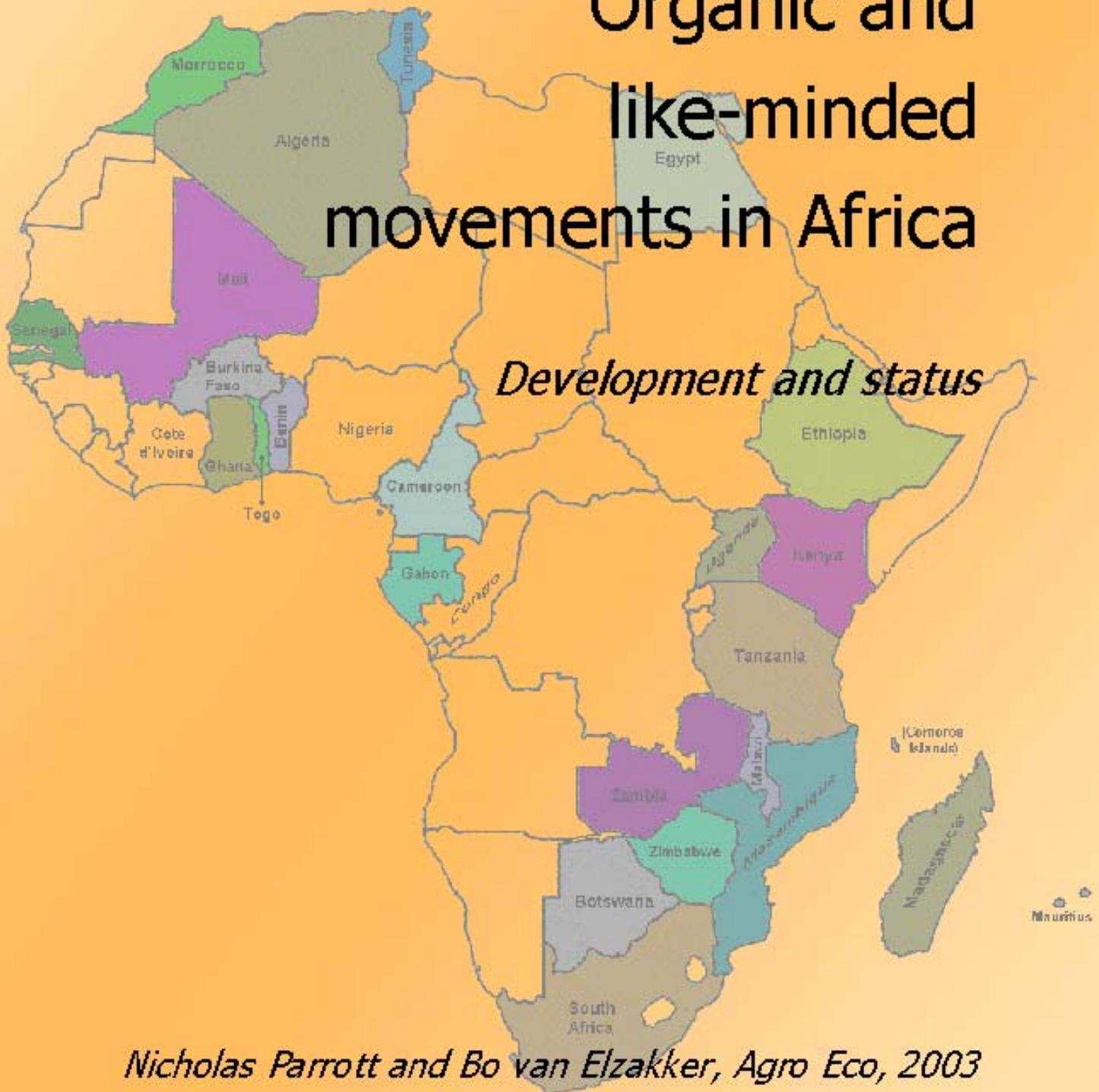




International Federation of Organic Agriculture Movements

Organic and like-minded movements in Africa

Development and status



Nicholas Parrott and Bo van Elzakker, Agro Eco, 2003



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Foreword

Access to food continues to be insecure in Africa, and the reasons are well known to be more often of social, economic and political nature rather than a matter of not sufficient food being produced at global level. Organic agriculture, both certified and non-certified, offers considerable potentials in developing countries. Small farming communities usually have limited access to external inputs, as these are often costly or not available, while their application needs training and information. Green Revolution crop varieties depend on agrochemicals, and their distribution is usually limited to areas with high agricultural potential. Farmers in marginal areas have rarely adopted Green Revolution production systems. Genetically modified crops are being pushed to Africa as a solution to hunger, while this risky, proprietary and expensive technology is very likely to deepen the Green Revolution failure.

Organic production apart from being suitable to marginal as well as productive areas, contributes to soil, water, and biodiversity conservation. It produces the diversity necessary for healthy nutrition, makes use of local resources and traditional knowledge and thus strengthens farming communities. Much farming in developing countries is de facto low or no chemical input farming, but this does not mean it is “organic by default”. Many farming technologies practised by poor people are sustainable, others are definitely not and need improvement.

In view of decreased subsidies for agrochemicals, and the general failure of the Green Revolution in Africa, viable alternatives to improve food security and food sovereignty are gaining momentum. Soil fertility management, desertification control, agricultural biodiversity conservation, agroforestry, Integrated Pest Management, rural community development, urban agriculture among others offer such approaches; many of them use organic agriculture principles and farming techniques.

