have already reacted to the confusion of different certifications in one of the world's most traded agricultural products: coffee. Some major European vendors have issued their own brand as a replacement for the competing third party certifications. A 2001 report (Giovannucci) on a survey of more than 2000 North American firms notes that although it is not clear to what extent the responses indicated a desire for less complex marketing messages for certified products, it is apparent that firms want clear and understandable certification without too many overlapping labels.

128. Apart from organic certifications there are also a number of competing certifications, labels, and brands that compete for the same consumer's attention and feed the confusion. China has 2 Green Foods labels and also a standard for "non-poisonous" foods, all of which are national in scope. There are also some specific niche categories such as *quingzhen (halal)* for the sizable Islamic community. India has a number of standards and terms for ecological agriculture —now jointly termed *Krishi* — many of which are locally or regionally derived. As Zanoli and his co-authors (2001) note, too many labels and choices produce an information entropy effect. As any marketing student can relate, a confused consumer is less likely to make a purchase.

The cost of not complying with certification standards

129. Complying with organic standards and meeting certification requirements often requires at least mid-term (3-5 years) commitment from the local institutions that are often critical in order to support small farmers in this process. Part of this work applies equally to conventional products — not only to organics — in light of the increasing requirements in the marketplace for the improved quality and safety of foods.

130. Field visits to many of the case study sites indicated that some farmers clearly did not fully comply with organic standards. Incomplete compliance occurs as farmers learn and gradually adapt to these new methods. A typical reason for non-compliance in rain-fed agriculture is that farmers are tempted to further elevate yields with a boost of chemical fertilizers when rainfall is exceptionally good, particularly for high-value or rotation crops (Madhya Pradesh). Another common reason is to affect a quick response under difficult pest or disease conditions (Yunnan beans, Northern India). Helping to improve cultivation practices, input quality, crop diversity and rotation, and researching options for biological controls all can reduce cases of non-compliance. It is also important that farmers understand the consequences of violating the standards.

131. When farmers are already certified, then such non-compliance basically constitutes fraud. Consumers rely on the explicit guarantees of organic certification and are therefore harmed. Since the market value of organics is very much determined by the credibility of its certification systems, such fraud harms farmers and is a significant public threat that can damage their livelihoods. The public trust is also violated when government does not adequately protect the food supply of its citizens. Non-compliance with standards therefore requires the rapid response of certifiers and their accreditation agencies and the recognition of basic organic standards (and their use and labeling) in the legal code to permit the application of legal remedies.

132. Because organics is essentially built on trust, even just one or two compliance failures are enough reason for most buyers to discontinue purchasing. China's past experience with contaminated honey (banned in the EU) and vegetables (some require full inspections in Japan) and the rejection of India's food consignments by the European Union and the United States on grounds of sanitary and phytosanitary measures (Financial Express 2004) are good example that have not only cost the industry many millions of dollars in lost sales but also seriously damaged the country's reputation.

The costs of complying with certification

133. Certification fees are high for small farmers in most countries and neither China nor India is an exception where a farm certification easily runs into the thousands of dollars. For example, international certification in China can cost from USD 1 446 (JONA) to USD 2 410 (OCIA). Remote areas and more difficult certification conditions can elevate the costs. ECOCERT reportedly charges USD 570 /working day just for the site visit and generally for one such application 3-10 working days may be needed. Costs tend to be somewhat lower for domestic certification, but this too is still expensive for small farmers with the certification fee for a farm costing approximately USD 964 to USD 1 250 (OFDC). India is somewhat less expensive but also costly for small farmers to bear. A day rate for site visits is at least USD 300 and costs for larger farmers or processing plants are considerably higher.

134. As certification agencies and inspectors establish an increasing presence in developing countries and costs are reduced, farmers, firms and consumers can clearly benefit. For farmers, developing and managing their own Internal Control Systems (ICS) is another way to both minimize compliance costs and improve the responsibility and skills of the farmer association's management structure. By allowing farmer's groups to share in the costs and management of their certification, they become better prepared to manage the plethora of other standards that are increasingly mandated for global trade. These processes that include traceability, record-keeping and internal controls/efficiencies are part of the cost of being internationally competitive in the market for both organic and non-organic products. Inner Mongolia's livestock project company has implemented its own variant of ICS called a Responsibility Sharing System. Quite simply, each farmer is member of small local group and if that farmer fails to meet the organic certification requirements (i.e. antibiotics found in the product), the other farmers who are members of that Responsibility Sharing System have to bear the responsibility and the subsequent economic loss or penalty. Other cases such as Anhui tea, Karnataka, Kerala, and Madhya Pradesh also indicated the use of some form of ICS. As de Janvry notes, "there are important issues of collective action to be understood and how to design incentive contracts with these organizations so they assume the responsibility of monitoring each others actions".[8]

135. In India, the experience of the NGO (Agriculture and Organic Farming Group) shows that the requirements of group certification, did not match well with small-scale farmers' capacities. The introduction of an internal inspection system necessary for group certification requires considerable effort, and internal development work by the small farmers and this will usually require the committed support of an organization. Consequently, practitioners increasingly advocate the simplification of such systems in order to help more small farmers to access organic certification. Alternatives such as non-formal or community-based quality assurance and mutual guarantee principles can be effective when the buyer can readily ascertain at firsthand that standards are met. These can be quite effective for local bazaars and approaches like Community Supported Agriculture wherein local non-farmers directly contribute to the support of an organic farmer (Daniel 2003). The Indian Institute for Integrated Rural Development (IIRD) has already made efforts to implement local bazaars based on such low-cost community-based quality assurance schemes and Karnataka State is pioneering a similar approach. These participatory verification systems merit encouragement when there is strong group cohesion around common goals and when the markets are local or regional with very few intermediaries between producers and consumers. When used in a broader or international context with middlemen they, may face less market acceptance.

[8] Personal communication October 26, 2004 as Scientific Committee member for this evaluation.

136. While localized certification has many pro-poor benefits, once such products leave the local market they are subject to the same perception by average consumers who may not readily distinguish between types of certification or verification systems and this can be problematic if controls are inadequate and contaminated products reach the market as "organic". The potential scandal may also fail to recognize the difference in such two-tier systems and consequently all organics will bear the burden of negative perceptions. Since organic good will is based on trust, this could be disastrous to more than the culpable farmer or middleman and is likely to deleteriously affect the overall industry.

Box 3.3. The Role And Development Of Internal Control Systems

Internationally accredited or recognized certification systems facilitate market access. The increased demand for this type of services has led to a "certification industry", with its own economic interests that can make certification expensive for small farmers. Achieving the international standards and procedures — mostly established by institutions in the more developed countries — can require institutional and economic capacities beyond the reach of small scale farmers in the developing world. Developing countries are increasingly looking for ways to reduce certification costs and procedures in order to make certification more feasible for small farmers. Alternative certification schemes might offer new possibilities by reducing the costs and burdens of inspections.

Standardized quality control procedures are important for all certification systems, to ensure that systems, policies and procedures are in place. The Internal Control System (ICS) is one such alternative that can help groups of small farmers to reduce costs and simplify procedures of internal inspection and certification. Certification bodies can delegate the annual inspection of individual group members to an identified unit/person within a contracting organization. This can be a legally recognized farmers' association, co-operative, NGO, or exporter. The certification bodies then only need to inspect the workings of the method and a sample farmer group in order to evaluate the ICS's effectiveness and the reliability of its process and its procedures in the case of non-compliance.

Many follow the IFOAM Accreditation Criteria for grower group certification. IFOAM is studying how to further develop "Participatory guarantee systems" (reserving the word certification for 3rd party inspection and certification, not to confuse the discussion) in order to reduce unnecessary costs and bureaucracy.

Besides the obvious economic benefits, preliminary assessments of ICS schemes have shown that participating farmers have become more organized, meet regularly and are engaged in a learning process that contributes to better farm planning (SASA 2003). However, farmers participating in such schemes have felt that the record keeping involved demanded a lot of work, with little immediate benefit. Furthermore, the substantial documentation burden imposed by an ICS may deter smallholder farmers, many of whom might be semi-literate, from participating (IFOAM, 2003; SASA, 2003).

A variety of alternative schemes have been proposed since the beginning of the organic movement for local and national verification systems (Altieri, 2002). These have included the community supported agriculture schemes (CSAs) of the U.S. and Australia, the Teikei system in Japan, Coolméia Ecological Fairs in Brazil and, more recently, NOGAMU in Uganda and Alter Vida in Paraguay (Fonseca, 2004). All of them involve the interactive participation of small farmers, enterprises, traders and consumers. Co-responsibility, participation, learning process, transparency, and flexibility are key aspects of these schemes. The most important differences between their verification systems are whether the quality assurance systems rely on first-party, third-party or participatory network assessment. Domestic regulations in the EU and US do not recognize participatory certification whereas Brazil's organic legislation has put "participatory certification" on the same level as 3rd party certification.

Although lack of harmonization and the many public standards and private certification systems may hinder international recognition, the acceptance of some of these schemes can enable smallholder farmers around the world to access these international markets.

A considerable portion of this information is adapted primarily from a contribution by Pilar Santacoloma, FAO (AGS).

Who profits from organics

137. It is clear that in many cases organic products sell in consumer markets for a higher value, but it is less clear the extent to which farmers share in this benefit. In some cases (Maharashtra, Karnataka) where a beneficent NGO intercedes on behalf of the producers, they tend to receive a reasonable share that is well above 50% of the final price. However, where their power of negotiation is limited by their capacity to associate, it is likely that they would receive a lower relative portion. Some of the case studies noted that there was little price transparency for farmers and few were aware of the selling prices beyond the farm gate. In some cases it appears that other market players realized disproportionate rents although it is not always clear what their additional costs and risks actually were. In some cases (three China cases) farmers have been known to receive as little as 5% of the final (FOB) price, although this was more than they had previously received by selling their crops as conventional. Of course, the intermediaries have some processing, packaging, and marketing costs but these are estimated to be a relatively modest proportion of their share. Accordingly, where organized farmers participated in the processing and even the marketing of their products (Anhui tea), they were able to earn from 43% to 100% of the retail price for a competitive commodity such as tea where farmer margins can typically be 10% or less.

138. Nearly all of the case studies cited a significant growth in farmer income following organic conversion. Farmer profits tend to be somewhat better protected when they are organized either as an association or by a civic association (NGO or charity). This profitability is likely to diminish as competition inevitably increases.

139. Table 3.5 indicates that farmers receive a substantial portion of the price for sugar and rice. However, over the course of the last four years their share has declined by 20% for sugar and 15% for rice. Their declining share is indicative of two developments that accurately reflect the general market situation. First, retailers — especially those distributing organics — are becoming increasingly powerful. Their share of the total price increased 170% and 130% respectively. Second, increasing availability, especially of such staple commodities puts downward pressure on producer prices. In this case, the intermediary's share appears substantial and that is because this intermediary provides a number of services that include training, grading and processing, transportation, and marketing. Market forces are clearly very important in this price dynamic. As evidence, Table 3.6 illustrates the situation in a high-value crop with strong global demand. In this case, vanilla farmers are earning an increasing share that is commensurate with the increasing demand for their products. Their organizational capacity in this case helps them to understand market prices and negotiate accordingly. Conversely, farmers growing another high-demand product — Pu-er tea from ancient groves in Yunnan — have been less successful in organizing allegedly due, in part, to local government intervention and receive less than 10% of the retail price in the domestic market and 5% of the FOB price.

Table 3.5. Certified Organic Prices Along The Value Chain For Sugar And Rice
(in % of final price)

	Sugar				**Rice**			
% of price received by	**2000**	**2001**	**2002**	**2003**	**2000**	**2001**	**2002**	**2003**
Farmer	68	65	61	55	72	67	64	61
Wholesaler (EARF)	25	26	24	26	19	18	17	18
Retailer	07	09	15	19	9	15	19	21

Source: EARF from Karnataka case study.

Table 3.6. Certified Organic Prices Along The Value Chain For Vanilla (in % of FOB price)

Vanilla				
% of price received by	**2000**	**2001**	**2002**	**2003**
Farmer	75	79	89	93
Middlemen/Broker	6	5	1	1
Exporter	19	16	10	6

Source: EARF from Karnataka case study

Price premiums and their trends

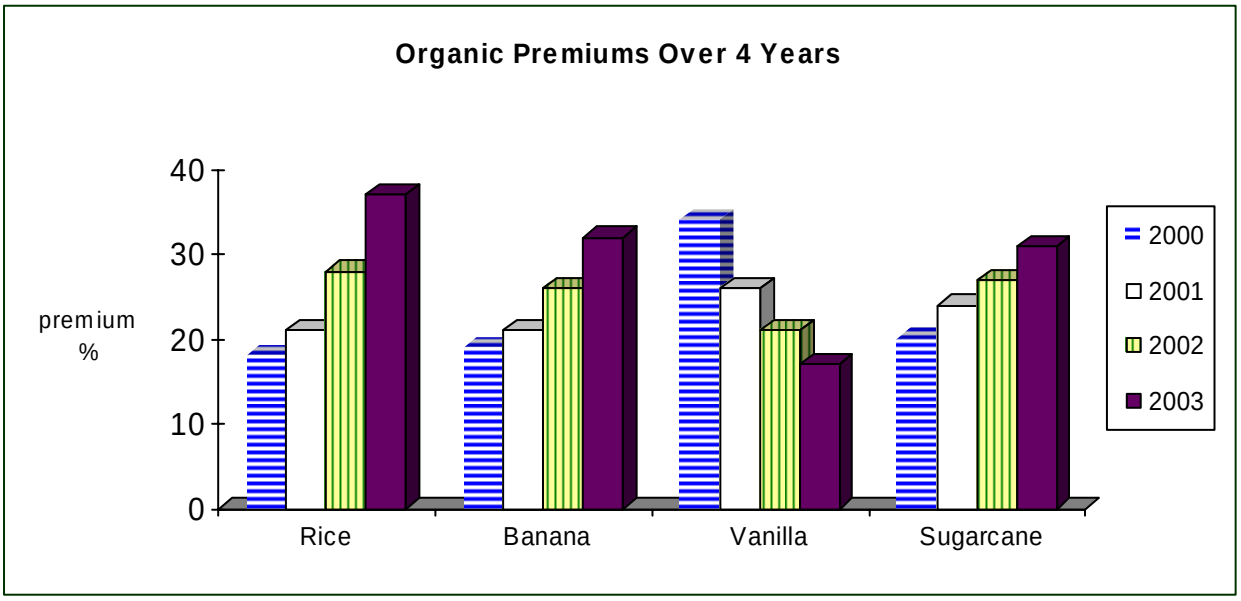
140. Almost without exception, the cases studied expressed a strong belief in the potential of organic production as an income enhancing option for farmers, particularly when seen in light of the price differentials obtained on the world market. The studies illustrated that some of the premiums were extraordinary. In some cases these reached as much as 300%-400% (Jianxi, Yunnan tea). There are indications however that, such premiums will diminish as global competition in the organic field escalates. This has already occurred for several commodities (Giovannucci 2003). Most of the case studies suggest that premium levels range from 10% to 50% with 20-30% as an approximate average. An independent study in 2003 (Garibay and Jyoti) surveyed organic exporters and found that their premiums ranged from 25% to 53%.

141. While export markets typically offered the highest prices and premiums, in some cases the emergence of domestic markets has also stimulated premiums. Although many producers find these premiums to be small and those market channels difficult to access, others have enjoyed considerable success. The Karnataka case study indicates that for products sold on the domestic market i.e. sugarcane, rice, and banana, the premiums have actually increased over the last four years whereas the organic premium for a high-value export (vanilla) has actually declined even if it's total price has not. This is a fairly representative finding and is illustrated in figure 3.2. As consumers have become more familiar with organics, local manufacturers and retailers are beginning to fill this profitable niche. The same Karnataka case noted that two food manufacturers and a dairy have begun paying a premium for organic ingredients and supplying the final products to the urban markets.

142. In many domestic markets, premiums are also paid for products in transition although this is less common for export products. There are modest premiums for other related certifications as well. For example, in China the Green Food producers can earn a premium for AA quality that is perceived as being similar to organic. The much more popular A grade of Green Food typically no longer earns farmers a significant premium, but is perceived as having a competitive advantage in the retail marketplace. China's *quingzhen* (literally "pure and clean") classification is important to the Islamic segment of the population and earns a modest premium among the Hui, China's largest national minority (Boyd Gillete 2000). In India, a number of food production and preparation methods with religious and cultural overtones also command modest premiums in the marketplace. These foods can be classed under the heading of *Krishi*, and where recognized, also can have a competitive distinction that makes them preferable to conventional produce. Premiums are modest, and typically farmers might benefit economically primarily if they sell directly to consumers.

143. Typically, every link in the value chain for organic produce enjoys improved earnings. Nevertheless, farmers may not enjoy the full benefit of organic premiums, particularly when they have no control or ownership over their certification and little or no collective bargaining.

Figure 3.2. Premiums For Export And Domestic Products



Source: Karnataka case

IV. THE IMPACTS OF ORGANIC AGRICULTURE AND THE PROS AND CONS OF ADOPTION

144. It is inevitable that in very populous countries such as China and India — where the arable land and irrigation water necessary for agriculture are diminishing on a per capita basis — that more productive methods will be important, and that these land and water resources must be protected. Thus, as Swaminathan has noted[9], organic agriculture should be assessed in relation to the following:

- Impact on productivity, profitability (including market demand) and income security - particularly for small farmers particularly in the context of the increasing feminization of agriculture.
- Impact on the ecological foundations essential for sustainable advances in productivity, namely soil health, water (quantity and quality), biodiversity, forests, and personal health.
- National food and nutrition security not just (physical access but also economic, ecological, and social access).

145. Organic agriculture is not a panacea that will satisfy all farmers nor is it a complete solution to the world's food needs, no technology or farming system can do that. In certain situations, particularly very intensive, input-oriented agriculture, organic methods may present significant difficulties — at least initially — in terms of crop yields. There are however reasoned arguments that, at least for small farmers, it can provide more benefits — both direct and indirect — than conventional methods. Equally compelling on the macro scale is that organic agriculture can provide several public benefits that by most calculations should make it a very relevant multi-purpose tool for many Asian policymakers for whom health, food security, and improved incomes are at the top of their priority list.

[9] Swaminathan personal communication Oct 1, 2004 in advisory capacity as Scientific Committee member.

Box 4.1. Recapturing Local Nutrition Through Organic Systems

The cropping profile of Uttaranchal hilly lands —especially the 43% of the land that is not irrigated— is an assemblage of diverse coarse grains, many of which were grown together in the field at one time. This traditional 12 grains cropping or *bara anajha* was also common in other parts of India before the Green Revolution era. These coarse grains —primarily millets— are nutritionally more valuable than rice or wheat as repositories of considerable micronutrients and vitamins, and yet they fell into disfavor.

The poorer dryland farmers often do not have the land for the market-oriented wheat-rice cropping patterns that are supported by government, which has had no plans for their millets. The coarse millet grains eventually acquired a social stigma, and gradually the men or guests of rural homes were preferably fed either rice or expensive wheat, while millet primarily secured, by default and poverty, only the health and nutrition of the women. The seeds of these millet grains, through selective generational breeding, are mostly free of disease and pest problems, do not require fertilization or water, and are able to sustain the severest of weather conditions. Despite such food security characteristics, the millets declined to have absolutely no market value.

Organic agriculture does have a market for such highly nutritious grains (including wheat free/gluten free foods), and so finger millet is now shifting from being a social disgrace to being a product that commands a higher price than both wheat and rice. The local community has accordingly resumed millet consumption as well. Similarly, due to urban labor migration, livestock cultivation gradually declined and was replaced with more expensive purchased commercial dairy products for the family. Livestock cultivation is now re-emerging as part of organic practices, and among its benefits is that it is providing very low-cost milk products, even to the poorer families.

Contributed by Binita Shah

Food Security

146. In China, India, and many Asian countries, food security is a primary concern. In the 1990s about 80% of all the malnourished children lived in countries that had a surplus of food (Worldwatch Institute 2000). Even though the macro problem of enough food at a national level has been resolved in many places, the problem of food security persists within countries (World Bank Institute 2004). The rural poor can face malnutrition and food shortages for a number of reasons, and crop failure is one of the more likely. Organic agriculture directly addresses this problem by fostering methods that improve natural soil fertility and stability in order to better withstand natural calamities such as drought [Altieri 1999; (Drinkwater, Wagoner, and Sarrantonio 1998)] and more efficiently use of nutrients (Mäder et al. 2002). This could be increasingly valuable as arable land in the western provinces of China becomes relatively less productive and farmlands decline by 400 000 hectares per year in the eastern provinces (UN 2003 p. 50). Another important feature of organic agriculture is crop diversity, and this aspect helps to provide more complete nutrition and reduces a farm community's economic risk of dependence on one crop (Altieri). Improved nutrition is important for many countries including India where almost half of its children are under-nourished (IFAD 2004).

147. The International Fertilizer Industry Association (1996), and International Food Policy Research Institute (2002) among others, have noted that organic materials alone may be insufficient to replenish the soil nutrients removed by crop harvests. While this may be accurate for intensive and large scale agricultural systems, 13 of the 14 smallholder cases report that this is not a problem; Yunnan tea is the exception. Although some of the cases are recent and have only a few years of production for most of the small farmers studied the functionality of organic inputs is adequate and, although some did purchase organic inputs rather than develop their own, these were usually readily available locally. Likewise, the Shandong Province case with 10 600 farmers and an output measured in the tens of thousands of tons, specifically noted that organic inputs were not a constraint for them.

148. Similarly, some researchers cite the necessity of synthetic pesticides to maintain crop yields, but this does not coincide with the majority of findings in the cases studied. The Shandong case noted difficulties in finding organic bio-pesticides while others noted occasional pesticide use, but always in situations where newly converted farmers lacked professional advice or extension support. There is evidence of improved pest and disease control after organic control methods were established (rice in Yunnan). Another study in Pakistan, states that national pesticide consumption for cotton rose by 40% between 1987 and 1997, nevertheless, yields were lower than in 1987 for six of the ten years (Poswal and Williamson, 1998 as cited in Madhya Pradesh Cotton Study). This pesticide treadmill of increasing use with decreasing returns typifies the experience in several other sectors and countries and Yudelman, Ratta, and Nygaard writing for IFPRI (1998, p.1) note that the "…near absence of investment in developing alternatives to pesticides for crop protection, especially in developing countries; and increased pest resistance in plants, (are) leading to ever more intensive use of pesticides to limit further losses."

Health

149. Negative health implications can take years or decades to emerge. While none of the case studies have maintained specific monitoring or health records of the effects of the shift to organics, there is certainly valid anecdotal evidence. For example, the Karnataka case study noted that none of the farmers and farm workers interviewed (30) have experienced any feelings of illness after working in the organic rice fields. In contrast, more than half of the local farmers and farm workers (60%) had sometimes suffered from nausea and vomiting after working in conventionally managed rice fields that applied both chemical fertilizers and pesticides. In Kerala, a number of farmers were hospitalized after local groundwater was contaminated with pesticide runoff from neighboring tea estates. Consumers are also affected, and food contamination stories have made headlines in a number of countries including China ("Food Sickened 5000 People Last Year." *China Daily*, June 1, 2000), where it has been noted that the "excessive use of pesticides and chemical fertilizers are having a detrimental impact on health and ecosystems" (UN 2003 p. 66).

