National Framework for Organic Farming in Bhutan

Department of Agriculture
Ministry of Agriculture
The Royal Government of Bhutan

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Foreword

From the Prime Minister

Bhutanese agriculture is characterized by traditional farming practices with low or no external inputs and dependent mainly on renewable natural resources which are available locally. Religious sentiments in Bhutan are such that our farmers would choose the alternative means of soil fertility management and pest control, like use of repellents and protectants if available, rather than the use of chemical inputs.

Developmentally, agricultural production is rapidly moving from subsistence towards commercial farming with direct government support, both in terms of policy as well as infrastructure development. While pursuing the developmental goals enshrined in "Vision 2020" the Royal Government has taken the Middle Path policy of balancing the safety of the environment and protecting the profit of our farmers. The global trends of consumers' preference shifting for natural products have helped the Royal government in its decision to initiate the organic farming program since we have the right production environment, both physical, and socio-cultural. In our endeavour to pursue the developmental goals, we will take advantage of our gifted physical environment, the socio-cultural, technological and spiritual environment that favours the development and progress of organic farming in Bhutan.

Technological needs for complementing on and building a strong organic culture will require tremendous effort, will and determination from the producers, the technical group, policy makers, planners and administrative bodies to establish the brand name for organic products from Bhutan. This will entail creating consumers' awareness for our products and working in partnership with our farming community on the value of preserving our pristine environment for unlimited production of organic products from the RNR sector. Therefore to take advantage of our natural environment and to safeguard it for future, I take this opportunity to urge all to promote organic farming. Let the organic farming be our symbol of a healthy living with nature and respect for all sentient being, while harnessing a good profit.

In order to promote organic farming in Bhutan, the need for a framework was felt necessary to guide the promotion of Organic Farming concept. Therefore,

the Ministry of Agriculture has developed "The National Framework for Organic Farming in Bhutan" which outlines key approaches and strategies to promote Organic Farming. This framework provides a vision of the increasingly important role Organic Farming will play in the future development of agriculture in Bhutan. It identifies the many benefits and advantages of Organic Farming as well as some of the key challenges which must be addressed; and outlines the strategies required to assure its widespread success and acceptance. This framework will be a **'living document'** incorporating changes with future developments.

The Ministry of Agriculture is aware of the challenges that lay ahead in developing organic farming in Bhutan. While both the physical and socio-cultural environment and the farming practices are ideal for developing organic farming systems, the developmental and extension needs for implementing and building organic farming systems for each soil and agro climatic conditions will require an integrated effort of all concerned departments of the Ministry, deploying most of their resources and budgetary provisions to achieve these objectives and also active participation from all stakeholders.

I wish to express my appreciation to all those who have worked to develop this frame work and also to those who in the future will work to make this vision a reality.
Tashi Delek!

Sangay Ngedup

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LIST OF ACRONYMS

BAFRA	Bhutan Agriculture and Food Regulatory Authority
CoRRB	Council for RNR Research of Bhutan
DOF	Department of Forest
DOL	Department of Livestock
FAO	Food and Agriculture Organisation
FYM	Farm Yard Manure
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movements
IPM	Integrated Pest Management
MDG	Millennium Development Goal
MOA	Ministry of Agriculture
MSME	Micro Small Medium Enterprise
NGO	Non- Governmental Organisation
NOPCU	National Organic Programme Coordination Unit
NPHC	National Post Harvest Centre
NPPC	National Plant Protection Centre
NSSC	National Soil Services Centre
PAM	Production, Access and Market
PPD	Planning and Policy Division
RGOB	Royal Government of Bhutan
RNR	Renewable Natural Resources
TWG	Technical Working Group
WHO	World Food Organisation

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1 INTRODUCTION

The primary goal of this framework is to enable a better understanding of organic agriculture and to clarify how organic practises can serve or hinder small farmers and rural communities - especially poor ones. This document gives the background and future directions for developing a framework for organic production in Bhutan. It outlines some policy needs, strategies for implementation and some future directions to take the Organic Programme forward.

1.1 Background

In Bhutan, agricultural development was given high priority in terms of policy support and resource allocation with the introduction of the planned development from the 1960s. The Government of Bhutan (RGOB) adopted sustainable development as a policy during the Seventh five-year plan (1992-1997), which laid the foundation for the development and implementation of Integrated Pest Management (IPM). The IPM strategy was geared towards safe and efficient use of pesticides and safeguarding the environment from pollution due to indiscriminate use of pesticides. Since then, there has been a decline in use of pesticides with the removal of subsidies on pesticides and the banning of several hazardous chemicals from the market for environmental reasons.

Bhutan possesses vast tracts of forest producing abundant biomass and other natural resources that are not fully utilised due to the country's conservation policy. The vision 2020 states that Bhutan will maintain 60% of the total area of the country under forest at all times to come.

Farming in Bhutan is still very traditional with little or no use of external inputs. In 2000 only 1,800 MT of fertilisers was used, by only 30% of the country's households - mainly for crops. During the same period farmers used a total of 139,000 MT of FYM (RNR census, 2000). Given the support for creating infrastructures for the production of vermin-compost, compost, farm yard manure (FYM), and assistance in the form of seed, planting material, local breeds of cows, FYM pits etc, and the country could become self reliant and also export organic products to neighbouring countries.

Emphasis on biodiversity, the environment, forest cover maintenance, integrated pest and nutrient management approaches in existing policies favour organic farming. The Nature Conservation Act and Biodiversity Act, also supports the principles of organic farming. This gives the Ministry of Agriculture a very sound base from which to go from IPM to organic farming. However,

currently there are no policies that directly deal with organic farming and organic standards in Bhutan need to be developed.

Subsistence production of basic foods is restricted in many regions by lack of access to knowledge, capital, land and water. At the same time, more favoured growing areas are used for conventional commercial production of speciality crops or animal feeds for export to affluent regions. This indicates that the major constraints to food security are found in social, economic and political conditions rather than in production methods. The main solutions to food security problems will therefore be found in social, economic and political improvement. Nevertheless, demand for food will increase in the future so there are reasons why alternative food supply systems are needed and the relevance of organic agriculture need to be addressed.