Organic agriculture in Africa has grown in the past years, to a point where it becomes visible and measurable. In about half of the African countries, a considerable number and variety of farmers, communities and organisations have gained experience, both with certified and non-certified organic production, for overseas markets as well as for local food supply.

IFOAM since many years has supported organic agriculture in developing countries through its “IFOAM Goes Organic” (I-GO) Program. IFOAM plans to expand its activities in Africa by establishing a centre on the continent. It will evaluate experiences, help to identify bottlenecks and potentials, and network and advocate for the development of organic farming in Africa.

The present working paper delivers explorative information, certainly not complete, on which to build the first activities of the IFOAM Africa centre. IFOAM wants to share this very instructive and useful compilation of data and analyses not only with its member organisations, but also with like-minded movements, development agencies, policy makers and donors.

IFOAM is grateful to HIVOS, The Netherlands, for granting the necessary funds through the I-GO Program to produce the present document, and to the authors for their committed work.



Gunnar Rundgren
IFOAM President

Executive summary

The purpose of the report commissioned by IFOAM is to present an overview of the current status of the organic movement in Africa. Statistical data are presented as well as an analytical profile of both the formal (certified) and informal organic sectors. Separate summaries are provided for the three main regions (Northern, Western and Southeastern Africa). 22 African countries have been chosen which together represent around 40% of African countries and 40% of the land area¹. They are the countries where organic agriculture is most developed. Additional data for other countries are provided where it became available.

Five different systems are identified in which organic agriculture is currently practised. They vary less in their farming methods, but more in the type of actors involved:

1. Commercialised, certified organic agriculture without any significant development funding. This is generally practised on large-scale farms and oriented towards organic markets in industrialized countries. Examples include a few large farms in South Africa, Malawi and Zambia, and Northern African export production for Europe on a considerable number of farms in Tunisia and Egypt. An outstanding example is Sekem that won the Right Livelihood Award in 2003.
2. Export oriented certified organic agriculture, supported by development funding, and aimed at improving incomes of small farmers. Uganda, for example, has 28,000 certified farms with 122,000 hectares of land, and Tanzania at least 5,000 hectares of certified land, and 1,000 farms.
3. Poverty and environment oriented agriculture based on organic principles, assisted by development agencies. This system addresses soil degradation and water scarcity as well as food security, and usually supports local initiatives.
4. Organic agriculture initiatives developed by farming communities and local organisations without foreign assistance, as a means of addressing pressing social, economic and environmental problems. Such initiatives are most developed in Kenya, Zimbabwe and South Africa.
5. Research carried out by local, national and supranational institutes: Egypt has a well- developed national research system for organic cotton. Among international research organisations, ICRAF's agroforestry and ICIPE's pest management research contribute substantially to knowledge of organic management.

¹ **North Africa:** Algeria, Egypt, Morocco, and Tunisia

West Africa: Benin, Burkina Faso, Cameroon, Ghana, Mali, Senegal, Togo

A number of approaches to environmental sustainability and food security draw on organic agricultural experience. These like-minded approaches include many of the food security programmes of international donors, as well as governments and non-governmental organisations. They also include soil fertility management and desertification control strategies, Integrated Pest Management, agroforestry, nature conservation, agricultural biodiversity, urban agriculture, and approaches to reduce global warming and to increase carbon sequestration. Many of the strategies and programmes following these approaches place organic farming at the centre of their efforts to counter food insecurity, rural poverty and environmental degradation. Together they can provide the necessary critical mass to substantially promote African organic agriculture within the coming decade.

Much organic production is believed to take place in the informal sector and without certification. Here statistics are hard to come by. In the formal sector, almost 40,000 farms are certified, with 235,000 hectares of land (IFOAM 2003). Uganda has 50% of Africa's certified land and is the only African country where the certified area exceeds 1% of total agricultural land. It has a wide variety of certified products including coffee, cocoa, vanilla, avocados, banana, cotton, dried fruit, pineapples and sesame. This success is partly due to a few large cooperatives initially supported by development cooperation. There is also a strong NGO sector promoting organic agriculture in Uganda. Domestic standards and a certification body are being developed.

Africa has a few other organic strongholds, e.g. cotton production in Egypt, for both export and the local market. However, the organic sector, certified and non-certified, for both export and local market (and subsistence) production, is extremely diverse, making it difficult, on the one hand, to reduce the description to a few dimensions, but on the other hand, offering many opportunities for development approaches. These potentials need further exploration.

While data is scarce throughout the continent, it is particularly so in West Africa. Clearly, the West African organic sector lags behind other regions. While the region has often been thought of as having a potential for developing a formal certified sector, especially with regard to tropical fruit, few organic trading links have been established. Coffee in Cameroon, palm oil and fruits in Ghana, and cotton in Mali, Senegal and Benin, however, show mentionable certified organic sectors. At the same time, agroecological initiatives promoting rural development and food security, and enhancing soil fertility are relatively strong in West Africa. Women are actively engaged in these initiatives. Communication and coordination problems seem, however, to weigh heavy on the development of the sector, language being one of them.

As certification which is usually carried out by Northern organisations, makes local marketing expensive, the need for regional standard setting and certification schemes is increasing. Regional or local standards need to be harmonized with standards of industrialized countries. First positive experiences to reduce certification cost have been made with group certification (IFOAM 2003: Smallholder Group Certification).

South and East Africa: Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe

Proceedings of Three Workshops). Local certification bodies exist in Egypt, Kenya, South Africa, and Uganda. However, the development of regional standards and certification systems needs support, advocacy and coordination.

