The Integrated Assessment of Organic Agriculture in Tanzania

Policy Options for Promoting Production and Trading Opportunities for Organic Agriculture

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Abbreviations and Acronyms

CA	-	Conventional Agriculture
CBD	-	Coffee Berry Disease
CoBD	-	Conversion on Biological Diversity
CBTF	-	Capacity Building Task Force
EPOPA	-	Export Promotion of Organic Products from Africa
ERB	-	Economic Research Bureau
FAO	-	Food and Agriculture Organisation of the UN
GTZ	-	German Agency for Technical Cooperation
IA	-	Integrated Assessment
IFOAM	-	International Federation of Organic Agriculture Movement
IRA	-	Institute of Resource Assessment
KIHATA	-	Kilimo Hai Tanzania
KNCU	-	Kilimanjaro Native Cooperative Union
MAFC	-	Ministry of Agriculture Food Security and Cooperatives
MDGs	-	Millennium development Goals
MITM	-	Ministry of Industries, Trade and Marketing
MPEE	-	Ministry of Planning, Economy, Empowerment
LAMP	-	Land Management Project (Babati)
NEMC	-	National Environment Management Council
NGO's	-	Non-Governmental Organizations
OA	-	Organic Agriculture
PRA	-	Participatory Rural Appraisal
SACCOs	-	Savings and Credit Cooperatives
SECAP	-	Soil Erosion Control and Afforestation Project
TanCert	-	Tanzania organic Certification Association
TCCIA	-	Tanzania Chamber of Commerce, Industry and Agriculture
TOAM	-	Tanzania Organic Agriculture Movement
TPRI	-	Tanzania Pesticides Research Institute
TBS	-	Tanzania Bureau of Standards
TZS	-	Tanzanian Shillings
UNCTAD	-	United Nations Conference on Trade and Development
UNEP	-	United Nations Environment Programme
UDSM	-	University of Dar es Salaam
VPO	-	Vice President's Office

1.0 INTRODUCTION

1.1 About the Report

This report presents an Integrated Assessment of organic agriculture (OA) in Tanzania, with cashew nut, honey and coffee as case studies of organically produced crops. It is intended to provide a justification for more policy support to OA sub-sector. The study is part of a wider East African programme supported by UNEP-UNCTAD-Capacity Building Task Force (CBTF) on Trade, Environment and Development to promote organic agriculture production and trade. ENVIROCARE[1] is facilitating the implementation of the project in Tanzania under the overall guidance of the Tanzania Ministry of Agriculture, Food Security and Cooperatives.

The report is divided into five main sections. Section one describes the report and the analytical tools used. The second section analyzes the relevant development of the OA sub-sector. The main sources of data have been literatures from organizations that have worked on developing the OA sector without the support from government.

Section three covers policy assessment. This chapter describes the challenges that have been identified regarding the government. The section also indicates the overall goals and targets of the sector. The environmental and socio-economic benefits of OA are also not clearly elaborated to support expansion of OA in Tanzania.

The fourth section provides for conclusions, recommendations and lessons learnt. Recommendations are divided into institutional, economic, environment and social aspects. They also provide important inputs to the ongoing government process of policy formulation.

1.2 About the Project

The project on *'Promoting Production and Trading Opportunities for OA in East Africa'* was initiated in June 2005 and runs concurrently in Kenya and Uganda. For the case of Tanzania, the UNEP - UNCTAD– Capacity Building Task Force (CBTF) on Trade, Environment and Development initially contacted the Ministry of Agriculture, Food Security and Cooperatives (MAFC) that later appointed ENVIROCARE as the partner to work on the project.

Envirocare and the MAFC formed a National Implementation Team. The main task of the team was to establish a National Steering Committee (NSC) that was to guide the implementation of the initiative.

[1] Envirocare is a Not-for Profit Organization that deals with environment, human rights and gender issues

The National Steering Committee comprised of members from various government bodies and academic institutions. These include the Vice President's Office (Division of Environment), Tanzania Bureau of Standards (TBS), Tanzania Organic Certification Association (TanCert), Tanzania Organic Agriculture Movement (TOAM), Board of External Trade (BET), University of Dar es Salaam, Sokoine University of Agriculture (SUA) and Tanganyika Farmers Association (TFA). In the project duration, the NSC organized national stakeholders workshops that drew other actors from the government and non-government institutions, in particular the Ministry of Industries, Trade and Marketing (MITM); National Environment Management Council (NEMC) and Export Promotion of Organic Products from Africa (EPOPA); Kilimanjaro Native Cooperative Union (KNCU); Kilimo Hai Tanzania (KIHATA) and Tanzania Zanzibar Organic Producers (TAZOP), respectively.

The project involved several processes and capacity building activities such as:

- Preparation of an Initial Background Document that reported on the status of OA in Tanzania (see Mwasha, 2005).
- Organization of workshops – altogether three national steering committee meetings and national stakeholders meetings were conducted.
- Selection of crops and carrying out an integrated assessment (IA) study.

The integrated assessment study focuses on three main areas: First, to document initiatives taken by various stakeholders in the country, including government policy development processes and efforts by NGOs and other actors engaged in OA. For this aspect, EPOPA was the main source of information as it is the first organization that started working with farmers to increase production capacity and facilitate export of organic crops. TOAM and TanCert provided valuable support for this assessment. Second, the IA focuses on three key crops--coffee, cashew nuts and honey-examining their economic, social and environmental benefits.

Finally, the assessment comes up with policy recommendations that are aimed at stimulating further dialogue to promote the OA sub-sector. The sub-sector policies will also be used to support other initiatives in favor of policy development and enforcement. This is more relevant as the National Agriculture and Livestock policy of 1997is being reviewed.

The analytical framework used in this study is the Driving Forces, Pressure, State, Impacts and Responses (DPSIR) model, based on the concept of Sustainable Development (SD) with three dimensions of economic, social and environmental considerations. The model was applied to each product to examine driving forces for OA and the resulting market conditions that cause changes in production and responses by actors.

1.2.1 Approach of the Integrated Assessment for the OA in Tanzania

The integrated assessment approach followed includes a process with 5 steps as shown in Figure 1. The first step is to define the objective of the assessment in this case, promotion of production and trading opportunities for OA in order to provide for food security and poverty alleviation while safeguarding the integrity of the environment.

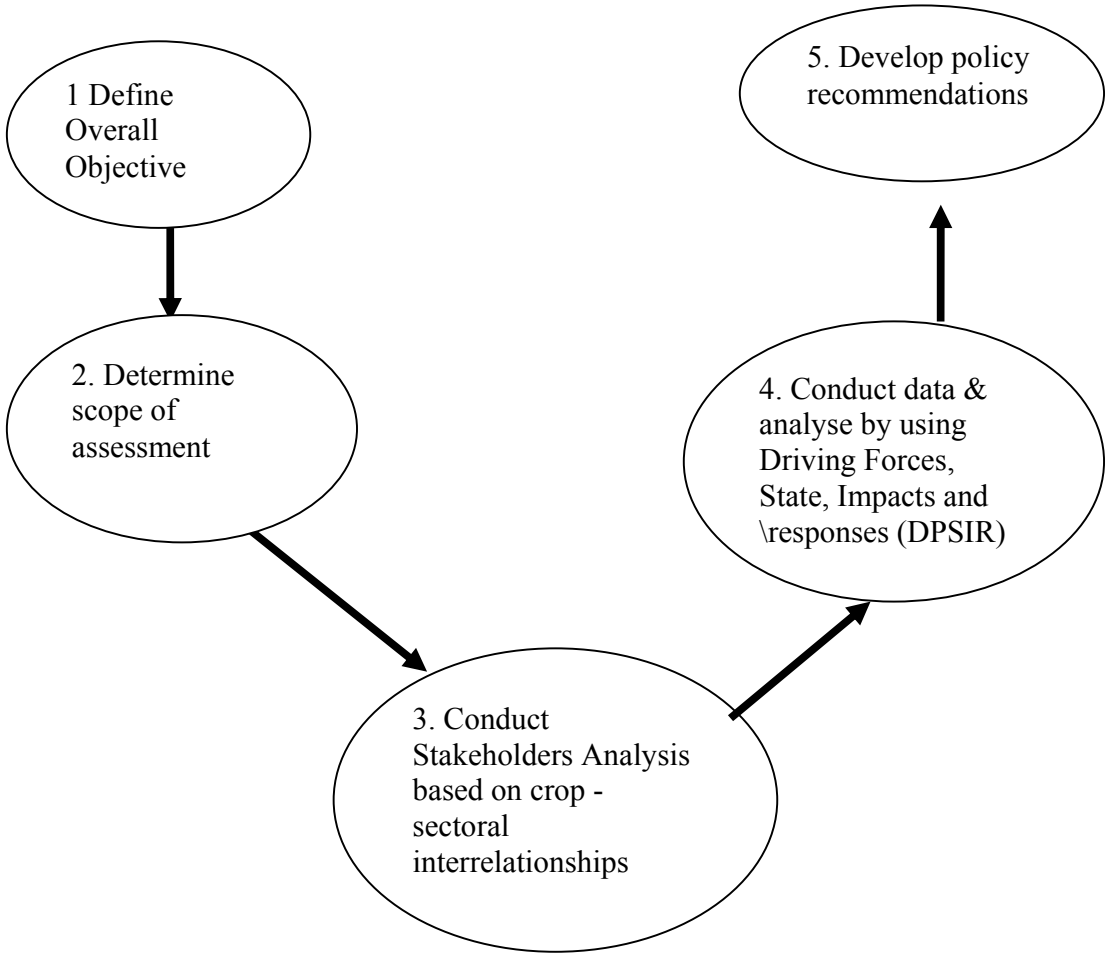


Figure 1: Process of Integrated Assessment for OA in Tanzania

The second step involved determining the scope and coverage of the assessment by selecting crops which are coffee, cashew nuts and honey. The range of impacts were followed up in the field investigations and stakeholder consultations.

The third step was to conduct stakeholder analysis in order to identify major players and partners involved in OA. Based on identification of backward and forward linkages between consumers and producers in the three selected crops,

key players involved were identified. This included the Ministry of Agriculture,, Food Security and Cooperatives.

The fourth step was to carry out the integrated assessment of OA currently (*ex ante* and *ex post* analysis), with the aid of the Driving Forces, Pressure, State, Impact and Response (DPSIR) framework.

1.2.2 The DPSIR Analytical Framework

The IA Driving Forces, Pressure, State, Impacts and Responses (DPSIR) model has been used to explain what is observed (e.g. in economic activities) by farmers (in their every day quest for livelihood) and linking these activities to underlying driving forces for change. Driving forces cause pressure, which causes a change in the state of the environment, and market conditions. The model also helps to understand what the changed status in the environment and markets implies in terms of generating impacts on people, their economy and ecosystems. Finally the model explores which responses are undertaken to face the emerging impacts. The response may lead to actions that ultimately influence the driving forces with a view to promoting OA and by doing so reducing adverse impacts in health and environment aspects.

DPSIR framework is a tool that helps to understand chain of causal links between driving forces affecting economic activities (i.e. conventional and OA) the resulting pressures due to these practices on the environment, as well as changes in market prices of the outputs resulting from the adoption of different technologies e.g. products produced through the use of industrial chemicals (fertilizers and pesticides) versus prices of outputs produced organically. The related physical, chemical and biological states of these forms of farming are identified and their impacts shown as negative or positive on ecosystems, human health and other social economic aspects, eventually leading to responses including policy, regulations and strategies to reduce the undesirable negative impacts.

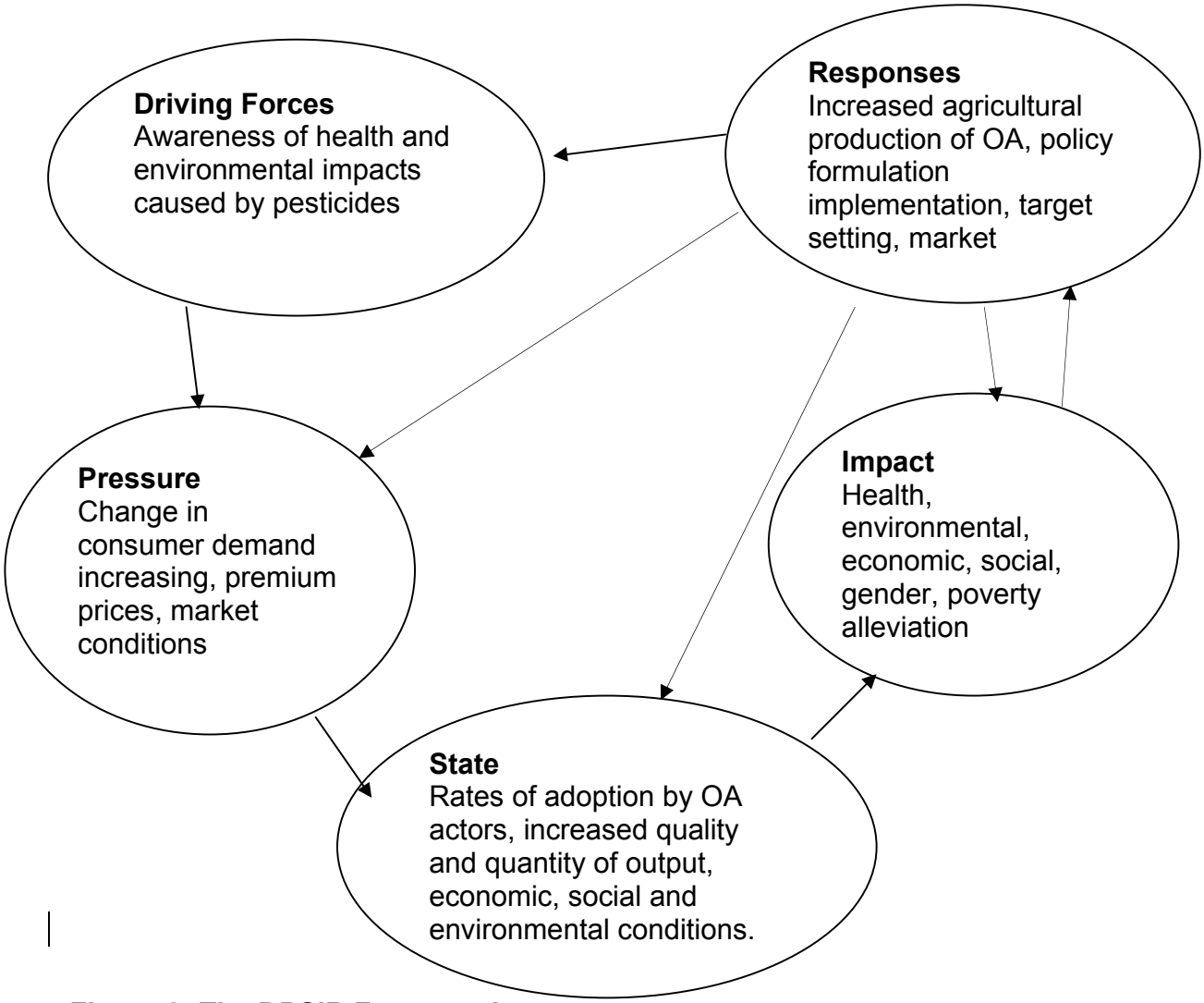


Figure 2: The DPSIR Framework

1.2.3 Selection of Crops for IA Study

The National Steering Committee, during one of its meetings, identified seven criteria to be used in the selection of crops for IA study as follows:

1) Currently organically produced crops
2) Economic importance (employment, GDP, Foreign exchange generation)
3) Welfare impact in terms of livelihoods support and poverty reduction
4) Environmental Impact (crops that use industrial chemicals which harm the environment)
5) Data availability
6) Market demand (local and export)
7) Production expansion potential

All crops produced organically were ranked and the ones with the highest scores were the ones selected. However due to logistical considerations and resource availability tea and cotton were not selected because that would have meant traveling long distances and more resources.