Research in several countries shows that the external costs of conventional agriculture are in the range of USD 100-300 per hectare per year. In South Asia the productivity of conventional agriculture is pegged around 50%, compared to the West and although the current system has failed to deliver proponents of the current agriculture system keep insisting that the solutions for the future lie in "more of the same", i.e. more fertilisers, more pesticides etc.

Conventional agriculture today is causing a number of problems such as:

- Decreasing bio-diversity within agricultural production and in surrounding environment
- Soil degradation leading to falling yields and continued loss of arable land
- Low income for farmers
- Pollution and inefficient use of natural resources such as water
- Disruption of rural institutions and production systems
- Human health problems caused by pesticides, antibiotics, hormones and unnatural feeding conditions (e.g. BSE)
- Environmental problems caused by agrochemicals and risks of biological pollution

For these reasons conversion to organic agriculture can be a major step towards a more sustainable agricultural model for Bhutan. The conventional food system may produce impressive quantities of food in some production systems, but its lack of accessibility to the hungry has demonstrated its limits and the nutritional quality is doubtful. The sustainability of conventional agriculture and agribusiness is questionable. However, organic agriculture has the

potential to produce both sufficient quantities and high quality nutritious food. organic agriculture offers a comprehensive response to the sustainability problems facing agriculture and our food production system. Millions of organic farmers all over the world are proving this in their daily work. Consumers are responding positively and governments and international organisations are increasingly recognising the value of organic farming.

Organic agriculture is particularly well suited for rural communities in developing countries that are currently most exposed to food shortages, since organic agriculture contributes to food security by a combination of many features, such as:

- Increasing yields in low-potential areas (e.g. dry lands) and market-marginalised areas
- Conserving bio-diversity and nature resources on the farm and in the surrounding environment
- Increasing income and/or reducing production costs
- Producing safe and diversified food suited to the local soil and agro climatic conditions
- Creating sustainable food supply chains for local farmers and communities

Figure 3 Potential organic production areas in remote areas with little road access

Figure 1 Typical dry land fields

Figure 2 Typical small farms in Bhutan

2 ORGANIC FARMING

2.1 Definitions and concepts

The definition of "*Organic Farming in Bhutan*" refers to *organic farming practices*, in Bhutan. Organic farming is an approach to agriculture where the aim is to create integrated, humane, environmentally and economically sustainable agricultural production systems, which maximise reliance on farm derived renewable resources and the management of ecological and biological processes and interactions, so as to provide acceptable levels of crop, livestock and human nutrition, protection from pests and diseases, and an appropriate return to the human and other resources applied.

FAO / WHO in the *Codex Alimentarius* uses the following definition:

"Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It emphasises the use of management practices in preference to the use of off-farm inputs. This is accomplished by using, where possible, agronomic, biological and mechanical methods, as opposed to using synthetic materials to fulfil any specific function with the system."

The definition used by IFOAM emphasises the environmental and social aspects that are key features of their standards.

"Organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibres. 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 optimise quality in all aspects of agriculture and the environment. Organic agriculture dramatically reduces external inputs by refraining from the use of chemo- synthetic fertilisers, pesticides and pharmaceuticals. Instead it allows the powerful laws of nature to increase both agricultural yields and disease resistance."

Organic Farming in Bhutan needs to cover a knowledge based holistic concept of farming practices and not just exclusion of agrochemicals. There are those who think that exclusion of agrochemicals alone is farming organic and that our traditional farming system is organic. Definitions of some farming systems from IFOAM are given below to show some distinctions.

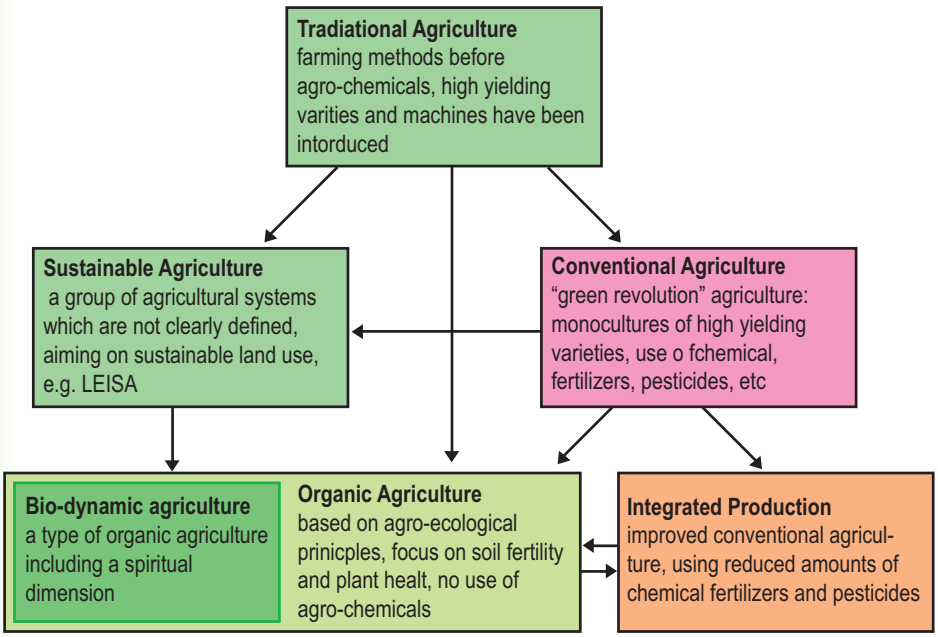


FIGURE 4 DEFINITIONS FOR DIFFERENT FARMING SYSTEMS (SOURCE: IFOAM TRAINING MANUAL)

2.2 Scope for organic farming in Bhutan

Bhutan has a large rural population still practicing traditional farming due to the lack of access to facilities and know-how. Farmers have been producing food crops simply using forest litter and farm yard manure. There is potential to increase productivity of these traditional farming systems by adopting organic farming, which include development of farming systems applicable to the local soil and agro-climatic conditions and local crop species, crop rotation and intercropping, efficient production of vermin-compost and FYM from farm wastes and organic farming plant materials, and pest management with improved farming systems and the use of botanical and other natural formulations. Such practices could change farming from subsistence to sustainable, providing safe and quality nutrition and ensuring food security. Value could be added to surplus production to meet market requirements. The potential for rural communities to collect and harvest non-timber forest products (NTFP) in their areas could substantially increase farmers' potential for additional incomes.