There is a notable lack of integration between organic agriculture practitioners and the research community. Practitioners' knowledge and expertise is usually retained as grey literature or is not published. This is not only a handicap for access by other user groups, but it also reduces opportunities for independent testing of claimed project success.

While research organisations most often ignore organic agriculture, there are a considerable number of researchers who focus on related principles and practices. The organic movement often misses out, at least for some time, on such useful research results, e.g. a mycopesticide developed by IITA's Biological Control Centre in Cotonou to control the short-horned grasshopper. Improved information exchange between the different communities could be very beneficial, and obviously, adequate facilitation is needed.

IFOAM as an international federation (www.ifoam.org) has 72 African member organisations, who with almost 10% of the total membership add to a rather high proportion of total membership, taking into account that the sector is not well developed in Africa. It cooperates with supranational initiatives for organic agriculture in Africa, such as the African Council of Organic Associations (Zambia), Agrecol Afrique (Senegal), African Network on the Development of Ecological Agriculture (Ghana) and the Participatory Ecological Land-Use Management (PELUM, Zimbabwe). In view of the needs and opportunities, IFOAM will set up an Africa centre in early 2004. Its first activities will be built on the database presented by this study.

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We are hugely indebted to a large number of individuals who have helped in preparing this report. They have helped with identifying sources of data, providing information on projects that they are involved in and in commenting upon draft profiles for individual countries. Our thanks to all concerned. Particular thanks are due to Christian Schader at IFOAM who has acted as point of contact between our two organisations and always been prompt and helpful in replying to our questions.

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1 Introduction

1.1 Aims and Objectives

This report was commissioned by IFOAM under the I-GO programme. Its purpose is to present a detailed overview of the status of the organic and like-minded movements in Africa and of their potential for development. It has been prepared as background strategy document to inform the strategies to be adopted by the planned IFOAM Africa centre. It has four main aims:

- To provide an overview of the development and status of organic farming within Africa, with reference to the overall farming situation there;
- To provide a statistical summary of organic production within Africa;
- To provide profiles of the development of the organic sector within 20-25 African countries, and
- To provide summaries of the situation within the three regions of Africa: North; West and the Southeast.

1.2 Structure of the Report

This report is divided into five sections. The first of these describes the selected countries and methods of investigation used. It points the reader to the sources of literature employed. The section of literature, regarding the formal certified sector is far more developed than others. The greater detail, and frequent updating of this literature, compared to that relating to development led and local organic practices, probably gives an exaggerated impression of its size and importance *viz a viz* the other two approaches. This section also seeks to contextualise the role of organic farming in Africa by briefly summarising the main challenges facing African agriculture. In particular it focuses upon how the organic movement can position itself *viz a viz* contemporary discourses surrounding the future of farming in Africa.

The second section provides a more detailed examination of these different approaches to organic farming. It provides aggregate data for certified organic land and commodity production in Africa. It discusses different approaches for evaluating the benefits of certified organic production. It then examines the actors involved in promoting certified organic production and the strategies that they adopt. The section on formal organic production concludes by examining the many challenges involved in constructing and maintaining transparent supply chains, challenges that are exacerbated by the continent's political and economic climate and lack of infrastructure. The second part of this section identifies the institutions involved in explicitly promoting organic agriculture in Africa. It provides an examination of IFOAM's role and membership in Africa. It then goes in turn to identify several groups of actors: African networks,

international organisations, governmental development agencies, NGOs and civil society organisations, and private sector consultants. The final part of this section identifies like-minded initiatives, development objectives and organisations that already have organic approaches and/or where there is a strong potential. These include a number of UN conventions (on climate change, desertification and biodiversity) as well as other broad development objectives such as food security and gender issues. The section also briefly discusses the weak existing linkages between the organic sector and formal research institutes, and flags this as a potential area for building future links.

The remaining three sections examine the state of organic agriculture in North, West and South and East Africa respectively. In each region a selected number of countries, known to have an active organic sector are profiled. Table 1 provides details of these countries. It was initially intended to include three others (Congo, the Comoros Islands and the Ivory Coast). However, in the event there was very little data available on these countries and so full profiles were not developed. Each regional area has, at the end, a section for “other countries” where we have recorded the snippets of information for countries where there was insufficient information to build up a complete country profile. The countries for which we have developed full profiles are also shown in Figure 1.1. They represent 41% of African countries and about 40% of the landmass of Africa. Organic farming is substantially less developed and/or less documented in the remaining African countries.