150. According to the World Health Organization (Moy 2001), at a minimum, 40 000 people die annually from pesticides, and a further 3-4 million are severely poisoned in the developing world each year. More recent research (EJF 2003) notes that "99 per cent of deaths associated with agrochemical exposure occur in developing countries – an annual toll of 220 000 people". The estimation would be far greater if taking into account that many of the rural poor might not be treated in hospitals. Organic agriculture offers a significant part of the solution to these health-related problems.

151. There is increasing European evidence of the considerable costs and negative effects related to the agrochemicals commonly used in conventional agriculture, and some studies have attempted to quantify the annual health costs of pesticide use, estimating these to be Euro 125 million in Germany (Waibel and Fleischer 1998) and Euro 190 million in the UK (Pretty et al 2000).

> The root cause of the problems in conventional farming is that the introduction of chemical fertilizers and pesticides has stimulated a production system that tries to be independent of natural regulating processes and local resources, and that is heavily dependent on non-renewable resources. It has stimulated mono-cropping … This leads to more pests and increased problems with nutrient management, as natural cycles are broken. To fix the problems even more pesticides and more chemical fertilizers have to be used – a vicious circle is established. (Rundgren 2002, p.11)

Does size matter?

152. Perhaps even more than conventional agriculture, organic agriculture in Asia is very much a smallholder-oriented endeavor. This report focuses more on the smaller scale farming situations in poor rural areas, and only briefly covers issues in the conversion of larger-scale conventional (external-input-oriented) operations to organic agriculture. Most types of agriculture benefit from scale economies, and although such benefits are somewhat less important for the more labor-oriented organic methods, they are still important in most other aspects. There are of course some organic

plantations and extensive tracts of company-owned lands in Asia. Although these are often leased or manned by small farmers, their size and organization help them to capture scale economies at least in the post harvest steps of storage, transportation, processing, and marketing.

153. Some of the scale disadvantages inherent in highly productive small farming operations that use conventional methods can be exacerbated by organic conversion. In such cases, yield reductions, even if temporary, can be difficult to bear. The increased labor and the learning process can tax the small farmer's time. The difficulties are compounded by the challenges a small farmer can have to access organic markets, which tend to be abroad or at least in larger urban areas. Finally, if a farmer pays for his own certification, he will likely be doing so during the transition process, when lower yields may significantly reduce his income.

154. As the evaluation notes (Role of Farmers Associations), it is difficult for small farmers to achieve the maximum economic value from organic methods without achieving certain economies of scale, particularly in marketing their products. This can require negotiating with new and often foreign buyers, implementing control systems to ensure consistent quality levels, and programming the timing and volume of production to meet shifting demand at different times of year. Even well-organized farmers associations can find it difficult to organize the marketing and managerial skills necessary to achieve this, only a few NGOs have the necessary business skills and long-term commitment, and partnering with companies — while potentially very effective —is also fraught with danger, unless the farmers are both well-organized and effective negotiators.

155. Although there is good evidence that small farms are generally more productive (per area unit) than large farms (Rosset 1999; Johnson and Ruttan 1994), in some of the areas studied the small size of farms present limitations that are difficult to surmount. Occasionally, the inadequate per capita land resources do not permit a basic livelihood for a family and force farmers to migrate to off-farm activities or to urban areas. In other cases farmers can provide their basic food security, but the surplus value of such small-scale agricultural production is rarely enough to support a lifestyle beyond the basic needs. In many cases, the small landholdings require only limited labor, leaving farm families with considerable under-utilized potential in labor. During the most intensive work periods, particularly during harvest, labor is often supplemented with landless laborers if necessary and/or returning family members living in urban areas. The harvest season in small farm communities also provides valuable cultural and social interactions, which draw family members back.

156. In other cases, the loss or migration of labor is such that there is a greater emphasis on extensive rather than intensive use of land (CNPAP 1998). The resulting extensive form of rural land management can have negative consequences for farm output. Without adequate land management, seed selection, input application and other cultivation efforts, both quality and yields tend to suffer.

157. In some cases land reform or political turmoil has resulted in fragmented ownership of farming plots. One result — especially in areas with poor transportation networks — is that farmers tend less to several scattered plots and put in as little labor and capital as possible (North India, Kerala). The opportunity cost of more attention to their crops or even a more intensive operation — especially in remote areas — is considered too high given the limited income possibilities from their traditionally grown products, and so they use only the minimum labor necessary for harvesting and marketing.

Value to producers and to consumers

158. Perhaps the most notable negative externality of organic agriculture is reduced consumer welfare as a result of higher prices. Such effects on total welfare would be minimal however, if organic prices reflect a higher level of quality and safety rather than merely poor efficiencies or lack of competition. Organic production methods provide valuable additional benefits or externalities at the producer level in the field that go far beyond advantages such as higher prices. Here are ten examples drawn from Giovannucci (2003) with adaptation:

- **Improved natural resource management** - an intrinsic part of organic production is a practical understanding of the systemic or holistic nature of such farming that clearly implies

a direct appreciation of the diverse forms of value, such as vital watersheds, sustainable logging, and non-timber forest products that exist in the surrounding landscapes.

- **Increased resilience** - the structure and physical tilth of organic soils are well-documented to better withstand adverse weather and climatic hazards such as drought and torrential rain. This is directly evidenced in reduced erosion and runoff and also in soils with superior moisture uptake, filtration, and retention.
- **Increased rural self-sufficiency** - most natural production systems eschew monoculture favoring diversification that improves food security and the rotation and integration of on-farm inputs like animal waste, compost, and wood.
- **Community or organizational development** – these are stimulated by the inherently associative approaches to soil, technology, and crop management in what are knowledge-intensive rather than capital intensive production methods. Relationships with neighbors, elders, and community are often important in organic systems for the purposes of sharing information, joint marketing and the need to manage resources like water and pests at the watershed or landscape level.
- **Reducing financial risk** - natural production systems typically require fewer external inputs thereby reducing production costs and the necessity to borrow money in advance to pay for necessary inputs early in the production cycle. Methods of integrated pest management have been demonstrated in many cases to be effective, lower-cost, and intrinsically more sustainable than conventional pesticide methods in the long run.
- **Reduced price risk for producers** - these products typically receive higher selling prices without necessarily incurring higher costs. In some cases, the more direct linkages to buyers can add longevity to relationships. Caution is certainly warranted here since it is not clear if price volatility is different and there are risks associated with the thinness of organic markets.
- **More direct access to markets and market information** – although this is already changing in some cases, still many buyers of organic products do not work through procurement systems with various middleman that are typical of commodities but rather develop direct relationships with their suppliers and, in this manner, can facilitate higher remuneration to the producer as well as timely and targeted information that the producer needs to meet the buyer's exact requirements.
- **Biodiversity conservation** - these production methods recognize and reward the existence of biodiversity in everything from soil microbes to the pest-predator balance of larger life forms and, in turn, these stabilize the rural environment and reduce the risk of widespread plagues, wildlife eradication, and other consequences of a mismanaged environment
- **Increased use of rural labor** - the modern advance of low-input production systems such as extensive livestock rearing or efficient industrial methods such as chemical herbicides and intensive avian production mean fewer rural labor opportunities. Organic methods can typically replace what are now capital investments with investment in human labor thereby providing income for the landless and small farmers who can sell their services. Increased labor is an advantage so long as the value of the marginal product of labor is above the opportunity cost. The resulting opportunities can help to better stabilize rural communities and reduce urban migration.
- **Fewer health and environmental risks due to misuse of agrochemicals** - The pervasive and long-term environmental destruction now recognized to be directly associated with agrochemicals that were once considered safe but are now banned from most industrial countries - is being transferred to developing countries. The World Health Organization estimates that in developing countries the more toxic materials continue to be widely used and easily available despite some official bans.

Macro trends in established consumer markets

159. Some of the most current opportunities in organic trade are the result of recent shifts in the nature of agricultural trade. Standards are increasingly becoming the new tools of product

differentiation and niche definition, superseding their traditional role as market regulators and lubricants. This fundamental shift has been fueled by GATT and WTO achievements in reducing tariffs and quotas leaving standards to increasingly be a tool of choice for managing trade.

160. Increasing health and food safety concerns[10] are driving a set of quality-oriented and process-oriented changes that are occurring not only in the more developed economies but increasingly in many of Asia's urban centers as well. These changes are stimulated by accelerating developments in the regulatory, business, and consumer environment and influencing global trade (Giovannucci 2003).

- We face a new *consumer* environment with diet, health, and food safety as major and interrelated concerns. As consumers develop increasingly globalized tastes and ideals, they are demanding that social, ethical, and ecological requirements be met by agricultural production and trade. With some products, such as coffee and cacao, such concerns are already becoming the basis of buying practices in major food companies.
- We face a new and much more severe *regulatory* environment that places greater demands for standards on all agricultural products. As government requirements become stricter, these are overlaid with regional trade agreements and international agreements such as those of the World Trade Organization (i.e. SPS and TBT)
- We face a new *business* environment where companies are increasingly concerned about potential liabilities resulting from food related illnesses and reputational liabilities for not meeting social and environmental expectations. Retailers, often the dominant companies in agricultural trade chains, are increasingly adopting or creating their own standards (i.e. Ethical Trade Initiative, Utz Kapeh, and EUREP - Euro Retailer Produce Working Group) and expecting even developing countries suppliers to meet them.

161. The prices for most agricultural commodities have declined in recent years. As competition is increasingly global, many producers are seeking alternatives, where they may have a better competitive advantage. There are a number of ways in which agricultural production can be differentiated, and organic standards are one of these. There are some pros and cons to entering into differentiated markets, and these are summarized in the table below.

Table 4.1. Comparison Of Conventional And Differentiated Markets

Conventional	Differentiated
1. Commodity price pressures	1. Consistently higher prices
2. Reward for quality and price	2. Reward for quality and process
3. Easy market access	3. Limited market access
4. Intense competition	4. Moderate competition
5. Gov support: subsidy, ext. R& D	5. Limited government support
6. Broad market size	6. Very limited market size
7. Short learning and cost curve	7. Longer curve: certification, etc.

Source: Daniele Giovannucci.

[10] Bovine spongiform encephalopathy [BSE, or “mad cow” disease], hoof and mouth disease, pesticide residues, cyclospora, and mycotoxins, among others.

162. Differentiated markets are naturally smaller and more difficult to access than the markets for conventional agricultural products. This could make differentiated markets, in some ways, riskier but most organic products can always be sold as conventional products. Compared to conventional products, there is less price competition among differentiated products. Organic production for example differentiates itself on the basis of its unique processes. These processes add value and typically receive higher prices. For farmers and consumers alike, the market for organic products is underserved by most governments. Although both government interest and development projects have expanded considerably in recent years, the vast majority of resources (institutional and otherwise) still support conventional approaches such as trained extension services, research and development through various institutions, and even subsidies. As a result, farmers must undergo a longer and more difficult learning process that includes additional costs such as certification.

Natural resource conservation and biodiversity

163. A respected study undertaken by scientists of IUCN and Future Harvest (2001) notes that agriculture is the number one threat to biodiversity on the planet. Organic agriculture can be a positive step toward reducing that threat, since its precepts dictate working in harmony with the biodiversity of the farm and the surrounding areas (Scialabba, Grandi, and Henatsch 2002). Organic farmers in China and India consistently expressed satisfaction at the noticeable increase in local fauna and their perception that more amphibians, reptiles, and birds were helping to control local pests. This coincides with a review of 33 published studies on the biodiversity differences between organic and conventional farming systems (Bartram and Perkins 2003). As arable land declines, its quality becomes increasingly important. Between 1985 and 2000 the erosion percentage in China rose more than 40% (U.N. 2003 p.49). Organic methods are known to stem and even reduce the erosion of agricultural land. Although the opportunities are currently somewhat limited, there is an increasing interest in linking productive projects, particularly agricultural ones, with environmental services such as biodiversity conservation and carbon sequestration with entities like the Global Environment Facility (U.N. and World Bank) having already pioneered such projects since the late 1990s (Giovannucci, Brandriss, Brenes, Ruthenberg, Agostini 2000).

164. The rural poor in many parts of Asia depend on common-property resources that face heavy pressure and degradation (IFAD 2002). Projects participants in south and east China as well as those in western and southern India noted that organic principles help them to better understand their environment and as a consequence, there has been less pressure on local forest resources, an increase in the planting and conservation of useful species of both trees and ground cover, and reduced or at least better-terraced hillside farming. There is reason to conclude that the principles of sustainability that are embedded in organic agriculture can facilitate better management of common property resources. Organic agriculture bundles both a product and an environmental service, and when organic products are sold at a premium, they create and pay for farmers to conserve natural resources and biodiversity.

V. WORKABLE SOLUTIONS: PUBLIC SECTOR ROLES

From Farmer Associations and NGOs to Government Policies

165. In most countries, organic agriculture has blossomed in response to market demand and despite some government indifference or policies that do not favor it. Small organic farmers face problems related to biased government policies and institutions, which tend to favor larger farmers, such as government research agencies that focus on crops grown by larger farmers, or subsidies to credit for heavy machinery or inputs used mainly by larger farmers. For years organic agriculture has been generally overlooked, because it was perceived as being insufficiently modern and of little economic consequence. Often seen as the default option, it was lumped with traditional and rustic forms of agriculture that receive little if any policy support. This despite indications that investing in marginal areas is justified by evidence that the marginal returns to investment in such areas are typically higher than in more advantaged areas (Hazel and Fan 2000). However, this is quickly changing, as the fiscal and risk benefits are increasingly realized at the government level. In some cases, state and provincial governments have moved much more quickly than some central

governments to develop adequate policies in response to the opportunities of organic agriculture in their regions. Today, many agricultural ministries have organic policy and standards on their current agenda. This section covers the specific implications for the public sector of the 14 case studies, and the general lessons that can be inferred from these and the current literature on this topic.

Government investment in organic-oriented services

166. Both India and China have recently taken more supportive positions toward organic agriculture. In fact, a number of Asian governments are increasingly recognizing their nations' potential for organic agriculture and supporting some modest investments in the field. For governments, investment in organic agriculture implies a number of tangible benefits ranging from simple economic benefits to those mentioned in Section IV, which are more difficult to quantify. For example, the yield stability and diversification demonstrated in organic systems is likely to improve both nutrition and food security, especially in rural areas, thereby reducing government expenditures in stock retention and policies to encourage increased production. In a separate calculation, each farmer that fully adopts organic principles produces a crop without synthetic fertilizer, which in the case of some countries (e.g. India) means a direct cost savings that can amount to hundreds or thousands of dollars per farmer each year in subsidies, which government does not have to expend. For example, the current Indian fertilizer subsidy of USD 98 per hectare could be also paid to organic farmers but in a different manner (i.e. certification, promotion, tax relief, direct credit, organic extension services, organic research fund, etc.). Since the subsidies are typically paid directly to fertilizer companies, they would be the only ones to be disappointed. Similarly, government support for organic agriculture would reduce the use of usually imported synthetic agrochemicals such as pesticides and herbicides, and thereby reduce the outflow of foreign exchange. In these ways, and others, the public sector's support for organic agriculture can help to transform marginal rural denizens that are currently perceived as either vulnerable or as a burden into one of the country's contributing assets.

167. In most cases government investments in organic-oriented public services have been minimal - often from the local level - and primarily in the form of pilot projects and some research. Both India and China have strong governments with considerable influence on rural well-being. For organic agriculture to thrive and to offer its benefits to both farmers and consumers, governments ought to take a supportive and pro-active approach. Much of the government support for agriculture is targeted to conventional agriculture and excludes organics. This can be seen in the form of state-sponsored research, subsidized certification (i.e. for ISO 9001 and HACCP), extension services, and subsidized power for irrigation and fertilizer production, both used primarily by conventional agriculture. Subsidies for organic agriculture are warranted because they meet nearly all of the criteria for subsidies given to conventional agriculture and add an important consideration. The positive externalities of organics, whose costs are typically not fully internalized by market forces, especially during the conversion process, can justify the public investment. This reasoning led a number of European countries to adopt subsidies and other incentives for their organic sectors. The experience of IFAD and other international agencies can help to design and channel incentives, and help ensure that subsidies are structured so as to be non-distortionary. Organic agriculture need not necessarily be an expense, in fact it can easily fall on the other side of the balance sheet. For example, a new multi-donor fund is being considered for the remediation of non-point sources of pollution in China[11]. Development agencies such as IFAD have experience that will be vital as the fund intends to incorporate organic agricultural incentives in remote rural areas, since these have been recognized for their environmental contributions at the watershed level.

168. The training of extension services in organic methods has been slow and, in many cases, is non-existent. None of the 14 projects studied found that public extension services provided adequate training benefits. Extension services are less prepared to serve organic farmers, and in some areas they are increasingly trained by, and affiliated with, agrochemical distributors who are often replacing governments and research institutions as sources of information for farmers (Uttaranchal). Since the

[11] Personal communication SEPA.

cases have clearly conveyed that production technology is vital, there is a critical role for NGOs and development agencies to help bridge this missing link, particularly for small farmers.

169. In both countries organic investments have been more prominent at the state and local government levels. In the case of Jianxi, the organic conversion was initiated and facilitated by the township government. They identified this opportunity and organized the farmers to vote on full community adoption of organic principles. The government drew up a contract ensuring farmers that the township government will provide them with various supports including subsidized bio-pesticide, seeds, and organic fertilizer as well as extension services and marketing. The contract clearly forbids farmers to use prohibited agro-chemicals and GMO crops and, in a bid to help restore natural biodiversity, also forbids hunting (including frogs and snakes) or forest clearing. Although the project has met with its difficulties — particularly adapting to organic methods due to the limitations of local extension services — it has succeeded in meeting many of its goals, and farmer incomes and opportunities have increased such that only half of those that formerly migrated for work now do so.

170. India's organic agriculture is progressing at the state level. Several states have made strong commitment to developing an organic farming base. Uttaranchal boldly declared itself "an organic state" proclaiming its intention to encourage it at every level of government and only funding new research and projects that incorporate at least some organic components. It is also now considering legislation to favor organic investments with tax benefits and to exempt organic inputs and products from taxes. Karnataka is the first state to elaborate organic standards and is actively developing pilot projects in every district in partnership with local NGOs that have been selected as part of a statewide process. Their selection criteria and process are synopsized in Appendix 4.

Institutions that influence organics

171. China has recently shifted the administration of organic inspection and certification from the State Environmental Protection Administration to the Committee for National Certification and Accreditation (CNCA). The Ministry of Agriculture's role is still evolving. The China Organic Food Certification Center, under the Ministry of Agriculture's CNGFDC, now certifies about one-third of the products for the domestic market. Optimists hope that the Ministry of Agriculture can do more to promote organics, while pessimists feel that the Ministry is far more committed to its own standards of Green Food, which have enjoyed enormous acceptance and earned considerable incomes for the many state affiliated and government owned farms that produce certified Green Foods (Bean and Qing 2001). There are already clear indications that the Green AA designation will be subsumed into an organic certification. It is not yet clear how the Ministry of Agriculture will invest in organics, but at the local and regional level, several governments have already expressed their clear commitment to supporting organic agriculture. The CNCA, an important part of the government apparatus, is keen to promote the upcoming organic standards, and its international-caliber staff is preparing to position Chinese organics as a valuable component of its agricultural trade portfolio by helping to ensure tighter regulation and enforcement of the standards. State council said that administration of organic inspection and certification has been shifted from SEPA to CNCA, but it is not clear exactly what will be the role of the Ministry of Agriculture. Currently under consideration is a scheme to provide favorable taxation and credit options for organic farmers.

172. India is reportedly planning to help even the playing field by providing organic fertilizer manufacturers with the same fertilizer subsidy that it currently provides to conventional agriculture. Early plans indicate that this would do very little to help organic agriculture, because it would merely fund some of the same fertilizer giants to produce and distribute "organic fertilizer". Since organic principles encourage on-farm nutrient recycling, this could be a perverse subsidy that works against organic principles and against poor farmers, who are most likely to produce their own on-farm fertilizer.

Policies and regulations

173. Organic policy need not be distinct and separate, in fact it should be integrated as a part of existing agricultural policy as one on the menu of options available for farmers to select. In many cases, local and even national policymakers are unfamiliar with organics and the body of experience

in other countries. IFAD and other international agencies have the most experience to play a vital supporting role in this process. India's Uttaranchal state, for example, is reviewing the formulation of all state funding and regulations to ensure that they are pro-organic and must draw primarily on its own sources of knowledge and local resources. Existing agricultural policies often embody distinct biases favoring conventional agriculture. These take the form of research support, tax breaks, fertilizer subsidy, power subsidy, and unrealistic national economic indicators that undervalue the depletion and degradation of natural resources such as water and biodiversity. If it is understood that organic agriculture does no harm and tends to safeguard health and the environment, then the idea that farming systems, which cause pollution or use environmentally toxic pesticides should be the ones that are registered, inspected and certified, doesn't seem so novel. Indeed it makes simple economic sense.

174. The aspects of facilitation and support are perhaps the most important roles that governments can play to foster healthy organic growth. Provincial, state, and local governments are similarly active in several parts of India and China. The Indian state of Karnataka and the Yunnan Department of Agriculture are just two of the governments that have responded to the positive examples in their regions with concrete initiatives such as model organic projects in every district and support for organic extension training and bio-fertilizer development respectively. Here, development organizations, including IFAD, are well placed to assess best practices and support such pilot initiatives. Some policies can inadvertently work against organics. For example, Rundgren (2002) notes that some governments do not support or protect farmers' rights to develop and save seeds, something that is an integral part of organic and traditional agriculture. Policies that provide loose or no controls over GMOs also risk destroying organic potential, since some international standards will reject organically labeled products that are contaminated with GMOs. Farmers require secure land tenure in order to invest in organic methods, since some of these methods yield benefits (e.g. improved soil tilth) that are more tangible in the long-term.

Investing in the land: fragmented holdings and the importance of tenure

175. The security of land tenure is vital for farmers to adopt organics. Organic methods may require more labor investment, particularly in the early stages of adoption, and this investment's benefits are increasingly evident over the long-term. For example, organic methods can gradually build the fertility and tilth of soil and, over time, can significantly contribute to its stability thereby reducing erosion as well as improving both water percolation and moisture retention. However this can take years to become evident. Similarly, organic methods and the accompanying environmental conservation, gradually over years build toward an ecological balance of pest/predator relationships thereby requiring fewer pest and disease control interventions. Without secure land tenure, there is a greater risk of nutrient mining of the soils and reduction of the forest area for short-term benefit, not to mention that it is difficult to get credit as was noted in some cases (Kerala, Karnataka).