Table 1: Criteria for Selection of the Crops

Criteria	**Coffee**	Vanilla	Cloves	Cotton	Tea	Cashew nut	Sesame	Peanuts	Cocoa	Honey	Ginger	Turmeric	Chili (Bird eye)
Data availability	**3**	3	3	3	3	3	1	1	1	3	2	2	3
Benefits	**3**	3	3	3	3	3	1	3	2	3	3	3	2
Distribution	**3**	3	3	3	3	3	3	3	1	3	3	-	3
Market demand													
- Local	**1**	0	0	3	2	3	0	0	2	2	0	0	0
- Export	**3**	3	3	3	3	3	3	3	3	3	3	3	2
Production expansion potential	**3**	3	3	3	3	3	3	3	3	3	3	3	3
Environmental impacts	**3**	3	2	3	3	3	1	1	1	3	1	1	1
Indigenous knowledge	**2**	1	3	3	3	3	3	3	2	3	3	3	3
Score	**21**	19	20	24	23	24	15	17	14	23	18	15	17

1.2.4 Selection of Study Areas

After selecting the three crops for the assessment, the next task was to select study areas. Based on logistical considerations, the team decided on three districts where organic production of each of the crops is taking place. It was decided to select Mkuranga District (south of Dar es Salaam) for organic cashew nuts, Rufiji District (adjacent to Mkuranga) for organic honey and Moshi Rural District (Northern Tanzania on the foothills of Kilimanjaro Mountain) for organic coffee. The study districts are shown in Figure 3.

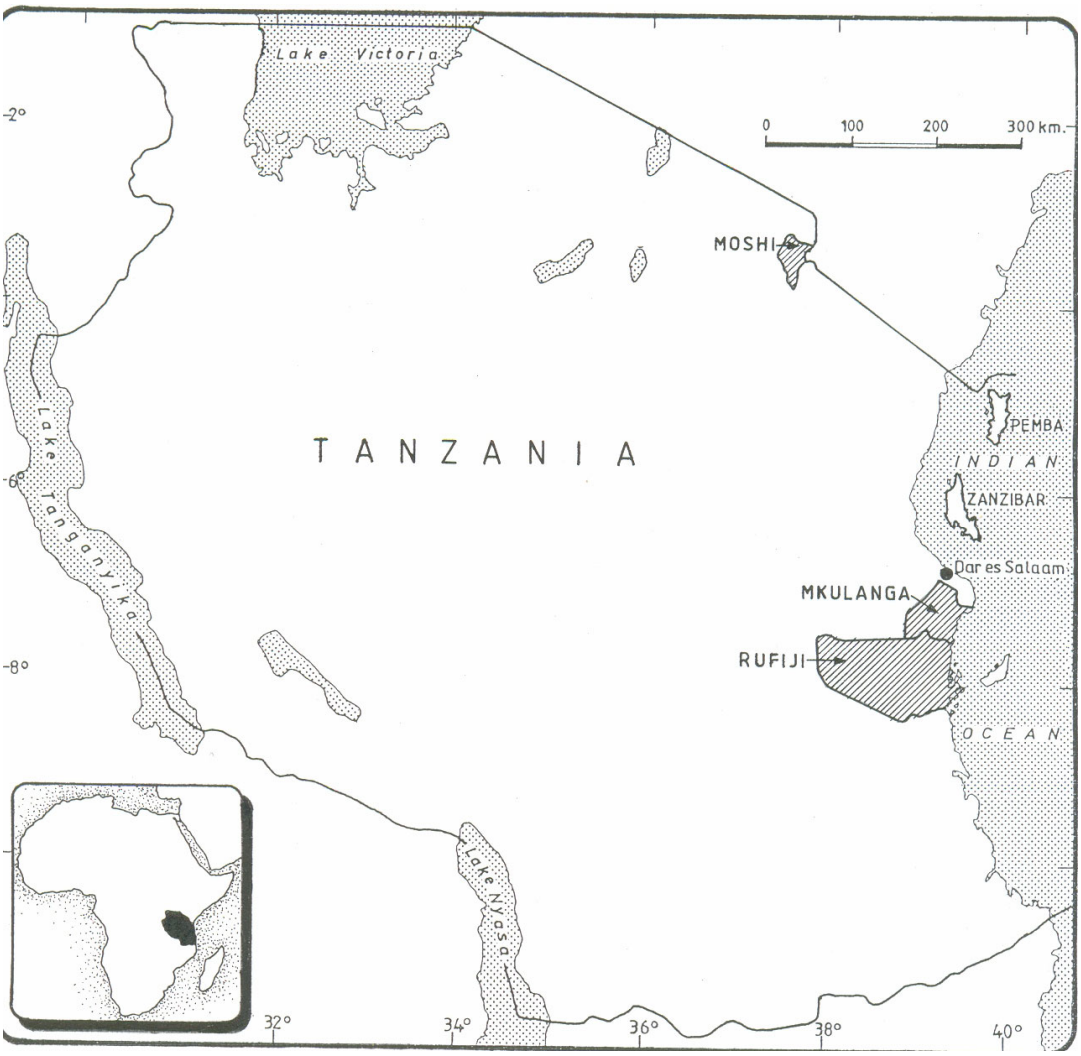


Figure3: Map of Tanzania showing study districts

1.2.5 Participatory Process for the Integrated Assessment Study

The Integrated Assessment of OA in Tanzania was undertaken in a participative process as shown in Table 2.

Table 2: Participation Process for OA Project

Level	Involvement (Actors)	Activities/Roles
International level	UNEP, UNCTAD, CBTF NGOs Development partners Experts Relevant organizations	• Opinions and ideas • Expert opinions and guidance • Financial consideration
National level	Ministries (Agric , Trade,) NGOs, Private sector operators, National Steering Committee	• Discussion of concept • Contribute ideas • Involved in planning and implementation (include selected regions, official representatives.
District level	District Officials, Extension Officers, NGOs, Private sectors Village Representatives	• Discuss concept, field activities, selection of villages • Make available primary and secondary materials
Village level	Village Governments CBOs, Farmers, Traders NGOs.	• Mobilize villagers for field work • Participate in interviews

1.2.6 Data Collection

With the analytical framework in mind, the team collected both primary and secondary data that was used to generate qualitative and quantitative information for this study. Secondary data sources include the Vice Presidents Office, Ministry of Agriculture, Food Security and Cooperatives, Ministry of Industry Trade and Marketing, FAO and UNEP documentation, Sokoine University of Agriculture, Tanzania Bureau of Standards, National Bureau of Statistics, Internet search.

Primary data was collected through Participatory Rural Appraisal (PRA) and Focus Group Discussions, Structured Questionnaires for Household Surveys checklist of questions for group discussions and formal interview with various stakeholders during consultations, key informants and observation among others.

Data processing has been done using the Statistical Package for Social Sciences (SPSS) and analysis has used a variety of methods and tools such as statistical inferences and trend analysis. The data for the case studies of cashew nuts, honey and coffee are summarized in the appendices.

1.3 Country Overview

Tanzania, one of Africa's most ecologically rich countries, has a total land area of approximately 89 million hectares, of which about 33 million hectares are forest cover that includes closed forest (MNRT, 1997). It is the largest of the five East African countries (Tanzania, Kenya, Uganda, Rwanda and Burundi), and it borders eight countries: Kenya, Uganda, Rwanda, Burundi, Zambia, Malawi, Mozambique and the Democratic Republic of Congo. The government of the United Republic of Tanzania is a unitary republic based on multi-party parliamentary democracy. All state authority is exercised and controlled by the governments of the United Republic of Tanzania and the Revolutionary Government of Zanzibar.

Tanzania's population was estimated to be 37.6 million in 2004 (World Bank, 2006), with just under half (43%) of the population estimated in 2005 to be aged 14 years or younger (UNSTATS, 2006). According to 2002 statistics, the majority of the country's population (77%) lives in rural areas, with 23% living in urban areas (NBS, 2003).

In the mid-eighties, Tanzania embarked on economic reforms, but the reforms were not sustained, and after an initial period of economic growth in the late eighties, the early nineties were again characterized by macro-economic disequilibria and poor economic growth. In the mid-nineties, Tanzania resumed its reform course with a clear and sustained commitment to macro-economic stability through sound fiscal and monetary policies as the foundation for economic growth. Macro-economic stabilization was accompanied by wide ranging structural reforms, including privatization of state owned enterprises, liberalization of the agriculture sector, efforts to improve the business environment, and strengthening of public expenditure management. These reforms have resulted in sustained high growth, which in the last five years was between 5 and 8 % annually.

The post-independence period (1961-1967) was marked by an emphasis on improved peasant farming through extension services and the provision of credit and marketing structures. At the same time, the Government continued to support large-scale farming in selected areas. The evolution of agricultural policy in Tanzania was therefore strongly influenced by the changing macro-economic policies.

1.3.1 Population and Land Use in Tanzania

The population of Tanzania is increasing at an annual rate of 3.4% (UN, 1990) and so is the demand for agricultural resources and employment through expansion of land under agriculture. Based on this rapid population growth, natural resources have been and are continuing to be mined and some are being

converted into farmland and ranches in certain areas. Due to population growth and increasing scarcity of agricultural land in many parts of Tanzania, traditional systems like shifting cultivation, different fallow systems and extensive grazing system are more and more under pressure. Conflict of interests between sedentary agriculturalists and nomadic pastoralists is a cause of concern in areas was farming and pastoralist communities are likely to compete for resources. Problems arise when drought, intensification of agriculture, or overly large herds cross the line of sustainability for both ways of livelihood.

1.3.2 An Overview of agriculture in Tanzania

Agriculture is the backbone of the Tanzanian economy. Smallholder farms using traditional cultivation methods dominate the sector. The average size of land cultivated ranges from less than one to three hectares of land. The large majority of the crop area is cultivated by hand (85%), while 10% of peasants use ploughs and only 5% tractors.

Tanzania's climate and growing conditions are favourable for a wide variety of fruit, vegetables and flowers. The major fruit potential is in pineapples, passion fruit, citrus fruit, mangoes, peaches, pears and bananas, while vegetables include tomatoes, spinach, cabbage and okra. Both tropical and non-tropical varieties of flowers are grown.

The main staples include maize, sorghum, millet, rice, wheat, pulses, cassava, potatoes, bananas and plantains. The major export crops include coffee, cotton, cashew nuts, tobacco, sisal, pyrethrum and tea. Export crop marketing has been liberalised, as has the supply of agricultural inputs and prices.

Incentives for agricultural production include 100% capital deduction on plant and machinery for agriculture, the reduction of stamp duty on the transfer of agricultural land to a nominal sum and the exemption for agriculture from skills and development levy. There are further relief for agriculture both in terms of income tax, VAT and customs duty.

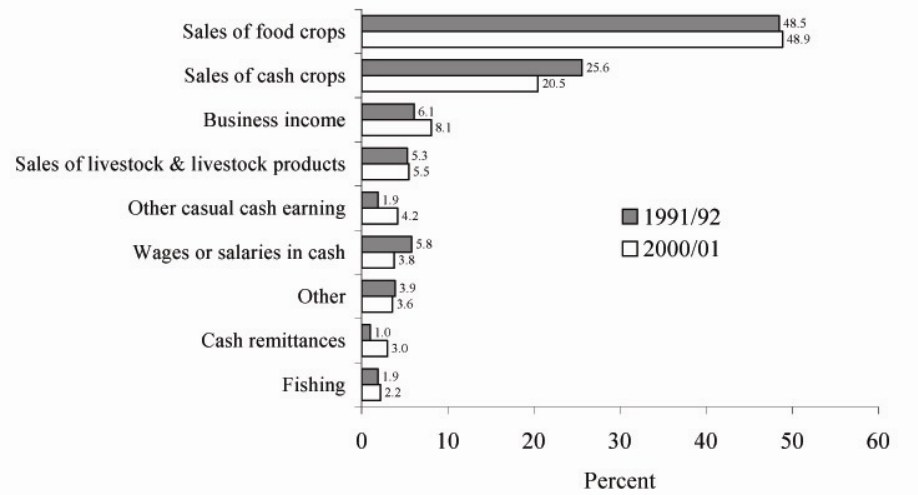
There are several factors affecting the agriculture sector. First of all, it is predominantly rain-fed and therefore unfavorable weather often results in poor agriculture performance. Further concerns include low labor and land productivity due to application of poor technologies, and dependence on unreliable and irregular weather conditions. Both crops and livestock are adversely affected by periodical droughts. Among the factors that contribute to low productivity are: (i) low use of inputs; (ii) low prices compared to production costs; (iii) unfavorable weather conditions; (iv) pests and diseases; (v) poor knowledge of agronomic practices; (vi) low levels of capital especially for small scale farmers.