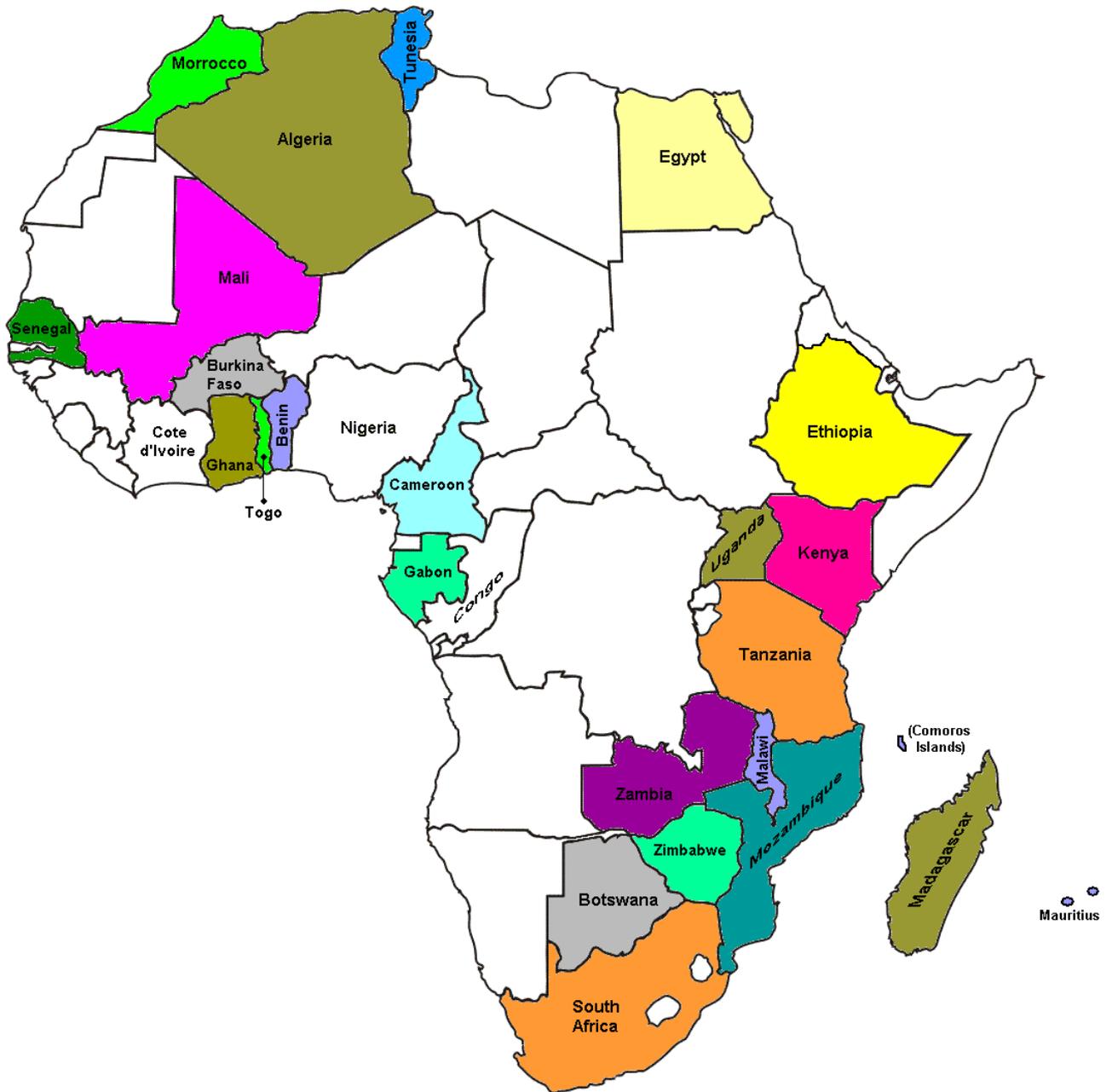
Table 1.1: Countries with Known Organic Production

North Africa (4)	West Africa (7)	East and South Africa (11)
Algeria (a)	Benin (a, b, c)	Ethiopia (c, d)
Egypt (a, b, c)	Burkina Faso (a, b, c, d)	Kenya (a, b, c, d)
Morocco (a, c)	Cameroon (a, b)	Madagascar (a, d)
Tunisia (a, c)	Ghana (a, b, c)	Malawi (a, b)
	Mali (d)	Mauritius (a)
	Senegal (a, b, d)	Mozambique (a, b, c)
	Togo (b)	South Africa (a, b, c)
		Tanzania (a, c)
		Uganda (a, b, c)
		Zambia (a, d)
		Zimbabwe (a, b, c)
	Other Countries: Gambia, Ivory Coast, Nigeria, Sierra Leone	Other Countries: Congo Democratic Republic: Lesotho, Namibia, Réunion

Initial reasons for selection:

- a. Known exporter of certified organic produce;
- b. At least two IFOAM members (2002 data);
- c. Consultants have experience in and/or good contacts within these countries;
- d. Known presence of other closely aligned initiatives.

Figure 1.1: Countries Covered by the Survey



1.3 Methodology: Data Sources, Biases and Gaps

This report was based on searches of the known literature (in both traditional and electronic form) which was used as the basis for identifying key trends and issues within the profiled countries and Africa as a whole. Personal contacts were made through IFOAM's and Agroeco's networks to discuss gaps and omissions in the data and identify sources for filling these. Finally, copies of the country profiles were distributed to known individuals (generally, but not exclusively, IFOAM members) requesting comments on errors, omissions and bias. More than 150 e-mails were sent asking for comments on the accuracy of the country profiles. This was done in anticipation of the usual problems of communication and responses on a project of this sort. This was compounded by the very short time period in which this report had to be completed and that this survey fell during the holiday season in Europe. Response rates were sufficient to guarantee feedback on most of the countries². At the time of submitting this report we do expect further comments and feedback which will either be forwarded or incorporated into a final version.