176. Farmers tending very small and geographically fragmented plots can face difficulties to maintain organic practices if the surrounding land is using conventional agricultural methods or is contaminated as in urban or periurban areas. In cases of fragmented farm parcels the transport of manure and compost may also be challenging for some farmers since organic fertilizer tends to be more bulky than conventional fertilizers. Farmers that practice shifting cultivation may benefit from organic practices that enable them to improve soil characteristics and thereby cultivate one area consistently.

Box 5.1. Organic Agriculture And Fragmented Land Holdings

Fragmented land holding, especially in marginal regions, is one of the biggest challenges to overcome in the introduction of any market-oriented agriculture program. In Northern India there are cases of organic farmers consolidating their tiny dispersed parcels —typically less than .5 hectare held in two or three different places— into a common group land title that has some legal validity. The increased social dynamics resulting from their common organic practices enhances their ability to adopt improved cultivation methods and Internal Control Systems for certification. They thereby facilitate their capacity to undertake contract farming and to obtain the critical volumes and necessary quality levels required for marketing and processing, thus encouraging further investment for adding value.

Contributed by Binita Shah

What standards?

177. A number of Asian nations have developed national organic standards that apply to their exports. Other than Japan and S. Korea, Asian countries have not elevated standards and consumer labeling rules to the level of binding domestic regulations. India is developing national standards in the wake of one state developing its own and another declaring itself to be "an organic state". China is also ready to unveil its new official national standard before the end of the year. With the exception of Japan, none of the Asian countries appear to have yet developed the capacity to effectively monitor organic labeling and standards compliance. Consumer confidence, as mentioned in the earlier section on certification is underdeveloped and, in some cases, consumers already doubt label claims.

178. Several case studies mention: that the scaling up of organic agriculture will benefit from a supportive regulatory environment, especially on inspection and certification, monitored product traceability, and supervised internal quality control systems. It should be noted that in developed markets there is no clear correlation between government intervention in certification and inspection and the development of the organic sector (Rundgren 2002a) perhaps because their circumstances are different from those in many developing countries (i.e. bottom-up, farmer-led development, well-functioning fraud and labeling laws, etc.). A clear signal from government could be quite helpful to organic development. As Rundgren (2002a) points out, there are other ways to support organics besides a formal regulatory framework; a number of these ways are also noted in this chapter.

179. Depending on their orientation, the case study projects aimed for either internationally recognized standards (exports) or local/national standards. The latter are often modeled on international standards but, as many cases showed, tend to have lower levels of compliance and only modest attempts at enforcement. Although less stringent compliance and enforcement requirements help to keep costs low and may encourage more farmers to participate, they are likely to eventually have dangerous repercussions in the form of lost consumer confidence. For farmers, poor compliance means that they are unlikely to experience the full benefits of organic methods and may develop an unrealistic understanding and expectations of organic principles.

The confusion of certification standards

180. It is difficult to develop a market for organic produce, when farmers are not clear on the standards and requirements, and more so when consumers are confused. The cases were almost unanimous in expressing that for consumers, for many farmers, and even for government and industry representatives, there is considerable bewilderment about organic standards. This is perhaps most consequential at the consumer level, where confusion or lack of trust are well-known sales inhibitors. One Chinese case notes that this is primarily due to the absence of "government control of inspection and certification" (Inner Mongolia). Building organic brands to convey trust as some have tried (Yunnan ancient tea, Inner Mongolia livestock) can be a very productive strategy, but is not easy to do, especially beyond the local area. For example, conventional lamb producers in Inner Mongolia also claim that their product is certified as safe, and consumers do not recognize the differences

between this claim and organic certification. The sector could benefit from credible labeling standards and education campaigns to inform of farmers and consumers.

181. In Asia, only Japan has made great strides with the codification of organic standards. Their clear labeling rules elevate consumer confidence and undoubtedly help consumers to more readily identify and develop a trust for certified organic products. Enforced labeling guidelines can also protect genuine organic farmers from competing with counterfeit products. Enforcement is particularly important for organic products because they are often perceived —despite many products and producers — as a single unified category unto themselves. Consequently, the public exposure of fraud in one product is likely to have a ripple effect on other organic products. Consumers tend to remember that organic certification was fraudulent rather than that one supplier of organic apples or of organic tea committed fraud. Conversely, certification and its numerous requirements can also serve to force legitimate organic farmers out of the organic market, as it already has in Japan.

182. At the international level, the processes and the bodies that are accredited for certification and inspection, still vary from country to country. So despite increasing bilateral recognition of equivalency, farmers must often undergo more than one certification process to sell to different countries. The lack of unified standards concerning organic certification among different certifiers still causes confusion and inefficiencies in the trade making it a source of conflict that comes up in several of the case studies such as Yunnan beans as well as in some industry surveys of different countries.

Role and impact of public and private institutions

183. Conventional farmers today can count on a reasonable public/private support network, where they can access information about cultivation techniques, statistics, market information, etc. In contrast, the organic sector in many countries is highly fragmented and typically characterized by the domination of market-responsive companies and the slow plodding reactions of government agencies. In order to build a sustainable platform for organic products a similar —though much leaner — public/private network must be woven together to enable sector participants to understand and respond to the dynamic requirements of both farmers at one end and market demands at the other. The new information and communication technologies make this possible, but hardware is not enough. A recent Chinese initiative (www.OFGF.net) is aimed at building an international organic farming and green food information-sharing network, but after two years of effort it is not yet fully functional and offers little on organics. International agencies can play a useful role by providing access to the most current know-how and best practice experience in order to improve the competitive position of organic farmers.

184. The first hurdle for most farmers is to understand the principles of organic agriculture. This can be true even when farmers are already producing without synthetic agrochemicals. Many are surprised that there is much more to it than the prohibition of synthetic chemicals. Developing an understanding of the principles and how they can be pragmatically applied to their specific situation takes time. If they are to avoid costly bouts of trial and error, producers will need adequate institutional support to help them analyze their particular situation and find the best solutions. The best support is from other farmers that have faced similar situations. It is therefore critical that government and public organizations help to foster local self-help associations, since they not only benefit farmers but also benefit government, for whom it is increasingly costly and difficult to effectively reach farmers through extension services.

185. These same associations can significantly improve farmers' competitiveness by facilitating the benefits of scale in inputs, production, storage, and marketing. The implementing of Internal Control Systems for farmers associations can significantly reduce their costs and likely improve their internal governance skills. Similarly, such associations can potentially ease the difficulties that are inherent in transitional periods for farmers that have cultivated intensively with synthetic agrochemicals. These associations can be a valuable part of rural development and deserve to be both recognized by government and given necessary support as they establish themselves. The body of international experience in this realm is quite important and ought to be made available by IFAD and other international development organizations with this knowledge.

Research

186. Small farmers frequently face problems related to biased government policies and institutions, which tend to favor larger farmers, such as government research agencies that focus on crops grown by larger farmers. Most organic farmers face these prejudices and more since their approach to agriculture is fundamentally different than the dominant research paradigm in both countries.

187. However, some of the leading academic institutions (for agriculture) in China and India, not to mention Japan and Thailand have seen a considerable increase in interest for this topic over the last few years, and this is evidenced by a considerable escalation in relevant publications (personal communications and document exchanges during project roundtable meetings in Beijing and New Delhi). Similarly, the organic sector in Europe initially had only modest investment from the public research systems (Lampkin et al. 1999), although there has been increasing interest in recent years.

188. Overall, in both China and India, the level of research oriented toward organic production has been modest in most cases. In the field, there are few examples of on-farm or farmer-conducted research and trials except for those carried out by the case study projects themselves. The Kerala case for example, has a Land To Lab Center that encourages farmer-oriented innovation and facilitates its testing in the lab to help determine efficacy and applicability elsewhere. The shortage of credible and rigorously conducted research is a shortcoming that has likely slowed the adoption and impeded the success of organics. Stoll (2001) notes that "…as long as policy makers have limited interest in the organic sector, organic research will remain insignificant." To bridge this gap, IFAD and other development agencies are knowledgeable about how to support field level research and farmer to farmer dissemination.

189. In order to shift the current public course in research, new approaches would be necessary at three levels:

- Re-orienting some of the research priorities in formal institutions to focus on holistic approaches to practical needs in the field. This includes research on the formulation and application of organic inputs such as biopesticides.
- Training and coordinating the different extension services so that they can provide organic cultivation advice and also offer consistent messages.
- Recognition and integration of farmers' own field research into the research agenda can effectively utilize the practical experience of successful innovators. Dissemination by farmer-to-farmer or farmer field school methods can be facilitated by organic projects.

Financing for organics

190. Small farmers frequently have problems accessing credit to cover investments, such as irrigation and mechanization, and to purchase costly inputs like fertilizers and pesticides that are usually necessary to produce high-value crops. Thus, it is important to understand that smallholder organic production in India and China is typically not capital intensive. The exception is the at times crucial transition period when sometimes lower yields are exacerbated by increased costs for certification and labor. Any organic project must be prepared for this financing need, if the farmers who are converting had previously used conventional methods and high levels of inputs. Whether financing is provided as a subsidy or as a credit, it should include technical assistance during conversion.

191. There is no evidence of the availability of traditional forms of credit for organic farming from financial institutions in either country. Although India has a fairly well developed micro credit and Self-Help Group network, such resources may only serve to convert a few farmers each year (Uttaranchal). As with other forms of agriculture, adding value at harvest (picking methods, field packing materials, cold storage, etc.) and post harvest stages does require capital investment. Organic marketing can also be more costly because of fewer buyers. China is discussing the option of

providing preferential credit and perhaps trade promotion to food processors that handle organic products.

192. Nearly all of the case study projects help farmers overcome these financing problems by subsidizing organic inputs and paying for certification. Most also help cover many of the external costs incurred by farmers such as input production, technology acquisition, and by handling the marketing and attempting to provide extension support to improve yields. In at least one case the foreign buyer has provided a number of subsidies and pre-financed the harvesting operation (Madhya Pradesh Cotton). Such arrangements are increasingly common in other countries, where small farmers can provide a unique product, and where buyers seek to fulfill their own Corporate Social Responsibility requirements (SASA and EcoLogic 2004).

VI. CONCLUSIONS AND RECOMMENDATIONS

193. The 14 case studies have, in different ways, captured the small farmer's experiences of organic projects in the different regions and under very different conditions. A further review of more than a hundred documents on this topic has broadened the understanding of this complex theme. This section serves to unify this intricate mosaic into a set of concise lessons to help understand the processes that have led small farmers to diversify into organic agriculture and to identify the nature of the causal or contributing relationships — whether negative or positive — of government agencies, projects, private companies, and NGOs. Generally speaking, in the projects studied there is no significant evidence that organic methods would be deleterious to small farmers. In fact, most of the cases clearly noted a number of benefits from which it is reasonable to conclude that the promotion of organic agriculture among small farmers can contribute to poverty alleviation and is well warranted.

A. Conclusions

194. Organic agriculture provides a number of advantages and a few disadvantages for small farmers. Although many farmers initially toil with trial and error in the field, having a reliable source of knowledge and research makes an enormous difference in the speed of organic adoption, reducing costs, and better managing production risks. Some farmers can also take advantage of the invaluable traditional **knowledge** available to them locally about cycles, seeds, and pests. Taking advantage of community networks weaves the experience of elder farmers into modern organic processors and provides useful lessons for continuity. This is still a vital factor since the systematic appraisal and dissemination of basic production information on organic agriculture is largely absent from the agricultural system and remains very unfamiliar territory for most extension staff, research bodies and development agencies. This includes aspects of conversion, key crop and animal production practices, techniques for production of organic inputs, certification options, costs and benefits, organic processing, and market opportunities.

195. In many cases, the extent to which farmers benefit from the opportunities provided by organic agriculture can be correlated with the extent to which they are permitted or helped to develop and strengthen their own **local farmer associations**. These can facilitate the exchange of knowledge, support farmers through the early conversion processes, improve production and post-harvest controls, achieve scale economies, improve farmers' bargaining position, and play an important role in organic product marketing. Whether concealed or explicit, the economic or other motives of companies and sometimes even government officials and NGOs can – though this is by no means inevitable — hinder the ability of farmers to organize and thereby prevent them from getting the full economic gains and other benefits from organic agriculture.

196. **Transitional periods** can mean a decline in yields and uncertainties for those farmers that employ intensive agricultural methods and are dependent on external inputs. Organic methods can be more cost-effective and even more profitable in the long run, but only if properly applied. In most cases overall farm incomes — though not always yields — soon recover. However, the transition process and the time it takes are a barrier to many farmers, and they require various types of support. These can include reliable organic production technology, temporary support for inputs, and modest subsidies for the conversion process. The benefits of organics are not often immediate. While some markets offer a price premium for crops in transition, many do not. There are examples of effective

support for farmers during transition periods. Most involved good technical support and transitional incentives such as certification subsidy, but caution must be exercised so as not to create perverse incentives that may induce temporary conversion simply because of poorly designed subsidies.

197. There appears to be a loose correlation between the existing capacity of a farmer and the benefits of organics. Poorer small farmers incorporating rustic or traditional methods seem to experience more significant results from organic farming. For many such cases, transition periods do not mean a reduction in yield. In many cases, the opposite is true as both yields and overall incomes tend to rise. The implications for converting conventional farmers that practice intensive cultivation methods would necessarily be different and would be more dependent on careful analysis of the probable outcomes and well structured incentives.

198. Receiving **greater income** is by far the most important reason given by farmers for converting to organic agriculture. Price is a primary issue for most farmers, and it is clear that many organic farmers are no different in this regard. While some convert for ideological or health reasons, most make the effort to change because they expect to improve their income. Environmental or other reasons are important but they are often listed as secondary. While some regions enjoy socio-cultural characteristics that might encourage the adoption or refinement of organic practices, most of the case studies noted that the economic component typically prevailed. It is important to note as Parrott (2004 p. 6) remarks that "the context in which the (visible, certified) organic movement in the South is developing is one in which market relationships dominate."

199. The markets for safe foods —for which organic products are particularly well-suited — are large and are likely to continue growing strongly. This demand makes safety an increasing prerequisite for entry to the market but, as the Green Food experience has shown, price premiums are increasingly limited. While it is true that in many cases **premium prices** for organic products are very attractive, they can also be ephemeral as a result of rather thin and increasingly well-contested markets. While premiums are very high and continue to grow in a few markets, the global experience is somewhat less promising as more and larger producers enter this lucrative niche. Established organic crops like rice and sugar (Karnataka) and coffee (Giovannucci 2001 and 2003) have already seen considerable reductions in price premiums. Promises to farmers about great market profits may prove to be misleading, especially after the 2-3 years it typically takes for certification.

200. After years of disregard, many countries are working to adopt appropriate **organic standards and policies**. The change has come as governments increasingly realize the fiscal and risk benefits inherent in organic agriculture. Organics can provide many public benefits. For small and poor farmers, it can be an effective risk management tool that reduces their costs and diversifies their production. For rural communities it can provide improved incomes, better resource management, and more labor opportunities. For agricultural competitiveness, it meets the increasing demands for improved food safety methods and traceability that are becoming the hallmark of high-value agricultural trade. For governments, organics reduce the possibility of environmental contamination, reduce the use of chemical inputs (often imported), and minimize the public health costs of pesticide poisoning. For nearly everyone involved in its production, processing, and trade, organic agriculture quite simply earns more money.

Factors that facilitate adoption

201. The table below lists the interventions that were most important to a farmer, when considering the adoption of organic agriculture. It ranks the perception of the respondents of the relative importance that a particular intervention did or would have in their choice to undertake a conversion to organics. The rankings reflect useful appraisals of project experience and also the relative bias of many case studies that had considerable support in the mechanics and costs of certification, quality management, and internal controls. For example, organic case studies in Latin America as well as other research have shown that lower-cost certification is a critical factor, where farmers and farmer groups undertake this independently (see in Chapter III, “The Cost of Complying with Certification”). In both China and India, firms, NGOs, and governments often handled the basic mechanisms including their management, costs and paperwork. Such rankings can also be affected by the type of farmer responding. A farmer producing for home or local consumption is likely to focus

on technical or extension advice. A farmer producing for the larger domestic market may also find other aspects, especially financing and market information, to be increasingly useful. A farmer producing for export or supermarkets will find that other key interventions such as certification and systems for management and controls are also a vital interest.

202. Based on this fieldwork and other project experience, the rankings reflect what are today the most difficult hurdles for small farmers to surmount. How to farm organically (while maintaining volumes and reducing pest/disease risks) and also market the products are primary challenges and prerequisites for most measures of success. The other three factors, while also very important, are significantly easier to achieve.

203. Although many of the farmers' support networks or facilitators also undertook marketing, sales, and promotion, this component was still ranked very close to the top. Its importance here reflects the only partial or relative success that they had in these arenas. For many of the cases, sales were inconsistent and for farmers, only some of their products could be sold at prices that reflected their certification.

Table 6.1. Farmer Ranking Of Intervention Priorities To Facilitate Conversion

Ranking of importance of interventions *(1 is most desired and 5 is least desired)*	
Technical advice (extension) on production technology	**1**
Market Information or Promotion	**2**
Financing for start-up, transition period, or expansion	**3**
Lower cost of certification	**4**
Quality management and internal control systems	**5**

204. In several cases the firms that were directly involved with the farmers' organic process were also asked to rank their preferences (table 6.2). In most cases, they valued very different interventions reflecting their active role in certification and conducting quality management and control systems. Technical advice is the one commonality that farmers and firms both agreed was extremely important. This confirms the case study impressions that organic adoption is very much a knowledge-oriented undertaking that requires more than simply eliminating or altering some production methods.

Table 6.2. Company Ranking Of Intervention Priorities To Facilitate Conversion

Ranking of importance of interventions *(1 is most desired and 5 is least desired)*	
Technical advice (extension) on production technology	**2**
Market Information or Promotion	**4**
Financing for start-up, transition period, or expansion	**5**
Lower cost of certification	**3**
Quality management and internal control systems	**1**

205. As the case studies point out, the organic requirements, the sometimes lengthy conversion process, and the realities of organic markets can surprise farmers and development professionals alike. Many of the cases offer an important lesson in order to not hinder adoption: it is risky for a project to

work with farmers that convert only because of the promise of higher prices. Without adequate motivation and recognizable rewards for the positive environmental externalities they generate, farmers are more likely to only participate in a perfunctory manner, not adhere to the standards, and receive only limited benefits. They may also be more likely to abandon the project. It is vital that any initiative foster the many benefits – quite apart from the financial price premiums currently available in the marketplace. These benefits, can include:

- Drought resistance and erosion reduction
- Diversified production and improved local nutrition security
- Potentially lower production risks and production costs
- Better use of community resources such as protection of biodiversity and clean water sources
- More rational agro-chemical use and less risk of negative health consequences from exposure

206. Perhaps the single most important factor for successful organic adoption is the availability of a reliable support system that can initially help provide the many components that farmers find difficult to access. These include technology, initial financing for certification and input production, and marketing. Other factors appear to have less relevance. For example, although organics can be very site-specific in its approach, particular climactic or specific agro-ecological conditions do not appear to either foster or impede the adoption or success of organic agriculture. The availability of family labor only occasionally appeared as a constraint since most poor rural areas have abundant labor. Land tenure, as mentioned earlier, can be a factor.

Organic agriculture and women

207. While female farmers participated in several of the case studies, in one case women were primary subjects (Maharashtra). At least two characteristics inherent in organic agriculture may have a specific impact on women: land tenure and labor availability (particularly for female-headed households).

208. The impact of organics' increased labor is often perceived as positive for men hired as laborers, but potentially difficult for women who already do much of the farming and also carry out child-rearing and many domestic labors. In several crops, particularly tea and spices that require careful tending and harvesting as well as post harvest grading and cleaning, the demand on women for labor has increased considerably (Kerala). Similarly, in Karnataka the estimates for this increased by as much as 40%. In two cases, women farmers without male family members faced difficulties with ploughing, digging for soil and water conservation measures and compost production. Although male labor is typically available, the money to pay them often is not, so they had to leave part of their land uncultivated particularly for crops like wet paddy and sugarcane. Nevertheless, female respondents typically viewed the increased labor as a unique income earning opportunity. Some of the women interviewed expressed that while organics is labor-intensive, it gives them a lucrative cash crop, and this income improves their standing.

209. A potentially more grave concern relates to fact that many women neither own nor control the land they farm. Without the security of land tenure, there is much less incentive for them to improve the conditions of the soil and other natural resources. Hence, the lack of land tenure could tend to reduce the attractiveness of organic agriculture.

210. One case with a focus on women farmers (Maharashtra) notes that organic production can be a natural fit for rural women, since any degradation of the environment affects them drastically. Women and resources are invariably entwined, because they not only carry out many agricultural tasks, but also perform other work like collecting water and gathering fuel and fodder that can result in a respect for the environment and judicious resource management.

Differences since adoption of organic agriculture

211. The agricultural income of organic farmers has improved in all cases and, in most cases, is greater than that of comparable conventional farmers in the area. Besides the potential for improved incomes, organic agriculture can contribute to sustainability in at least four areas that are important for small farmers. The adoption of organic agriculture has implications for a) food security, b) the environment, c) risk management, and d) labor/social structures.

212. Food security is a primary concern in the region and while national food security is within the reach of most Asian countries, nearly all of them have distinct pockets of poverty where malnutrition is common. In rural areas, crop failures due to natural calamities typically leave communities with insufficient food supplies and little money to purchase more. The body of research indicates that organic agriculture can directly addresses this issue in a number of ways. Organic methods improve soil quality including its moisture absorption and retention properties. Healthy soils can therefore better withstand drought and torrential rain. Similarly, soil stability reduces both water and wind erosion as does the organic practice of interplanting different species. The diversification of crops means there is less overall dependence on a single variety, and this naturally improves the available choice of nutritional sources and may spread their availability throughout the year as different plants come to fruit at different times.

213. Organic certification tends to enhance marketing opportunities by improving the likelihood of a direct relationship with processors, exporters, or retailers. And when farmers own their certification, they can have a much stronger voice in the agricultural value chain.

214. Organic soil and water management methods benefit not only the farmer, but the community that depends on the surrounding environment. Organic methods not only help conserve biodiversity, they contribute to a healthier watershed by significantly reducing agrochemical leaching into the groundwater and runoff into surface water. Less contamination means less exposure, potentially improving the health environment of both farmers and their communities.

215. Small farmers have few alternatives when crops fail. Therefore, many quite naturally seek to manage risk in their production choices. Organic agriculture can contribute to their risk management in a number of ways. On the macro scale, sustainably using vital natural resources such as watersheds and forests offers long-term benefits for entire communities. Avoiding monocrop cultivation might reduce the output of a specific crop, but such diversification can also reduce the risk of dependence on a single crop. Diversification also offers other benefits. It improves the control of pests and diseases as crop rotation and inter-planting present barriers to the movement and life-cycles of pest and diseases. Small farmers typically have limited cash savings and risk these savings, when they pay for external inputs prior to or during the farming season. Organic agriculture seeks to convert local natural resources and recycle nutrients on the farm, and this reduces farmers' cash outlay.