2.2.1 Organic farming to achieve Millennium Development Goal (MDG) targets

The Millennium Development Goals have eight targets through which balanced development and poverty alleviation are planned to be achieved. In Bhutan poverty is found to be more pronounced in rural areas, especially in the south eastern regions of the country. These are either marginal lands or land without access to roads, which in turn also are lands not exposed to agrochemicals. Organic Farming offers an opportunity to contribute towards achievements in six of the eight targets.

1. Eradication of extreme poverty and hunger,
2. Promote gender equality and empower women,
3. Reduce child mortality and
4. Improve maternal health,
5. Ensure environmental sustainability and
6. Develop a global partnership for development.

Organic farming will create a clean Bhutan image. In addition, a clear *Organic Farming Policy* will position us to protect our farming communities in the present global situation, with Bhutan on the verge of joining the WTO, as we could restrict agricultural imports to be only organic/ organic farming produce and products in keeping with our policy to go organic.

Bhutanese standards for organic farming need to be developed to assure food quality for the growing number of Bhutanese who are concerned about chemical intake from imported produce, fruits and vegetables, and to facilitate export to people around the world who are increasingly conscious of food quality, chemical residues and the way in which the food has been grown. We need to develop standards and services that support and subsidise farming communities to produce for themselves and for the market.

2.2.2 The potential benefits of organic farming include:

- Farmers and their local communities satisfy their own requirements for nutrition, health and food
- Long-term commitment to maintain soil fertility, particularly addressing soil erosion, degradation and desertification

- Reduced external energy consumption and the reduced water use
- 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
- For small and poor farmers, organic farming can be an effective risk management tool that reduces input costs, diversifies production, and improves local food security
- Increased agricultural competitiveness by meeting increasing demands for improved food safety standards and traceability that are becoming the hallmark of high-value agricultural trade
- Organic production reduces environmental contamination risks, and minimises the public health costs of pesticide poisoning, etc.

The aims of organic farming and the issues covered are shown by the diagram below:

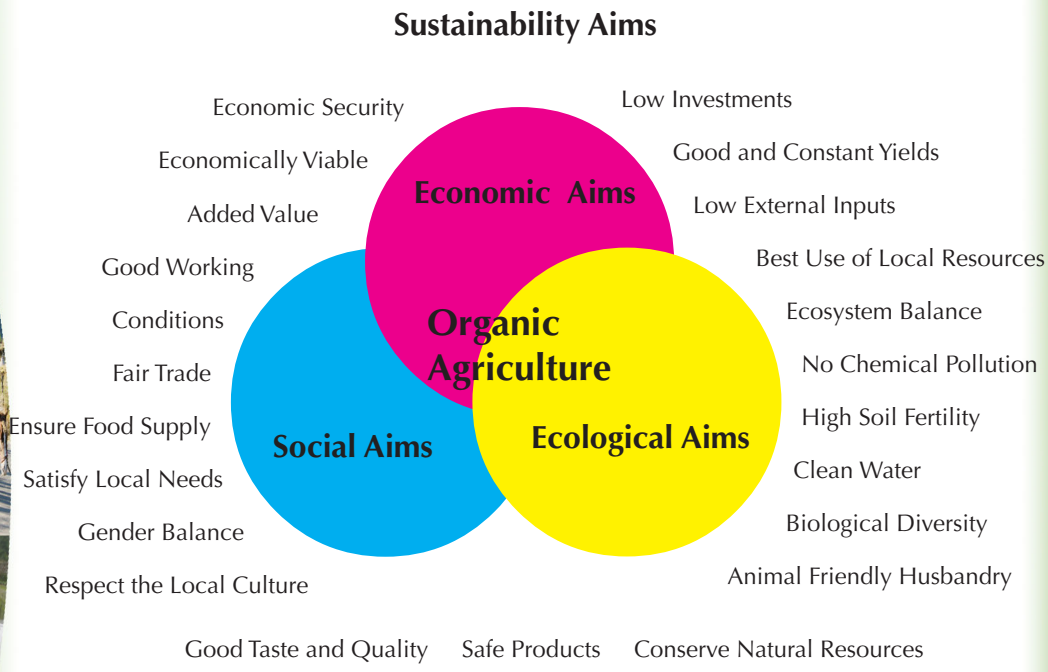


Figure 5 Subjects, issues and areas covered under organic farming (Source: IFOAM Training Manual)

- Higher prices for organic products can provide higher earnings for producers involved in production, processing, and trade and hereby also benefit small farmers

2.2.3 Opportunities created by a *Organic Farming Policy*

Implementation of an organic programme could create the following opportunities:

- Overcome the current lack of understanding of organic principles in the farming system by providing awareness and knowledge among producers about organic farming production techniques.
- Increased awareness about health and environmental benefits from organic products will support the development of a national organic market that can benefit small farmers that have difficulties compete with imported products.
- The international organic market is growing rapidly and could provide niche export markets for Bhutanese farmers that can comply with organic standards.
- Organic produce can form the basis for processing high value organic products providing the platform for business development in manufacturing.
- Bhutan could become the first country in the world to become 'organic' by 2020, which could have a huge promotion value for Bhutanese products.
- Organic farming is labour intensive but also has the potential to generate higher labour income than conventional farming. The introduction of organic farming could stall urban migration by giving better paid work opportunities on the land and in rural enterprises and in that way contribute to rural stability.
- The Organic farming system has the potential to increase household food security and income while conserving biodiversity on farms.
- Learning to manage organic standards prepares farmers to manage other standards increasingly required for trade. This is especially true if group certification with internal control systems becomes part of the strategy to extend the practice of organic production.