Nevertheless, earlier studies (Government of the URT, World Bank and IFPRI, 2000) found that Tanzania, despite low levels of technology, has comparative

advantage in all its export crops, and in several of the main food crops. It also found that there are significant linkages between increased production of exportable and overall rural incomes and growth. Hence, the issue of how to increase agricultural production and incomes is crucial to both growth as well as poverty alleviation (Sarris et al, 2006).

1.3.3 Contribution of Agriculture to the Economy

Agriculture accounts for nearly 45% of GDP and employs around 70% of labor force. The sector accounts for 60% of merchandise exports and represents a source of livelihood to 82% of the population. Agricultural income is the main source of income for the poor, especially in rural areas. Sale of agricultural products accounts for about 70% of rural household incomes.



Source: ASDP, 2006

Figure 4: Rural household Income source

Over the 1990s, average agricultural growth was 3.6 %, which was higher than in the 1970s and 1980s when annual agricultural growth averaged 2.9 and 2.1 % respectively. It grew by 5.2% in 2005. Over the 1990s, agricultural exports grew at an annual rate of over 7% per year, although this rate has slowed in recent years due to declining world market prices. Food crop production has grown at a rate of 3% which is about the rate of population growth and accounts for about 65% of agricultural GDP, with cash crops accounting for only about 10%. National data show significant progress towards the objective of a sustained 5% growth rate with an increase of the five year moving average agricultural GDP growth rates from about 3.3% from 1991 to 2000 to 4.3% over the 1999-2003 periods (Figure 5).

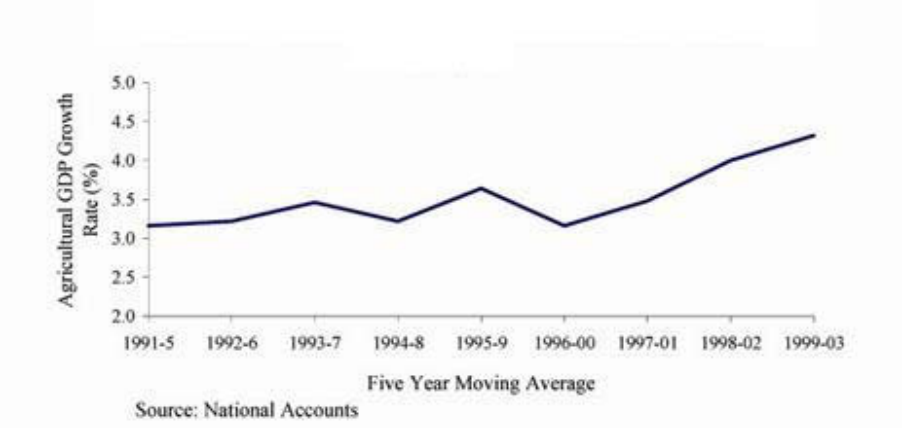


Figure 5: Agricultural GDP growth rates (%)

Agricultural growth has varied across food crops, cash crops and livestock. Within food crops, maize is the most important (accounting for over 20% of total agricultural GDP) followed by rice/paddy, beans, cassava, sorghum, and wheat. Within cash crops the most important by export value are coffee, cashew, cotton, tobacco and tea. The recent annual average growth rates of export crops, food crops, and livestock has been about 6, 4, and 3 % respectively.

1.3.4 Poverty and Income Distribution

The prevalence of income poverty is still high in Tanzania. According to the Household Budget Survey of 2000/01 the proportion of the population below the national poverty line is 18.9% and that below the national basic needs poverty line is 35.7%. Since 1990s, poverty has declined in Tanzania but remains widespread, particularly in rural areas where 39.9% of households are below the basic needs poverty line. The rural poor make up about 81% of the poor in Tanzania. From 1991/92 to 2000/01 overall food poverty declined from 22% to 19% while basic needs poverty declined from 39% to 36%. Poverty declines were most rapid in major urban centers such as Dar es Salaam (from 28% to 18%) and least rapid in rural areas (from 41% to 39 %).

Within agriculture, poverty levels are highest among households depending on livestock (59.1%), while the poverty levels of those depending on sales of food crops is 40.6%, those who depend on cash crops 38.6% and those who depend on sales of livestock products 33.3%. These observations are not so surprising given that the agricultural sector only expanded at 3.5% over the past decade or at a rate of less than 1% per capita.

The poverty profile further suggests that changes in agricultural production and farm gate prices have the potential to significantly impact on poverty in Tanzania. A recent analysis (Levin et al, 2004) concluded that expansion of agricultural production in Tanzania has the strongest employment and income effects

agricultural production growth seems to have the largest impact on poverty reduction (Sarris et al, op cit, 2006)

Source: National Bureau of Statistics, 2002

Figure 6: Human development Index (HDI) by Regions of Tanzania

1.3.5 Major Environmental Problems in Tanzania

Importance of the environment in the economy of Tanzania is fourfold: it provides the basic resources for virtually all socio-economic activity in the country; it holds natural habitats, plants and animals that are part of an irreplaceable global heritage; it is a waste receptacle; and it is a foundation for eventual alleviation of abject poverty. In Tanzania, environment degradation is in most cases man made. For example, the best agricultural lands in the country are densely populated which in turn results into its degradation, making the soil unfit for cultivation. Deforestation, which is taking place at an alarming rate, has augmented the magnitude of desertification and adversely affected soil fertility, water catchment areas and water flow.

1.3.5.1 Land Degradation

Human impacts on deforestation, soil erosion, overgrazing, degradation of water resources and loss of biodiversity have all resulted in land degradation. Poor agricultural practices such as shifting cultivation, lack of crop rotation practices, inadequate of agricultural technology and land husbandry techniques exacerbate the problem.

Liviga (1999) contends that the effects of overstocking of cattle, which are localized, give rise to serious degradation in places such as Shinyanga and Mbulu where livestock units have exceeded the carrying capacity. This situation is a good example of the capacity of decentralized institutions at the local level to enforce laws and instruments which are meant to ensure sound environmental management.

1.3.5.2 Pollution Management and Urbanization

Pollution is a major problem in urban and rural areas of Tanzania. Improper treatment and disposal of solid and liquid wastes are the major contributors to urban area pollution. In Dar es Salaam, for example, less than 5% of the population is connected to a sewage system. Meanwhile in rural areas industrial fertilizers have implications for human health, soil fertility and loss of economic value of the forest (including biodiversity and ecosystem functions).

The combined results of these problems are that soil, air and water get contaminated with pollutants, which are detrimental to human health. Pesticides and other pollutants get into bodies of water, suffocate aquatic plants and animals and accumulate in the food chain, eventually contaminating plants and animals making them unfit for human consumption.

1.3.5.3 Agricultural and Range Land Resources Management

Agriculture and rangeland resources are the backbone of Tanzania's economy. It is estimated that about 55% of the land could be used for agriculture and over 51% for pastoral lands. However, only about 6% of the agricultural land is cultivated with the practice of shifting cultivation, which causes deforestation and land degradation on the pastoral land. Lake Manyara basin, Geita Gold Mines, Usangu Wetlands and Ngorongoro Conservation areas have been affected the most by inadequate control and land management.

The main cause for these problems is due to lack of proper instruments of enforcement of the existing legislations. For example the most recent Environmental Management Act (2004) is too nebulous when it states that, “land users and occupiers shall be responsible for the protection, improvement and nourishment of the land and for using it in an environmentally sustainable manner as may be prescribed by the Minister [responsible for environment]… (URT, 2004 section 50)

1.3.5.4 Poor Enforcement of Environmental Laws

Poor enforcement is attributed mainly to inadequate capacity in the judicial mechanisms. While local governments can bring court cases under legislation pertaining to the environment, often, such cases are delayed for years, and no specially trained judiciary experts for such cases.

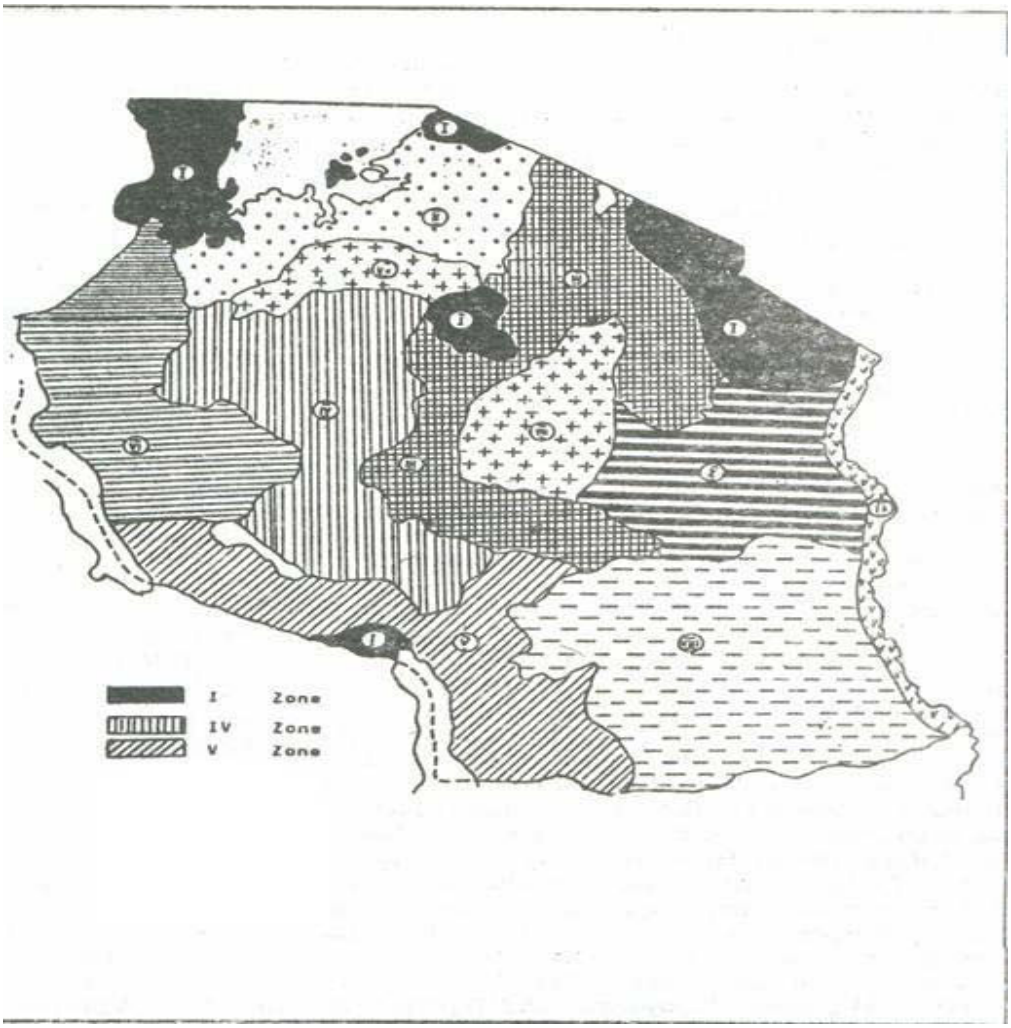


Figure 7: Environmental Stress in Tanzania

Key

Zone I: High environmental stress due to high population pressure on land for farming, deforestation, erosion due to terrain, high precipitation.

Zones IV: high population with extensive agriculture for cotton, overgrazing, extensive agriculture for tobacco production.

Zone V: Commercial maize production

1.3.5.6 Measures Undertaken to Counteract Environmental Stress

A decade ago the World Bank reported that many small farmers were aware of the declining trend in fertility of the soil and were taking steps to stem the decline (World Bank, 1993:183). For the case of Tanzania this observation is supported by several studies that have been conducted by ERB[2]. In 1994, ERB revealed that 87% the farmers in Iringa and Tanga Regions had adopted measures to prevent soil erosion; 49% of the farmers practiced contour plowing while 47% planted trees and 4% and built bands. Also in 1995, ERB (Bagachwa *et al*) revealed 32% of the farmers used organic fertilizers, mostly manure obtained from their own or neighbors livestock to improve soil fertility and reduce erosion.

In general, fertilizer use has been shown to be low and confined to major Southern maize growing regions of Iringa, Mbeya, Rukwa and Ruvuma (Bagachwa, 1995c). Fertilizer use was found to be low at around 10% of the recommended amount of 200-300 kg per hectare (World Bank, 1994), Bagachwa, *et al* 1995) although the ERB survey found that nearly 70 person of interviewed farmers in Tanga and Iringa Rural Districts used chemical fertilizers. The low fertilizer uses was mainly due to high prices and inadequate availability of fertilizers. Prior to 1990 the government subsidized fertilizers but large scale farmers took advantage at the cost of small holders and used more chemical fertilizer that results to pollution. Government reintroduced fertilizer subsidies during the 2003/04 agricultural season to all regions of Tanzania. According to the MAFC, the government estimated the 2004/05 season fertilizer demand to be at 385,000MT[3]. The increased use of fertilizer is expected to contribute to increased food and cash crops production and productivity; however it is also feared that this may lead to environmental pollution.

[2] ERB – Economic Resources Bureau, University of Dar es Salaam
[3] http://www.fews.net/centers/

2.0 Key Issues and the Status of OA in Tanzania

2.1 Definition and Evolution

2.1.1 Definitions of OA

Although there is no universal definition for OA, it generally means a sustainable and environmentally-friendly production method, and it has particular advantages for small-scale farmers in Africa. It also provides interesting marketing opportunities. Practical experiences as well as a number of reports demonstrate the appropriateness of OA for small farmers in developing countries. This includes reports by the FAO, IFAD, IFOAM, UNCTAD and the UNEP-UNCTAD CBTF.