216. Organic agriculture influences labor and social structures on many levels. It tends to be inclusionary, because its systemic approach to agriculture and the surrounding environment can require social interaction and cooperation. Its increased use of rural labor helps contribute to rural stability, as can also the improved incomes it tends to provide. Labor measurements for organic agriculture in developing countries often fail to properly disaggregate those components of labor that are necessary for the higher standards required of higher-value or export products. Organic agriculture can have greater labor requirements that might limit the off-farm employment of farmers. This presents a choice to pursue the more rewarding option. While that choice is limited in some rural areas, in others it is considerable. For example, in the year 2000 China's off-farm component of rural income grew to more than 50%. Organic systems are by definition diversified and therefore distribute the crop cultivation requirements across the year, rather than concentrate them at one time; this also facilitates the use of family labor and may reduce the need to pay for external labor. Its mechanisms support equity, as they lend themselves to smaller farmers, and its demand can offer farmers and SMEs access to high-value and even global markets, which they would otherwise find difficult to attain.

217. Because organic agriculture tends to value local approaches (since these have usually evolved as sustainable responses to local needs and requirements), and the wisdom of elders who have long experience with natures cycles, it helps to sustain local culture. This helps farmers and communities make more informed choices about new technologies and different ways of farming or herding. One of the lamb herders in Inner Mongolia noted succinctly that he did not want to introduce higher-yielding lambs from New Zealand because, after studying the differences, he noted that the local lamb variety was less likely to succumb to illness, since it had been habituated to local natural conditions for thousands of years, and its flavor was one that they preferred.

B. Recommendations

Criteria for developing organic initiatives

218. Perhaps the most salient criterion for identifying suitable projects is the organizational aspect of the targeted farming community. Organic conversion can involve a prolonged agricultural learning process as well as challenges in certification, meeting standards, and marketing. Using a private firm for this purpose is quite workable for larger farmers, but is less effective for smaller ones. To cost-effectively address these needs for smaller farmers will require a viable field-level organization with respected leadership. Building such farmer associations is a notoriously difficult business (Bingen 1999), and it is preferable to strengthen existing organizations – provided they are representative of their constituents—rather than to start new ones.

219. Agricultural development of any sort can be difficult for public institutions in an era of relatively declining expenditures (in developing countries) for extension services and rural farm-related investments such as infrastructure. Organic agriculture can be simpler in some ways and more difficult in others. It can be simpler in the sense that many organic practices derive from experience with the natural cycles of a particular place and such knowledge is sometimes embodied in local elders or embedded in the cultural lore of a region. Such commonsense or sense of place would be otherwise difficult to learn. It can be difficult, in the sense that holistic methods often don't provide a quick fix and require a longer-term commitment. Therefore, during conversions, government and local institutions, such as NGOs, need to be committed to supporting a multi-year process (as clearly evidenced in China's Kiwi project). Such a commitment might require: acquisition of technology and training, especially for extension service agents; preparation for certification and initially covering its cost; ensuring the availability of appropriate inputs such as organic seeds or appropriate green manure and cover crops; and very limited subsidies to cover possible yield decline during the transition period.

220. Although farm size has not explicitly been identified as a useful criteria for identifying suitable projects, — and indeed there are a number of successful and large-scale organic farms — some of the aspects of organic farming can lend themselves more to smaller farms. Organics' typical increase in labor could be a limiting factor for larger operations in some areas, where labor availability is limited. The on-site or proximal production of basic inputs like fertilizer can also initially be challenging for very large farms, especially those that employ intensive systems, practice monocultures, or lack integrated production systems (i.e. leguminous cover crops or animal husbandry). For farmers with very small and geographically fragmented plots the transport of compost may also be challenging. Of course, because of the competitive advantage inherent in economies of scale in production, certification, and marketing, if small farmers cannot develop effective organizations, large farmers will attain a dominant position even organics.

221. It appears on the surface that conversion can be an easier process, where agro-ecological conditions are favorable for farming and environments are more pristine. However, some of the more dramatic examples of success have occurred under much more difficult conditions. Two of the Indian cases (Maharashtra and Karnataka) were sited in a semi-arid and nearly barren landscape that, although once productive farmland, had lost nearly all of its fertility due to years of poor conventional management. that eventually forced the unproductive area to be abandoned. The changes that resulted from a few years of organic management, have helped to both inspire and unify the farmers involved in the transition. This would indicate that while useful in any agro-ecological environment, organic

approaches are particularly productive in situations where conventional farming would be impractical or too costly. Beyond the local benefits, some projects may need to assess the market context of degraded or unfavorable environments, in terms of whether they will be competitive with better endowed and better connected regions or must depend on local consumption and markets.

222. Two assessments can be particularly important for determining the suitability of a project that is intended to be market-oriented. First is a feasibility study of existing market opportunities, costs, and risks for the products being considered. This should include a sensitivity analysis for variations in the organic premiums to ensure that the project's success is not completely dependent on price premiums, which are likely to change. Second is a cost-benefit analysis to evaluate the expected differences between an organic approach and current cropping system, in order to properly assess the set of impacts as a result of the potential reduction in yields and change of cultural practices. Any small farmer project ought to also study the feasibility of adopting organic methods, if resource-poor small farm families lack fertilization options such as livestock and green manure.

Key success factors

223. Appropriate sequencing of the planning and adoption measures improves the likelihood of success. The ad hoc approach of some projects (e.g. Northern India cases) leads to slow adoption and partial adoption that limits success and frustrates participants. Successful project planning will include the following three steps, possibly in a different order depending on the project's goals:

- *Clarify the specific aims of conversion with the participation of stakeholders*

  Some of the goals of organic projects — such as food security, environmental protection, and increased income — are not mutually exclusive, but they do elicit different approaches and have different measures of success. Clarity and consensus on these aims is important for project success. One tool to help farmers and decision-makers better assess the likely trade-offs between the economic, ecological, and social issues involved, is FAO's "Framework for Socio-Ecological Analysis".

- *Conduct an analysis of the realistic changes needed, the requirements, and risks.*

  Conducting sound analysis at the very beginning is important in order to establish a realistic strategy and also to prepare for potential stumbling points. Specifically, good upfront assessment of the current production system will help to evaluate the projected costs and risks. Among the things to look at are: the farmers' expected training needs and availability of local training resources; the nature of the farming system and its suitability for the selected strategy (if exports are the goal and everyone is farming potatoes, changes must be calculated); the impact of any changes in current cultivation practices such as how the provision of inputs, including labor, will occur (soil testing will improve inputs strategies); the potential change in yields and how that will be factored in. Rather than considering only the farm in this conversion, the household must be factored in, since its resources will determine the allocation of support for conversion and its potential to contribute adequate labor.

  The market tends to be a critical factor, yet it is important that small farmers not be encouraged to chase markets. Doing so may lead to producing the current in-demand, high-value item, but it is likely that since other producers around the world may be pursuing the same strategy, the winner will be the one with the comparative advantage. Market chasing requires capital, know-how, adaptability, and a considerable tolerance for risk.

  Once the analysis of the production system has determined the crops with the most potential, a second set of assessments can be conducted. These involve a realistic assessment of the post harvest and marketing system to assess options for storage, transport, and processing as well as to understand the market conditions for the intended products. Once a market study or preliminary assessment of the market is complete, a full marketing plan can be elaborated.

- *Design a future farming system with organic experts and the full participation of all stakeholders*

  A well-designed farming system can facilitate the first stages of conversion that require the organization of organic production to carry out systematic training in the use of a new technology. This includes the identification of knowledge resources and technology providers and the subsequent training of farmers, extension agents, NGOs, and other supporting organizations. A system design can include a detailed conversion plan with clear steps, timing, and responsibilities allotted. Having such a plan in the early phases helps to ensure that responsibilities are met at each stage and can reduce the risk of participants abandoning the project, because of unrealistic expectations or losing confidence in its outcome.

224. Many agricultural development policies and projects recognize the absolutely critical need to integrate marketing support. Organics are somewhat unique in terms of marketing. Of course, they can be marketed as conventional products, and often are. But frequently, opportunities exist to capture higher value for the organic process, although such markets are not always readily accessible. Helping farmers to first assess their market orientation and then access targeted organic markets often requires some specialized help. Since many NGOs and farmer associations often lack the prerequisite business skills to negotiate the various aspects of marketing, an apex body or a network of organizations can be fortified with outside support and training in order to take advantage of scale economies, improve bargaining and significantly reduce transaction costs. Development agencies have a role in supporting this process by helping to ensure internationally relevant market linkages and a measure of equity for smaller farmers. A private sector partner with such linkages, an NGO, or private consultant can, at least initially, facilitate the marketing. It is not necessary to turn a farmer into a trader —a very difficult task — but it is important to strengthen a farmer's knowledge and position in order to effectively negotiate with a trader.

225. A well-planned project recognizes that successful organic marketing requires a dedicated commitment and is more than an occasional task that farmers undertake, like taking a crop to the local market. Many of the markets for organic products can be both lucrative and yet shallow or thin, meaning that the number of buyers is limited and demand is unsteady. This can elevate the risk for producers and increases the need to build a capable marketing orientation and to properly support the initial marketing processes that are often difficult.

226. The capacity of farmers to organize is one of the more subtle and yet most powerful success factors among these projects. It is likely that improved prices and incomes will only be sustainable in the long term if farmers are empowered enough to organize themselves and thereby reduce their reliance on other actors in the market. A project can devolve some of the most difficult responsibilities to well-organized farmer groups. Organized farmers can quickly take up critical roles such as testing organic technology and methods and disseminating information among themselves and their neighbors. This in turn increases their responsibility/ownership for the project's results. If the project's metrics of success go beyond the quantity sold and profits earned to also incorporate impact measurements of sustainability and empowerment, then the choice and development of an organizational component will be one of the most highly valued in the project.

227. The quality of the products is important and perhaps even more important than the organic certification itself. Nearly all of the cases noted the primacy of this requirement, especially for urban or export markets. This concurs with research on other products including less differentiated commodities such as coffee and tea. Extensive research of North American firms (Giovannucci 2001) clearly noted that for them, quality is by far the most important characteristic of organic coffees, and this was confirmed (using different research methods) in 2003 for 13 other countries including Japan. This does not imply that the best quality is necessarily required. Equally important to a reasonable level of quality is the consistency of that quality level and supply.

228. Organic farming is primarily knowledge intensive, whereas conventional farming is more chemical intensive. Accordingly, it is difficult to establish a one-size-fits-all approach since conditions will vary in different zones. Organic projects require that time be built into the process for

farmers to test and learn new technology and methods. Knowledgeable extension service is critical. Local know-how, especially from experienced farmers and knowledgeable elders, can smooth the transition and reduce risks. It is also important to provide farmers good access to sources of knowledge about the application of organic methods to their crops and agro-ecological conditions. Farmer-to-farmer learning models are perhaps best suited for this situation, especially when linked to broader sources of research and knowledge about organic methods from international research institutions (FiBL, Rodale, etc.) and organically-oriented organizations in other developing countries. These knowledge hubs are facilitated through Internet access and the establishment of farmer-friendly databases. One such example from Latin America, particularly for the market development aspects, is the Center for Information on Sustainable Markets (CIMS by its Spanish acronym).

229. Farm diversification should be an early priority. The organic kiwi project demonstrates how even a successful product may not be enough when participating in fast changing global markets. By developing alternatives (wild rice, goats) the project participants were able to withstand the simultaneous price crash and partial failure of their primary cash crop. Diversification reflects some of the natural balance in the environment and also has been proven to reduce losses due to pests and disease; it is a hallmark of organic processes. Any strategy to promote organic agriculture among the poor ought to also consider crop choices. Local varietal adaptability is important and so is the exercise of caution regarding commodities such as coffee or tea, whose international markets are inherently volatile. Balancing the mix of crops for local markets and for international ones is the recommended approach.

230. Developing a supportive policy environment may not have measurable short-term impact on new or existing projects, but it can set the groundwork for future success. At the least, the project participants can lobby for neutral policies that do not favor conventional farming (for example with fertilizer subsidy) and for the inclusion of organic methods as both part of the menu of offerings from public extension services and part of the state research agenda.

231. Working with participants that share a socio-cultural understanding of the interconnectedness of farming and natural systems in their environment can facilitate the initial adoption and the absorption of organic methods. Such personal commitment among stakeholders is likely to also keep them motivated during the difficult parts of the process. Some of the successful projects suggest that it is most important to first identify leading farmers, who have a personal or professional interest in organic agriculture rather than trying to convert entire communities, if the communities do not have a shared interest and belief in organics. Therefore the focus should be on good extension to teach and support converters instead of promotion to stimulate conversion.

232. We have seen in the case studies that two popular beliefs about certification and marketing did not necessarily hold up. Subsidizing certification certainly facilitates market access and in some cases is an important early subsidy, but once farmers calculate the basic costs vs. benefits of organic marketing, certification was not perceived as a significant constraint and could often be paid for out of the anticipated premiums for certified products. Only in the case of the poorest farmers might the expense require continued financing. The second belief is that providing market access is a prerequisite for the adoption of organic methods. Several of the Indian projects focused on tangible local benefits rather than external market opportunities, and some of the Chinese projects (Yunnan beans) demonstrated that even with guaranteed sales farmers were not necessarily willing to adopt or comply with organic standards. This is especially true when farmers feel they are not in control and therefore prefer not to invest in new methods, when the financial benefits may be transitory.

Guidelines for developing organic private sector partnerships

233. The market aspect, as noted earlier, is not always an essential factor, but it is most often a primary factor for farmers. In most cases, public marketing systems have been dismantled and today's development professionals (government, NGOs, international agencies) are often not trained to help farmers develop a strong market orientation, and therefore it must be sought elsewhere (Giovannucci 1999). The most efficient way to do this is by inviting the private sector to provide marketing services. However, some caution is warranted since at least some of a firm's goals, such as maximizing their profits, may be in opposition to the best interest of farmers. The public sector,

including government and NGOs, can support farmer organizations at the outset and help ensure equity in their partnership with private companies. Ultimately, a market-oriented value chain is developed that takes full advantage of each partner's strength in order to fortify competitiveness while also ensuring a fair share for producers.

234. As larger businesses become increasingly interested in the benefits of organic produce, contract farming systems can provide mutually beneficial partnerships between farmers and firms. Typically, firms provide support to in terms of inputs, technology, certification, and market access. Farmers of course provide the necessary products, but can also provide quality management, internal verification systems, and can handle certification. When there is a balance of roles, and farmers have a measure of self-determination, there is a greater likelihood of success. The livestock project in Inner Mongolia, according to the company's directors, owes a considerable portion of its success to ensuring that farmers enjoy fair and equitable treatment. For example:

- Good economic return is ensured and written in contracts.
- Responsibility and obligation of parties involved should be clearly stated in the contract.
- Equal participation of all parties (minority people, women and small households) should be ensured in organic project decision making.
- Good internal quality management system set-up to help ensure quality, traceability, and organic compliance.

235. Contracts, of course, are only as good as the mutual trust between the parties and their abilities to enforce the contract. In the absence of a developed judicial system that effectively enforces contract law, farmers associations can only be effective so long as their farmers have some leverage. It is therefore useful to encourage farmers associations to take up as much responsibility for critical aspects of the supply chain as feasible. This includes responsibility for quality management, extension services, input production (planting material, fertilizer, etc.), internal verification, and most importantly, certification.

236. Local commitment and control of a project is critical to ensure farmer benefits and its long-term sustainability. Even economically successful projects can fail the local people, if their needs are not fully respected (Yunnan tea). In some cases, relatively untrammeled areas can receive unique benefits from organic certification. If that process is well-managed, the people living in or near these areas can improve the economic value of the resources that they either cultivate or collect and, at the same time, help to protect the ecological balance of such zones. The improved value can serve as an incentive for sustainable natural resource stewardship or, if poorly managed, as a negative incentive to over-extract or further encroach on forest lands. In Yunnan China, the much greater prices offered for the product of natural tea trees growing in the area's ancient forests has stimulated dangerous levels of over extraction. Because the local people claim they do not have a say or any control over the forest's management (leased by the government to a foreign company), they have less incentive to modulate the harvests or help ameliorate the soils and care for the trees.

237. Other partnerships, even with the public sector can serve to stimulate both a basic market demand for organics and improve public exposure and information for them. Several European countries, particularly Austria, have pioneered the use of organic foods in public institutions that range from hospitals to government offices. Organic school food programs would be ideal, especially in poor areas where smaller farmers with limited access to large urban markets can more effectively meets such local demand. Given the importance placed on children's' food safety[12], this could be a natural fit.

[12] In response to market demand, baby food companies have been among the most successful converters to organics in both the U.S. and Europe.

Scaling up options

238. Many of the approaches pursued in organic agriculture projects reflect current best practices in the field of rural development. After extensive assessment of rural strategies, the World Bank notes that lessons in the field are influencing a changing emphasis in the approaches to agricultural growth. These align with organic development strategies and are illustrated in the table below.

Table 6.3. Changing Development Emphasis In Agriculture

Less emphasis	More emphasis
Resource and input-led growth	Knowledge-led growth and sustainable production systems
Agricultural production	Agricultural chains and markets
Food staples	Higher value crops, animals, fish
Traditional exports	Non-traditional exports
Broad-based approaches	Poverty focused within differentiated farm types and ecological conditions

Source: World Bank 2003

239. Most successful projects have room for internal or local expansion and many projects are capable of such efforts with internal resources. Organic projects are a relatively new phenomenon in most of Asia and so lessons for scaling up such projects are limited. Nevertheless, some insights are presented in the case studies and related literature. Three specific areas merit attention in order to successfully expand organic opportunities.

- A number of projects do not fulfill their potential, in part because they lack adequate and long-term capacity building, particularly in the local associations that can serve as critical leverage points for cost-effective learning and adoption of organic principles.
- Implementing systematized and rigorous long-term evaluations or studies that most organic projects lack would enable the credible dissemination of workable organic concepts and models through educational institutions, farmer-to-farmer methods, NGOs and development agencies. Credible analysis would also help to leverage broader impact by encouraging joint ventures and new partnerships with the private sector.
- Adequate study of both the micro and macro impacts of organic farming is necessary to influence appropriate policy responses that can support, or at the very least not hinder, organic development.
- When projects are market oriented, their expansion should be planned with consideration of the realistic market demand especially in the cases where such demand is already thin.

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Organic Agriculture and Poverty Reduction in Asia
China and India Focus

APPENDIX 1

LIST OF CASE STUDIES AND PRODUCTS

China Cases

Inner Mongolia (Livestock-Lamb)

1. Caoyuanxingfa Co., Ltd. (CYXF), is one of China's leading agro-industrial enterprises, employing 10 000 people in six provinces, and serving as the facilitating company for organic livestock development in one of the poorest regions of Inner Mongolia. CYXF has a history of working directly with producers and felt comfortable in this role, but its primary purposes for entering into organics was to further enhance its reputation as a Green and sanitary company (it also has eight certified Green Food products) and explore the potential of this emerging market in light of increasing food safety issues for livestock trade. Its processing plants have been ISO 9001 and HACCP certified yet in the area of Xilinhaote it takes a less industrial approach in its relationship with local herders and a free grazing system that produces about 500 tons of organic lamb meat (2004) to be certified by Organic Food Certification Center (OFCC).

2. Currently, 300 households participate in the program that involves extensive grazing. The region has for centuries pursued traditional livestock production in relatively undisturbed grazing areas. The advent of the project has not imposed any significant changes in these methods other than the halting of some veterinary medication and improving production assets (i.e. sheep house, digging wells). As a result, neither yields nor production costs have changed significantly apart from some initial investment. Although the traditional production methods have not changed for these families, the elevated price of lamb since 2000 has significantly improved their livelihoods taking them from the lowest economic rungs in the province to a medium-high ranking. While producers found the transition relatively smooth, then had considerable difficulty with the record-keeping and paperwork that is not required. The process of verification of compliance is handled with random tests at the processing plant and with an effective Internal Control System called the Responsibility Sharing System.

3. The producers are not formally organized and there are no other supporting institutions such as NGOs working in the area. Government has played no direct role in the project that was initiated and financed entirely by the company.

4. The project success has in part coincided with the very elevated demand for livestock, especially high-quality natural lamb. Most of its production (80%) has gone to the domestic market since it is just beginning to use the organic label. The balance goes to Japan and the Middle East; since organics fetch a higher premium abroad, exports are its primary target.

Anhui (Tea)

5. China has 45% percent of world's total tea growing area and more than 80 million tea farmers and 50 million tea traders across the country. Anhui province’s Huoshan County produces *Huoshan* Huangya, a particularly high quality tea as well as typical green tea at both high and low altitudes with somewhat different results.

6. Initiated by the China Netherlands Poverty Alleviation Project (CNPAP), the "Huoshan Organic Development Strategy" was shaped by the County government in 1999, defining milestones and targets for organic tea production. Soon afterwards the County Tea Industry' Association was set up as an NGO with CNPAP funding. This Association plays a leading role in the organic development of the County and is supported by the government. The County government continues to provide

finance to the NGO staff after the CNPAP project completed in 2003, although continuity has been difficult. This makes it possible for the NGO to provide training and other services to local farmers and traders. The local County government handles technical support and promotion, having set up more than 48 Tea Field Schools in the region. The CNPAP also encouraged development of small farmer associations and these have apparently been essential for field level dissemination and the management of internal control systems for certification. The farmer associations have also proven useful in arranging the processing and marketing.

7. The high altitude producers are often poorer and use more traditional methods and no agrochemicals while the lower altitude producers typically incorporate synthetic pesticides into their management systems. The more natural tradition of tea production in the Highland areas, as well as a superior taste, led the government to introduce organic agriculture into these areas first. The number of farmers participating in organic tea production has gone up from 367 households in 2000 to 6 502 households in 2004. The average size of a family's tea holdings is rather small at 0.075 ha. The technical support coupled with the opportunity for considerable price premiums have led to better care for the tea plots, especially in the somewhat neglected highland areas. The extra care plus organic requirements have substantially increased labor costs. Some of the methods promulgated by the organic project have been selectively adopted by non-organic producers in other villages.

8. The government's organizational support, processing, marketing and the farmer training and inputs such as organic seedlings were mentioned by farmers as critical support measures that permitted their conversion. IFAD’s poverty alleviation project funded some of the training and inputs. As a result, both quality and yields have improved considerably, adding to the farmers' income.

9. OFDC, China's largest organic certifier provided technical experts to train the local extension people and help to draft Huoshan’s own organic tea production regulations. Because of small tea plots and difficulties in certifying fragmented areas, entire villages or village groups were converted simultaneously with donor funding.