2.2.4 Limiting factors

- Initial yield reductions can be observed, especially for farmers employing cultivation methods that depend on external inputs. However, yields can be maintained and can increase after a transition period by using farming systems applicable for a locality (crop rotation, manure and compost application, etc.).
- The transition period with a likely yield reduction and increased manpower requirements without increased product values may deter farmers' engagement with organic farming.
- Increased manpower requirements for organic farming could be an initial constraint until higher paying market-outlets are developed.
- Certification is costly for small farmers and could be a serious barrier to access markets that require certification.
- Limited awareness in the domestic market about nutritional, safety and quality of organic farming products.
- Small and fragmented landholdings can hinder organic certification unless all farms are brought under organic farming practices to avoid risks of contamination from irrigation and runoff water.
- There is still little knowledge about organic farming practices among national agricultural extension staff, which will have to be corrected through training.

These constraints are identified as initial as they occur mainly in the transition period from conventional to organic farming. To promote organic farming the constraints need to be addressed in a national *Organic Farming Policy* and strategies to ensure that support mechanisms are in place to overcome initial difficulties.

2.3 Need for a framework for organic farming

The National Framework for Organic Farming is the first step towards introduction of an organic production policy that will provide a basis for government and private agencies and individuals to restructure agriculture in Bhutan to make it safe, sustainable and profitable for rural communities.
Bhutan needs clear legislation and its own standards for organic production based on *Codex Alimentarius*. Implementation of Food Safety and Quality standards for Bhutan would provide a base for developing a regulatory framework for traceability and quality assurance for local markets. Internal Control Systems (ICS) and a participatory guarantee system to support certification for exports would be another important step forward.

3 POLICY FRAMEWORK FOR PROMOTION OF ORGANIC FARMING

3.1 Vision

In the long term Bhutan strives to develop and promote organic farming as a way of life among Bhutanese farmers and trade in organic food items, to enhance nutrition, health and farm household income, and to become a net exporter of organic agricultural products. Bhutan envisions to become 'Organic' by 2020.

3.2 Mission

To develop and promote organic farming and environmentally friendly farming systems and programmes that will enable Bhutanese farmers and traders to provide safe, quality food, produce and products for Bhutanese consumers and other markets.

3.3 Existing policies supporting organic farming

Some policies are already in place that favours organic farming production principles. These give Bhutan a sound base for developing and promoting organic farming.

The policies are:

- The Forest and Nature Conservation Rules of Bhutan,2000
- The Biodiversity Act, 2004
- IPM- The Pesticide Act of Bhutan, 2000
- The Water Act – draft
- The Food Safety Act - being developed
- The CBNRM framework for Bhutan, 2002
- The Cooperatives Act of Bhutan 2001
- The NGO act of Bhutan 2001

3.4 Organic farming and Renewable Natural Resources (RNR)

Organic farming practices are relevant to a wide range of farming activities in the RNR sector:

- Forest management and wild collection/harvesting of non-wood forest

products

- Integration of field crops, horticultural crops, medicinal and aromatic plants, farming with livestock animals, forestry and biodiversity
- Processing, trading, services and marketing of produce and products
- Food safety and nutrition
- Water quality, environment and sustainability

3.5 Key principles of organic farming

Organic farming and processing is based on a number of principles:

3.5.1 Management and conservation of resources and protection of the environment

- Protecting the long term fertility of the soil by maintaining and increasing levels of organic matter, fostering soil biological activity and preventing soil erosion
- Achieving nitrogen self sufficiency through crop rotation with leguminous and biological nitrogen fixation, as well as effective recycling of organic materials including crop residues and livestock wastes
- Promoting judicious use of and proper care for water resources and the life in it and conservation through water harvesting
- Using renewable on-farm resources in locally organised farming systems
- Reducing to zero all forms of pollution that result from agricultural practices
- Controlling weeds, diseases and pests by relying primarily on local formulations for plant protection, crop rotations, natural predators, diversity, resistant varieties, and by using local species of successful traditional seeds and crops

3.5.2 Socio-economic factors

- Preserving and enhancing traditional and indigenous farming knowledge
- Developing the education curriculum to include subjects covering biodiversity, agriculture, animal husbandry, forestry and natural systems of medicines

3.5.3 Integrated, holistic farming

- Integration of animal husbandry within the farm to provide proper living conditions for local breeds of livestock, including clean fodder produced on Organic farms and allowing them to live according to their natural behaviour
- Careful attention to the impact on wildlife and natural habitats paying heed to their needs for breeding and survival.
- Holistic farming with full integration of forest resources, livestock rearing and a farming system supported by production of on-farm inputs such as compost, vermi-compost and plant protection formulation.

Figure 8 Livestock is an integral part in organic farming

Figure 9 Composting is a need for all farming types to supplement and improve the richness of farm yard manure

4 THE STRATEGIC PLAN - WHAT NEEDS TO BE DONE

This strategic plan sets out steps to help overcome the current challenges to introducing organic farming in the conventional food and agricultural sector. The recommendations in this plan are designed to lead to realisation of the long term vision that organic farming will significantly replace the conventional food and agriculture sector depending on the success of the introductory phase of the organic programme.

4.1 Broad strategy

A three pronged strategic approach will be adopted to cover potential development areas.