In Tanzania, most farmers are practicing low input agriculture (approximately 80% of the agriculture), otherwise known as *traditional farming* which tends towards organic principles. This kind of farming is famously referred to as *"organic by default"* because it is practiced by small scale farmers who usually can not afford to buy chemical fertilizers. The survey conducted by Sogn and Mella 2006 indicated that about one-third of the Tanzanian consumers interviewed were not able to define OA precisely in line with the IFOAM principles, as 36% of the respondents did not know what organic products are, a majority defined it either as natural products (34%), as a certain mode of production (15%), or as healthful products (15%).

In light of the lack of awareness among most Tanzanians, the Hai-logo that represents TanCert Certification process has the potential to be an important symbol for Tanzanian OA and to contribute to creating awareness among the actors. It can be a trustworthy brand that shows the way to organic products in the market.

OA also contributes to poverty alleviation and food security (Rundgren, 2006) by a combination of many features, most notably by:

- Increasing yields in low-input areas
- Conserving bio-diversity and nature resources on the farm and in the surrounding area
- Increasing income and/or reducing costs
- Producing safe and varied food
- Being sustainable in the long term

OA is best known as a farming method where no synthetic fertilizers and pesticides are used. The essence of this form of agriculture is its holistic management system. According to Codex Alimentarius, "OA is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It

emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system". http://www.fao.org/DOCREP/004/Y1669E/y1669e04.htm

2.1.2 Evolution of OA in Tanzania

The first organic garden in Tanzania was started in 1898 in Peramiho, Songea District of Ruvuma Region. But it was not until the 1990s that the Tanzanian government launched a campaign that aimed at promoting OA and related services. This campaign stimulated donors' support and encouraged various initiatives from NGOs and other organizations like EPOPA.

Presently there are many organizations and programmes that promote OA in Tanzania, including:

- The Global Service Corps (GSC) programme
- Meatu cotton organic Project (in Meatu)
- Export Promotion of Organic Products from Africa- EPOPA
- Natural crop protection in Mgeta-Morogoro district
- Organic vegetable farming in Zanzibar
- Improvement of organic coffee (KNCU)
- Organic Coffee Karatu (Gibbs farm)
- INADES Formation
- Kilimo Hai Tanzania (KIHATA)
- Envirocare
- Care Tanzania
- GTZ Organic project

The following boxes illustrate some of the OA projects undertaken in Tanzania

Box 1: SECAP Project in Lushoto District

The Soil Erosion and Afforestation Project (SECAP) is a project supported by GTZ and implemented in the Western Usambara Mountains in North-East Tanzania from 1979. SECAP promotes sustainable land use practices in agro-forestry through sectoral integration and makes full use of villager participation in implementation The Project is based on the following elements:
Basic soil erosion control measures and zero grazing of domestic cattle
Alternative production of crops, livestock and related activities such as production of fodder and use of cow manure from the livestock units
Catchment agro-forestry and rehabilitation
Although SECAP is not a project specifically dedicated to OA, it has elements that promote organic production. For example, only cow-dung and compost manure are used in the farms. Livestock is fed by using local feeds, which, in turn, were planted on the contours to prevent soil erosion. SECAP has elements of ecological farming to enable increased production from small plots in this densely populated mountain district.

Box 2: Organic Cotton project in Meatu District

Cotton is the world's most important textile fibre, but industrial production of cotton is one of the greatest environmental and social disasters.

A quarter of all pesticides used worldwide rain down on the cotton fields, and the crop requires vast quantities of water. This form of cotton production has driven farmers in developing countries to despair. The fields are polluted, the pesticides are unaffordable, and earnings melt away as prices on the world cotton market shrivel.

But the Meatu Project in western Tanzania proves that it does not have to be like this. With the support of a Swiss yarn trader, Switzerland's second largest supermarket chain, and over 500 farmer families, a chain of solidarity has been set up to cultivate cotton by organic methods.

Organic crop production saves on expensive pesticides, protects nature and the health of workers, and guarantees fair prices for the farmers. Already four villages in the Meatu project now enjoy a modest prosperity. Shaping their own future, the farmers are proud and optimistic. Meatu's example shows that organic cultivation and a partnership extending over the entire product chain is a valid model for creating a long-term future for small farmers in developing countries.

BOX 3: **Organic Coffee - Gibb's Farm, Karatu District**

GIBB'S FARM consists of 30 Acres of quality organic coffee, 10 acres of organic vegetables and fruit, 5 acres of flowers and herbs and a working dairy and pig farm. 95% of all of the vegetables and many of fruits served at GIBB'S FARM are grown in the organic vegetable garden. Their farmyard produces all of the pork and milk served at Gibb's and supplies them with all the organic compost they need. There is also a tree nursery on the farm where hundreds of young seedlings are grown to encourage the growth of native tree species in the area. The entire operation is a model of ecologically sustainable agriculture. Everything is grown organically using only natural fertilizer from the farm. In short, every possible element of GIBB'S FARM is ecologically friendly and sustainable, without pesticides or herbicides, providing different sources of fuel for cooking, organic fertilizer for crops, sustainable production of building materials.. The farm serves as a model for local people. GIBB'S FARM's efforts at sustainable, renewable resource use provides an example of what is successful. The farm has shown that there are ecologically sound solutions to meet needs such as growing healthy plants

2.2 Health and Environmental Benefits of OA

Several studies have shown that OA offers a range of environmental, social and economic benefits for both developing and developed countries (Vasilikotis, www.enr.berkeley.edu). On the economic side, developing countries may have some comparative advantage in OA, as they have relatively abundant labor and use relatively fewer agrochemicals. Indeed, OA provides a trading opportunity, with major markets for organic products growing at rates of 10-20 per cent per year and price premiums available for a number of goods (UNCTAD,2005). Moreover, it may also represent an opportunity for sustainable local development.

OA production is environmentally friendly and has positive effects on the local environment, including enhancing soil fertility, reducing pollution and restoration of biodiversity. Practices normally accompanying OA, such as multi-cropping instead of mono cropping, enhance local nutrition and food security (since even if one crop fails, the others are likely to survive). OA is well suited to small-scale farming, and can increase the yields and incomes of subsistence farmers who are not currently using agrochemicals. In this respect, OA can contribute substantially to poverty reduction and sustainable rural development. In the less developed countries of Africa, where 70% of the farmers are women, it can have significant positive impact on women's income (UNCTAD 2005).

Box 4: Organic Coffee and Biodiversity Conservation in Kilimanjaro

A farmer from Mrimbo B village said of OA "When we were using insecticides friendly insects such as butterflies were being killed but now they are back" As a result of OA insects and numerous organisms which seemed to have been extinct such as chameleons, red ants are seen to come back. 23.9% of respondents had noticed positive change with respect to soil biodiversity and 20.9% were of the opinion that with OA there was less water pollution. In the same vein farmers commend OA for having no harmful effects on animals, humans and plants.

However, in order to reap the multifaceted benefits of OA, governments must create an enabling environment that fosters the development of this sector. The OA producers and exporters have to overcome a number of obstacles, including lack of information (e.g. OA production techniques, markets, standards), expensive certification systems, and the challenge of meeting standards set by both export and local markets.

2.3 Regulators, Promoters and Certifiers

In 2002, the NGO 'Participatory Ecological Land Use Management Tanzania' (PELUM) organized a meeting to initiate the process of setting up standards and certification. After many meetings and stakeholder consultations the standards for the local market were first approved in December 2003, and thereafter followed the establishment of TanCert in 2004.

2.3.1 Tanzania Organic Certification Association (TanCert)

TanCert is the sole body that strives to provide affordable certification services to facilitate the market competitiveness of organic products locally and worldwide. TanCert certifies organic products with a guaranty sign of 'HAI'. The standards for the local market differ from that of the export market. Both are a brief version of the IFOAM principles and basic standards. The standards for local markets take into account the specific conditions for organic production in Tanzania and the current stage of its development in the country.

Figure 8: TanCert's Organic Certification Brand for the local market

TanCert also provides training of local inspectors, who are recognized by international certification bodies. The formation of TanCert led to the establishment of the Tanzania OA Movement (TOAM) in June 2005.

2.3.2 Tanzania OA Movement (TOAM)

TOAM was registered and launched June 2005. As an umbrella organization for various stakeholders' initiatives, it aims at providing leadership and coordination in developing and promoting the organic sector in Tanzania. It also facilitates research, training and extension, cooperation and networking among stakeholders, and the development of local market.

In November 2005, TOAM in collaboration with EPOPA, developed a three years strategic plan where its vision and mission are clearly stated. The plan is covering OA promotion, training, marketing, developing appropriate OA technologies and awareness creation to the public. TOAM has participated in the Dar es Salaam International Trade Fair, as well as the Farmers Agricultural Show in Mbeya region (Nane nane show) so as to advertise itself and recruit more members.

2.3.3 Export Promotion of Organic Products from Africa (EPOPA)

This programme is financed by the Swedish International Development Agency (SIDA). The programme has projects in Uganda and Tanzania.

EPOPA aims to give African smallholder farmers a better livelihood through developing local and international organic markets. Thousands of smallholder farmers get a premium price for their organic crops through various programme conducted by EPOPA. The increase in agricultural production is due to better practices that benefit rural communities.

Table 3: Some of the EPOPA's Projects that have taken Place in Tanzania

YEAR	PROJECTS	OBJECTIVE / ACTIVITIES
2002- 2004	KCU Organic Robusta	To consolidate and increase the export of organic coffee and to improve the livelihood of the rural population.
2002- 2005	Organic Coffee exports from Kilimanjaro region, KNCU Fair Trade.	To contribute to improve the livelihood of the smallholder communities on the slopes of the Kilimanjaro, through export of organic coffee.
2002- 2005	Premier Cashew Industries, Organic Cashew Nuts exports from Coast region,	To enhance the export of organic cashew nuts that is cultivated by small scale farmers in Mkuranga district.
2003	ICS Inspection Training in Bukoba, Tanzania	To train local inspectors in Tanzania and Uganda. A 5 days course for 11 participants. The focus of the training was inspection of groups with Internal Control Systems
2003-2006	Dabaga Canned Pineapple, Organic exports from Iringa region.	To contribute to improved living standards of the pineapple growing families in Njombe district.
2003, 2006	Tanzania Organic Sector Development Training	The 14 days training on various fields of OA for 28 participants
2004	Organic seeds in Uganda, Tanzania and Zambia	To investigate the seed production and distribution in Uganda, Tanzania and Zambia as well as examining the possibilities of getting organic seeds and seedlings.
2004	Development of organic certification bodies in Uganda and Tanzania	TanCert was established.
2004- 2006-	Fidahussein Rufiji Delta Honey Organic exports from Rufiji district,	Set up organic export of beekeeping products. Beneficiaries are members of the local Beekeepers Association.
2005-2008	Tanpro Peanuts Tanzania	Empower marketing of organic peanuts
2005 - 2007	Regional Organic Standard in East Africa	To develop regional organic standards and certification capacity in East Africa. The project is implemented by IFOAM in cooperation with Grolink. The project also interacts closely with the UNCTAD/UNEP CBTF project with a similar scope.

Source: http://www.grolink.se/Projects

2.4 Initiatives by Government and Other Actors on Promoting OA

2.4.1 Standards Development

On the basis of the Standards Act No. 3 of 1975 as amended by Act No. 1 of 1977, Tanzania develops National Standards for products and services of all description in industry and commerce, through the Tanzania Bureau of Standards. The rebirth of the East African Community through the signing of the East African Cooperation Treaty ushered in the era of regional economic cooperation and integration. Standardization, Quality Assurance, Accreditation,

Metrology and Testing is one such area agreed upon in the Treaty, for regional trade. Thus, hand in hand with the IA study was established a harmonization process for a single East African Organic Standard under the UNEP-UNCTAD CBTF Project, through the East African Community.

The East African Organic Standard has been written for organic production in East Africa and has been adapted to conditions in East Africa. The purpose is to have a single organic standard for organic agriculture production and trade, under East African conditions.

Once each of the three East African Partner States adopts the standard: EAS 456:2007 – East African organic products standard, as their national standard, each country can use the same standard for certification under their individual national certification marks or logos. There are also possibilities of using the standard as a platform for a common label for organic products in East Africa and for developing consumer trust.

2.4.2 Government Statements on OA

Government officials have been forthright on promoting OA, as revealed in various events like workshops and exhibitions when are invited for doing official opening.

***A speech by the MAFC at stakeholders meeting in 2003*:** "The MAFC in collaboration with NGOs, CBOs, traders, exporters and other development partners is promoting the development of OA in the country. MAFC has taken this challenge seriously by including it in the Agriculture Sector Development Strategy (ASDS). The attention paid to OA development in the country is highly appreciated despite of the fact that it is still at an embryonic stage. However, it should be noted that, organic farming is not new in the context of our farmers, since they have been practicing it by default. This practice has many advantages to our producers; the use of farm inputs has many hidden costs including reducing producers gross margins to endangering the health of the environment. Also, we are all aware of the challenges brought about by what is called 'EurepGAP' standards that impose strict requirements for adherence to Maximum Residues Limits (MRLs) for pesticides in food products that have to be complied with, in order to penetrate the European market."

2.4.3 Organic Honey Exhibition in Dodoma by Other Actors

Stakeholders of beekeeping in Tanzania met in October 2006 in Dodoma and discussed the current state of honey and bees-wax production in Tanzania.

Compared to other export products, prices of bee products have remained relatively high. In 1991 Tanzania's honey won the quality test for organic honey in the UK.

Factors that hinder the development of beekeeping in Tanzania identified in the stakeholder workshop include:

- Inadequate knowledge to apply improved technologies as well as the use of inappropriate technology in harvesting, processing, storage and packaging of honey products
- Increased loss of beekeeping areas due to expansion of agricultural land and inadequate and ineffective extension services
- Paucity of reliable markets was also mentioned; however this factor needs closer examination because demand in the world and prices are high and attractive.
- Apart from lack of markets, the major problems are lack of market information and inaccessibility to markets due to unreliable transport, inadequate entrepreneurship and joint marketing skills among beekeepers.