Jianxi (Ginger, Soybeans and Rice)

10. Jiaohu Township is located in the northern mountainous area of Wanzai County in Jianxi Province. It has 800ha of cultivated land and 68% is still covered in forest. There are 7 villages with about 3000 households (11 000 people) and each family cultivates an average area of 0.27ha. This is a particularly poor area with an annual per capita income of about USD 232.

11. Rice was the main staple crop — cultivated with some synthetic agro-chemicals — and surplus harvests were used for local trade. Income was supplemented with foraging for both timber and non-timber forest products. Poor management and over harvesting led to resource degradation and falling farmer incomes.

12. In 1999, the township government recognizing the inevitable decline came up with the idea of organics and conducted market research that was fruitful and soon led to their first standing order. The People's Congress, with government encouragement, voted to convert the entire township to organic methods and banned all synthetic agrochemicals from entering the township. The first test plot of 3.3 hectares was certified in 2001 and by 2004 all 800 hectares were certified to international standards. Not only was government the initiating force, but it also supported the process with farmer training and new technology, product collection, and marketing.

13. Organic products such as ginger and soybeans are sold to domestic middlemen or processors who export these primarily to North America. To encourage farmers, arrangements were made with processors to pay them some premiums even while they were still in the transition phase. Gross earnings for 2003 were approximately USD 280 000 and, even after expenses, earnings dramatically improved incomes throughout the township. Equally important, they diversified from a dependence on one crop to growing more than 10 kinds of crops including new cash crops such as ginger, green soybean, strawberries, scallions, red sweet potatoes.

14. As farmers have mastered organic farming methods they have contributed to the recovery of the ecological environment with reduced land clearance, better terracing, and less farming on steep slopes. They have also become less reliant on forest resources thereby allowing these to slowly recover.

15. Farmers however have also faced a number of difficulties in adapting to both new methods and new crop varieties. In some cases, this has resulted in production inefficiencies and very low yields that have frustrated some of the farmers. These changes have also help to create a leasing market as less capable or inefficient farmers have opted to rent their land to the more successful farmers who can enjoy better economies of scale in applying their experience and methods.

Yunnan (Ancient Tea Groves) Fair Trade

16. Three villages with 4 112 farmers in the higher elevations of Lancang County produce organic tea on 720 hectares. Two of them have been internationally certified since 2001 and the third will be certified in 2005. Most of the certified area is actually a primary growth forest interspersed with ancient tea trees. According to local records these tea trees have been producing tea for the last 800-1 000 years. Fresh tea leaves are harvested but traditionally no soil or plant maintenance has occurred. One segment is a newly replanted area designed for commercial organic cultivation. These villages are interspersed with commercial tea plantings that are conventionally managed and somewhat larger in land area.

17. The villages are extremely poor with average annual incomes of USD 45, USD 60, and USD 70 respectively. In comparison, the average per capita income in Yunnan for 2002 was USD 195. All three villages are almost completely populated by ethnic minorities: the Dai, Bulang, Hani, and Lahu people. The latter were primarily hunter gatherers until settling in the late 1950s and so are relatively new to agriculture. Tea is the primary source of income for all the residents

18. The Lancang Antique Tea Company (LATC) is one hundred percent worker-owned shareholding company that was established in 1998 after the bankruptcy of the previous state-owned tea processing enterprise. Its 60 owner-employees are involved in tea processing and marketing. Most of the business is in the lucrative domestic market and exports are undertaken through a trading company. LATC helped to set up The Lancang Antique Tea Garden Association (LATGA) with farmers from the three villages. LATGA was initiated as part of a Fair-trade project and listed in the FLO register.

19. LATGA and LATC are struggling to conserve and maintain the forest resources that are in danger of over extraction and degradation. They also face difficulties controlling the economic access to the public forest where Lancang County government and a foreign firm have arranged their own extraction plans independent of the farmers groups.

Yunnan (Kidney Beans)

20. Lijiang County, located in the mountainous northwest part of Yunnan province, has a long history of kidney bean production dating back to 1924. This case covers three relatively remote townships averaging just over 2 500 meters above sea level where about 65% of the farmers have converted 3 037 ha to organic and are now internationally certified.

21. The 5 000-6 500 participating farmer households each have about 0.67 to 1.33 ha for cultivation. In many cases, the land is not contiguous but rather is scattered into smaller plots. About half the land is on steep slopes rising from a valley. Cultivation methods have been traditional although in recent years synthetic pesticides have increasingly come into to use. Most households also cultivate other crops such as potato, maize and rapeseed in rotation with kidney beans and have achieved food security with grains although a good portion of these are purchased with the incomes earned from their cash crops. Average per capita income ranges from USD 120 to USD 160 per year. Farmers are ensured a minimum price for their kidney beans to ensure that organic standards are adhered to any: the possibility of better prices is the primary motivating factor for most of them.

22. The Lijiang Deyi Food Processing Ltd. manages the collection and marketing of the products through simple contracts with farmers. This company emerged to replace the former government-owned company that that first stimulated organics in the region in the late 1990s and also performed much the same post harvest and marketing functions. Today, extension services and even crop collection are conducted by county extension agents although many have only modest organic knowledge. Farmers have no organization of their own.

23. The company owns the organic certification and it pays for a number of different certifications each year to satisfy clients and improve marketing opportunities. It is ISO 9001 and HACCP certified and processes about 3 000-4 000 tons annually for domestic sales and export to a number of countries.

Anhui (Kiwi and Wild Rice)

24. Yuexi County in Anhui Province is situated in remote area that is very suitable for kiwifruit growing. Organic conversion began in 1997 with a 2.9 hectare test plot in the Yufan Kiwifruit Research Institute which was a research, demonstration, and seedling propagation farm. There are now 5.9 ha of certified kiwifruit. The project was supported by Sino-German cooperation with GTZ's five-year "Organic Farming Development in China" that played an important early role in the development of organic faming in China. In addition to developing an information and advisory service for organic farming, the project supported the development of certification and the use of participatory techniques involving farmers in all of the aspect of organic agriculture.

25. The aims of organic conversion for local farmers were to improve quality and storage properties thereby raising the competitiveness (and price) of their products. The project's research component was vital to farmers' success and their yield and quality improvements were strong reasons for conversion. To go beyond the research station, the establishment of the Yuexi Organic Kiwifruit Association facilitated training and on-farm trials that were essential to the project's success. This farmers association planted early seeds of cooperation and problem solving than helped them to endure the three-year conversion process from conventional production methods to organic methods. The association is now continuing the learning work by serving as a platform for farmers to exchange experiences and ideas and serves as a bridge to semi-literate farmers.

26. In 2001, after researching and conducting its own trials, the association introduced wild rice to its members as a form of diversification from Kiwi as their only cash crop. Wild rice has been an immediate and unmitigated success. This has been particularly important in light of several years of falling prices and climactic difficulties that diminished yields. The association also handles marketing for the producers, helping to ensure reasonable prices.

Shandong food company

27. The local government's recognition of the opportunities in organics has been instrumental in making the 5 towns of the Feicheng area one of the most successful organic vegetable production zones in Shandong Province. This is a developed area that specializes in high-value produced for the Japanese and European markets. It serves as a good example of the predominant organic production model in China where larger scale enterprises and trading companies contract farmers to produce high-value certified products for export. It involves small producers although these are not necessarily the poorest nor are they in disadvantaged regions. This mini case study was undertaken in order to better understand the most common approach to organics that accounts for the vast majority of China's organic trade and represent what most domestic policymakers would be familiar with as organics.

28. There are 5066 ha of farmland in organic or in conversion producing 20 kinds of internationally certified products including taro, burdock, asparagus, sweet corn, cha dou, tian dou, squash, carrot, string bean, lima bean, garlic, spinach, green soybean, cauliflower, green Chinese onion, and Japanese pumpkin. Annual production amount is 130 000 tons.

29. Several companies in the area are involved, primarily in post harvest preparation and processing. One of these, the Tai'an Asia Food Co. is a Sino-Japanese joint venture that employs

1 200 staff and that coordinates the production of 10 600 farmers. Farmers are relatively well-off and able to earn several hundred US dollars considering average farm size is only 0.083 ha and this is similar to the conventional farms in the region. The company is diversified and draws only 40% of its income from organic operations.

30. These intensive commercial operations initially reduced their yields after conversion but have rebounded close to the original conventional yields and this is improving as they gain more experience with organic management.

Hubei (Mushrooms and Tea)

31. Shiyan Municipality is a poverty area in Hubei Province where only 9% of the land is arable. Since 1999 organic product development was initiated and supported by the government. Supportive policies have been passed and a public fund was set up to support organic producers and traders. Organic product development in Shiyan is now carried out primarily by private enterprises such as the Shiyan Wudang Wild Products Development Co. and state owned tea farms such as the Longwangya Tea Group. These dictate requirements to the farmers and in return pay them a price significantly higher than they would receive for conventional products.

32. The firms own and pay for the certifications that are both international and domestic (i.e. OFDC and Organic Tea Research and Development Center) for 13 different products. Currently, some of the products are exported but most are sold in the domestic market including a sizable (about 1000m^2) retail marketing facility. The state owned Longwangya Tea Group Co. has a processing facility and 173.3 ha of landholdings that are contracted to small farmers that are organized into teams

33. Farmers are not organized and nearly all are smallholders with limited resources. Most practice traditional forms of agriculture using few external inputs. They primarily cultivate tea, mushroom i.e. shitake, and harvest wild mushrooms and medicinal and aromatic plants.

India cases

Himachal Pradesh, Punjab, and Uttaranchal Integrated Watershed Development Project (North India)

34. The Shiwalik Hills stretch into five states: Jammu and Kashmir, Punjab, Himachal Pradesh, Haryana, and Uttaranchal. These foothills of the Himalayan range have been identified as one of the degraded agro-ecosystems of India facing acute shortages of drinking water and deforestation to meet fodder and fuel requirements. Poverty in the region is further compounded by poor infrastructure that keeps areas isolated. An Integrated Watershed Development Project (IWDP) was launched by the government with World Bank support to improve the production potential of the area by evolving the watershed management technologies and encouraging community participation. The project includes an ecologically-friendly or organic farming component designed to play a vital role in several ways: to restore the fragile agro-ecosystem in the watershed development area; to minimize the impact of agricultural activities on the environment; and to increase farmers' income. The states of Uttaranchal, Himachal Pradesh and Punjab have made a start in organic agriculture and their projects are reviewed.

35. The entire project covers 835 villages with an area of 103 652 hectares. Farmers throughout are small and typically marginal with land holdings 0.2 to 1 hectare. Many plots are in higher elevations and on steep slopes throughout the watershed area. Most of the farmers use traditional methods with the more recent advent of conventional components such as chemical fertilizers and pesticides, with the latter having become particularly common.

36. With little information or visible proof, many farmers are not convinced about the potential of organic methods. Adoption has therefore been fragmented, slow, and partial. Most fear a reduction in yields and difficulties with pest management. Since the entire structure and network of public information has long been geared toward efforts to adopt agrochemical technologies, most extension agents are unprepared and often not wholly convinced. Consequently, extension services advocate

Integrated Pest Management (IPM) wherein insecticides are suggested as a last resort. Where organic farming is adopted, it is primarily appreciated for the substitution of costly chemical fertilizers.

37. The project has developed implementation units to help create awareness of organic methods through trainings, demonstrations visits, and interactive workshops. The concept of a bio-villages — where farmers are concerned with natural resource conservation and have adopted the organic farming —has been introduced and a number of these have been constituted although ecological and organic practices are only beginning. There are few effective farmers' organizations to help further this work and local governments have in some cases recruited NGOs to help them. For the extension agents, these concepts are novel and many lack of the training and knowledge of organic standards and certification.

38. A variety of crops such as ginger, peas, capsicum, wheat, paddy and seasonal vegetables are cultivated in the region. Since the land holdings are small, many farmers have very little marketable surplus. Most of the production remains in the region, being sold in the local market and going to the towns and urban centers. In few villages, farmers pool their produce and hire a truck and sell the produce about 100 kilometers away from the village to get a better price.

Maharashtra (Sorghum, Wheat, and Cotton)

39. Much of Maharashtra's Aurangabad region is considered to be very poor. Agriculture is the main source of income and the area depends on modest rainfall that is concentrated in the summer months. The area is multicultural with a sizable Muslim minority comprising approximately 35% of the total population.

40. The average farm holding is small, between 0.4 and 2 hectares with the largest farmers reaching 4 hectares. Production methods in the region are a mixture of traditional unconventional, but poverty levels have dictated rather modest use of synthetic agrochemical inputs.

41. The Institute for Integrated Rural Development (IIRD) is a civic organization that has targeted women, and particularly destitute women, for training needs and rural development activities. As a result, 60% of its beneficiaries are women. Accordingly, it is also women who facilitate and organize local groups. These in turn are supported by technical staff from IIRD who provide the inputs and the training required.

42. The current project began with 400 farmers in 1992. Today, it has grown to over 1700 farmers. IIRD's innovations and success have led it to develop training programs for other NGOs and for public officials.

43. Organic agriculture has taken an increasing role since the mid-1990s. Although IIRD remains a central fulcrum, many of the project activities are increasingly taken up by the layers of organized farmers that have been developed as part of the project's empowerment and sustainability goals. IIRD continues to provide on-farm support, certification and marketing services. The farmers are not externally certified but they have an internal certification system in place.

44. Food security was a predominant concern for a number of years and the focus crops included cereals, legumes, oilseeds, and spices. More recently, as food security has improved, marketing has emerged as a prime concern. The main organic products grown are wheat, sorghum, cotton, and pearl millet.

45. IIRD has established a weekly organic bazaar in the city of Aurangabad to foster more direct linkages between producers and consumers as well as providing a consistent platform for the exchange of products and services related to organic farming. The bazaar now sells approximately 40% of farmers' marketable surplus. The rest is sold to local traders and markets.

Kerala (Spices and Banana)

46. The Idukki district is part of Kerala's Western Ghats region, recognized as one of the world's 25 bio-diversity hot spots. This hilly region receives adequate rainfall and has maintained a considerable amount of forest cover despite increasing threats from agriculture and timber interests.

47. Three systems of production have dominated the project area. On steep slopes small farmers cultivate multiple crops. In some valley areas, companies own vast tea plantations. Around such plantations, marginal ethnic farmers cultivate tea in isolated small patches. Except for cardamom, use of pesticide is minimal among small and marginal farmers. The corporate farming enterprises reportedly use considerable quantities of both pesticides and chemical fertilizers.

48. Currently 1667 certified organic farmers are cultivating one of the areas major products: spices. These cover 1487 hectares and none of the farmers own more than one hectare of land. Among them, 1411 farmers are certified through active participation of a local charitable organization, and 258 farmers are certified through the financial support of the Spices Board an autonomous agency of the Government of India. The Tea project involves 1200 farmers, cultivating 1110 hectares as smallholdings.

49. Peermade Development Society (PDS) emerged as an NGO in 1980 and as a social service wing of a Christian diocese in response to extensive agrochemical contamination in the area's drinking water. This resulted in acute toxicity of farmers in the region leading to their hospitalization. It has focused on tribal and marginalized farmers and contributed to the development of farmer led organizations for the dissemination of organic practices and to effect quality control and standards compliance. At the field level, farmers are organized into self-help groups (SHGs) with additional layers of organization that manage local agricultural development. PDS has invested considerable efforts with its participating farmers to develop empowering mechanisms and procedures that prevent domination and subordination patterns that have proved to be detrimental for farmers in the region. It has developed farmer-led regulatory mechanisms to promote compliance with organic standards that farmers perceive more as a farm management tool to improve their processes and efficiencies.

50. PDS also links with government and other organizations to promote sustainable farming methods, to conduct joint research with farmers, to control pests and diseases, to facilitate value-added processing and to promote and prove the production of biological inputs for farming. Several of its units such as the Awareness Building Group or Training Center serve to develop new forms of enterprise and a Land to Lab Center encourages farmer-oriented innovation and testing of ideas.

51. PDS has established processing facilities for the farmers to capture more value and its Export Division is one of several functional marketing units that export primarily pepper and bananas. Most of the production is destined for the domestic market and integral part of PDS' success has been its entrepreneurial experience. It helped to develop the local medicinal plants industry that integrated with pharmaceutical processing and national as well as overseas marketing.

52. Spices and tea are the primary crops but several other varieties of nuts and fruits are also produced. In keeping with the project biodiversity commitment, no cereals are cultivated and diverse tree fruits are encouraged. These include jackfruit, banana, plantains, coconut, and guava. Most are for self-consumption as are the few vegetables and greens cultivated by many households.

Uttaranchal (Millet, Rice, and beans)

53. Uttaranchal is a border state in India's mountainous northwest region where agriculture is the primary form of both subsistence and income. Part of the organic focus is on 10 mountainous districts and three in the plains areas. The farmers in the hill regions are often poor and marginal. The land holdings under organic farming in various organic projects range between 0.1 hectares to 5 hectares. In many cases organics has first been targeted for adoption among the poorest and thus organic farmers tend to have land area that is three to five times smaller than their conventional neighbors. In the mountainous areas women play a very important role in agriculture. To a large extent men plough

the land, while women carry out most other operations like planting, weeding, fertilization, and harvesting.

54. In the state of Uttaranchal, organic agriculture is being given an impetus by the state government that has officially declared Uttaranchal as an "organic state". The Government of Uttaranchal is implementing policies and that would encourage and incorporate organic methods in all government supported endeavors. This includes research, training of extension services, incentives, and marketing and promotion. There are at least five major projects currently underway that incorporate various organic components such as composting and biodynamics. Government commitment has extended to rural youth training programs and the concept of bio-villages has been adopted and promulgated in several areas. To facilitate coordination and promotion of organic agricultural activities in the state, in July 2003 the Uttaranchal Organic Commodity Board (UOCB) was formed. In 2004 475 villages with 7 125 farmers are involved in the organic agriculture projects of the state.

55. Self-help groups and village level organizations play some role in the development and dissemination of organics, but public agencies i.e. extension services are still predominant. Several cases these have integrated with specialized NGOs to help improve uptake of improve compost and other organic methods. For farmers involved in the more marketable crops such as Basmati rice and Kidney beans, a group certification process has been undertaken in order to reduce costs and improve the adherence to organic standards. For the most part, farmer groups are not as prominent in the organic process.

56. The products produced under the various initiatives are mainly commodities. These are led by Finger Millet, Kidney Beans, and Rice but also include Wheat, Maize, Ginger, Soybeans and several pulses.

57. Marketing efforts have been focused primarily at the domestic level. Through direct contact and participation in trade fairs and exhibitions, modest sales have been generated. In some cases these sales are for the domestic market and in other cases traders export them. The state has plans to develop 33 marketing centers for organic products and one has already opened for business. Thirteen tons of organic rice has also been directly exported.

<u>Karnataka</u> (vanilla, pepper, banana, rice and sugar)

58. The Mandya district, just east of Mysore, falls into the Southern Dry Zone which an annual rainfall of 700 mm. The farmland is very dry. The 1288 beneficiary families in the surrounding village depend mainly on agriculture for their livelihood. All are poor and literacy is lower than the Indian average (males 83% and women 35%). Nearly 90% are small and marginal farmers with an average land holding of less than 1 hectare. The total cultivable area is 2129 hectares of which nearly 1655 hectares (approximately 80%) are under irrigation.

59. Until the mid-90s most farmers practiced chemically-oriented farming primarily with monocrops such as rice, sugarcane, and pulses. Many have abandoned monocropping and synthetic agrochemicals and some have attained organic certification. Crop diversification and related activities have increased the average income of farmers by 25%.

60. The Eco-Agri Research Foundation (EARF) — as the central organizing body — is a registered trust that since 1994 serves as a 50 hectare model farm demonstrating organic farming and biodynamic practices. The concept demonstrates a complex system of eco-farming with: animal husbandry; conservation of soil and water through water harvesting structures; vegetative soil erosion checks; and production of high value crops like vanilla, pepper, and banana.

61. Its purpose is to show the types of ‘Farming Systems’ suitable for the area and promote the concept of a land and cattle-based economy that is in harmony with nature. The main objectives were to create models of sustainability through adoption of organic and bio-dynamic practices and to demonstrate such models to the farmers of surrounding areas. Its local presence has permitted

practical field testing of the new approaches and this has reduced farmers' trepidation to adopt new methods.

62. The difficulties experienced in the conversion to organic/bio-dynamic farming and in the marketing of the produce by the farmers in the area resulted in a number of useful lessons that resulted in EARF taking on some ‘social entrepreneur’ responsibilities since 1996.

63. The major organic products generated are Jaggery Sugar (54 mt), Rice (25 mt), Vanilla (0.8mt) and Banana (10 mt); much of which is sold by the EARF in domestic markets at nearby Bangalore and Mysore and to market agents in other major cities. The Foundation pays farmers a substantial premium, even during the transition. It is also procuring organically grown vanilla, ginger and pepper from other parts of Karnataka as well as from the neighboring state of Kerala to combine with its own and improve export efficiencies to US and European countries.

Madhya Pradesh (Cotton)

64. Maikaal bioRe is an initiative situated in a traditional cotton growing area, which mainly extends along the flat topography of the Narmada River in the Khargone District. This many case study results from a more extensive research project monitoring input, output and field data of 100 organic and conventional farms over the complete cropping period 2003/04. The farms were selected on a random basis in 10 randomly selected villages of the Maikaal project region. The selected organic farms have been in the project for at least three years.

65. By the early 1990s companies in cotton business had become acutely aware of declining yields, deterioration of soil fertility and persistent pollution from the increasing necessity to apply pesticides (In India, cotton is grown on 5% of the cultivable land, but receives 54% of the insecticides used in agriculture). The same problems were occurring in many of the other major cotton producing countries as well.

66. In 1993, the Maikaal organic cotton initiative was started by a major Swiss yarn trading company, together with Maikaal Fibres Ltd., an Indian spinning mill. The experiment developed into a commercial project, which has grown and is now run by an independent company called Maikaal bioRe (India) Ltd, employing 36 persons. Farmers are both suppliers (raw cotton) to the company and its customers for support services such as training, consulting, crop monitoring, inputs, etc. Two farmers already sit on the Board as Directors and the company's intention is to involve more as shareholders.

67. The project focuses on biodynamic, certified organic cotton for the export market. It demonstrates how strong corporate leadership can create mutually profitable initiatives that address the environmental needs of farming communities.

68. The project has a strong market orientation and has helped farmers to efficiently apply state-of-the-art organic technology and methods. Training is an integral part of participation and the company provides all necessary inputs. This results in considerable efficiencies. For example, labor utilization is less in the organic systems than in the conventional system. Production costs are lower and yields are higher than in similar conventional systems.