1. Subsistence to sustainable poverty alleviation strategy in rural areas which are untouched by agrochemicals to be self sufficient for their needs. Market and price will not be a priority and conditions for this group.
   - Food security
   - Nutrition
   - Food diversity
   - Income generation

2. Land use & existing farming practice for development which have the need for environmental protection and farming systems supporting conservation. Market and prices will be important.
   - Harness the natural potential
   - Attention given to environmental conditions and resource management
   - Improve and develop production for requirement and potential market- possibility of branding and marketing the locality
   - Specific selected areas which have natural potential

3. Commodity approach for niche products mainly targeted for local and international market. This section will be open to any selected potential production areas where market prices can economically cover related costs. Foreign investments and contract growing for assured markets. Market and prices will lead this section.
   - production of high value low volume crops
   - contract growing with requirement of certification in selected suitable areas

4.2 PAM- Guide for development

The broad strategy will utilise the Production- Access- Market (PAM) guide for development

- Production-Access- Market, the triple gem should be used as a guide to deliver services, support and develop technologies to the wider public who have interest in organic farming. Production in all potential areas will be supported provided funds are available, and while access by road may not always be possible access to knowledge, technology and services will be provided to the best of ability. Market will be the key to development based on organic farming for immediate actions and efforts will be made to seek markets, support marketing and link production to market as high priority areas. The support should include:
    - Information
    - Technology package
    - Training/ HRD
    - Services
    - Inputs
    - Resources
    - Support
    - Infrastructure
    - Logistics
    - Finance/credit/subsidies
    - Tax exemption on imports
    - Marketing support- information-linkage-coordination

4.3 10th Five Year Plan Priorities and Strategies

For the success of organic programme and wider adoption of the farming system more importance needs to be given to the programme during the 10th FYP with its importance featured in the agriculture development policy as one of the guiding principles of RNR Policy along with the following strategic priorities and principles:

1. Attainment of Food Self Sufficiency
2. Enhancement of Rural Income
3. Environmental Conservation and Natural Resource Management
4. Generation of Employment Opportunities
5. Promotion of holistic integrated farming System (***Rangshin Sanam***)

4.4 Key approaches

- Bhutan embraces the principles of organic production. It recognizes that the formal certification of organic product is a complex inter-related process involving soil suitability, the availability of crop protection, local production regimes, and market access issues. As a result Bhutan seeks to develop "certified organic products" through an approach of specific selective products in specific regions of the country.
- Bhutan also recognizes that for reasons of food security and income generation, there is need to use non-organic production and plant protection techniques in some regions and for those products not specifically identified as being organic. In the short and medium terms, conventional production techniques are anticipated to encompass the majority of production systems in the Kingdom. In the longer run the country should embrace the principles of organic production.
- Organic agriculture development in Bhutan must be a gradual process and should not be implemented without careful assessment for market, food security, nutritional value, health benefits or environmental contribution and initially it should begin with produces that have established markets or have comparative advantage.
- Organic development should start with medicinal and aromatic plants, non-timber forest products from wild collection and selected crops and areas in the geographical areas where conventional agriculture has not yet introduced agrochemicals, and start by supporting development of potential niche crops in selected potential areas.
- Studies should be conducted in geographical areas targeted for organic farming promotion and support programmes need to be put in place from the beginning.
- Any area selected for organic farming will be offered a package recommendation of farming practices, management alternatives and adequate training prior to adoption of organic farming.
- Programmes should be mostly based on local initiatives and interest

and should not be forced on any group.

- Development policies should recognise the need to integrate professional marketing support.
- Certification will be mainly for exports and a local certification system developed.

4.5 Steps towards realisation of organic farming

Some steps to achieve the promotion of organic farming are:

4.5.1 Develop a coordination and advocacy institution to advance organic farming

- A National Organic Programme Coordination Unit (NOPCU) should be created within the Department of Agriculture with sufficient resources and representation from relevant sectors to take on the planning, development and advocacy functions required to advance the organic sector nationally.
- The scope of activities for the NOPCU should include providing advice on research and development, adjusting government policies, programmes and regulations, developing strategies to improving extension and advisory services to accommodate and support organic farming and improve consumer awareness about organic produce and products.
- Establish a Technical Working Group (TWG), consisting of representatives from all relevant departments, which will be responsible for guiding the development of the organic industry, and coordinating the stakeholders involved in policy matters, programme development, assessment, regulation and trading.

4.5.2 Establish a organic "community" and pilot activities

- The organic farming community should include farmers, professionals, micro, small and medium size enterprises (MSMEs) working with organic production and processing, retailers, researchers, extension specialists and organisations that have interests in organic farming.
- Available public and programme funding should be directed towards establishing pilot activities with technical support from the organic farming community to cover initial costs for equipment and structures

and other transitional costs.

- Conventional farming areas with limited use of agrochemicals should be designated as organic farming areas and programmes and strategies should be designed to support farmers in those areas set up production groups to develop organic value chains.
- Studies of selected organic value chains including product marketing should be conducted to identify weak links and to secure support for strengthening the entire chain.

4.5.3 Ensure political recognition of the long-term benefits of implementing standards and certification

- A government body, TWG with authority to approve definitions and standards and another body, BAFRA should grant accreditation to national certifiers should be established.
- National Organic Standards for Bhutan should be developed and adopted by the TWG.
- Resources should be allocated to secure enforcement to protect the integrity of organic standards.
- A national symbol system for the organic farming sector owned and defined by TWG should be implemented and promoted among consumers.

4.5.4. Input support

Critical inputs required for holistic farming which cannot be produced on-farm will be produced/ bought or facilitated by the government at reasonable prices. The following inputs will be covered under the programme:

- Holistic/ organic seeds and seedlings and planting materials
- Nutritional management aids- for plant and animals in the way of soil fertility management
- Disease management aids for plants and animals in the way of health care as allowed under the organic standards and plant protection.

4.5.5 Develop support programmes for transitional growers and MSMEs

- Programmes should be developed to subsidise the transitional costs and

reward the environmental services provided by farmers who stop the use of agrochemicals.

- Credit and crop insurance schemes should be designed to ensure that farmers have a continued income if their net income from farming falls during the conversion period until their production can be sold as certified organic.
- Assistance packages including grants or easily accessible loans for organic farming based MSMEs and industries for value addition including on-farm processing, storage and transportation, input production, etc. should be developed, with assistance to MSMEs proportional to the distance from urban areas.
- Certification and accreditation schemes should be designed with appropriate assistance measures to ensure that farmers can participate.