2.5 OA Production and Certification in Tanzania

OA in Tanzania is at its infant stage and so is its demand. Various studies indicate that the area under certified organic production is more than 64,000 ha and the number of certified farmers is estimated to be more than (kirenga – Personal consultation). The number of certified farmers in the near future is likely to increase to more than 75,000 as there are several companies that are interested in investing in OA.

Crops under organic farming include cotton, coffee, black tea, cocoa, ginger and spices, essential oils (lemon grass), honey, and cashew nuts. Other crops include fresh fruits (citrus, papaya, guava and mango); dried fruits (banana, pineapple, mango, papaya); herbs and spices (cinnamon, ginger, vanilla, chilli, pepper, nutmeg, cardamom, clove, curry, lemon grass). There are also oil seeds (sunflower) and oils (palm oil, sunflower oil), tea (hibiscus tea), vegetables (fresh mostly peas), processed vegetables e.g. garlic and onion powder. A number of these crops have historically been grown organically by 'default'. These crops were chosen for production and trade based on the availability of both local and export markets. Potential areas for organic production and trade include Muheza, Handeni and Kilindi (Tanga region), Meatu (Shinyanga), Kasulu (Kigoma), Iringa, Mbeya, Morogoro, Rukwa, Arusha, Zanzibar, Kilimanjaro, Kagera and the Coast Region.

There are about 16 known firms operating in the country; some of them are indicated in box 4.

Box 4

Organic production in 2002 by some firms

Firm	Farmers	Yield MT
Biolands	16,000	NA
KCU	3,500	470
KNCU	5,000	400
PCI	500	400

The crops grown are chosen based on market demand and ease in handling for exportation. Some crops, such as spices, have multiple products. These are used for spicing food and for the production of essential oils. Most organic products are exported to Germany, The Netherlands, Sweden, Japan, Switzerland, United Kingdom (UK), Indonesia and United States of America (USA).

Since TanCert is not yet accredited to certify for the export market, there are five foreign certification bodies in the country. These include IMO of Switzerland, Naturland of Germany, SACert of UK, EcoCert of France/Germany and Bio inspecta. Some of the products certified are found in Table 4.

Table 4: Certified Organic Production 2004/05

S/N	Firm	Location	Product	Area (Ha)	Number of Farmers	Production (MT)
1	Fidahussein	Coast region, Mkuranga district	Honey	3,077 hives	507	NA
2	Biore Tz	Shinyanga, Meatu district	Cotton	5,748	1,283	1,620
3	KNCU	Kilimanjaro	Arabica coffee	812 204	1,193 334	72 (in conversion)
4	KCU	Kagera	Robusta coffee	1,525	3,352	425
5	PCI	Coast region, Mkuranga district	Cashewnuts	1,216	468	709
6	Zanz-Germ	Zanzibar	Spices	4,400	1,400	65
7	Biolands International Lts	Mbeya , Kyela district	Cocoa	NA	3,500	2,000
8	CSOD	Pemba	Essential Oil	50	50	
9	Matunda Mema	Kagera	Dried fruits	294	78	NA
10	Mkuranga Women Group	Coast region, Mkuranga district	Vegetables for local markets	3.4	34	NA
Total (Hives excluded)				**14,252.4**	**24,192**	**>2,891**

Source: -Extracted from Kick off Study of UNEP/UNCTAD-CBTF

In addition to organic crops, Tanzania has about 18 million heads of cattle[4], the majority being indigenous cattle that are naturally grazed. It is assumed that there is plenty potential of organic meat from this source.

2.6 Value Addition for OA Products

Processing of organic products is important so as to increase the shelf life of products, simplify their transportation and making it easier to sale. In Tanzania, few agencies are involved in the processing of organic products. Most of these products are not certified but are produced based on the OA principles. Some of the agencies are:

[4] Year 2003/04 data (adopted from Adah mwasha, 2006)

2.6.1 Irente Farm, Lushoto, Tanga

Irente farm is one of the first and well-established sources of natural products in Tanzania. It is based in Lushoto – Tanga region and was founded by the Lutheran church. The farm processes rye flour (German bread), wheat flour, passion juice and plums juice, vegetables, cheese and sunflower oil. Raw materials are obtained from farmers nearby.

2.6.2 Quality Food Products Ltd, Arusha

The company is dealing with safflower oil production. It is based in Njiro-Arusha region. Efforts to certify organic products are underway; currently products are sold merely as pesticide-free. To date all quantities produced are destined for the export market.

2.6.3 Honey Research Institute - Arusha

The Honey Research Institute is a government institute. It is based in Njiro-Arusha region and collects, cleans and packs natural honey. Currently the Institute's main study is on the quality of honey; it seeks to determine the water and sugar content of the honeys from their different production sources. The institute and a few outgrowers manage the beehives.

2.6.4 Golden African, Arusha

Golden African is based in Arusha, close to the Tengeru Institute. The company obtains raw materials from a variety of sources in Tanzania including farmers in Usambara, Tabora, Kilimanjaro and Arusha. It mainly process natural products such as jams, honey, juices and butter. Honey has the fastest selling trends and the typical labeling (Golden African) on honey jars has been an attraction to customers, especially tourists.

2.6.5 Movenpick (the former Royal Palm) Hotel, Dar es Salaam

This is one of the biggest hotels in Dar es Salaam Tanzania. The hotel has offered a variety of organic dishes since 1995. 90% of its customers are foreigners.

2.6.6 Tanganyika Instant Coffee Company Limited (Tanica), Bukoba

This factory is based in Bukoba region. Tanica gets a supply of organic coffee from Kagera Co-operative Union. In 2002 they delivered 48 tons of high quality organic robusta coffee to the factory. The instant coffee from Tanica is sold in Africa (mainly Kenya), European, Asian and Australian markets. It is also sold in the major Tanzanian supermarkets. The organic coffee is certified by KRAV (a

Swedish IFOAM accredited certification body). It is also certified by the Tanzania Bureau of Standards (TBS).

2.7 Marketing of OA

To a large extent, OA production is a market-oriented endeavor that is usually privately driven. Interested buyers sign contracts with growers. Supply often starts by trial and error rather than by design.

2.7.1 Local Markets

The local market is not well developed due to lack of awareness and understanding of organic products. A few, who are well informed about the importance of organic products, do not find the desired range of the products in the local market due to lack of 'guaranteed sign'. Consumers interviewed in Dar es Salaam felt they were stuck in a market situation whereby food production that is organic "by default" is mixed up with products obtained through other farming practices and it is difficult to trace the origin of the products. (Sogn and Mella, 2006).

Although a variety of natural, environmental, medicinal, healthy/organic products are available in Tanzania, most of them are sold at prices 50% to 100% higher than conventional products. Due to the high price of organic products, 90% of the total demand for organic produce comes from the expatriate community. The remaining 10% of organic customers consist of local people, mainly health-conscious, elite Tanzanians. Since the majority of people cannot understand why organic products should be sold at higher prices, the premium margins are less supported.

Local markets also suffer from irregular supply, unsatisfactory packaging/labeling, and a paucity of certified products, all of which slow market growth.

The analysis of the supply sources for local organic markets in Tanzania has been divided into two main categories, namely the retailing outlets and the processing outlets *(described above).* The retailing outlets have been further subdivided into specialized and non-specialized outlets. The research that was conducted by EPOPA, 2004 in Dar es Salaam and Arusha towns revealed the following specialized outlets.

2.7.1.1 Mum's Kitchen

Established in 2002 in Dar-es-Salaam, Mum's kitchen is a small shop specialized in organic commodities such as flour, juices, milk products, breads, vegetables, Soya milk, cooking oils, nuts, and cereals. About 90% of Mum's kitchen's customers come from the expatriate community, including tourists. Only 10% are

Tanzanians, who are either health-conscious clients, wealthy enough to afford organic prices, or those suffering from ill-health concerns such as diabetes and high blood pressure.

2.7.1.2 Vitality

Vitality was established in 2004 and is located at Oysterbay in Dar-es-Salaam. This grocery sells organic/natural products that come from South Africa. Most of what is stocked is medicinal products, but the shop is expanding and is interested in stocking locally available organic/ medicinal products, such as nuts, honey, dried fruits and jams.

2.7.1.3 Tunda Shop

The Tunda Shop was re-established in 2007 by Envirocare from the former Natural Products Shop, and is located at Survey area in Dar-es-Salaam. The products sold are life enriching pure organic products from small farms that conserve biodiversity. The shop also aims to find markets for small-scale farmers from Kilimanjaro who have begun producing organic products with the help of Envirocare. Quantities sold have been increasing, for example the demand for natural products triples annually with the exception of honey which doubles yearly. Products sold include groundnuts, wheat flour, honey, jams, rice, finger millet and sunflower oils.

2.7.2 Export Market

Organic markets have experienced alternating periods of high growth and stabilization, but they still constitute only a small percentage of the food markets in developed countries. The United States, Germany, and the United Kingdom are the biggest markets, but Sweden, Switzerland, and Denmark have the highest per capita consumption. The Japanese organic market is small for the size of its economy, although there is a large volume of uncertified organic products. Middle-income countries such as Mexico, Brazil, and South Africa have seen their markets grow as well. Middle Eastern countries with a lot of spending power, such as the United Arab Emirates, have also picked up the organic message and offer attractive opportunities. In general, nearly 100% of the certified organic products produced are exported to countries like Germany, UK and USA. It is estimated that more than 2,000 MT of organic products are exported from Tanzania annually.

Since the early 1960s there has been a growing market in Europe, Japan and the USA for products grown in a sustainable manner and without the use of agro chemicals. The organic market has grown from US$ 13 billion in 1998 to US$ 25 billion in 2005. This is due to the increasing environmental concerns by the consumers in these developed countries. As such, they are willing to pay premium prices for certified organic products. Slowly but surely, governments, as

well as development cooperatives, are recognizing the contributions that organic agriculture can make to environmental, health, bio-diversity and food security issues. The aforementioned situation made for an ideal opportunity for African countries to find premium export markets. The price that the farmers receive for their cash crops is 15 to 40 percent higher. Many farmers report a significant increase in productivity due to more intensive crop management measures. The farmers also produce their own food organically. The farmers also appreciate the extra attention given to them by the extension workers and generally respond to that by caring more about farming. The higher prices are not achieved by the organic qualification only but also by better quality products and in some cases, by more direct trading structures.

Table 5: An overview of the exports of coffee for 2002 (with reservations for the accuracy of the data)

Country	Exports (Mt)	Share
Mexico	9 497	38%
Peru	Approx 3 900	15%
Columbia	Approx 1 000	4%
El Salvador	246	1%
Tanzania	160	<1 %
Uganda	Approx 1 250	5%
Others	8 000	31%
World	**25,000**	**100%**

Source: SIDA, 2002

Demand for honey and beeswax in the world market is very high and the demand for Tanzanian honey and beeswax exceeds supply. In terms of quality, Tanzanian honey and beeswax are highly competitive in the international market. The main buyers of Tanzania honey are the European Union member countries, especially The UK, Germany and The Netherlands, as well as the United Arab Emirates, Oman and Kenya. The main importers of Tanzanian beeswax are Japan, USA and European Union member countries. Regarding international market prices, the highest quality table honey price is 1,200 USD/ton, while industrial honey is only about 1,000 USD/ ton. The price of beeswax is 5,000 USD / ton (Mwakatobe and Mlingwa, 2006).

Export market is related to the following:

• The balance of supply and demand may be affected negatively if the organic market growth slows down or supply increases too quickly. This risk is enhanced by the present conditions in the conventional market, which may stimulate farmers to convert their production to organic.

• The production of cashew from Tanzania may be affected if the present bearish market continues and farmers step out, or the Tanzanian government's intervention may pose difficulties on the (internal) cashew trade.

• It may be difficult to sell 100% of the organic cashews, because of an imbalance in the grades that the market requires. The organic market presently seems to demand a high proportion of broken nuts than wholes (Koekoek, EPOPA 2005).

Table 6: List of Actors Involved in Marketing of OA Products in Tanzania

Actor	Crop type and status	Source (district/ Region)	Export Destination/ Status
Kilimanjaro Native Cooperative Union (KNCU)	Coffee	Kilimanjaro	EU, USA, Japan
Mufindi Tea Company Ltd (MTC)	Processed tea	Njombe	Europe
Zanz-Germ Enterprises Ltd	Ginger, pepper, turmeric, chili and lemon grass	Kigoma; (ginger), Tanga (pepper) and Zanzibar	Germany
[4]Premier Cashew Industry Ltd (PCI)	Cashew nuts	Mkuranga (Coast region)	UK, USA
Clove Stem Oil Distillery (CSOD)	Lemon grass oil, cinnamon leaf oil, eucalyptus oil and sweet basil oil	Zanzibar	Switzerland
Kagera Cooperative Union (1990) LTD (KCU)	Clean coffee (robusta)	Bukoba rural, Muleba (Kagera region)	Sweden, Germany, UK
Biolands International; Ltd	Cocoa	Kyela district	EEC, USA
Kilimanjaro Natural Food Cooperative Society (KNFCS)	Dried mangoes, hibiscus, mushroom, ginger, banana & garlic	Kilimanjaro	Sells locally
Matunda Mema	Dried fruits	Bukoba district	Germany
TANPRO	Peanuts	Sumbawanga district	NA
ECOL	Cotton	Handeni, Morogoro, Dodoma	NA
Njia Moja Ushirika Group,	Cloves, turmeric, cinnamon, black pepper, vanilla, lemon grass	Pemba	Indonesia, Japan through ZSTC
ADP Isangati	Dry turmeric	Mbeya	Germany
Bombay Birmah Tea	Tea	Tanga	NA
KIWAKABO Tema	Coffee	Moshi	Not yet certified
Kibidula	Lemon grass	Mafinga	NA
Zanzibar State Trading Company (ZSTC)	Essential oil	Pemba	Indonesia, Japan
Kimango Farm Enterprise L	Mangoes, lemon grass	Morogoro	NA
Tanzania Tea Packers (TATEPA)	Tea	Dar es Salaam	NA
Tanganyika Instant Coffee Company Ltd (Tanica)	Coffee	Bukoba	NA
Biore Tanzania Ltd	Cotton	Shinyanga	NA
Mikese Organic Farm	Fruits (mangoes)	Morogoro	NA
Tanzania Organic Products (TAZOP)	Spices	Zanzibar	Germany
Fidahussein Co.	Honey	Rufiji district	NA
MAYAWA	Vanilla	Kagera	Uganda
Hamisi Omari	Spices	Muheza district	Agent for spice buyers

Ramadhani Ngosha	Spices	Muheza district	Agent for spice buyers
Sunnhemp Seed Bank	Various crops	Songea district	Capacity building

Source: EPOPA Report on Basic Data on Certified Organic Production & Export in Tanzania; October 2004 in Mwasha, A (2006).