The Formal Organic Sector

The most detailed and extensive sources of information relating to the organic sector relate to formal certified production. These are largely drawn together by market intelligence agencies and development institutes promoting "aid through trade" (see for example ITC, 1999; ITC *et al*, 2001, ProFound & Pierrott, 2002). Specialist reports on specific commodities, notably organic cotton (Ton, 2002) and beverages- tea, coffee and cocoa, (SIPPO, 2002) provide extra detail about some important export crops. Annual surveys of certifying agencies undertaken by SOL provide an overview of total certified land and producers, although in the case of Africa this information may have often only been partial. Updates and insights from consultants, certifiers and local experts supplemented our review of this literature. The apparent precision of some of this data can be misleading. Significant changes can occur in short periods of time, as new projects are initiated and others fall by the wayside. Other factors may also influence inaccurate reporting.³

The Informal Organic Sector

It is far more difficult to gauge the extent of uncertified organic production within Africa. For one thing there is the problem of defining, in the African context what we

² The countries from which we did not receive any feedback (and hence where we have not been able to draw such a full picture) are: Ethiopia; Benin, Togo, Mali and Burkina Faso. Notably four of these five are in West Africa, which underpins our point about communication with this part of the continent being more problematic.

³ We have indicated in the text where figures do not tally with our expectations and where we suspect that such factors may be at play.

mean by organic agriculture (see section 1.5). In recent years a number of publications have highlighted what appears a growing interest in organic and sustainable agriculture in the South. (See for example; Devlin and Zettel, 1999; Greenpeace *et al* 2002; Parrott & Marsden, 2002; Scialabba & Hattam 2002; Uphoff (Ed) 2002a; Pretty & Hine, 2001)⁴. Many of these reports include both organic and Low External Input Sustainable Agriculture (LEISA) systems together and it is often difficult without extremely detailed analysis to isolate the organic initiatives from the LEISA ones. None of these reports purport to provide a comprehensive overview of organic (or sustainable farming) in the South.⁵ To our knowledge no such work of this nature has been undertaken - on a global, continental or even national basis -, at least not in the South.⁶

The experiences reviewed in these reports show a considerable bias towards externally funded development projects. While this is understandable (in terms of access to communications and need and desire to conduct and publicise project evaluations) we suspect that it leads to a considerable over-estimation of “project led” organic farming initiatives and a parallel underplaying of the importance of locally led indigenous experimentation and development. This unfortunately further reinforces the perception that organic farming in Africa is a Northern led phenomenon.

We believe that there is a considerable range of local and indigenous initiatives exploring the potential of organic farming. Often these may not take the form of “projects” but may simply be the result of farmer experimentation and innovation. Often it is only when they become successful, formalised as “projects” and the object of external interest and evaluation that the North notices them. In some countries (notably Kenya, Zimbabwe and South Africa) we have identified a wide range of agro-ecological and organic initiatives. These suggest that ecological farming may be acquiring a critical mass as a development tool at the grassroots level in these countries.

Despite this we believe that we have done little more than scratch the surface in respect of identifying grassroots initiatives. For example there are seven IFOAM member organisations in Togo, all evidently NGOs, yet we have only found details of the activities of one. The lack of externally funded / assisted projects in Togo at the present time may be one crucial reason why there is so little information available about the status of the organic movement. Similar observations apply to several other African

⁴ These reports draw on a range of resources to identify organic and agro-ecological farming approaches that are emerging in the South. Their data sources include literature searches, project reports and evaluations and structured questionnaires. Some focus on both formal and informal organic production (see for example Parrott & Marsden, 2002; Scialabba & Hattam 2002). The others dedicate considerable attention to organic approaches within the broader rubric of low external input sustainable (LEISA) agriculture.

⁵ Pretty and Hine’s report is probably the most comprehensive to date. They conducted an audit of 208 sustainable agriculture projects in 52 countries. 29 (c.14%) of these were fully organic (though not necessarily certified). Twelve of these are in Africa and are reported within the various country profiles.

⁶ However, the FAO have recently started to distribute a questionnaire on global organic farming, with the intention of developing a more authoritative database, which will be published in the format of an FAO statistical yearbook. This should when realised go some way to filling this present information gap.

countries with security problems or strained diplomatic relations with donor communities. The emergence of national organic movements in some countries (notably Kenya and Uganda) and of international networks (e.g. PELUM in South and East Africa, Agrecol Afrique in West Africa) holds the hope that these individual initiatives will be better recognised and supported.

At the same time we also believe that the project-based literature is also under-reporting the extent to which organic farming is being used as a development tool. It appears that there are many donor organisations that are supporting organic agriculture within broader programme areas or within projects⁷. These may focus on sustainable agriculture, sustainable resource management, poverty alleviation, or a range of other primary objectives, all of which are finding the value of organic agriculture as a tool, rather than treating it as an end in itself. We explore these areas in more detail in section 2.8. It is often difficult to track down or verify individual organic components within these programmes. We know that they exist, but at this point they are difficult to quantify. In this respect the information gathered here is indicative of the potential of organic agriculture in meeting broader development objectives rather than being a comprehensive overview.

Organic Research

We have also attempted in this report to begin to map the extent and status of organic research in Africa. Within the time constraints of this project we cannot claim to present a full picture. Many researchers with an interest in organic production tend to publish within their own disciplinary fields, which cover a wide array of natural and social sciences. For practical reasons we have had to confine our search to material published in the mainstream organic literature (particularly proceedings of IFOAM scientific conferences). We have found encouraging signs. Researchers and lecturers within the university system who are actively carrying the organic banner: setting up courses, liaising with government departments and farmer groups. We have also found some encouraging examples of organic research done by institutes who traditionally do not regard themselves as part of the organic community (notably ICRAF and ICIPE - see country profile for Kenya). In general however the links between national and international research institutes (particularly those within the CGIAR network) are poorly developed and could be strengthened. We briefly explore this issue in section 2.9.