4.5.6 Establish advisory services to support the adoption process and assist farmers and organic processors with quality assurance

- Advisory services should be established to support the information needs of interested, transitional and existing organic farmers.
- Production handbooks and on-line information and training resources about organic farming should be developed and made available for farmers and local extension agents. This material should be based on studies and lessons learned from different regions of Bhutan.
- Formal training programmes should be developed and implemented for organic advisors who will support the conversion of farming practices.
- The National Research Centres should be involved in development of local organic farming practices and an effective cooperation should be established between organic service providers and national researchers to ensure that research needs are properly identified and relevant projects undertaken. A network of demonstrations in farmers field and research centres across the country should be developed to facilitate generation of new and relevant knowledge.
- Organic farming advisory services should include assistance for MSMEs in the processing sector with focus on establishing MSMEs in the rural areas.

Figure 14 Niche products of high value and low volume nature such special food products for high end use and medicinal, aromatic plants, and herbs will have to be carefully selected for development.

Figure 15 Consultations and information sharing is an important tool to develop organic farming at the grass root level

4.5.7 Development of organic markets

- Coordinated supply and marketing chain for organic produce and organic farm inputs should be to build, which could include government financed support programmes for processors and distributors undergoing conversion to organic.
- The NOPCU should work with mainstream retailers, importers and exporters to increase awareness about organic farming and to develop an overall vision and strategy for the organic farming sector that addresses issues such as imports and is able to direct the sector towards commodities in high demand but with low domestic supply.
- Consumer awareness about personal and social benefits of organic foods and farming should be built with media campaigns that target misconceptions and promote local produce and commodities. Learning from successful campaigns in other countries, slogans such as "Buy Local Organic" could be used to enlist consumers in efforts to shift conventional retail behaviour and ensure government support.
- After a logo has been developed for organic production for export from Bhutan the logo should be promoted to obtain international recognition.
- The National Post Harvest Centre should spearhead research on options for improving post-harvest handling within the organic distribution chain.
- Amendments to food grading standards should be revised to ensure that organic farmers are not unduly penalised by grading standards that encourage growers to use pesticides.
- Relevant public institutions should be encouraged to purchase organic products to stimulate market development and raise the public profile of the sector.
- Support for marketing should include a price information system for organic products and facilitation of linkage between producers and buyers.

4.5.8 Development of organic standards, internal control systems and group certification for exports

- Bhutan organic standards should set out minimum requirements for production, processing, transport and storage and list inputs that are

permitted in the production, post harvest, processing and handling of organic labelled products with certification procedures for exports.

- Organic standards should be included in the Food Safety Standard currently being prepared by BAFRA according to the *Codex Alimentarius*. Therefore the Organic Programme will work in close consultation with BAFRA on organic standards development to ensure standards for Bhutan are compatible with most international standards.
- A Dzongkha word implying organic should be used for products produced for the domestic market in accordance with organic standards set by the Technical Working Group but without certification. "*Rangshin Sanam*" is one word the Organic Programme has been using to imply organic farming; this is suggested as the Dzongkha term. The words "certified organic" should be reserved for products with formal certification mainly for export. The use of the word "organic" for produce and products should be regulated once the standards are in place.
- Symbols/logos should be developed to promote organic marketing. The National seal should be used as a logo to symbolise the high standard of Bhutan organic produce and products. The use of this seal should only be authorised to agencies, producers or traders who comply with the organic standards and be a guarantee for quality and high value.
- An Internal Control System that permits group certification especially for export should be developed. The system will reduce certification costs and thereby promote involvement of small farmers in certified production. The system could also be an instrument for training farmers and developing the organic industry.

A suggested proposal as to how this could be implemented is presented in Figure 10.

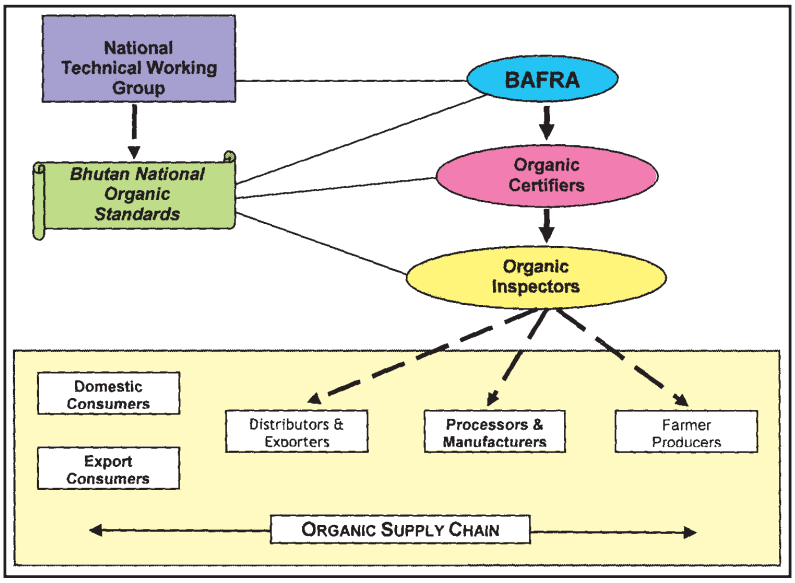


Figure 10 Proposal for Organic Standard and Regulation System in Bhutan

Figure 12 Practical training for farmers to build capacity to manage organic farming. Shown here farmers of Gasa learning to make compost

5 ACTION PLAN FOR IMPLEMENTATION OF ORGANIC FARMING FRAMEWORK

5.1 Immediate actions

Several activities in the steps outlined above need to be initiated simultaneously. The actions to be taken immediately are:

- Establishment of the Organic Programme Coordination Unit to implement and coordinate the ***National Framework for Organic Farming in Bhutan.***
- Formation of a Technical Working Group to provide overall guidance in implementing the Organic Farming Framework
- Identification of suitable crops and geographical areas for initiation of field activities and initial organic production
- Sourcing and development of inputs for organic farming to identify alternatives and solutions for plant protection and soil fertility management preferably building on local knowledge
- Commence education and training of producers and extension personnel in organic farming techniques
- Preparation and production of printed organic farming information material
- Development of National Organic Standards to regulate organic production
- Development of a national logo to protect and regulate the term "organic" for imports and exports of organic products
- Study to establish the need for and development of an accreditation system for non-certified produce grown without synthetic agro-chemicals or "Natural", "Rangshin Sanam" products
- Initialisation of an organic verification protocol and training of local inspectors
- Introduction of technologies for appropriate and efficient processing of Organic produce
- Market research and development of a marketing system for Organic products for local and other markets

- Initiation of a public awareness campaign to raise awareness of the benefits of Organic production, products and consumption.