2.8 Constraints to OA Production and Trade

There are several constraints that hinder the development of OA production and trade in Tanzania. These are grouped into economic and trade constraints;, regulatory and certification constraints; and information, awareness and education constraints.

2.8.1 Economic and trade related constraints

- High costs of certification - Most of the organically-produced commodities in the local market are non-certified products. The high cost of certification is a matter of concern. For the most part, Tanzania still depends on expensive external certification authorities to certify organic products for sale in international markets. The issue that TanCert is not accredited denies farmers access to international markets. The foreign certifiers charge a certification fee at a rate ranging from USD 150 to USD 450 per day for one inspector to conduct a one day inspection. Approximately an inspector can accomplish the inspection procedures for five farmers per day. Although TanCert charge between USD 100-180 per day still many can not afford, except for group certification. Obtaining accreditation for TanCert to certify farmers seems to be a possible solution for the high certification costs charged by foreign companies.
- The local market is not well developed because of the low level of awareness on organic products among the population.
- OA production is perceived to be costly since it is labor-intensive and hence costly.
- Transportation of organic products from producers/farms to consumers/ markets is limited and therefore hinders timely availability of products in the markets. Transport problems affect agricultural production in the country as a whole, but OA in particular would benefit from improved transport
- Lack of credit facilities and abuse of subsidized inputs.

2.8.2 Policy, regulatory and certification constraints

- Lack of clear policy to guide OA development that result to little support from the government.
- Inputs such as organic pesticides and fertilizers that can be used to improve soil fertility and reduce pests and diseases are in short supply.
- Complex and unaffordable regulations. For example, a government allows registration of botanical (organic) fertilizers and pesticides, but the procedures involved are expensive for individuals to afford. Once the

botanicals are registered, they can be easily processed and sold at wider distribution.

2.8.3 Information, Awareness and Education Constraints

- Inadequate information on issues related to OA, including, production techniques, processing, labeling and marketing. This tends to deny farmers opportunity to utilize the market potentials.
- Inadequate capacities in research, training and extension services. Due to the downsizing of the civil service since the mid-1980s, there are not enough extension workers who can help train farmers in the whole process of organic production preparation, packaging, labeling and marketing of organic products. Before retrenchments, extension officers were easily found at division level and even at ward level.
- Lack of a mechanism for generating farm data by farmers, particularly the uncertified farmers, thus making it difficult to determine the state of OA products in the country.
- Fragmentation of information is another constraint that results to contradictory statements and overlapping of information regarding the OA in the country.

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A Contradictory statement:

Financial Times 17th August 2005, reported that the President of the Tanzania was to launch a project said to be the first organic cotton project in Sub-Saharan Africa to produce organic cotton… when in fact organic production of cotton had already began in Meatu since the mid 1990's.

2.8.4 Specific Problems on Cashew Nuts, Honey and Coffee

Each organically-grown crop has specific needs that need to be encountered to enhance higher yield. The field visit reveals specific problems associated with cashew nuts, honey and coffee.

2.8.4.1 Problems Associated with Organic Cashew Nuts Production

- The production of cashew nuts in Kerekese shows a declining trend. One explanation for this is the unstable price of OA. The price of organic cashew was TZS.650/= per kilogramme in the 2003/4 season but in the 2004/5 season, the price plunged to TZS.370/= per kilogram, something which resulted into halving farmer's incomes, ceteris paribus.
- Sulphur shortage is another problem. There has been an attempt by the government to facilitate sulphur availability by creation of an 'Inputs fund'. However, the fund has encountered implementation problems that as made it unpopular. Farmers have to contribute TZS.20/= toward sulphur for every kilogram of cashew nuts sold, but then they face an unreliable

delivery of sulphur. For example in 2005, only 250 out of the 700 allocated bags of sulphur were made available to the village.

- Increasingly, theft of cashew is becoming a feature of cashew production necessitating further demands on family labor to guard the crop.
- Despite its usefulness in facilitating production of cashew nuts, credit provided by the private trading company PCI has the following problems associated with its provision. First, 44% of the respondents noted that the mode of repayment was too stringent – farmers are required to repay the whole credit owed regardless of amount produced.
- Another problem is that farmers must sell to the credit providers, which creates a monophonic buying structure which diminishes sellers in bargaining power. Others pointed out that credit was too costly since the price of sulphur is high and the cashew-buying price low.
- Another problem with credit is that the amount provided is not enough. The mean amount of credit a household received in 2004 was TZS 98,130/=. This is enough to buy approximately 10 bags of sulphur which is barely sufficient to spray about 7 hectares per household; however credit is insufficient to cover for high labour for weeding, spraying and harvesting. These activities are costly and are beyond the poor farmer's ability. For instance labour for weeding per day costs an average of TZS.13, 600/= per day for 10 days to cover 7 hectares. This translates into TZS.19, 430/= per hectares.
- The farmers repayment of sulphur loans is also facing challenges. Credit for sulphur is extended by the trader to Kerekese village alone, while cashew nut production is done in many villages surrounding Kerekese and where sulphur availability is problematic, credit sulphur from Kerekese becomes 'ready cash' for the cash poor farmers. It was reported that, it is common practice to find a farmer selling the credit sulphur for less the credit amount just to get hold of badly needed cash to buy food. This has multiple effects including low cashew productivity, contrary to expectations due to low sulphur use. Farmers then have low earnings while the burden of debt repayment remains.

2.8.4.2 Problems associated with organic honey production

- Lack of storage facilities. Plastic buckets are not strong enough and there is a lack of space for storage.
- Lack of extension services. The District Beekeeping Officer visited only 25% of beekeepers during the last season. However, the officer has been able to produce a beekeeping handbook under a project supported by IUCN with funding from the Dutch Government and distributed to beekeepers.
- Capacity building and training received from NGOs such as EPOPA and district government is inadequate.

- Theft of honey from their beehives occurs because of the distance from homes to where the hives are located. Farmers do not practice cooperative security arrangements.
- The processed honey is usually transported to the buying centre by simple transport modes like head loading and the use of bicycles. Transportation of beehives is difficult because of the distance from the village to the beehives and the lack of formal infrastructure like roads. People have to carry the hives on their heads
- There is only one buyer of honey: Fidahussein Company. Without the company villagers would have faced problems marketing their honey; however the sole buyer also dictates the price and other buying conditions
- The local market for honey is still undeveloped although the demand for honey is quite high.

2.8.4.3 Problems Associated with Organic Coffee Production

- According to agricultural experts, there is the false assumption that it is easy to go into organic farming because what one needs is organic manure. In reality there are two types of cow manure: farmyard manure and kraal manure. The farmyard manure is not as rich in nutrients as kraal manure, which is expensive to ship from the lowlands.
- Farmers have not settled firmly in OA; it is as if they have one foot in OA and another in CA. This is after realising that the production trend is falling. This is an assumption by farmers. Also it is a fact that the abrupt change from CA to OA may affect production levels.
- Government levies on agricultural produce reduce the farmers' take home income.
- The standards to be observed are very stringent and a farmer has to be really converted to OA to persevere in the demands.
- The price difference between conventional and organic coffee is currently not that significant. It ranges from only 100 – 300 shillings.
- Pulping machines are not affordable to many farmers. A farmer complained that he did not have pulping machine because the price is prohibitive. According to the Regional Agricultural Officer, most (90%) farmers do their pulping at home as central pulperies are few. In Moshi there are only three such facilities. Central pulperies produce better quality coffee.
- The main problem in processing coffee is fermenting, washing and drying the beans. A tin (20 kg) of cherries turns out 5 kg of dried beans. Coffee also requires shade when drying. Processing in homes is often done incorrectly and spoils coffee. Bad handling spoils the aroma of the coffee. For example, some people boil their beans to dry them quickly instead of waiting the necessary 14 days for drying and 14 days for storing. Also some use gunny bags instead of the preferred clean sisal bags, which give room for air to pass and help condition the beans.

- Predominant men roles leaves the women out of the decision making process for the farms; there is a need for education on changed gender relations.
- The productivity of bananas has improved which have better prices than coffee so concentration on banana production.
- Farmers are accustomed to using pesticides.
- OA farmers are few, so they are bound to be affected by those who continue with CA (e.g. Coffee Berry Disease (CBD) from a neighbour's infected crops may affects one's coffee).
- OA requires patience; e.g. cow's urine requires 10 days of fermentation before use
- Commercial production of herbs for use as organic pesticides in OA is not readily available.
- In a liberalised market situation coffee farmers can sell to any buyer to get quick money and is not bothered by being faithful to his cooperative society. This might affect the standards (a farmer can sell coffee as organic when in fact it is not) and therefore a threat to OA.

2.9 Current Policy Environment for OA in Tanzania

In Tanzania, there has not been any comprehensive OA policy, except for a few clauses which support OA within several policy documents. The latest version of Agriculture and Livestock Policy of 1997 recognized the importance of OA and has several clauses that support OA principles. In section D (V) on environmental Issues in agriculture, it states that, "the Ministry will promote agro-forestry and organic farming. This is crucial for the long term future of the country that Tanzania's natural resources (soils, water, forests, wildlife) be managed so that agricultural production is sustainable and negative externalities are kept at a minimum".

However, as of today, the agriculture policy is under review by the new 2006 set up of the Ministry (MAFC). This process of policy review provides a good opportunity for stakeholders to suggest improvement through policies that address OA. Likewise the *Livestock Policy* is also due for review. Another current document that is under review is the Agriculture Sector Development Strategy (ASDS), which talks of promoting commercial agriculture in non-traditional export crops, including OA crops.

The policy is silent with respect to organic livestock husbandry. However it mentions safe, effective and minimal use of therapeutants, hormones and drugs, antibiotic and other disease control chemicals.

The *National Fisheries Policy of 1997* and its strategy statement do not explicitly mention organic fish farming, and is essentially silent on OA.

Section 4.2.2 of the *National Forest Policy* provides policy statement for beekeeping. However, it does not mention organic honey production. The policy directs that beekeeping resource assessment will be intensified, and a beekeeping component will be incorporated in the management plans of forest reserves that may include setting aside suitable habitats for beekeeping habitats.
The *National Environmental Policy of 1997* points out that, "Environmental impacts of actions in one sector are always felt in other sectors." Therefore internalisation of environmental considerations in sectoral policies and programmes and their co-ordination is essential to achieve sustainable development. The policy does not explicitly mention OA promotion but OA could fit within strategies to achieve the integrity of ecosystems and the health of environment in general.
Since OA is crosscutting, it needs a multi-sectoral approach in its policy framework. For instance, OA production can be addressed by several policies, including: agricultural policy, livestock policy, fisheries policy, environment policy, industrial policy and health policy, while OA trade could be addressed by the trade policy and cooperatives policy, among others.

2.9.1 Ministries Involved in OA and the need for Coordination

Coordination of the different policies addressing OA is a vital element in the promotion of production and trading of organic products. The multi-sectoral and multi-ministerial development and management of OA might make it difficult to promote this farming method. Agriculture in Tanzania falls under eight ministries:

- Ministry of Agriculture, Food Security and Cooperatives
- Ministry of Livestock Development
- Ministry of Natural Resources and Tourism
- Ministry of Industries and Trade and Marketing
- Vice President's Office – Division of Environment
- Prime Minister's Office - Regional Administration and Local Government
- Ministry of Water
- Ministry of Health and Social Welfare (Tanzania Food and Drugs Administration Agency)
- Ministry of Lands and Human Settlement Development

Government authorities have an important role in promoting OA. Improving communication and collaboration between the government and other actors such as facilitating agencies, certifying bodies, research institutions, NGOs, CBO, producers, exporters and consumers is important for developing OA that balances economic concerns with those of the environment and the livelihoods of smallholder farmers (Bakewell-Stone, 2006).

3.0 Policy Assessment for the Development of OA sector

This section draws from the review of literature on OA development process in Tanzania. The case studies of cashew nuts, honey and coffee as well as comments obtained from various stakeholders' workshops have been used to argue the need for policy development, institutional set up, targets and time frame to support development of the OA sub-sector. It has to be noted that all the previously-mentioned progress of the OA sub-sector have been taking place without an adequate policy framework, guidelines and regulation from the government. This report argues that it is time to come up with a clear policy and institutional framework that will map out the development path of OA in the country.

3.1 Policy Issues and Challenges of OA Development

MAFC is the government body that has the responsibility of coordinating policy development in the agriculture sector including that for OA. The process is continuing and the following challenges have been identified:-

- Inadequate capacities to carry out OA initiatives, such as research training and extension services.
- Inadequate capacity in OA Research, Extension, Training and Education as well as documentation and dissemination of the findings.
- Limited understanding and awareness of opportunities and potentials of OA system.
- Limited promotion, supply and research on OA inputs like pesticides, fertilizers and pests avoidance and soil management technologies.
- Limited (and in some cases lack of) accessibility and affordability of certification services by small holder farmers as a marketing requirement.
- Although bilateral agreements between the Tanzanian government with other countries on the supplying agro-chemicals came to an end in 2000/01 still the government provide subsidies for synthetic fertilizer in order to combat poverty. This is an obstacle to a faster adoption of OA since such inputs and OA do not work together. It therefore a challenge to OA stakeholders to come up with some strategies to ensure that organic movement and campaigns do not enter into conflict with the government in the endeavors to reduce poverty.
- Uncoordinated planning with other sectors. For example, land for OA should be far from conventional agriculture, particularly for organic honey.
- The perception among some stakeholders that OA competes with conventional agriculture and will bring about food insecurity because it has low productivity.