Table 1.1: Overview of the China Case Studies' Characteristics							
Name of project - organisation	**Province & District**	**# Organic farmers**	**Agro-ecological zone**	**Farm size & total area**	**Organizational structure**	**Crops**	**Market Orientation**
Houshan Organic Tea Association	Anhui Province, Houshan County	6 502	Temperate hilly	0.075 ha - 506 ha	Government managed farmer association	Tea	Domestic with some export
Yuexi Organic Kiwi Farmers' Association	Anhui Province, Yuexi County	70	Mountainous areas	1.1 ha - 76 ha	Farmers association (small farmers)	Kiwi, wild rice, developing goat & off-season veg.	Local and traders
Jiangxi's Jiaohu township	Jiangxi Province, Wanzai County	2 987	Mountainous temperate zone	0.27 ha - 848 ha	Government administered	Ginger, rice, bamboo shoots, herbs, livestock	Products for domestic and exportation
Lijiang Ecological Planting	Yunnan Province, Lijiang County	5 750	High altitude, mountains	.67-1.33 ha - 3 037 ha	Company organized collection activities with farmers	Kidney bean, plums	Export
Shiyan Wudang Wild Products Co. & Hubei Longwangya	Hubei Province, Shiyan Municipality, Liulin town	500	Hilly temperate zone	3 000 ha	Government supported company organizing farmers	Tea, wild and domestic mushrooms, medicinal	Domestic distribution supermarkets, own retail outlet.
Caoyuan Xingfa Co. Ltd.	Inner Mongolia, Xilinhaote	300	Grassland steppe	Thousands of ha. grazing	Meat processing company + smallholders	Lamb	Domestic with some exports
Lancang Antique Tea Co.	Yunnan Province, Lancang county	4 112	Subtropical mountains	<1 ha - 720 ha	Farmer owned company	Tea	Domestic and export through fair trade network

Table 1.2: Overview of the India Case Studies' Characteristics								
Name	**No. of organic farmers**	**Farm size + total area**	**Agro-ecological zone**	**Type of crops**	**Region/State**	**Type of production organization**	**Post harvest operations**	**Market orientation**
The Eco-Agri Research Foundation (EARF)	1 288	<1 per family. 2 129 total	Semi-arid tropics	Pepper, banana, sugar, vanilla, MADP	Karnataka	Charitable trust NGO); training and organizing small farmers for production and marketing	Some processing and collecting volumes from other farmers to market large scale	Both. Export US- Europe; Domestic through traders/ agents
Uttaranchal Organic Commodity Board	1 792	Average: 1 (0.1-2.5), total: 1 732	Mountainous areas	Various cereals, pulses, vegetables, spices, MADP, rice	Uttaranchal	NGO established by state to be the nodal agency of organic activities.	Collection and processing (if any) is done by farmers federations or blocks	Domestic focus with traders, direct to retailer, and 33 market centers for organic. Some produce export.
"Shiwalik Hills" Integrated Watershed Dev Program	Thousands	Small 1 ha or less primarily	Semi arid-mountainous and temperate valleys	Vegetables, fruits, grains, cereals, pulses, oilseeds, medicinal and aromatic plants	Punjab, J&K, Uttaranchal, Himachal Pradesh, and Haryana	Government managed and WB co-financed project		Regional i.e. Chandigarhand for export through agents in Bombay & Delhi
Institute for Integrated Rural Development (IIRD)	1 016	1-2; total 1 536	Semi-arid	Wheat, cereals, vegetables, cotton	Maharashtra	Primarily women's groups, eco-clubs, eco-development plans	Collection in community, simple processing by women	Mostly domestic local promoting bazaars in urban areas
Malkaal Cotton Research Project	1 178	8-10, total 11 500	Lowland sub-tropical plains irrigated	Cotton, wheat, chilli, pulses, maize, sugar cane, banana, etc.	Madhya Pradesh	Private Ltd. company; organizing the farmers for organic production on behalf of the yarn trader Remei.	Collecting the cotton and some of the rotation crops; ginning, bailing	Cotton for export market (processed in India), food crops for domestic market (starting)
Peermade Development Society Exports	1 667 spice farmers, 996 tea farmers	<1 ha; 1 487 ha spice; 1 110 ha tea	Humid tropics	Pepper, ginger, turmeric, clove, nutmeg, cardamom, vanilla, banana, cocoa, coconut, coffee, tea	Kerala	Religious org. Coordinating training & marketing for marginal and tribal farmers	Collection and processing tea and spices	Domestic: banana and tea. Largest India exporter of organic spices (USA, Europe)

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APPENDIX 2

ORGANIC LIVESTOCK

Contribution from Francesca Ambrosini

1. The basic principles of the organic system, aim at an optimal integration of the animals into the nutrient cycle of the farm organism. Furthermore they help to minimize the ecological damage potentially caused by animal production. The organic farm strives to be a closed system, producing feed for its own animals and incorporating their manure into crop production. Animal disease management of organic livestock emphasizes the concept that animal health deals with animal welfare and avoids unnecessary animal suffering caused by intensive systems (including permitting some natural behavior and avoiding mutilations e.g. beak trimming, castration, dehorning, de-feathering in laying hens, etc.).

2. Most organic livestock standards require that animals have access to adequate space, fresh air, outdoors, daylight, shade, and shelter for inclement weather, suitable to the species and climatic conditions. Standards require a balanced nutritional program using primarily organic feeds. Under IFOAM, some Asian, and current EU standards, only 80 percent of the feed, or less, must be organic (the percentage of organic feed is gradually being increased, according to the standards of the region). Synthetic health care inputs are generally prohibited or restricted. Some certification bodies and national standards prohibit the use of antibiotics (animals or their products must be sold on the conventional market if antibiotics are used), while other specify a withholding period, usually double or triple the label requirement, before the animal or its products can be sold as organic. Vaccinations are generally allowed, with some restrictions. Growth promoters and hormones are generally prohibited. Housing must meet animals' biological and ethological needs. For ruminant livestock access to pasture must be maximized and zero grazing is not acceptable.

Standards and Regulations

3. For livestock production, eight sets of standards, including national, international and private standards refer to the European Union regulations (EEC Regulation 2092/91), which are regional standards, IFOAM basic standards (2002), which are international guidelines, UKROFS (2001) and NOP (National Organic Program) standards which are national standards for the UK and USA, respectively, and four private standards; Argencert (Argentina, 2002) and Bio-Gro (New Zealand, 2002), both approved certification bodies in Article 11(1) countries, and KRAV (Sweden, 2002) and Soil Association Certification Ltd (UK, 2002), both of which are approved certification bodies in EU Member States. The standards provided in the EEC 2091/92 and UKROFS regulations form the basis on which the UK determines equivalence for import authorizations under Article 11(6). The IFOAM standards are essentially advisory, but form the basis of standards adopted by many private certifiers. Certifying bodies from other countries in Europe and others are: SKAL (The Netherlands), IMO (Institut für Marketökologie, Switzerland) and FVO (Farm Verified Organics, USA). For organic livestock production, the main areas covered by standards in addition to those covering inspection, certification, labeling and general requirements for organic products, are (1) Conversion, (2) Breeding, (3) Welfare and environment issues, (4) Nutrition, (5) Health management, (6) Transport and slaughter and (7) Social justice.

Factors that hinder to the development of organic livestock farming

4. Due to the major costs (the differences appear to be due to higher feed costs, higher average labor costs, significantly higher herd replacement costs, and significant transition costs), farmers are not adequately remunerated by the market. For milk production, for example, cost benefit analysis demonstrated that, due to lower milk yield and higher land requirements for forage production, a

switch to organic husbandry is beneficial only where significantly higher milk prices can be achieved by alternative marketing. Beef cattle are probably the most costly animals to provide statutory organic housing for, and, in general, rearing costs are particularly higher compared to those of the conventional ones. However against these costs possible increased returns must be set. Research work on organic pig farming systems showed that various factors lead to an increased final price of organic pig meat. Studies on organic sheep demonstrated that they have a lower average daily gain probably because parasitic infections are on average higher in organic farms. In addition to this, the requirement for separate and documented production, processing, storage and handling of organic and conventional produce limits organic livestock production for export to those countries with adequate infrastructure or a sufficiently large potential organic market to justify the investment. The retail market for organic livestock produce in the UK, for example, is dominated by supermarkets, some of which have a policy to buy only UK organic meat. This is a further potential barrier to farmers in the developing world to export their products.

5. Organic livestock systems redirect the natural energies/resources exploitation to growing food that is gentle to the animals and the environment, as well as being healthy and safe to eat, affordable and accessible to the poorest of the poor. However, in the poor countries there may be particular problems in relation to the quality and safety of animal products that could have negative impact in relation to zoonotic diseases, due to inadequacy of the current inspection and certification systems. Further investigations and responsible collection need to be addressed in poor countries to design appropriate standards and legislations for local and domestic markets.

Factors that contribute to the development of organic livestock farming

6. Organic livestock production contributes to food security and safety. There is no evidence linking organically produced food with an increased risk of food microbial poisoning. Recent surveys confirmed expectations that organic methods minimize pathogenic risks. It is a sustainable farming system, also for the poor farmers that do not have cash capital to access feedings and drugs for the animals. It promotes products without chemical residues. The experience and the societal trends of the industrialized countries indicate a movement toward values which support the long-term growth of organic livestock farming. Consumers are primarily interested in buying organic products for their perceived healthy attributes. In addition to this, the more humane and improved welfare conditions of the animals, their healthier life and the avoidance of chemicals and genetically modified materials, makes the consumers very interested in organic animal's products (e.g. meat, milk, cheese, yogurt, eggs etc.) and favors the good marketing trend of the sector. An overview study on organic livestock production demonstrated that: (a) between organic and conventional milk there are no significant differences, for composition, sensorial qualities, hygiene and cheese making results, as well as size or profitability of the farms; (b) organic sheep have a higher dressing percentage and good carcass quality; (c) organic pig farming systems show that the daily gain of the organic and conventional pigs are similar; in general, organic pigs had less pneumonia and less arthritis than pigs reared in conventional farming systems; (d) organic chicken meat has quite good quality standards and the sensory quality of its breast muscle is better than the conventional one; (e) parasitic infection can be controlled through integrated pasture management systems (e.g. strategic nutritional feeding plans, multi-species grazing pastures and natural medicine).

Key investments

7. In order to adopt better organic livestock practices, and to enable long term marketing advantages, including export and local health care, Governments should refer to the existing standards and regulations and international accreditation (e.g. EEC Regulation 2092/91, IFOAM basic standards 2002, UKROFS 2001, etc.). National certifying bodies providing cost effective certification services are key stakeholder for organic certification. Locally based certification organizations would eliminate the costly practice of hiring outside experts to certify organic operations. Individual countries, and aid agencies, should be encouraged to give subsidies for conversion to organic farming and to ensure sustainable production. Research institutions, NGOs, veterinarians, farmers, political bodies, retailers, and the civil society need to be involved in the studies for marketing chains development. Training should be promoted to assure more locally available certifiers in order to

ensure participation of small rural producers. Educational programs for veterinarians, extensionists, and farmers, should include components of environmental and animal welfare issues to reflect genuine public concern. All relevant institutions should develop policies to incorporate animal welfare and the other relevant concerns noted.

8. Project experience in conversion would play an active role in formulating standards and directives for organic livestock certification. Technologies, techniques and support systems of conversion models can be replicated for different type, size, and animal species to benefit farmers, rural communities, cooperatives and organizations.

9. There are particular difficulties for resource-poor farmers in producing and having certified organic livestock products, including systems of land holding, animal ID and traceability. With cooperative and/or communal group arrangements it would be possible for certification to be achieved, as long as supply chains were assured. Advice on certification and marketing issues should be made available in appropriate formats for poor farmers. Animal associations should also be involved in organic farming by way of establishing backward-forward linkages with organic farmers to provide fodder in lieu of manure.

APPENDIX 3

SELECT DOCUMENTED BENEFITS ORGANIC VERSUS CONVENTIONAL PRODUCTS

1. For many products, a fast-emerging body of published and peer-reviewed research literature claims a range of benefits not found in products grown by conventional chemically-oriented agriculture.

2. Even in two of the most regulated and food-safe nations, conventionally grown fruits and vegetable are much more likely to contain pesticide residues than their organic counterparts. Long-term testing by the U.S. Department of Agriculture on pesticide residues in fresh fruits and vegetables clearly indicates differences between conventional and organic farming. Compared to organics, conventional fresh fruits and vegetables are: three to four times more likely on average to contain pesticide residues; about ten times more likely to contain multiple pesticide residues than organic samples; and have average residue levels that are three to ten times higher. U.K. government testing of conventional and organic foods found patterns to be less contaminated but similar to the U.S. test results.

Agricultural Marketing Service. 2002. Pesticide Data Program Annual Summary (for year 2000). Washington, D.C.: United States Department of Agriculture.

Pesticide Residue Committee. 2001. Annual Report. London: United Kingdom Food Standards Agency.

3. According to a study published by researchers at the University of California at Davis, organic fruits and vegetables had significantly higher levels of antioxidants than their conventionally grown counterparts. The differences ranged from 19% more in strawberries to 58.5% more in corn.

Dr Alyson Mitchell et al. in Journal of Agricultural and Food Chemistry February 2003.

4. A recent review by two independent groups of researchers of 76 scientific studies from Europe, Canada, New Zealand and the US measuring the impact of conventional and organic agriculture on biodiversity noted that organic farming is likely to increase biodiversity. New Scientist magazine notes in October 2004 that of 99 separate comparisons of biodiversity in groups of organisms, 66 found that organic farming benefited wildlife, while eight concluded it was detrimental. Twenty-five comparisons produced mixed results or suggested no difference between the farming methods.

Biological Conservation Journal (vol 122, p 113).

5. The Washington State University authors report on three professional apple production systems monitored from 1994 to 1999. All three systems gave similar apple yields but the organic system had higher soil quality and potentially lower negative environmental impact than the conventional system. And also produced measurably sweeter and less tart apples, higher profitability, and greater energy efficiency. According to their data conclusions: "the organic system ranked first environmental and economic sustainability…"

John Reganold, Jerry Glover, Preston Andrews, Herbert Hinman. Sustainability of Three Apple Production Systems. Published in Nature Vol 410 April 2001

6. Tomato catsup is an excellent source of lycopene, carotenoids, and antioxidant compounds and is a major form of tomato consumption in the U.S. A team of U.S. Department of Agriculture scientists studied the lycopene content of 13 commercially available brands of tomato catsup including six major national brands. They found that the average level in the organic brands was on average 56 percent higher than the national brands. The scientists measured the micrograms of trans-

lycopene per gram of catsup and the average level in the organic brands was by far the highest – 174.2 micrograms per gram of catsup. The other national brands using conventional tomatoes averaged 102.5 to 112.3 micrograms per gram.

Betty K. Ishida and Mary H. Chapman. "A Comparison of the Carotenoid Content and Total Antioxidant Activity in Catsup from Several Commercial Sources in the United States." Journal of Agricultural and Food Chemistry, Volume 52, Number 26, December 29, 2004.

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APPENDIX 4

METHODOLOGY ADOPTED IN KARNATAKA FOR PILOTING ORGANIC PROJECTS

The following excerpt illustrates the first stages of Karnataka, India's conversion program that it plans to extend to each district in the state. The pilot extends to 26 districts and is already operational in late 2004.

A. The selection of NGOs to lead the organic conversion model

Newspaper advertisements invited applications from NGOs in the prescribed format. In response to this 280 applications were received and these applications were scrutinized based on the criteria for selection as indicated below.

1. EXPERIENCE IN ORGANIC FARMING (75 marks)

- No .of years of Organic promotion -(5 marks)
- Area of operation, no. of farmers involved, and area converted to organic -(10 marks)
- Other organic promotional activities (production, conservation etc)- (10 marks)
- Value addition of organic produce-(10 marks)
- Marketing of organic produce -(10 marks)
- Certified area under Organic cultivation-(10 marks)
- Availability of trained personnel in Organic Farming-(5 marks)
- No. of training programmes in relation to Organic Farming and No. farmers benefited-(5 marks)
- Availability of infrastructure for training-(5 marks)
- Awards / Recognitions in relation to Organic Farming-(5 marks)

2. EXPERIENCE IN OTHER AGRICULTURE RELATED ACTIVITIES (20 marks)

- No. of Micro watershed developed-(5 marks)
- Involvement with Watershed development dept. programmes-(5 marks)
- Farmers associations/ SHG'S/Sanghas established- (5 marks)
- Programmes/ activities in relation to agricultural development-(5 marks)

3. INVOLVEMENT IN WOMEN WELFARE PROGRAMMES (5 marks)

Total -100 Marks Under each of the above main criteria, subclasses were made for allotment of marks.

B. Identification of Site for Implementation of the Programme:

NGOs selected for implementation of Organic Village/Site programme must identify sites with approximately 100 ha of contiguous area in their district based on attached criteria.

C. *Benchmark survey is to be conducted in the identified sites in order to properly track the impact of organic implementation.*

D. *Identification of Training-Education Programme for implementation is critical in order to ensure continuity and adequate institutional support for local farmers.*

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APPENDIX 5

SELECT COUNTRY ORGANIC PROFILES IN ASIA

In order to better understand the context of organics in the region and enable project designers to have an overview, brief profiles of the organic sector in several countries around the region have been prepared including: Indonesia, Japan, the Philippines, and Thailand. These cover the: the general background and current policy situation; the salient characteristics of the organic systems; market volumes, conditions, and trends; the important constraints to development; and the key institutions.

Organics in Japan[13]

1. Background of development of organic foods in Japan.

The systematic approach to agricultural products that are grown in a socially and environmentally responsible manner was initiated by the Japan Organic Agricultural Association (JOAA) in the early 1970's. Since Japanese people have a cultural tradition to respect and live in harmony with the nature, there have always been a number of people who reject and/or minimize chemical inputs in agriculture and in processing foods, including people involved in approaches such as Macrobiotic (Seishoku) and some traditional religious organizations. A number of such products were called natural or organic (*Yuki)* foods and the Japanese organic market was considered the third-largest in the world until the use of the term organic was recently regulated and more explicitly defined as those products that are formally certified by the Japanese Agricultural Standard (JAS).

Although the Ministry for Agriculture Forests and Fisheries (MAFF) established the Guidelines for organic agriculture in 1992, the usage of "organic", "natural" and "specially grown products" was confusing and their regulation only began after 2000, when the revised Japanese Agricultural Standard (JAS) Law was passed and specified the definition of organic agricultural products. This came into effect in April of 2001 for domestic producers although complete implementation of this Standard was delayed until April 2002 when it became fully effective.

The Law requires third party certification of organic operators before they can use JAS organic labeling. As of April 2004, there are 66 Japanese certification organizations and 21 foreign certification organizations approved and registered by MAFF. Organic products certified in the countries which have negotiated an "equivalency" agreement with Japan (15 EU countries, Australia, Switzerland, and the U.S.A.) can be imported into Japan by a certified importer without re-certification.

Since MAFF does not collect data on the acreage of organic farms, there is no exact figure for certified organic area. A 1999 estimate (Willer and Yussefi 2004) noted that organically managed land in Japan measured just over 5000 hectares. In 2004, with the cooperation of several prominent RCOs, we now estimate certified organic farm land at around 7000 hectares. This can be corroborated by calculating that the total farm land in Japan is 4.42 million hectares, and given the government's estimate of total organic production as 0.15% of total then — assuming that productivity of organic and conventional to be similar— organic land would be 6630 hectares (4 420 000 x 0.0015).

[13] Report prepared by Kenji Matsumoto and edited by Daniele Giovannucci.

2. Key institutions in the organic field

The Ministry of Agriculture, Forestry and Fisheries http://www.maff.go.jp regulates Standardization and Labeling of Organic Agricultural Products and Agricultural Processed Food according to the JAS law implemented in 2000 in accordance with Codex Alimentarius guidelines.

The Plant Protection Station (http://www.pps.go.jp), a part of MAFF, regulates imported organic products as these are subject to plant quarantine or inspection at the port of entry into Japan. If the organic product does not pass the inspection, it is not cleared for entry or it is automatically fumigated and organic certification must be removed.

Center for Food Quality, Labeling and Consumer Services (http://www.cfqlcs.go.jp) is an Administrative Agency that became incorporated and independent of MAFF in 2001 and executes the following operations:

- provides organic food related information to consumers
- executes JAS standards through its inspection of food quality and labeling
- educates certifiers and operators to manage the process
- oversees registered certification organizations
- analyzes and assesses issues related to JAS regulations

Ministry of Health, Labor and Welfare (MHLW) (http://www.mhlw.go.jp) has a Food Sanitation Law to prevent health hazards arising from human consumption of food. This general public health regulation also applies to organic food safety.

Food Safety Commission (http://www.fsc.go.jp/english/index.html) is one of the new Cabinet Offices established in 2003. As in many countries over the past few years, Japan has experienced a series of threatening incidents related to food such as: milk which contained Staphylococcal Enterotoxin (July 2000), BSE infected cows (May 2001), excess pesticide residues detected in imported frozen vegetables (several occurrences), false labeling of a processed food with prohibited food additives (Jan 2002), false country of origin labeling of beef (several cases), and outbreak of Avian influenza (2003). Those continuous food-related incidents have shaken confidence in food safety and reliability among Japanese consumers. The Japanese Government has carried out multiple administrative reforms and in July 2003, the Food Safety Commission was established as a Cabinet level entity. This Commission has oversight over all the food related governmental authorities.

Japan External Trade Organization (JETRO) (http://jetro.go.jp) promotes international trade with Japan, carries out research, and organizes trade fairs and investment missions that have included organic themes such as the Bio-Fach organic products exhibition in Japan.

NGOs and Associations

There are several NGOs and associations involved with organics at the national level. These include IFOAM Japan (info@ifoam-japan.net)and two separate liaison councils of registered certification organizations: Japan Organic Certifiers Council in Tokyo, and Organic JAS certifiers Group in Kansai.

JAS' application is currently limited to crop production and processed food. It applies to organic grain, vegetables, fruits, herbs, beans (coffee and cocoa) and wild and harvested products. It does not yet apply to aquaculture, mushrooms that are usually cultivated on wood/bark mediums, and alcoholic beverages are also excluded even if their ingredients comply with the standards. The new standards and certification system for organic livestock and organic feed are expected to be implemented during 2005.

In order to sell agricultural products and/or processed food as organic, all operators involved in production, processing, sub-dividing (referring to wholesalers that act as middlemen or distributors and participate in selection, cleaning, processing, packaging) and importation must be certified by either a registered certification organization (RCO) or a registered foreign certification organizations

(RFCO). However, importers do not have to be certified when sealed products already carry the JAS organic mark issued by a RCO or RFCO.

The JAS supports Internal Control Systems (ICS) through its Production Process Management Directorate (PPMD) and this can be beneficial for small-scale producers. PPMD refers to either an individual or an organization (e.g. an agricultural cooperative or agricultural corporation) that manages a farming system. This categorization allows a group of individual producers to be certified as a collective unit.

3. Certified organic production in Japan

Currently, the total number of certified farmers is 4500 with an average of 1.5 hectares each. Of course, there are producers who cultivate organic farms larger than 10 hectares mainly producing organic rice or wheat.

Official tracking for JAS Organic certification statistics began in April of the 2001 fiscal year. The following tables present the volumes certified for years 2001, 2002, and 2003 (from April through March of the subsequent year i.e. 2002 fiscal year begins April 2002 and ends March 2003).