5.2 Medium term actions

- Establishment of a Organic board to regulate Organic systems and standards
- Promotion of the benefits of organic and "natural" produce to consumers and support for creation of local markets
- Research to establish the most effective organic farming techniques for Bhutan
- Establishment of on-farm demonstrations and other forms of support for conversion from conventional to organic farms including an economic support scheme for conversion to organic
- Development of organic systems for collection and processing of wild plants
- Promotion of and assistance for businesses producing organic inputs
- Identification of potential local and export market of organic produce and products
- Regular monitoring and assessment

5.3 Longer term actions

- Development of export markets for organic produce
- Ongoing research and development of organic production methods and technologies
- Ongoing training and support for organic farmers and organic production businesses
- Ongoing promotion of organic production systems and organic and "natural" products
- Regular monitoring and assessment of the effectiveness of the various aspects of organic policy

Figure 16 Organic Vegetables, potential for development

Figure 17 Rice grown without agrochemicals in Bumthang

Figure 11 Dhamji village in Gasa, the whole Dzongkhag has been agrochemical free for three years.

Figure 13 Practical training in pest and disease management are essential.

6 INSTITUTIONAL ARRANGEMENTS

6.1 Technical Working Group (TWG)

The TWG will be responsible for development in organic farming in Bhutan and take overall decisions to guide the direction of the organic farming sector. The TWG will coordinate stakeholders involved in agriculture policy formulation, research, extension, and marketing and in regulation of the sector.

The initial technical working group will be composed of the following institutions with the Director General, MOA as the chairperson.

Director General, DoA
DoF (member)
DoL (member)
CoRRB (member)
BAFRA (member)
NSSC (member)
NPPC (member)
AMS, MoA (member)
Private sector
Coordinator, National Organic Programme Coordination Unit (member secretary)

The main tasks of the TWG will be:

- To appraise, review and decide on policies that involve multi-sector or cross-ministerial issues with national implications
- To plan, review, prioritise, and ensure implementation of sector specific organic programmes and projects
- To consult with relevant stakeholders where Organic ventures that involve parties from various interest groups working together at a specific site with common resources or facilities
- Approve the national standards and certification system and the rules for using the national logo

6.2 National Organic Programme Coordination Unit (NOPCU)

The NOPCU will be responsible for developing, coordinating and implementing the National Organic Programme commencing with the

implementation of the *National Framework for Organic Farming in Bhutan* in accordance with decisions taken by the TWG. The NOPCU will advise the TWG on future directions for development of the organic sector and present proposals for projects and activities to the TWG. The NOPCU will plan and coordinate the use of available programme funding for development of the sector including provision of training material, documentation and information and development of training programmes.

The NOPCU will be headed by a full time National Organic Programme Co-ordinator and should have necessary full time staffs to implement the National Framework. Focal persons for coordination will be identified in the National Centres; NPPC, NSSC and the RCs and in DoL and DoF.

6.3 Roles andfunctions of different stakeholders:

Ministry of Agriculture (MoA) - MoA will provide the policy support and direction for the growth of the organic industry. All departments under the MoA will be involved in the development of the organic sector. The NOPCU will have its seat in MoA.

Planning and Policy Division (PPD) - PPD will lead the development of policies concerning the organic industry and review and propose amendments to policies that are detrimental to the development of the industry.

Council for RNR Research of Bhutan (CoRRB) – CoRRB will incorporate Organic research and technology generation activities in their research mandate. The knowledge and technology for organic farming will be provided by the best people available to build local capacity to promote organic farming. Research on technology development will be carried out by the CoRRB involving the Extension in research topic identification and evaluation. CoRRB will also provide back up support during the adoption phase.

National Soil Services Centre (NSSC) – NSSC will lead in developing soil fertility management approaches and appropriate technologies for soil fertility management in the organic context and ensure they are available for extension activities.

Department of Agriculture (DoA) - DoA will lead, coordinate and supervise the implementation of the Organic Programme. DoA will also provide the required support and guidance to the Dzongkhags.

National Plant Protection Centre (NPPC) – NPPC will provide a leading role

in developing plant protection and disease management approaches for organic farming. Appropriate technologies on plant protection and disease management in the organic farming context will be incorporated in farming systems and made available to extension.

National Post Harvest Centre (NPHC) – NPHC will lead research and technology development for the post harvest handling and management of organic produce and adding value to increase produce shelf life. NPHC will provide guidelines for post harvest management of organic crops organise training and make extension materials available.

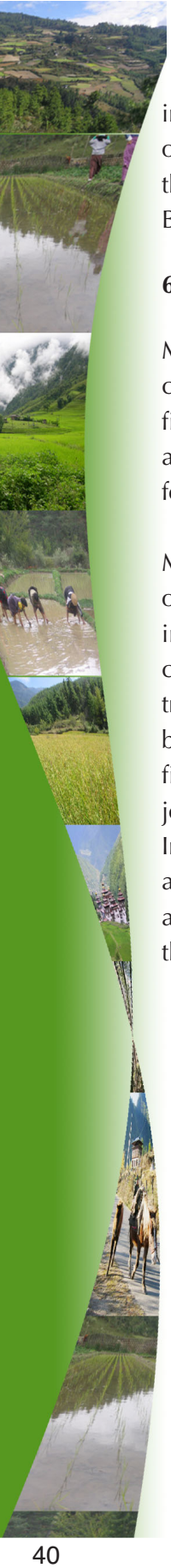
Dzongkhags - Extension officers will implement the Organic Programme at the field level. They will promote the principles of organic farming to the farmers and provide advisory services to interested farmers. They will assist in the formation of groups of organic farmers, assist in developing farm management plans in preparation for conversion, assist with data collection and provide training and other support services. DAO's will identify research needs and work in close collaboration with research to address the issues.