1.4 Discourses on Organic Farming in Africa

The people of Africa are more directly dependent on agriculture than in any other continent. In many of the countries profiled in this report 75% or more of the population are subsistence farmers. It is a continent where, to date, the Green

⁷ This point is evident from unpublished reviews that the authors have seen on the potential interest of the donor community in organic farming.

Revolution has failed to be taken up. Input levels are low (the median rate of fertiliser use in our study countries is 10 kg/ha). Much farming in Africa is *de facto* no or low input. Many countries experience water scarcity (defined as less than 1,000 cubic metres available per person per year- or 3 litres per person per day) and many more experience water stress (up to 1,699 cubic metres available per person per year). Productivity is generally very low, often insufficient to guarantee year round food security. In the majority of Southern and Eastern African countries that we profile in this report 40% or more of the population is judged (by the FAO) to be malnourished. Nearly every African country is in receipt of food aid from the World Food Programme.⁸ Yet at the same time many are dependent on agricultural exports as their primary source of export earnings. High population growth rates and resultant environmental pressure on marginal lands all combine to create a sense of crisis and urgency whenever African agriculture is discussed. The issues facing African agriculture include nutrient depleted soils, unreliable rainfall patterns, soil erosion and deforestation. These interlocking cycles of environmental degradation create continuing human misery. In turn they provide a strong impetus for high levels of rural / urban migration, which brings forth a further sequence of problems.

At the same time the prominence afforded to agriculture within development circles has been much diminished of late. Interventions in agriculture simply have not been successful and do not pay back. For example, World Bank lending devoted to agriculture (on a global level) has declined from 26% in the 1980s to 10% by 2000 (Millstone and Lang, 2002, p.40). There are signs that in Africa this neglect of agriculture may be about to alter. In 2002, Kofi Annan announced an independent review of the state of agriculture in Africa, conducted by a non UN body. An interim report from the international committee dismisses LEISA and organic approaches to farming (in one line) which are said to “*offer limited opportunities*” for improving productivity in what they identify as “*priority agricultural systems.*”⁹ (Interacademy Council Study Panel, 2003). The final report is planned to be published in autumn 2003. It is likely to be influential in determining future resource allocation and agricultural support structures in Africa. One of the chief architects of the report, Rudy Rabbinge, was recently quoted as saying that organic agriculture was *an immoral option* for African farmers¹⁰. At the same time the report envisages a strong potential role for GMOs in assisting the development of African agriculture. It would appear that the advocates of modernisation and a reductionist scientific approach have learnt very little from twenty years or more of empirical evidence highlighting the dangers and failures of the Green Revolution and its inappropriateness to subsistence and near-subsistence

⁸ The exceptions to this are South Africa, Zimbabwe, Western Sahara, Togo, Lybia and Nigeria. In the case of Togo, Western Sahara and Zimbabwe this is more due to political considerations than any lack of need.

⁹ Defined as those where food insecurity is the most severe and the scope for productivity gains are the highest.

¹⁰ He later claimed to have been misquoted but the anti-organic thrust of his presentation was undeniable.

farmers. Yet, on the other hand, it is worth asking what efforts the African organic movement made to put its case before this panel?

The organic movement could well benefit from trying to understand the reasons for this apparently illogical rejection of the potential of organic approaches as a viable solution to Africa's development problems. We suggest four main reasons organic farming remains further marginalized from mainstream development agendas:

- The mindset and objectives of most agronomists and agricultural economists, which remains largely based around production functions and maximising yields of single crops. This reductionist approach to agriculture fails to take into account issues of ecological sustainability and social appropriateness. Most of all it does not recognise the political and economic contexts of massive subsidies that have propped up the industrial, mono-cultural approaches to agriculture that prevail in the North: approaches which, despite their evident shortcomings, are held up as a model for other countries to follow. The failure of the organic movement to provide documented and peer reviewed evidence of the achievements of organic agriculture in enhancing farm productivity, food security and the self regenerative capacity of farm ecosystems in Africa and elsewhere in the developing world plays a contributory factor in this.
- The social and economic contexts in which organic farming has developed in the North. These have been reliant upon premium markets and government subsidies for more environmentally friendly and (though oft-disputed) healthier production systems. The cost to farmers of withdrawing from the agri-industrial treadmill is generally one of lower yields (at least in the first few years). This leads to a common misconception that this pattern of lower yields would recur in other dissimilar situations. In Africa in particular there are neither the available subsidies nor premium markets to offset this and the suggestion that yields should be sacrificed to promote sustainability is self-evidently morally abhorrent.
- Organic farming is widely perceived as meaning “farming without chemicals.” In the North this may be the most significant difference between “conventional” (i.e. industrialised) and organic farming practices. In reality organic farming is more sophisticated than this and this difference becomes evident when thinking about farming practices in the South (and particularly Africa). Many traditional agricultural practices such as slash and burn and unimproved fallows may be organic in the sense that they do not use synthetic inputs. Yet they are far from sustainable, especially in the context of low productivity, high population growth and competing land uses. Much farming in Africa is de facto no or low input and as such can all too readily be presented as a “failing form” of organic farming. As Harris et al note *‘Isolated (organic) techniques are sometimes practised, (in African farming systems, but) there is a general lack of an integrated approach to soil fertility and crop protection management and under-exploitation of the full range of techniques which would maximise the benefits of locally-available natural resources’*. More sophisticated definitions and understandings of organic farming need to be developed that emphasise the importance within organic farming of “closed systems”, agro-biodiversity and making sustainable use of local resources.

At the same time these techniques need to be widely taught and disseminated within farming communities across Africa.