Table 1 presents the volume of raw food products while Table 3 indicates foods that are processed. MAFF collects this statistical data from information reported by its registered certification organizations (RCOs and RFCOs). RCOs and RFCOs are obliged to gather such data from producers, manufacturers, wholesalers (subdividers), and importers that they certify.

Some anomalies because of the new reporting mechanism appear to have skewed the figures to indicate an overall reduction between 2001 and 2002 although it appears that healthy growth actually occurred. The combined domestic and import figures seem to indicate shrinkage in the market but this can probably be attributed to both reporting irregularities and to a onetime anomaly. This anomaly was the result of the grace period that was established for foreign products during the first year of JAS and led to a considerable quantity of products entering the Japanese market prior to the April 2002 full implementation (thus counting statistically for the 2001 year). In the crop category, the domestic organic production appeared to grow strongly in 2002 while imports contracted. Imports rebounded strongly to grow by 150% in 2003 and domestic production was stagnant.

Table 1. Certified JAS Crops In Japan And Foreign countries (metric tons)

	Domestic			Imported		
	2003	**2002**	**2001**	**2003**	**2002**	**2001**
Vegetable	28 125	27 460	19 675	26 994	23 994	26 221
Fruit	2 163	1 939	1 391	15 925	28 050	4 085
Rice	10 838	12 287	7 777	2 604	2 031	2 672
Wheat	687	559	722	1 733	1 086	2 058
Soy bean	853	945	1 162	53 212	44 874	61 019
Japanese green tea	1 487	1 246	927	964	1 224	93
Others	2 351	2 188	2 081	192 376	16 331	58 493
Total	**46 504**	**46 623**	**33 734**	**293 808**	**117 589**	**154 642**

Source: compiled by JONA from MAFF data. *others includes: almond, green coffee, cocoa bean, black tea.

NB: Not all organic products certified by JAS Organic System are imported to Japan. Some, such as grapes, are used for processing ingredients such as grape juice, abroad that may then be imported to Japan.

The overall market for fresh foods— accounting for the 01-02 anomaly noted above—has been growing strongly with 107% growth between 2002 and 2003.

Table 2. Total Certified JAS Crops In Japan And Foreign Countries (metric tons)

	2003	2002	2001
Vegetable	55 119	51 454	45 896
Fruit	18 088	29 989	5 476
Rice	13 442	14 318	10 449
Wheat	2 420	1 645	2 780
Soy bean	54 065	45 819	62 181
Japanese green tea	2 451	2 470	1 020
Others	194 727	18 519	60 574
Total	**340 312**	**164 212**	**188 376**

The domestic production of processed food in 2002 was 96 234 tons and exceeded the imports of certified processed food from all other countries. When disregarding the erroneous official soy sauce figures for 2001 (19 975 tons) then the actual total growth rate of domestic processed food was 29% more than 2001[14]. Strong processing growth continued in 2003 with a 22% increase.

For imported processed foods, the numbers dropped between 2001 and 2002 but showed a rebound of more than 40% in 2003 although totals are still well below 2001 figures.

Table 3. Certified JAS Processed Foods In Japan And Foreign Countries (metric tons)

	Domestic			Imported		
	2003	**2002**	**2001**	**2003**	**2002**	**2001**
Frozen vegetable	43	291	1 128	5 107	11 377	11 826
Canned vegetable	11	169	13	903	2 498	532
Other processed veg.	3 327	2 501	802	8 452	2 848	1 243
Drinks	8 121	5 285	4 739	2 231	1 215	64 664
Tofu	52 822	52 520	44 034	0	0	0
Nattoh	9 563	10 692	10 154	0	0	0
Miso	3 283	2 263	1 887	593	284	273
Soy sauce	1 910	1 037	19 975	83	124	0
Dry noodles	131	121	103	565	1 068	823
Japanese tea	1 032	1 987	1 270	154	178	0
Others	37 441	19 367	9 532	39 181	20 269	18 980
Total	**117 684**	**96 234**	**93 638**	**57 269**	**39 860**	**98 342**

Category of others processed in foreign countries includes black tea, dried fruits, vinegar, etc. Drinks processed in foreign countries include fruits drinks and bottled coffee and tea.

Source: compiled by JONA from MAFF data

The total market for processed foods has returned to strong growth in 2003 and appears set to further increase in 2004 as the JAS standard is now comfortably understood and many firms are able to handle its certification requirements. The emerging standards, particularly for livestock products in 2005 ought to ensure substantial overall growth for the organic segment.

[14] 2001: 93 638 (total processed food) minus 19 975 (soy source production) = 73 663 tons. 2002: 96 234 (total processed food) minus 1 037 (soy source production) = 95.197 tons.

Table 4. Total Certified JAS Processed Foods In Japan And Foreign Countries (metric tons)

	2003	2002	2001
Frozen vegetable	5 150	11 668	12 954
Canned vegetable	914	2 667	545
Other processed veg.	11 779	5 349	2 045
Drinks	10 352	6 500	69 403
Tofu	52 822	52 520	44 034
Nattoh	9 563	10 692	10 154
Miso	3 876	2 547	2 160
Soy sauce	1 993	1 161	19 975
Dry noodles	696	1 189	926
Japanese tea	1 186	2 165	1 270
Others	76 622	39 636	28 512
Total	**174 953**	**136 094**	**191 980**

Category of others processed in foreign countries includes black tea, dried fruits, vinegar, etc. Drinks processed in foreign countries include fruits drinks and bottled coffee and tea.

Source: compiled by JONA from MAFF data

This growth is however on a very small base. The domestic production of certified organic agricultural products amounted to only 0.1% of the total crop production in 2001, and despite 50% growth to a market share of 0.15% in 2002 and then to 0.16% in 2003, it remains very small. Unless there are drastic shifts in the government's organic policies or consumer education about organic production is significantly improved, Japan’s organic production will likely continue to be small for some time. The limited domestic organic production base suggests that, under the current scenario, it is likely that growth in the organic market will depend increasingly on imported organic foods.

4. Marketing of Japanese Organics

The total retail value for the 2002 fiscal year ending March 2003[15] is estimated to be approximately 114 billion Japanese yen or USD 1.03 billion, considerably more than other earlier estimates of approximately USD 300-400 million (Willer/Yussefi, Organic Monitor). The certified agricultural crops accounted for approximately USD 258.3 million (28.4 billion yen) with USD 204.6 million (22.5 billion yen) produced domestically and USD 53.7 million (5.9 billion yen) imported from abroad. The processed food category is three times larger at USD 778.4 million (85.6 billion yen). Japan's processed organics totaled approximately USD 649.4 million (71.4 billion yen) while processed imports added USD 129.1 million (14.2 billion yen).

In addition to the expected outlets such as natural food wholesalers, specialty retailers, and consumer co-operatives, a number of other distribution channels have developed and thrived over the last thirty years, including the Teikei[16] of JOAA and home-delivery service companies.

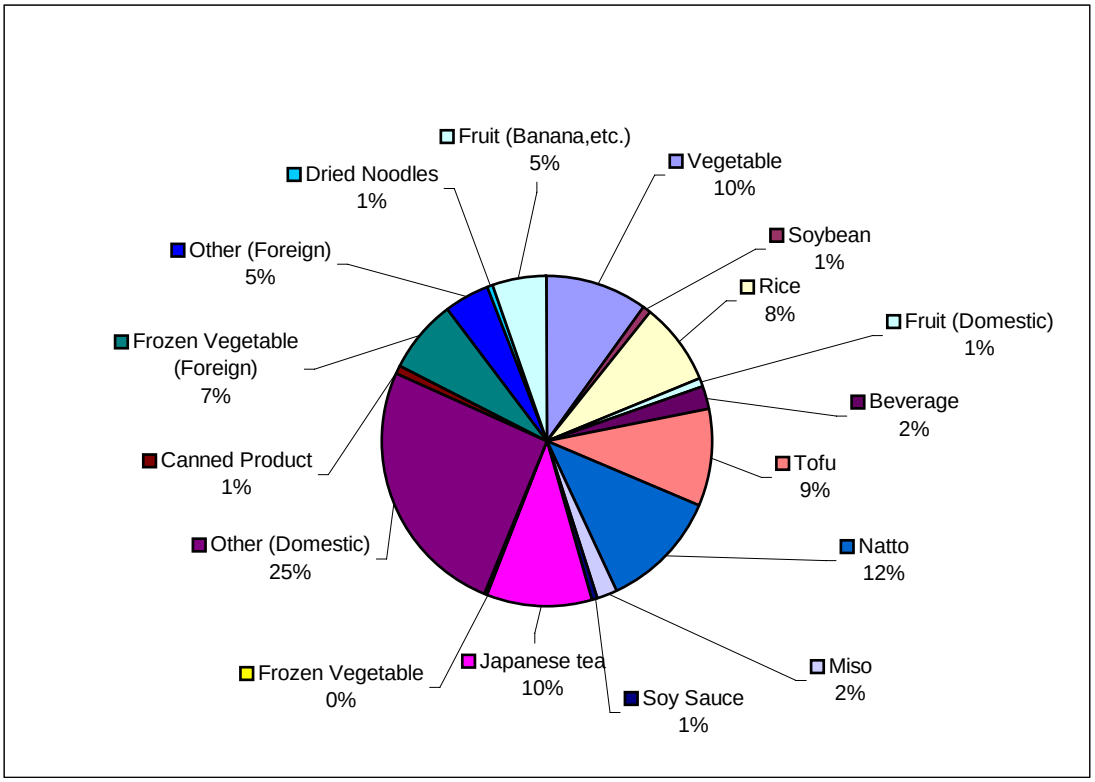
Figure 1 shows the relative importance of different products by value in the 2002 fiscal year. Products like tofu that represent 40 percent of the volume account for less than 10 percent of the value. Among the most important items are Natto with 12 percent, and vegetables and tea with 10 percent each. The "other domestic" category is rather large, and includes items such as mugi-cha (barley tea), blended

[15] Retail prices used in calculation are based on investigation of supermarket prices; they are cross checked with those in a household budget survey issued by the Prime Minister’s Office. The market estimates assume that certified foods are purchased by final consumers and thus a retail price estimate is applied to the data.

[16] The Teikei system is based on a production agreement between a producer and a group of consumers.

black tea, Konnyaku (traditional Japanese processed food made with potato flour, Japanese rice cake, nuts, sugar, and wheat flour.

Figure 1. Market Share Of Products In The Organic Market (Monetary Value)



Source: Compiled by IFOAM Japan from MAFF data

5. Key constraints to organic development

The most important reason for the slow growth of the organic market in Japan is the general lack of awareness about organic products among Japanese consumers. While the term 'organic' is becoming better recognized and the JAS seal is somewhat familiar, most consumers are not aware of what organic actually means. According to the MAFF's monitoring survey in 2002, 50% of the surveyed consumers in their 20's and 30% of those in their 30's did not recognize the Organic JAS mark at all. Education will be an important part of reaching new consumers. Another study (2002) indicates that more than 60% of the surveyed consumers believed that no-pesticide vegetables were safer than organic vegetables. There are no direct government incentives or subsidies to organic farmers.

Consumer surveys regularly find that Japanese have a strong interest in food safety and reliability. The 'potential' consumer demand for organic foods is therefore quite high; however, the demand is not yet realized. This is in part due to consumer perceptions of organics as natural and therefore not necessarily controlled or safe. This is distinct from the consumer perception in many countries that organics are more likely to be safe foods. There is anecdotal evidence that the Japanese consumers' interest in food safety, which has intensified as a result of a number of food-related incidents, may be driving consumers to focus more on non-organic foods.

The types out of organic foods typically available on the domestic market are still limited in variety. Although they are expanding beyond traditional Japanese foods, the availability of a much wider variety of cuisines, such as Chinese, other Asian, and Western, is a more recent development. Livestock products — because these are not yet regulated — have also hampered development. For example, milk chocolate containing more than five percent milk cannot be sold as organic even if all of the other ingredients meet JAS requirements. Any processed foods with more than five percent of the ingredients from livestock similarly cannot be certified as organic. As the JAS organic live-stock

regulations are implemented in 2005, new products will be developed, adding more varieties of organic foods.

Organics tend to have a very high markup and are often considerably more expensive than conventional products. These price differentials may also be acting to dampen the market as the purchasing power of Japanese consumers is currently low due to Japan's economic recession.

Organics in Indonesia[17]

1. Background

Indonesia is an archipelago country with more than 17.000 tropical islands, about 5000 kilometers east to west. It has a landmass of 1.9 million square kilometers. More than half of which is forested and a significant portion is mountainous. It has a tropical monsoon environment with two distinctive seasonal changes every six months; dry season (June to September) and rainy season (December to March). The humidity is relatively high at an average of 80 percent. In general however, it is the variable rainfall pattern —ranging from 2000 to 3500 mm per annum— rather than temperature that determine the agricultural systems.

In the fourth most populous country in the world (235 million people in 2004), today agriculture represents less than 20% of total GDP yet employs more than 40% of the labor force. Arable land for food crop production is about 11% of the total land area. Food crop production dominates organic agriculture, particularly in Java-Bali, Sumatra, and West Papua. Among the five major islands, Java is the most densely populated and also the most fertile. On Java, agricultural land area tends to be in decline, while outside Java it is increasing. Islands such as Kalimantan and Sumatra, which have the biggest area of land in Indonesia, offer potentially useable land that is still available as a resource although much of it is currently forested.

2. The general characteristics of organic in Indonesia[18]

Organic agriculture, as a systematic and even certifiable approach, is a relatively new phenomenon that has gained attention and significant growth only in the last decade. The oldest organic farm in Indonesia, named Bina Sarana Bhakti located in West Java and was certified in the early 1990s. There is increasing interest in organics and there is rapid growth in both the export and the domestic markets. Even a large state-owned tea plantation in West Java (*Perkebunan Rancabolang Afdeling Kendeng PTPN VIII Jabar Kec. Pasirjambu Ciwidey*) with about 9794 hectares has recently converted from conventional to organic production.

Average costs of certification can range on average from a low of about USD 1 500 to more than USD 5 000 depending on farm size, type of product, location, and working days required. For an internationally recognized certification of an organic shrimp export operation in East Java the cost was nearly USD 40 000 in 2003.

Although there are traditional knowledge sources, there is very limited availability of organic production know-how. The absence of training manuals or resource books and references about organic farming makes adoption riskier for many farmers. Nor are there any training manuals for post harvest, handling, packaging, etc. There are however training manuals on integrated pest management that are widely available including some in the local language. The government extension service is usually under the administration of district leaders or *Bupati*. Although there are at least 30

[17] Report prepared by Riza V. Tjahjadi (Executive Director of BioTani Indonesia Foundation and National Coordinator PAN Indonesia) and edited by Daniele Giovannucci.

[18] Among the published documents that offer more information there is: Tjahjadi, Riza V. 2004. Organic Farming in Indonesia. Retro and Reflection of Current Situations. BioTani Indonesia Foundation. Jakarta, 13 December 2004. This paper can be obtained by sending e-mail to: biotani@rad.net.id or biotani2004a@yahoo.com.

recognized organic demonstration farms located in all five province of Java and 3 districts of Sumatra, none have undertaken to train extension services in organic methods.

There are unfortunately no estimates of how much land is certified or of the number of farmers involved with organic agriculture. However, one of the largest exporters (ForesTrade Indonesia) works with approximately 3500 farmers in more than 100 communities.

National Standards - SNI Pangan Organik

Indonesia has not enacted any legislation for the legal protection of organic agriculture. So far, the national standard, namely the *Standard Nasional Indonesia* (SNI) *Pangan Organik* or Organic Food (SNI 01-6729-2002) was issued by *Badan Standardisasi Nasional* (BSN), the national standard agency. SNI was adopted in accordance with the Codex Alimentarius Commission's guideline for production, processing, labeling and marketing of organically produced foods, with modifications for Indonesia's context. The SNI also refers to the IFOAM Basic Standards for Organic Production and Processing (2002), the Japanese Agricultural Standard for organics, the United States Department of Agricultures' National Organic Program (NOP), the National Association of Sustainable Agriculture Australia (NASAA), and the EU standard.

The SNI was approved by the Minister of agriculture at the end of 2002. Later, the Minister in 2003 appointed *Pusat Standar dan Akreditasi* (PSA) as the Competent Authority (*Kompeten Pertanian Organik*, KPO). During December 2004 KPO-PSA revised the SNI, with the participation of a multi-stakeholder taskforce. Moreover the KPO-PSA underwent training twice in 2004 (included farmer participation) to make comparison of the SNI with the IFOAM standard, and evaluate financial management on organic farms. According to KPO, a draft standard on organic seafood has been prepared by the Ministry on Fisheries and Maritime. The food regulations and codes for labeling and advertisement date to 1999 (Government Regulation of the Republic of Indonesia No 69) and are not yet in accord with current needs.

The Ministry of Agriculture established an ambitious program, entitled Go Organic 2010, with a target to become one of the biggest exporters of organic commodities in the world by that year. This three-stage program began in 2001with the first step, whereby existing information on organic agriculture was consolidated. By 2005 a well-developed infrastructure was to already have been established, although this has not occurred except in limited areas. An evaluation of information available on government websites intended to promote the organic sector shows that there is little information available and much of the information is out of date. General features of organic farming in Indonesia can be found at
http://organic-indonesia.deptan.go.id/mainMenu.asp

3. The key organic institutions

Organic agriculture in Indonesia is still in the early stage of development but a number of institutional efforts are underway to support and guide the sector. Some of the most important are:

Government bodies

The Ministry of Agriculture approves pesticide and chemical fertilizers registration procedure, and a registration procedure for organic fertilizers is also being developed. Plant protection and quarantine procedure are also under administration of the Ministry, and it also promotes business opportunity.

The Ministry of Agriculture includes the *Otoritas Kompeten Pangan Organik* (OKPO Indonesia) or Competent Authority for Organic Food under auspice of the *Pusat Standarisasi dan Akreditasi* (PSA) or Center for Standardization and Accreditation. OKPO has established a task force for Organic Food. The task Force *Pangan Organik* consists of various elements: government agencies, the private sector, technical experts, *Badan Pengawasan Obat dan Makanan* (BPOM) or National Agency of Drug and Food Control, *Badan Standardisasi Nasional* (BSN) or National Standardization Agency of

Indonesia, *Komite Akreditasi Nasional* (KAN) or National Accreditation Committee, universities, practitioners, farmers and consumer groups.

http://organic-indonesia.deptan.go.id/ also: http://www.bsn.or.id/BSNSite2/english.htm

National Agency of Drug and Food Control has a series of functions based on regulation and standardization. In regard to organic products these include;

- Licensing and certification of pharmaceuticals based on Good Manufacturing Practices;
- Pre-market evaluation of products;
- Post-marketing vigilance including product sampling and laboratory testing, inspection of production and distribution facilities;
- Audit product advertisement and promotion;
- Research on drug and food policy implementation issues;
- Public communication and education.

http://www.pom.go.id/profile/e_fungsi_badan_POM.asp

The Ministry of Fisheries is preparing a standard for sea-products.

The Ministry of Health issued a joint decree with the Minister of Agriculture in 1996 concerning maximum residue limits on imported fruits and vegetables.

The Ministry of Forestry has issued a decree concerning the utilization of certain areas as buffer zone to preserve community forests while allowing them to continue utilizing non-timber forest products.

The National Agency for Export Development or *Badan Pengembangan Ekspor Nasional* promotes the development and marketing of Indonesian products for export but have almost no experience with organics.

Bupati or Regional Chiefs at the District level
Bupati in several regions have actively promoted potential organic products such as coffee and other food crops by designing policy for organic agriculture development in their respective regions. And some have also pursued these efforts abroad especially with visits to Europe and The Netherlands.

Major Non-Governmental Organizations (NGOs)

Several NGOs advocating organic agriculture organized a network for organic farming in 1998 named *Jaker PO*. This network's membership now consists of 40 NGOs, including several farmers groups as members. They have further developed the network by organizing educational seminars and meetings, which included consultations with Malaysian and Thailand organic growers' organizations to observe their business activities and gain insight on technical requirements for establishing a certification body, named BioCert, in 2002.

In 2000, several top-level officers at the Agriculture Ministry in collaboration with University researchers set up *Masyarakat Pertanian Organik Indonesia* (Maporindo), an association for organic farming.

A number of farmers producing organic food have formed the Indonesian Organic Goods Producers Association (APOI) in 2003. APOI aims to improve not only the environment but also the quality and quantity of the country's agricultural produce through organic farming. The association consists of a broad selection of producer groups that are involved in a variety of organic endeavors including: horticultural crops, plantation crops, fishery products, marine products, husbandry products, organic seedlings, organic fertilizers, and bio-pesticides.

Certifiers

According *Otoritas Kompeten Pangan Organik* there is currently only one Indonesian accredited certifier. Sucofindo is a state-owned company that has recently been licensed to certify but has not yet

undertaken such work. There are 15 organizations currently awaiting approval and licensing to certify. One certification body —named BioCert– was founded by a group of organic NGOs in April 2002 and entering the year 2005 has 34 clients. Some individuals have qualified as organic inspectors for international certification agencies. The national Association for Sustainable Agriculture Australia (NASAA), Naturland, and SKAL International are among the most prominent international certifiers that operate in Indonesia.

Education/training institutes

There are several training institutes for organic farming as listed in the directory on organic farming published by PSA (*Pusat Standarisasi dan Akreditasi*) of the Agriculture Ministry. One: *Bina Sarana Bhakti* is recognized for its quality but offers only a brief internship. Most training however, is sporadic and not carried out on regular basis.

4. Marketing of Indonesian Organics

The statistical observation of organics by the *Badan Pusat Statistik* (BPS) or Central Statistics Agency has not been successful. The preliminary assessment of the Directorate General of Custom and Excise is also only partially conducted and remains incomplete. Similarly very little information of value was received as a result of an e-mail survey sent to NGOs, farmers groups, several donor agencies, and exporters that took place in late 2004.

Marketing in North Sulawesi

Revoldi Koleangan, an individual local marketer in North Sulawesi has initiated a kind of local market development campaign. His main problem is the over-supply of rice with production amounts of about 400 metric tons per harvest but he can market around 200 tons. To help resolve the problem he has been supplying organic rice to around 12 local supermarkets in Manado City North Sulawesi but this is still not enough.

(Questionnaire to IFOAM's "Local Market for Sustainable Development." 12 Dec. 2002)

There is evidence that the increasing interest of a growing population will help organic agricultural products to have a future market in Indonesia. According to one supermarket owner, reporting in a daily newspaper (Bisnis 21/12/2004), there are currently approximately 15 million people in Indonesia consuming organic foods, of course most of these are not certified foods. Although the trade of organic products is mushrooming in the big cities, only a limited number of shops specialize in organic products.