Department of Forest (DoF) - DoF will facilitate activities that deal with forest resource utilisation such as wild harvesting and collection, resource studies and mapping. The forest management plans will include provision for gathering of organic products in consultation with interested communities where the potential exists.

Department of Livestock (DoL) – DoL will promote the integration of animal husbandry in organic farming systems to interested farmers, specially the inclusion of local hardy breeds of cows, and assistance and advisory services. DoL will provide support, guidance, training and supervision to groups of organic farmers and assist in developing animal husbandry based farm management plans in preparation for conversion.

Agricultural Marketing Services (AMS) – AMS will create the infrastructure and mechanisms for local produce to be available on local and international markets. AMS will conduct market research and development on organic products for regional and international markets in collaboration with customers and the NOPCU, make market information available and link producers to the markets. AMS will assist in organising the logistics needed for transporting organic produce from farms to markets.

Bhutan Agriculture and Food Regulatory Association (BAFRA) – BAFRA will



in collaboration with the Organic Programme Coordination Unit develop the organic standards and an organic certification system. BAFRA will regulate the standards and the use of the national organic logo that will represent the Bhutan National Organic Standards.

6.4 Important points to consider

MoA can play an important role in fostering institutional support systems that can initially help provide connections to the many components that farmers find difficult to access. These include capacity building and the acquisition of adequate technology and training, market connections, and initial financing for certification and input production.

MoA can help organise an apex body or a network of institutions and organisations that can then be fortified with professional support and training in order to take advantage of scale of economy (marketing, production, certification, etc), improve bargaining power and significantly reduce transaction costs. MoA's departments have important roles to provide mutually beneficial partnerships between farmers and national or international private firms and can even facilitate market relations by supporting farmer groups to jointly engage in contract farming arrangements.

In order to improve the likelihood of success, MoA 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.

7 CONCLUDING REMARKS

As with the introduction of any new system or technology, organic farming requires the acquisition and careful, systematic dissemination of knowledge and information; practical developmental and research programmes; promotion and marketing; formal recognition and regulation, and an effective organisational structure to ensure essential initial and ongoing support and assistance.

Since organic farming is knowledge and labour intensive and basic services lacking, support will have to be high to the organic farmers during conversion of their farming systems. Investments by the central agencies will have to be increased and designed to meet their needs as appropriate. Development of markets and marketing channels for organic products locally and internationally will be the key to success of the promotion of organic farming. Certification system and support for group certification will be essential in the initial stages when required for export markets.

The biggest challenge in conversion will be the conversion of the mind sets of the research and extension staff who have been trained according to traditional agrochemical based education. This document provides the foundation for addressing this and outlines some methods by which organic farming can be promoted and adapted to Bhutan and incorporated into Bhutanese agriculture as a way of life.

This framework will be a living document which will be revised when needed to update information and broad strategies and guidelines. The success of organic farming rests with all stakeholders, farmers, researchers, extensionists, consumers, and the central and local governmentsÕ support.

An implementation plan will be developed for the MOA to guide its activities to operationalise the framework.

8 BIBLIOGRAPHY

1 Agricultural and Processed Food Products Export Development Authority (APEDA), 2003. *Presentation on Financial Assistance Schemes of APEDA*, 18th August, 2003, Kolkata

2 Agricultural Marketing Services, Department of Agriculture, 2000. National Organic Program Standards, Washington DC.

3 AQUIS, Draft National Standard For Organic and Bio-Dynamic Produce, 2001, Third Edition, Canberra

4 Bio Suisse. 2002. *Regulation on the Implementation of Bio Suisse Standards and Basis for Decisions of the BIO SUISSE Label-Commission<<Import>>,* Edition 2002, English Translation, Bio Suisse (Association of the Swiss Organic Agriculture Organisations) Basel.

5 Economic and Social Commision for Asia and the Pacific, United Nations, 2002. *Organic Agriculture and Rural Poverty Alleviation, Potential and best practices in Asia*, New York.

6 Eyhorn,F., Heeb,M. Weidmann,G., Oct.2002. IFOAM Training Manual for Organic Agriculture in the Tropics, Theory, Transparancies, Didactic Approach, compiled by FiBL

7 Giovannucci D., 2004, Organic Agriculture for Poverty Reduction in Asia:

8 Government of Karnataka, Karnataka State Policy on Promotion of Organic (Holistic) Farming, Karnataka.

9 Lamkin N.H. & Padel S., 1994, Ed. *The Economics of Organic Farming - An International Perspective*, United Nations Economic Alleviation-Potential and Best Practices in Asia.

10 MacRae, R., Martin,R., Macey,A., Beauchemin,R. and Christensen, R. 2002, *A National Strategic Plan for the Canadian Organic Food and Farming Sector*, The Organic Agricultural Centre of Canada, Nova Scotia Agricultural College, Nova Scotia.

11 RGOB, 2000. Ministry of Agriculture, *RNR Census, 2000,*

12 RGOB, 2001. The Cooperatives Act of Bhutan 2001, Thimphu

13 RGOB, 2001. The NGO Act of Bhutan 2001, Thimphu

14 RGOB, 2005, Bhutan Millennium Development Goals Report 2005

15 RGOB, Ministry of Agriculture, 2000. The Forest and Nature Conservation Rules of Bhutan, 2000, Volume I,

16 RGOB, Ministry of Agriculture, 2000. The Pesticide Act of Bhutan, 2000, Thimphu

17 RGOB, Ministry of Agriculture, 2004. *The Biodiversity Act, 2004,* Thimphu

18 RGOB, Ministry of Agriculture, 2004. *The Water Act, A Draft, 2004.* Thimphu

19 Rural Industries Research and Development Corporation, 2001*, 5 Year R& D Plan for Organic Produce 2001-2006,*

20 Tolia, R.S., Organic Uttaranchal and Food and Agriculture Organisation, Some Aspects of Mountain Agriculture and Economy, Uttaranchal Organic Commodities Board, Government of Uttaranchal.