- Finally, the global trading environment and the demand for organic produce in the North has led many entrepreneurs and development agencies to identify organic production in the South as a means of meeting often-lucrative niche markets in the North. National governments in the South, and even FAO, see organic farming primarily as a way of generating much-needed foreign exchange. To some extent the organic movement has allowed itself to be co-opted into this agenda, which over recent years has provided funding opportunities to develop organic production systems and to help resource-poor farmers increase their cash incomes. This often tends to be the most visible aspect of organic production (certainly in the case of Africa, see section 1.3). An excessive focus on the role of formal certified organic production, meeting the demands of generally well to do Northern consumers can all too easily be misinterpreted as a new form of green colonialism. The damaging divisions between the organic and agro-ecological movements in South America can be largely attributed to this fundamental difference of opinion about whether ecological farming systems in that part of the world should be oriented towards improving food security or delivering to the global trading regime. While these tensions have not had the same divisive effect that they have had in South America, the potential for them to emerge in Africa cannot be ignored. This is particularly true in countries such as Tanzania and Kenya (and most notably Zimbabwe) where substantial organic export industries (often based on large, foreign owned or managed holdings) co-exist alongside significant levels of poverty and malnutrition. Whilst the organic movement can do little to address these problems of inequality by itself, it should remain aware of the dangers of being seen as maintaining or even exacerbating them by being overly identified with export production.

2 Formal and Informal Organic Farming in Africa

2.1 Certified Organic Land

Every year, Stiftung Ökologie & Landbau (SÖL, The Foundation for Ecology & Agriculture) conducts a global survey of certified organic land (Yussefi and Willer, 2003). Figures for Africa only go back three years and while they have shown an increase over this period, this is partly due to more accurate data collection.¹¹ In global terms Africa accounts for only 1% of total certified organic land, but given that most organic farms in Africa are very small family smallholdings, the continent accounts for almost 10% of certified farms (ibid. 2003, p.19). Figures for individual African countries are provided in Table 2.1.

Interestingly, the figures show that the great majority (76%) of Africa's certified organic land is in the south and east of the continent, with more than 50% in Uganda and almost 20% in South Africa. North Africa accounts for a further 19% and West Africa contains just 5% of Africa's certified land. Although data on numbers of farms are not available for every country, the figures that are available suggest that farm profiles differ substantially between the three different regions. In North Africa, the average farm size is 32 hectares, reflecting generally larger farm sizes and the relatively more commercial orientation of farming in this region. Between 25-33% of the population is engaged in farming, compared to sub Saharan African where the figure in most countries is generally 60% or higher). Figures for the numbers of farms in West Africa are far from complete, however, on the basis of those countries for which data is available, farm sizes appear very small, with an average farm size of 1.2 hectares. Southern and Eastern Africa falls between these two extremes with an average farm size of 5 hectares. However this figure masks substantial differences between countries. In Malawi, Zambia, South Africa, and Mauritius for example, the average size of holdings is quite large, ranging from 40 hectares upwards. Thus, the certified organic movement has a very different profile and orientation in these different regions and countries.

¹¹ As authors we have reservations about some of these figures, which in some cases we believe may be inflated. We would also point out that these figures can fluctuate dramatically from one year to another, as projects are initiated, or come to an end. Political and economic instability, market volatility and poor communications also contribute significantly to this (see section 2.5 below).

Table 2.1: Land Under Organic Management & Number of Organic Farms in Africa

Country	Date	Organic Farms	% of all Farms	Organic Hectares	% of Agricultural Area
NORTH AFRICA					
Egypt	2001	460	0.02	15,000	0.19
Morocco	2000	555	0.01	11,956	0.14
Tunisia	2001	409	0.08	18,255	0.36
TOTAL		1424		46,211	
WEST AFRICA					
Benin	2001	359 #		197 #	0.003
Burkina Faso	1999	+		+	
Cameroon	2001	N/A		2,500	0.03
Ghana	2001	N/A		5,453	0.04
Senegal	2001	3,000		2,500	0.1
TOTAL		N/A		10,652	
Kenya	2000			494	0.002
Madagascar	2001	300		1,230	0.005
Malawi	2001	6		298	0.01
Mauritius*	1995	3		175	0.15
Mozambique	2001	5,000		N/A	
South Africa	2001	250		45,000	0.05
Tanzania	2001	991		5,155	0.01
Uganda	2001	28,200		122,000	1.39
Zambia	2001	72		5,688	0.02
Zimbabwe	2001	10		40	
TOTAL		34,832 [^]		178,080	
SUM		39,375		235,825	

(Source: SÖL-Survey, February 2003)¹²

¹² We have made a few amendments to these figures based on this survey, *but only on the basis of published data.*

*: ITC et al (2001) suggest that 2 of these three farms have since abandoned organic production.

#: Ton (2002)

+: Organic farming exists In Burkina Faso but we do not have any figures.

^ This figure excludes Kenya for which no detailed figures are available.