In Jakarta, there are currently around 25 outlets selling organic vegetables, which includes one named Healthy Choice, a franchise of Taiwan's Yogi House that also has branches in Singapore and Malaysia. Most of the certified organic products in shops are imported from the United States, Switzerland, New Zealand, Australia, and Taiwan. Local products including vegetables, rice, eggs, chicken and mushrooms are typically obtained from organic farms in Bandung and Puncak in the West Java province as well as from East Java, but standardization of their quality remains a problem.

In Medan, capital of North Sumatera province where 26 000 hectares of organic rice is cultivated, another method for promoting organic products is through door-to-door sales of rice. Using three medical doctors for marketing credibility, 12 groups of farmers have successfully developed this tactic under the auspices of the Pesticide Action Network and sell about 15 metric tons non-certified rice per month.

One U.S.-based group called ForesTrade is among the largest exporters of organic products. The Dutch government recently approved a 1.1 million Euro matching fund project that will allow ForesTrade to build a new state-of-the-art processing center in Padang Sumatra. Its primary business is in coffee, cinnamon, and other spices. Other exporters are also thriving with these and other high-value crops like certified bananas. One in Sumatra annually ships 1 700 tons of coffee and 3 tons of

dried vanilla. All of these products are certified by the National Association of Sustainable Agriculture Australia (NASAA), and Skal.

A project funded by the U.S. Department of Agriculture named Program Distressed Areas Assistance in Flores Island and East Timor is also exporting 3 000 tons of certified organic coffee and 1 ton vanilla per year. Cacao grown organically in North Sumatra will be exported to Switzerland (11 tons in the first quarter 2005) by Bitra, one of the largest NGOs on the island.

Coffee, vanilla and spices such as cinnamon, ginger, pepper, and cloves account for a large portion of export value. Forestrade exports around 1.088 tons organic cinnamon (Cassia Vera) to Europe and U.S

The primary markets for Indonesia's organic products include: Japan, U.S., The Netherlands, Germany, Australia, and New Zealand Norway, and Canada.

5. Key constraints to the adoption of organics

There are no explicit barriers to the adoption of organic farming, yet a number of constraints do exist. Of the increasing availability of organic production technology does not always reach farmers as NGOs in some areas are less effective or uninterested. Some feel there is an ethical dilemma between ideological choices as reasons for adopting organic methods and acting as traders of organic products which is often derided as “lubricating the oil of the capitalist machine”. A number of NGOs also lack experience in managing a supply chain. The government systems for research and extension have very little knowledge of organics and it is often up to the NGOs to meet farmer needs.

For exporting, government policies offer no shortcuts or incentives. Government procedures are business as usual, which include illegal taxes and bribery. Certification also increases production costs. According to Ananta K. Seta, the head of the Department of Agriculture’s “GoOrganic 2010”, growth of the domestic market has reportedly skyrocketed by about 600% in the last three years although this is from a relatively small basis and is usually not certified. This represents a much faster growth rate than the export market.

The illegal fees and bribery hurt local farmers more than large-scale producers who are better able to integrate these costs of doing business. For example, the charges imposed on local produce to be sold to other regions reduce the competitiveness of the local products in both national and international markets. The 2004 survey for local competitiveness by the Regional Autonomy Watch (KPPOD) revealed that the tendencies of local governments to impose disruptive fees and charges was a key factor affecting the decision of potential investors to not enter Indonesia. This situation is worse since I'm a besides government officials, local criminal networks have also established “taxes" on organic products that are perceived as high-value items.

Organics in Thailand[19]

1. Background of organic development in Thailand

The 8th National Economic and Social Development Plan (for 1997-2001) was the first institutional framework at national level that clearly described a structure for sustainable agriculture, including organic farming. It also sets a target of converting 20% of arable land to sustainable agricultural methods such as organics. The government financed the Sustainable Agriculture Pilot Project covering nearly 200 000 hectares of farmland with over 30 000 farming families involved in Surin Province to test pesticide-free rice and vegetable farming. Several thousand farms were recruited for organic rice production (1 320 farms with 2 195 ha) and for organic vegetables (1 664 farms with 158 ha) but only a few hundred were actually certified.

[19] Report prepared by Gagendra Singh and edited by Daniele Giovannucci.

In 1984 a group of farm leaders, NGOs, environmentalists, and consumers organized "The Alternative Agriculture Network" as a nation-wide forum for developing a more sustainable agriculture in Thailand. In 1998, the Alternative Agriculture Network established Organic Agriculture Certification Thailand (ACT) to be the certifying agency for organic agriculture in Thailand. ACT has been accredited by International Federation of Organic Agriculture Movement (IFOAM) in 2001 and was the first certification body based in Asia to become IFOAM Accredited. The latest version of organic agriculture standard (2003) is available on line (http://www.actorganic.org/standard.html).

In 1999, Department of Export Promotion developed a trade promotion projects known as *"Pilot Project on the Export of Organic Farm Products"* with the main objective of promoting organic production and export of rice, banana, pineapple, asparagus and baby corn. The Project aimed to develop practical experiences in organic farming and to establish an inspection and certification system. The DEP financed the Department of Agriculture and Thailand Institute of Scientific and Technological Research to develop the *National Organic Standard Guideline for Crop Production.* In 1999, Surin was chosen to be the pioneering province in Thailand for organic agriculture with a project from 1999-2006.

The Department of Agriculture and the Thailand Institute of Scientific and Technological Research developed organic crop standards in 2001 and The National Office of Agricultural Product and Food Standards developed national organic agriculture criteria for accreditation of a certifying body in Thailand in 2002.

2. Key institutions for organic agriculture in Thailand

Table 1. Government

Key Government Actors	Role
National Bureau of Agricultural Commodity and Food Standards (ACFS) http://www.acfs.go.th/	• Complete a national production and processing guidelines of organic crops, livestock, and shrimp production • Setting up a national organic accreditation programme
Department of Agriculture (DOA), The Organic Crop Institute (http://www.doa.go.th)	• Complete organic crop standards • Set up an organic inspection and certification "The Organic Crop Institute"
Department of Agricultural Extension (DOAE) (http://www.doae.go.th)	• Support organic farming activities
Surin: Organic Agriculture City Project (http://www.surin.go.th)	• Promote the organic agricultural system throughout the province, to be pioneering province for organic agriculture in Thailand. • Issued the new Surin Organic Agriculture Standard (12 August 2004) based on ACT and ACFS codes

Table 2. NGOs

Key NGO Actors	Role
Various NGOs under the Alternative Agriculture Network (AAN), key players include:	• Encourages chemical-free farming among farmers and promotes alternative market to consumers. • Disseminates and studies mainstream policies which affect small farmers, such as GATT and Biodiversity Convention. • Publish "Alternative Agriculture" and "Lokdulyapav (Balanced World).
Earth Net Foundation (and Green Net Co-op) (http://www.greennetorganic.com)	• Promote and support production, management, marketing and consumption of organic agricultural products
Surin Farmer Support	• Extension for chemical-free agriculture, cost reduction
Suan Duangtawan	• experimental and technology development center for natural farming, conceptually derived from Japanese alliance and NGOs; vegetable, fruit and egg production; short- and long-course training for natural farming
Thailand Organic Agriculture Club	• newsletter, academic service and conferences, field trip, training and other activities to promote the better public understanding of organic agriculture
Institute for Sustainable Agriculture Community, Northnet Foundation	• training and extension of sustainable agriculture communities; sustainable agriculture technology research and development

Table 3. Certifiers

Key Certifying Agencies	Role
Organic Agriculture Certification Thailand (ACT) 801/8 Soi Ngamwongwan 27, Ngamwongwan Road, MuangDistrict, Nonthaburi 11000 Thailand Tel/Fax: +66 2 5800934 Email: actnet@ksc.th.com	• Thai certification body providing organic certification services for farms in Thailand and Southeast Asia region
North Organic Agriculture Committee Email: proconet@chmai.loxinfo.co.th	• Certify organic farms in North region of Thailand
OMIC - OVERSEAS MERCHANDISE INSPECTION CO. LTD. No. 12-14, Yen Akas Soi 3, Chongnonsri, Yannawa, BANGKOK 10120 Tel: (66) 2-286-4120 Fax: (66) 2-287-2571 E-mail:gm.th@omicnet.com http://www.omicnet.jp/english/company/link_asia.html#thailand	• Accredit organic farms according to the JAS (Japanese Agricultural Standards)
BCS (Germany) BCS EKO-GARANTIE GMBH info@bcs-oeko.de http://www.bcs-oeko.de	• Foreign-based agency certifying organic farms in Thailand and operating primarily under EU2092/91.
Skal International Thailand 51/36 Moo 9, Sukhumvit 105 (Soi lasal), Sukhumvit Road, Kwaeng Bangna, Khet Bangna 10260 BANGKOK Thailand T : +66.2.3611.960 F : +66.2.3611.970 E-mail: pwaibel@controlunionthailand.com Skal (Netherlands) http://www.skalint.com	▪ Foreign-based agency certifying organic farms in Thailand and operating primarily under EU2092/91.
Soil Association (UK) http://www.soilassociation.org	• Foreign-based agency certifying organic farms in Thailand and operating primarily under EU2092/91.
Bioagricert (Italian) http://www.bioagricert.org	• Foreign-based agency certifying organic farms in Thailand and operating primarily under EU2092/91.
The Organic Crop Institute, Department of Agriculture (Governmental)	• Certifying agency for domestic trade • R&D for organic crop • Organic crop production • Training and technology transfer

3. Certified organic production and trade in Thailand[20]

Thailand's area under certified organic agriculture was estimated to be 11 050 ha in 2003. About 1 200 to 1 400 farms (of about 5 million total farms in the country) are certified as organic. The overall volume of production is estimated to have been approximately 9 600 metric tons in 2003 with an estimated total product value of USD 9 million or 373 million Thai Baht.

Almost all certified organic products are exported, only few products are sold locally. Thailand's major export destinations are Europe and Japan. Some products are also fair trade certified and exported to countries in Fair Trade network (e.g. Switzerland, Belgium, Germany, France, UK, Italy, Austria and Sweden).

There are products certified by domestic certifying bodies (e.g. The Organic Crop Institute) that are mainly supplied to the local markets. Nearly all of the internationally certified organic products are exported. Currently only two export certified companies: Capital Rice and Green Net Cooperative, also have certified organic products on the local markets (primarily supermarkets).

There is no data on the number or value of organic products sold in Thailand. Trade channels are primarily those small organic shops owned by NGOs such as Greennet and some supermarkets such as Tops and Carrefour.

Green Net" was established in 1993 as the first organic produce wholesaler in Thailand to support environmentally and socially responsible business. Today it thrives as the largest organic trader in Thailand and has established the non-profit Earth Net Foundation to develop organic agriculture and the Green Net Cooperative to work on fair trade marketing. It is one of the most respected information resources for organics in the Thailand.

Table 4. Summary of number of certified operators and total areas

Categories	Total area (ha)	Organic area	Conversion area
Single Producers (Crop production)	198.2	99	99.2
Producers Groups (671)	2 253.7	741.6	1 512.1
Wild production operators	-	-	-
Total (715 producers/operators)	**2 451.9**	**840.6**	**1 611.3**

Source: ACT-certified organic agriculture area contributes to about 22% of total organics

Organics in the Philippines[21]

1. Background

Organic options re-emerged as a systematic approach to agriculture in the mid-1980s. This was catalyzed by the Agency for Community Education and Services (ACES), an NGO that was initially contracted by the International Rice Research Institute (IRRI) to undertake the Small Farmers Organization Project, a community-based organizing pilot project using participatory strategies intended as a model on how productivity could be enhanced through High Yielding Varieties (HYV).

[20] Much of the production and trade data comes from Green net / Earth Net (personal communication 2004). This organization is involved in many of the organic developments in Thailand and is estimated to have the most current accurate data.

[21] Compiled by MASIPAG and edited by Daniele Giovannucci. MASIPAG (an acronym of Magsasaka at Siyentipiko Para sa Pag-unlad Ng Agrikultura) is a farmer-led partnership of 474 civic organizations, 28 NGOs, 26 faith-based groups, and various scientific institutions working towards the sustainable use and management of biodiversity. Their website is: http://www.masipag.org/index.html.

In the course of the project, ACES discovered that farmers were better off in the 1970s using the traditional methods than they were by the early 1980s when they were already using HYVs. The results of this study were presented in a national conference (BIGAS) held at the University of the Philippines at Los Banos in 1985. MASIPAG was launched in 1986 as the result of a committee formed at the conference to explore alternatives to Green Revolution agricultural practices. MASIPAG includes many farmer organization and NGO's that had emerged and engaged in the development of alternative farming technologies like low external input agriculture, ecological pest management, bio-intensive gardening, Sloping Agricultural Land Technology (SALT), Biodynamic farming, and regenerative agriculture, etc. All of these were generically referred to as "Organic Agriculture". Most of the work done in the 1980s was to improve local systems and did not focus on certification or external markets.

In the 1990s, there was evidence of further proliferation of such initiatives among farmers, NGO's and the church sector. The NGO Pakisama adopted such programs in 1991 in seven provinces; Church based organizations through their Social Action Centers have also adopted organic agriculture in their programs in Luzon, Visayas, and Mindanao. Philnet, an NGO network and the Philippine Rural Reconstruction Movement, one of the biggest NGOs in the Philippines, are also currently implementing Sustainable Agriculture programs. By this time, sustainability as criteria for development had become widespread and accepted in the development community and thus the term Sustainable Agriculture replaced "Organic Agriculture".

By the 1990s organics were more clearly defined and even gained a modest market presence. KAANIB, a MASIPAG member in Mindanao has posted rice sales of over a million pesos annually (about USD 20 000). In 1999 the Organic Industry Technical Working Committee[22] was established, with MASIPAG as the chair, after the Asia Conference of the International Federation of Organic Agriculture Movements (IFOAM) to pursue the development of organic standards.

The Organic Producers and Trade Association (OPTA) registered with the SEC in 1995 started out with 11 members and now has 200 members. OPTA members are engaged in various production and trade activities, e.g., commercial production of organic fertilizers, organic vegetables, dairy, poultry and meat products.

2. Organic Situation in the Philippines

The organic industry in the country is considered to be still in its infancy. There is no single, unified organic sector at present. With government support (i.e. education, research and extension) still mainly aimed to conventional agriculture, organic agriculture has been in the hands of the private sector, NGOs and People's organizations or Cooperatives. The industry is comprised of small scale and fragmented projects/initiatives spread across the country.

In 2003, the Philippine National Organic Standards for Crop and Livestock Production were revised and adopted by The Department of Agriculture's (DA), Bureau of Agriculture, Fisheries and Product Standards (BAFS). All standards development must pass through the BAFS office that is also in-charge of the accreditation of any local certifying body in the Philippines. The Standard was developed in harmony with the International Standards and the EU standards, was subjected to National Consultation, and then signed as an Executive order.

2003 marked the birth of OCCP as the primary certifying body whose membership includes NGO's, church based institutions, academics, local government units, media, organic producers and consumer organizations. OCCP has certified a number of crops for the local market only and has established cooperative arrangements with foreign certifiers for Philippine Inspectors to conduct their inspections for export products.

[22] Members of the committee are OPTA, Gratia Plena, MASIPAG, AVDF, Center for International Trade Exhibition Mission, and University of the Philippines at Los Banos.

After a National Workshop, hosted by the DA in mid 2004, the Organic Agriculture Industry Board was created by government. In September, stakeholders in the organic community drafted the Strategic Direction of the Organic Industry in the Philippines and an Accreditation Board for certifying bodies is now functional and headed by the Director of BAFS. The Organic Certification Center of the Philippines (OCCP) is one of the first accredited certifying bodies in the Philippines.

An implementing order or regulation is now being lobbied in the legislative body, which - when granted - can protect consumers and farmers from false claims or misrepresentation of products. It would require that products not be certified organic if they are not inspected and given certification according to the Philippine National Standards by an accredited certifier. Currently, in late 2004, products labeled as organically grown or chemical-free can be found in supermarkets and priced often the same as conventional products.

The Republic's Ecological Solid Waste Management Act (Act 9003) was recently passed. This law requires every local government unit and barangay or a county to engage in waste segregation and processing including composting. If fully implemented, compost and/or commercially produced organic fertilizer will easily be available and can be a means to facilitate the conversion process to organic farming. However, neither Congress nor the Executive Department has yet created a favorable overall framework for adoption of organic farming. Government response has been sporadic and fragmented. The Philippine Government has yet to adopt regulations in order to implement the Philippine National Standards that were adopted by BAFS in 2003. On the positive side, The Center for International Trade and Exposition Mission (CITEM) has continuously pursued a promotion program since 1997 through the annual BioSearch Exhibitions conference on natural, organic and herbal products, anticipating the strong growth of products which are not regulated.

3. Trade and Marketing Issues

There are no reliable estimates of the total organic producers nationwide. Recent estimates place the number of internationally certified organic farms at about 500, with a combined area of 2 000 hectares. They are mostly big farms, including farms with in-conversion status. The certified organic farms are devoted mainly to sugarcane, banana, herbs and coconut and exports have recently grown at an annual rate of 10-20%. The major foreign certifiers are: as IMO (Switzerland), Naturland (Germany), Ecocert (France) and Oregon Tilth. The total production area, including domestic producers, is about 3 500 hectares.

Philippine's most important organic exports (Internationally Certified)

- Banana products – fresh banana, banana chips, banana puree, banana powder, frozen banana
- Coconut products – coconut oil, desiccated coconuts, young green coconuts
- Mango products – fresh mango, mango puree, mango halves, dried mango, mango jam;
- Muscovado sugar
- Herbal tea and food supplements – banaba, lagundi, sambong, ampalaya, tsang gubat, and honey.
- Other fruits and nuts - papaya, noni, cashew, etc.

The total Philippines organic market size is relatively small and estimated at more than USD 7 million; in 2002 the estimate was USD 6.2 million. Of this, about 60% is from export earnings and 40% from domestic market production. A small handful of export companies located in the Visayas and Mindanao are responsible for most of these sales. In 1999, exports were estimated to be USD 2.5 million and by 2003, organic exports —by MAPISAG's own unofficial estimates— may have exceeded USD 10 million. Of the domestic production, about 20% is kept for growers' home consumption, and the rest is sold directly at markets or among the local communities. This is primarily for products like organic fruits and vegetables, cereals, legumes, sweet pepper and root crops. There is also a small market for processed organic products for domestic consumption include,

mangoes (jams, puree, halves dried fruits, marmalades, jellies juice,) banana products (figs, fries, catsup, fritters, cakes), fashion fruit (juices, purees, jams and marmalades), Cocoas (tableas, candies), Rice (wine known as Tapuy, cakes), processed pineapples, and ground black pepper. There are also culinary herbs, poultry meat and eggs, processed pork meat, salad dressing, processed vegetables (pickles/chunks), beverages and honey. There are inputs available for organic crop production such as compost fertilizers, vegetable seeds, bio-pesticides and microorganisms, imported organic products in supermarkets like Soya milk, vinegar, honey, tea, coffee and spices. The exact figures for each product cannot be calculated due to absence of domestic data.

Large-scale organic producers are geared primarily for export. However, most small-scale producers are focused on local markets. Often relying on their Internal Quality Control Systems (IQCS) they market their own products through informal channels usually in larger cities: through direct sales or mobile stalls in the community. Retail shops of organic products are often limited, while supermarkets favor large commercial suppliers over small farmer producers and demand costly packaging that is unaffordable for low budget producers.

There is some budding institutional support for post-harvest processes and marketing. One example is the Bio-Search Organic Fair[23] that takes place annually and has been a good avenue for promoting and selling organic products especially for small producer groups. It is conducted during the month of May, every year, when most organic products are available. Organic products —both certified and not— are displayed and sold. Most products are labeled as organically grown and only some are certified. However, with the success of BioSearch, certification is becoming more popular for local producers. In contrast to other countries such as Brazil, that in some areas have weekend organic market fairs sponsored by local Government, organic farmers markets or trade fairs are rare.

Since the late nineties, the Philippines have been exporting organic products to various countries. These included certified organic Muscovado sugar to Germany and Japan, green “Balangon” bananas to Japan, Saba banana chips to the United States, Canada and Europe. Coconut oil, desiccated coconut and coconut chips were also sold to the US and Europe. In 2002, the export of organic products has expanded to include certified organic banana leaves to Japan and Virgin Coconut Oil to the United States. The Organic Coffee Industry is a growing business both for export and domestic. Many coffee farmers are now shifting to organic coffee, which can be found in Ifugao, Cavite, Batangas, Bohol, Negros and some parts of Mindanao. Another new product with export potential is virgin coconut oil.

Total export of Philippine herbal products amounted to USD 33.8 million (USD 30.3 million personal care items and USD 3.5 million supplements) in 2002 as part of a global market for natural herbal products (including organics) valued at about USD 80 billion. Growth in exports has been erratic for the herbal industry. There was a significant increase in exports in 2000 but a 1.6% yearly decline in 2001 and 2002. Most of the herbal manufacturers are now seeking certification because of the perceived export potential to Japan, South Korea and other EU countries. Additionally, the local herbal market is estimated at about USD 40 million or about 3-5% of the USD 1billion annual spending of Filipinos on synthetic nutritional and medicinal products. The Philippines has the potential to develop into a larger grower of medicinal plants, given its rich biodiversity and long tradition of use and knowledge of herbal medicine. The tendency toward organic cultivation and certification for medicinal herbs is already evident in major producers such as India.

4. Key Factors in the Low Rate of Organic Adoption

Marketing Problems and Constraints:

1. Lack of marketing information especially in remote areas
2. Lack of distribution channels and access (high cost) to foreign markets
3. Inadequate products packaging
4. Lack of capital to improve existing storage, segregation, and market facilities.

[23] Hosted by the Natural Products Division, Center for International Trade, Exhibition And Mission (CITEM), under the Department of Trade and Industry .

5. Domestic consumers' lack of information and awareness about organic products

Major Export Constraints

1. Lack of supportive policies and incentives from the government
2. Lack of infrastructure to produce quality products
3. High certification costs (The creation of OCCP should help to reduce the certification costs)
5. Insufficient export facilitation; Complex procedures in importing countries including lack of market information and strategies

Specific Problems of Smallholder Producers in the Philippines

1. Organic producers are not organized and are not linked to markets or marketing chains
2. Low competencies in organic production methods including composting and microbial preparations which are beneficial to soil fertility
3. Government training and extension services in OA are very limited or non-existent in some areas.
4. Limited knowledge of standards and national regulations especially standards that are translated into local language
5. Problems in implementing IQCS/alternative guarantee system including record keeping and reporting
6. Limited capacity of local supporting organizations (i.e. People's Organization) in setting up systems and educating members on standards

Key Issues in the Conversion Process

1. Producers fear yield declines at the start of the conversion process and lack financing or cash to support production capital.
2. Limited sources of organic seeds (planting materials are often treated with chemicals) and organic fertilizers (no organic fertilizer manufacturers are certified)
3. Farmers, especially smallholders, without land tenure are reluctant to convert because their investments in more fertile land will not remain their property in the long run.