Based on the challenges mentioned above, the organic stakeholders has proposed the following policy statements in support of OA development in Tanzania:

(i) Facilitating registration and availability of natural/organic inputs to farmers.
(ii) Assistance in setting up the market infrastructure and linking the producers with the consumers.
(iii) Supporting farmers, NGOs, and other actors in initiatives for promoting OA.
(iv) Supporting capacity building for extension agents, farmers and researchers.
(v) Encouraging the application and conformity to relevant organic standards in farming practices in order to increase environmental conservation, farm biodiversity, social responsibility and promotion of fair trade.
(vi) Encouraging the formation and strengthening of small holder groups, associations and cooperatives for collective marketing to increase bargaining power and negotiation.

3.2 Targets and Time Frame for OA Development in Tanzania

3.2.1 Overall Goal

After assessing the status of OA and the lack of clear policy guidelines, this study has led to an attempt to formulate targets for the future of the OA sector in Tanzania. In order to place the targets in context, stakeholders agreed on the overall goal of the sector to be defined as ***"to have a vibrant organic sector supported by a wide range of stakeholders that is the driving force behind agriculture in the country, takes advantage of local and export markets and contributes to enhanced livelihoods through quality and safe food, environmental conservation, economic growth and sustainable development."***

The following specific measures are required to enable OA to address the challenges it faces:

- Given lack of clear policy guidelines in the existing agriculture and livestock policy of 1997, there is a need to develop, review or update policies and make them friendly to OA sub-sector development in Tanzania. Some policies are already in the process of being reviewed or will soon be reviewed; therefore the output of this study can feed directly into policy review process of the MAFC.

- The lack of OA-friendly policies in other related sectors calls for the need to mainstream OA into existing policies not only within the Agricultural Lead Ministries (livestock, trade, natural resources) but also in

crosscutting sectors such as Environment, Health, Education and Research and Development.

3.2.2 Targets for OA Development

Based on the above goal and specific measures, the following targets are put forward:

1. The Ministry of Agriculture Food Security and Cooperatives to complete the ongoing OA policy review by 2008.

2. The Ministry of Agriculture to establish OA Coordinating Unit within its structure by end of 2008. The Unit will review policy and create dialogue with other ministries in order to incorporate OA in their policies, programmes and projects by 2009.

3. To increase the number of OA farmers from the estimated 75,000 in 2006 to at least 100,000 by 2009.

4. To convert the 200,000ha of uncertified area for organic production into certified area (to reach 264,000ha in the medium term period of 5 -10 years, beginning 2009 to 2019. The current certified area is 64,000ha).

To increase organic production of the following products by a factor of 3:

Table 7: Indicative Targets for Selected OA Products

Crop	Year	Production kg/Hectare	Current Certified Area (ha)	Target Area (ha)*	Target certified Production 5 - 10 years MT*
Cashew nut	2004/05	583	1216	3648	2130
Coffee (Robusta)	2004/05	278	1525	4575	1270
Coffee (Arabica)	2004/05	88	812	2436	2145
Honey	2000/01	3077 hives			9230 Hives

*These figures have been arrived at assuming current conditions of production remain the same --yield remains constant and production area of OA crops increases by a factor of 3 over a five to ten - year period.

3.2.3 Time Frame for Attainment of the Targets

One year is the estimated time for the government, through MAFC, to incorporate OA in its policy and to enhance incorporation of OA in policies of other relevant ministries. MAFC is currently reviewing policies that will be ready in late 2007.

Policy recommendations arising from this assessment will be relevant inputs to be passed on to the policy review team through two of the National Advisory Committee members representing the MAFC.

The MAFC should argue for and then establish a functioning Coordinating Unit for OA by 2008. The OA unit should assist in lobbying for OA issues within the MAFC and any other institution including development partners.

By the end of 2009, other relevant Agricultural Lead Ministries should have incorporated the OA policy into their policy documents. Other stakeholders (like EPOPA, TanCert, TOAM, and private sector, operators such as Fiddahussein, KNCU, KIHATA among others) should be moving on with establishing and strengthening the institutional framework for OA in the government, while market forces are playing their part to influence activities on the ground.

3.3 How Targets Will Influence Sustainability Dimensions

The targets set above, if achieved, are envisaged to generate economic, social and environmental benefits to the OA sub-sector in Tanzania, which are envisaged to contribute towards the development of the sector sustainably.

3.3.1 Economic Benefits

When policies are in place and facilitating agencies provide the necessary support to OA supply chain, it is expected that the contribution of OA to GDP will ostensibly increase. For example the increase in production area from 64,000ha to 264,000[5] ha will evidently increase the quantity of products and thus the foreign earnings from exportation. Despite some selective tax cuts, overall government revenues earned from OA related taxes would also increase government earnings at central and local government levels.

Increasing the area of production would also increase labor needs, thus adding employment opportunities. Likewise, adding value of organic products will also demand for labor from harvesting to packaging in both urban and in rural areas.

As more hectares are converted to OA, use of off farm inputs such as industriall fertilizers and pesticides may be reduced, thereby saving a substantial amount of production costs that would have been spent for purchasing such in puts. For example, after the government re-introduced fertiliser subsidy system in 2003, the budget was also increased from TZS. 2.0 billion in 2002/03 to TZS. 7.244 and the budget for fertilizer subsidy for 2006/07 is 21 billion.

Another economic benefit would be opening up of markets in the major OA consuming countries in America, Europe, Japan and other developed countries. Through harmonization, there is a possibility of overcoming non-tariff-barriers

[5] 64,000ha existing certified area, and 200,000ha under organic production but uncertified

and benefiting from fair trade marketing arrangements. At a micro-level, individual producers and all those involved in the production, processing and marketing of OA products are expected to earn more incomes and thus reduce their levels of poverty.

It is essential that in order for the benefits to be realized in full, attention must be paid to increasing productivity levels of OA in addition to increasing cultivation area. Productivity may take some time to increase, in which case the adoption of OA may lead to a decline in total agricultural output and earnings from the sector. A key to success in raising productivity lies in ensuring that producers have access to technologies for improved production, as well as support for research, training and extension for individual products.

3.3.2 Social Benefits

Since the main beneficiaries in the economic outcomes above are ordinary farmers, expanded OA production and income generation will result in improved standard of living in terms improved housing, decreased malnutrition, and increased ability to access education and health services. Furthermore, improved production of OA products is likely to lead to positive health impacts as consumers get healthier foods and producers face fewer risks and hazards from diseases and accidents caused by exposure to chemicals.

Gender equality may also benefit from the opportunity for women and youth producers to earn income by engaging in OA productive activities.

3.3.3 Environmental Benefits

OA is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity (FAO, 1999). The adoption and expansion of OA production systems is expected to improve soil fertility, restore biodiversity and reduce chemical contamination of the environment. During field surveys in Kilimanjaro, respondents reported the re-appearance through organic farming of organisms that had disappeared from their farms when spraying pesticides and using inorganic fertilizers. Another environmental benefit will be restoration of the water quality through reduction of pollutants that run off into streams from farms during the rains.

The reduced fertilizer and pesticide use will also lead other environmental and health benefits. However, at this time and with the data available, it is not possible to quantify the economic value of environmental benefits. Further studies will need to be undertaken to quantify these benefits.

3.3.4 Combined Impacts of Economic, Social, and Environmental Benefits

The combination of economic, social and environmental benefits is expected to greatly aid Tanzania's sustainable agriculture, as the interaction of economic, social, and environmental forces produces a synergistic and mutually supporting effect. For example, increased income from organic products may increase the welfare of the people in general; then they will have money to purchase energy-saving stoves or alternative energy sources such as gas and electricity. Lower firewood consumption can reduce forest pressure, increase wood regeneration, help recover catchment areas and increase amount of water or rainfall. Meanwhile, as soil fertility and biodiversity improve, more production will be realized, leading towards food security and poverty reduction. The increase of production will lead to increased income for farmers and ideally fewer inequalities, improvement of social capital, gender empowerment, and increased ability for farmers to share the costs of social services such as education and health. In the macro level, exports will increase the government income and hence contribute to GDP.

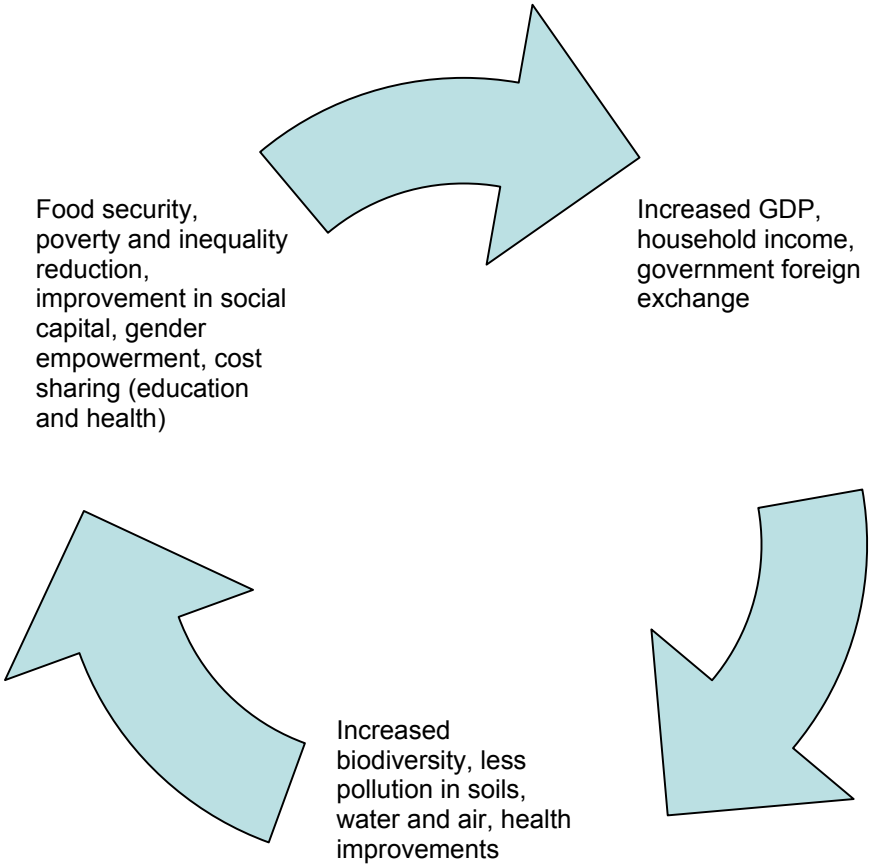

Figure 9: combined impacts of Economic, Social, and Environmental Benefits

3.4 Linking OA to MKUKUTA and MDG's

The benefits arising from expanded OA in Tanzania will likely stimulate the non-OA production sector (e.g. uncertified producers and conventional producers) to shift towards an OA production system. Thus, when policies and the requisite institutional framework are in place, we should expect that in the period from 2009-2019, the OA sub-sector in Tanzania will increase to three times the current size. This study argues that there is potential for OA that needs to be tapped and developed.

According to the goals of the Tanzania's National Strategy for Growth and Reduction of Poverty (MKUKUTA), the country should promote sustainable and broad-based growth. MKUKUTA's Target 2.4) is to increase agricultural growth from 5% in 2003 to 10% in 2010. Also Target 2.9 requires a reduction in negative impacts on the environment and peoples livelihoods. These MKUKUTA targets call for the exploration of what role OA can play in ensuring the anticipated growth does not jeopardize sustainability.. The key message of this study is that OA has a legitimate place within sustainable agriculture programmes envisaged by growth and poverty reduction strategies like MKUKUTA and Millennium Development Goals (MDGs). It will be necessary to engage the stakeholders involved in this integrated assessment to discuss how OA can contribute to the achievement of MKUKUTA and MDGs.

The targets arising from this IA study require the policy framework for OA put in place, an OA Unit be set up in the MAFC and policies of related sectors are reviewed to include OA and a forum for further discussion and refinement of an OA development strategy and implementation mechanisms are formulated in a participative manner. More work remains to be done to demonstrate how the strengths of OA can be enhanced, weaknesses and constraints addressed and opportunities for growth of OA tapped for the benefit of Tanzania and consumers.

3.5 Scenarios for Future Development of OA in Tanzania

On the basis of this IA, there are three possible scenarios with respect to OA development in Tanzania. The first option is "Business as Usual" : no OA policy, no ministerial institutional setup and current production and export levels remain the same. The second scenario envisages a situation when proposed policies and institutional framework are put into action and the targets are accepted and worked upon by all agents. The third scenario is when specific targets for OA have been met and there is deliberate effort to fast track OA to a higher level. For each scenario, we examine the likely development in the following indicators:

- Number of farmers involved in OA
- Availability of affordable certification services
- Food quality

- Productivity (Yields) of OA sub-sector
- Access to Technology and Research
- Awareness and sensitisation for OA production
- Export growth of OA
- Gender relations vis-à-vis in OA

3.5.1 First Scenario: OA Development under "Business as Usual"

Under the business as usual scenario, acreage of OA remains at 64,000 hectares, there is no OA sub-sector policy, there is only a desk at the MAFC, and other sectoral policies remain silent on OA. This means that all the identified factors that constrain OA development would remain because the appropriate institutional setup to deal with them is not yet in place. The result is that OA develops at a very slow pace with only about 75,000 producers and few certified products. Low yields in the OA production system, lack of access to technology and research support for OA and exports of OA products remain at the current level.

3.5.2 Second scenario: OA Policies and Institutional Set Up in Place

Under this scenario, government through MAFC reviews and updates policies to make them supportive of OA sub-sector development in Tanzania. This is followed by approval of OA policy and implementation plans and mechanisms. OA will have been mainstreamed into the existing policies within the agricultural sub-sector (crops, livestock, trade, natural resources) and in related sectors (environment, financial, health), education and research and development

Under this scenario, we assume that current constraints to the development of OA start to be addressed and solutions are sought through a consultative process with key stakeholders. The expected result is that awareness on OA will increase, more OA farmers and products certified, enhanced investment in production, processing and marketing of OA shows a substantial increase. As a result, appreciable incomes from OA sales are realized at the national economy and at individual farmer/producer levels.

Increased OA production requires that supportive services such as appropriate technologies, research, extension and certification grow as well in order to meet increased demands from producers and other actors. OA activities emerge as important in the Tanzanian economy.

3.5.3 Third Scenario: OA is Fast Tracked

Under this scenario, we assume that in 5-10 years, OA sub-sector policy will be in place, initial targets for OA growth will be attained and the challenge will be to set further specific strategies of OA development (e.g. certified production area increases from the current 64,000 hectares to higher targets of 264,000 hectares.

The number of OA certified farmers increases to more than 75,000, awareness is widespread and Tanzania becomes competitive in OA markets, both foreign markets and local. In the same vein, domestic consumption of OA products is accentuated.

The most realistic scenario is number two, given the constraints of OA development. But which scenario occurs will depend on the behaviour of key drivers as elaborated below.

3.6 Key Drivers of Change

In order to have meaningful changes in the status of OA sub-sector in Tanzania, there are number of key drivers for change, which must be in place before OA takeoff. These are discussed in the following sections.

3.6.1 Demand and Supply Conditions

The potential for OA in Tanzania is enormous. Within the country itself, organic products could be sold on the farms, in health food shops, farmers' markets, at community supported agribusinesses, supermarkets, organic super markets, to catering institutions, public procurement (schools and hospitals) and eco-tourism arrangements.

In the world market, organic products are sold at premium prices compared to conventional products. Currently, the rising demand in the consuming countries keeps premium prices for OA at high levels. However, as supply increases to meet the demand, competition will ensue and the margins enjoyed by OA producers and other actors in the supply chain are likely to dwindle. In this case, only innovative producers will continue to enjoy premium prices and lucrative margins. This calls for innovations in production to meet OA standards, better packaging and adherence to contractual obligations. Creating an organic products icon is among the priorities Tanzania could make to contribute in the development of increased agricultural export earnings.

The field study provided evidence to the fact that the demand for organic coffee, cashew nuts and honey far outstrips available supply. The market share for many OA products is still minute. For example, while the world demand for honey is 300,000 tons, Tanzania exported only 370 tons worth 420,000 US$ in 2004/05 (0.12%). The potential for honey production is 138,000 tons (Mwakatobe and Mlingwa, 2006). This illustrates the fact that demands is far greater compared to supply.

3.6.2 Policy, Legal, and Institutional Support

The development of OA is contingent upon continued policy, legal and institutional support from the government and facilitating NGOs (both local and foreign). They have the ability to create an environment that will enable the OA sub-sector to flourish. Policy and institutional support can come in the form of guidelines, standards, information, arbitration and other factors that enable OA actors to increase output and benefit from it. There are emerging indications that the government of Tanzania is in full support of OA as shown in the speech by the Permanent Secretary - MAFC- in a stakeholders workshop in November 2006.

3.6.3 Technical Support to OA

Technical support in the form of input supply, research, training, and extension is essential for OA development. Government research and training activities to support OA should complement activities undertaken by other OA promoters such EPOPA, TanCert, TOAM and local NGOs such as Envirocare, KIHATA and TOFO. For example in Mkuranga District, there was only one agricultural extension officer at the district level for the cashew nut crop who was supposed to cater to the whole district for agriculture and livestock matters. Likewise in Rufiji District, there was only one extension officer catering to the whole district for matters of beekeeping. However, KNCU in Kilimanjaro has 8 extension officers for its organic coffee production programme, an indication of effectiveness facilitation by EPOPA, and vibrancy of the cooperative union.

Also, honey producers from Rufiji District face processing constraints. It was found that 96% do their own processing but they lack the proper equipment. For example 40% of the interviewed farmers use white cloth, 21 use plastic buckets and 12% use special sieves for processing. Some producers are reported to be using mosquito nets, while in other cases farmers simply fail to separate honey from beeswax

3.6.4 Response of Practitioners in OA Production and Supply Chain

The OA practitioners include farmers, certifiers, input suppliers, processors and packaging enterprises, transporters, wholesalers and retailers. The growth of the OA sub-sector will be influenced by the level of response of the practitioners to take up available opportunities in the OA sub sector. Possible practitioner responses include seeking investment and organizing production and service provision activities in order for them to earn incomes from the OA industry.

The responses or strategies of individuals or entities will result in a faster development of the OA sub sector than current development. By enticing more participants, the OA sub-sector will increase production, adding to growth of the

market and increased contribution to national and individual incomes. In the case of Rufiji and Mkuranga Districts, field studies showed that farmers are at the mercy of the monopsonistic buyer of both cashew nuts and honey and the supply of inputs. At the same time, producers are not organized in such a way as to empower themselves to bargain for fair prices.

The development of OA will ultimately depend on the extent to which actors in the sub-sector take up challenges and opportunities created by the growing global market for organic products. It is essential that the policies to support OA and the institutional framework cause the drivers to shift in the desired direction. In the following section, the study concludes and suggests some recommendations for further action and study.

3.7 Winners and Losers

Once the proposed policy is put into action there are bound to be winners and losers. Winners would be small scale farmers, who would reduce amount of money that would be spent for buying chemical fertilizers, and have increased output from the same piece of land and fair income. Consumers and exporters would also be winners. The formers will be guaranteed that the foods they eat are safe and the latter will have increased income through increased export level. The species that have been threatened to be lost due to environment pollution will be winners as they will be reoccurring.

Losers are those who will not benefit with the increased number of hectares being converted to OA. These include agrochemical companies, who will have to contend with possible decline in demand of some of the products especially fertilizers and pesticides.

4.0 Conclusions, Recommendations and Lessons

4.1 Conclusions

1. Most smallholders are engaged in uncertified organic production and therefore, if properly mobilized, sensitized on the benefit of OA and supported are likely to be more receptive to OA, as most of the OA farming practices are compatible with or even synonymous to subsistence farming practices.

2. Real impetus for OA began in the 1990s and has gathered momentum, but it is still miniscule - 0.0025 % of arable land is certified for OA production.

3. The local market has not been well developed because of the low level of awareness about organic products among the population. OA is export-oriented and the expatriate community dominates local market, while access to international market is restrained by the high costs of certification of the products. Emerging health concern may assist in stimulating local demand.

4. Most of the supply of organic products is backed up by external support although to date, the supply does not meet the demand, especially for the export market.

5. The institutional framework for OA in Tanzania is spread over eight government ministries, and other stakeholders including advocacy/promotion NGOs and certifying bodies. All these actors are not well coordinated, and so there is a fragmentation in production and trade as well as information about OA.

6. Certification is foreign dominated and costly. Local certifiers are less costly compared to foreign certifiers, but still unaffordable for many producers. The non-accreditation of local certifiers denies producers access to international market.

7. There are specific problems with regard to each OA product (as shown in the three crops studied: cashew nuts, honey and coffee).

8. There has not been adequate and relevant policy framework, guidelines and regulatory support from the government.

9. There is widespread misconception that OA is characterized by low productivity and demands high labour inputs.

10. Advocates of OA face an uphill struggle because of the subsidies that is provided by the government for agro-chemicals and pesticides. This is an obstacle to a faster adoption of OA (the two are incompatible). In the same vein, OA movement and campaigns come into conflict with virtues of conventional agriculture and government' endeavors to achieve food security.

11. The three possible scenarios for OA development in Tanzania are "business as usual," a "gradual", and "fast track." The most realistic is the second "gradual" scenario.

12. Based on the participatory process and targets on OA and a concerted policy review, we envision an increase in the number of OA farmers and consequently a substantial increase in organically produced crops as well as conversion of uncertified products.

13. The following indicators have been identified to track the development of OA in Tanzania:
    - Number of farmers involved in OA
    - Availability of affordable certification services
    - Food quality
    - Productivity (Yields) of OA sub-sector
    - Access to technology and research support to OA
    - Awareness and sensitisation for OA production
    - Export growth of OA
    - Gender relations in OA

15. Increased OA production has yet untapped potential for poverty reduction and reduction in inequality. Include OA in the National Strategy for Growth and Poverty Reduction (NSG&PR or MKUKUTA).

16. OA Farmers need to work together through producer and marketing associations in order to institute joint marketing procedures to gain more bargaining power against single monopolistic buyer/seller arrangements. At present, one buyer of OA cashew nuts and honey dictates terms as he has monopoly in providing inputs and in buying OA products.

4.2 Recommendations

The following recommendations are proposed for consideration of the OA sub-sector in Tanzania. These are grouped into institutional recommendations followed by recommendations in the three dimensions of sustainable development: economic, social and environmental aspects.

4.2.1 Institutional development recommendations

1. Accreditation should be simplified. Special consideration should be for certification of smallholder producers. The government should subsidize/support local suppliers until they are able to stand on their own feet. Consider establishing a government certification service. Make certification less costly in terms of both money and time by enabling local certification bodies and Regional Certification bodies to be accredited to internationally recognized bodies. The government should contribute to certification costs by providing subsidies to local certification agencies. This is recommended to MAFC.

2. The government should work together with stakeholders and producers in identifying the causes of constraints and in seeking solutions in a participative manner. There is a need to improve farmer access to OA extension services by increasing the number of specialized extension workers knowledgeable in OA. Extension workers could aid, for example, in advising producers in the processing of coffee from picking, pulping, drying, storage, transportation and marketing according to certain OA standards. They could also provide advice in the case of cashew nuts, honey, and other OA products. This is recommended to extension departments of MAFC, MNR&T and local and international NGOs.

3. It is time to incorporate incipient policy statements into official policy documents and establish a Coordinating Unit that will provide road map for the development of OA in the country. The OA Coordinating Unit will become a focal point for liaison with relevant government ministries and other stakeholders. This is recommended to MAFC.

4. An OA Unit needs to be established in the Ministry of Agriculture and in other sectoral ministries (MLD and MNR&T and Environment.). The overall goal of OA Units in ministries is to ensure that OA is included in policy documents, coordination, and training. They can help make the OA sub-sector competitive, equitable and sustainable to benefit small-scale farmers in TZ.

5. There is need to develop a Log frame for monitoring and evaluation of the following indicators for tracking the development of OA in the country:
    - Number of farmers involved in OA
    - Availability of affordable certification services
    - Food quality
    - Productivity (Yields) of OA sub-sector
    - Access to Technology and Research support to OA
    - Awareness and sensitization for OA production
    - Export growth of OA
    - Gender issues in OA

6. The MAFC, through its Department of Cooperative Development and in collaboration with TOAM, has the role of sensitizing and building capacity for establishing producer and marketing associations.
7. Overall aim of IA should be to create an overarching policy framework for guidance to the relevant ministries and stakeholders in building capacities of the technical personnel, infrastructure development and establishment of market channels.

4.2.2 Economic recommendations

8. There is need to ensure that premium prices for organic products obtaining in the world market are reflected at the level of local organic producer for him/her feel the benefit of converting from conventional agriculture to organic farming. This is recommended to buyer and exporters of organic products.

9. Credit should be extended to farmers to enable them to access improved technologies (for example, better beehives, improved processing facilities for honey, better honey processing facilities, use of recommended sulphur for cashew). This is recommended to the government and all relevant public, financial institution as well as traders in OA.

10. Advocate for the introduction of preferential tax mechanisms as a deliberate measure to support OA producers. For example, a specific recommendation is to advocate for suspension of Value Added Tax (VAT) for local producers of organic inputs such as organic pesticides and fertilizers. Also, advocate for tax rebates to local producers of OA so that they may produce more and sell at affordable prices. This is recommended to Ministry of Finance and the Tanzania Revenue Authority (TRA) and local governments, who have some responsibility in local taxation.

11. Improve availability of allowed organic inputs such as sulphur, seeds and fertilizers, and ensure that they are subsidized. This is recommended to Ministry of Industries, Trade and Marketing and Ministry of Environment.

12. Improve rural road infrastructure (roads and bridges) in OA practicing areas to reduce overall cost of transport for produce and input supply chain. This is recommended to Ministry of Infrastructure Development and the Ministry responsible for Local Government.

4.2.3 Social recommendations

13. Farmers should be mobilized and supported in adopting OA production and trading system since it is not very different from traditional practices. They need support to acquire the certification services. This is recommended to MAFC, NGOs, Development partners.

14. Since realization of the health benefits of organic products is emerging among Tanzanians, there are potentials to develop the local market, but there is a need for deliberate promotional efforts. Efforts to promote the local market of organic products must be two-fold. First it is necessary to raise awareness among the local people so as to increase understanding in the importance of using organic products. The second step is to make the products easily accessible to them. This is recommended to ministry of Health, Ministry of Environment.

15. The promotion of production and trading of organic products should fall under the multi-sectoral and multi-ministerial development and management of OA is required. This is recommended to MAFC.

4.2.4 Environmental recommendations

16. Government should recognize the diverse interests represented in the organic sector, taking into account that OA cannot be a threat to conventional agriculture, given its current status. This is recommended to MAFC

17. There is a need for evidence -based research on the environmental rationale of OA (cost-benefit analysis) and publicize the merits and demerits of OA. This is recommended to MAFC.

18. With respect to beekeeping, use of modern beehives and beekeeping practices that are in conformity with the OA standards is recommended. This is recommended to MAFC, MNRT.

4.3 Lessons Learnt

Policy development requires the participation of many players. In this study it is possible to bring different disciplines together in a participatory approach to formulate a common goal and hence to propose policy options. This initiates closer coordination in implementation of common activities and future integration of the same in strategies and action plan.

Relevant sectoral development of OA was made through the private sector and other stakeholders without policy or regulations by the government. However government is very receptive of the efforts that already undertaken by the sector; there is no threat that government will dismiss the original goal of the sector when it comes into making OA policy.

It is easier to create OA policy within the general Agricultural policy document since there is already a clause on OA; this is preferable to introducing policy in another sector that has never mentioned organic concepts in their policy documents.

The IA should not be a one-off activity. It should be integrated in the policy making / formulation process. For example TOAM in collaboration with MAFC and other relevant ministries such as Ministries of Industries Trade and marketing could conduct IA for other OA crops and in the process generates sets of informed recommendations to the government and other stakeholders. The experience gained in this study should then be harnessed in other similar situations beyond OA

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