Data sources for table: Unless otherwise specified: **ITC (1999)**. **Benin:** René Tokannou, REDAD. **Cameroon:** **Ghana Madagascar:** IMO, Institute for Marketecology **Egypt:** Dr. Mohammad Yousri Hashem, Center of Organic Agriculture in Egypt **Kenya:** GTZ **Malawi:** Peter Mwango, Shire Highlands Organic Growers Association, **Morocco:** L. Pr. Lahcen Kenny, Institut Agronomique et Vétérinaire Hassan II, Agadir **Mozambique:** ZMP, OeKOMARKT Forum, Issue 45, 11/8 2002 **Senegal:** Beat Geiser, AGRECOL AFRIQUE, **South Africa:** Farms: Piet Gernaat, Biodynamic Agriculture Association of Southern Africa, Farmland: FAO (2002): **Tanzania:** Institute for Marketecology and Naturland Auslandsstatistik **Tunisia:** Prof. Dr. Mohamed Ben Khedher **Uganda:** Farms: Michael Hauser University of Agricultural Sciences, Vienna, Farmland: Charles Walaga pers. comm.in: FAO (2002): **Zambia:** Susie Burgess, Organic Producers and Processors Association of Zambia, **Zimbabwe:** The Organic Standard, Issue 17, September 2002.

2.2 Commodities

Certified organic land in Africa is almost exclusively geared towards export markets. Given the dominant trade patterns in Africa, in which 60% of agricultural exports go to Europe, and the relative strength of organic demand in many European Countries, this means that certified organic production in Africa is overwhelmingly oriented to meet European markets.¹³ Thus, it must be responsive to demand, as well to quality standards and other issues of contract compliance. Table 2.2 lists the commodities that we identify as being exported from individual African countries. An analysis of market trends, opportunities and blockages is beyond the scope of this report- detailed studies on some commodities can be found in Ton (2002) for cotton, SIPPO (2001) for tea, coffee and cocoa, and Koekoek (2003) for groundnuts. More general studies can be found in CBI (2003), ITC et al. (2001) and ITC (1999).

¹³ The exceptions to this are Egypt and South Africa where there is some domestic interest in local produce.

Table 2.2: Organic commodity production in Africa

Product / Country	ALG	BEN	B.F.	CAM	COM	EGY	ETH	GHA	I.C.	KEN	MAD	MAL	MAU	MOR	MOZ	SEN	S.A.	TAN	TUN	UGA	ZAM	ZIM
Fresh Vegetables			?	?		#		?		#	#	#				?	#		#	#	#	
Bananas				#				#								#						
Citrus Fruits, Grapes, Wine	?					#								#			#		?			
Tropical fruits (fresh) ¹⁴			?	#		#		#			#					#	#	#		#		
Dried Fruits	#		#	?		#					#			#				#	#	#		
Coffee				#			#			#	#							#	#	#		
Tea																		#		#		
Cocoa				#				#	?		#							#				
Sugar											#		#									
Cotton		#				#						?				#		#		#		
Coconut Oil											?				#							
Palm Oil								#			#							#				
Olive Oil																			#			
Ground Nuts (peanuts)																						
Tree Nuts (cashew, shea)										#								#				#
Sesame			#			?														#	#	#
Herbs (culinary)						#	#	#		#	#	#		#	#		#		#		#	#
Spices (culinary)					#	#	#				#	#			#		#	#		#		#
Medicinal / Therapeutic						#					?			#					#			#
Essential Oils											#							#			#	#
Honey																		#	#		#	#
Other Forest Products	#											#			?			#	#	#	#	#
Cereals						#														#	#	#

Source: Walaga (2003) and discussions with organic and trade consultants.

Abbreviations for countries: Algeria; Benin; Burkina Faso; Cameroon; Comoros Islands; Egypt; Ethiopia; Ghana; Ivory Coast; Kenya, Madagascar; Malawi; Mauritius; Morocco; Mozambique; Senegal, South Africa; Tanzania; Tunisia; Uganda; Zambia; Zimbabwe.

¹⁴ Avocados, mangoes, pineapples, papaya etc.

2.3 Evaluating the Benefits of Certified Organic Farming

Whilst acreage and numbers of farmers involved in organic farming are one way of calculating the spread of organic farming, they are not very good indicators for capturing the economic significance of activities within the sector. For example, one acre of grazing land in the Sahel does not have the same productive capacity as an acre of vegetable garden. One way of measuring the economic significance of organic farming methods is to look at the additional returns accruing to producers by virtue of their being organic: “the value added”. For some crops this can be 20% or more above the conventional price.

It is somewhat misleading, however, to focus upon premia as the sole indicator of the benefits of organic farming. Organic farming often involves substituting purchased external inputs with ones that are locally available, thereby increasing the potential for increasing the margin of the farm¹⁵. It may also reduce financial risk by avoiding the need to go into debt (at often high interest rates) to purchase inputs. For many farmers a switch to organic farming may imply opening an access to new markets that previously did not exist. It may also enable different social groups who were previously not involved in cash crop production to do so. This is particularly true for women, who in many African cultures do not have access to the inputs or credit required to engage in cash crop farming. In these last two cases it is the gross earnings rather than the margin of the premium that should be considered as the benefit.

The premium offered to organic farming could also have knock-on effects on the prices offered in local conventional markets, creating competition as local conventional traders seek to maintain their supply base. In this case the benefits become far more diffuse and widespread. A final consideration is that prices paid for organic produce -especially for produce that is also fair-traded - tend to be agreed on in advance of the growing season. This can have substantial benefits for farmers, protecting them to some extent from volatility in global markets.

An evaluation of the EPOPA programme carried out by SIDA in 2000 suggested remarkably positive outcomes. In 2000, circa 24,000 farmers were participating in five projects receiving a premium of between 15-30% above the ordinary farm gate price. In some instances it was higher as competition created a spiral effect. The prices for sesame tripled over one year as a result of the project. The baseline income of farmers varied from between \$170 - \$1300 per annum. Assuming an average increase in income

¹⁵ However, in some instances this figure will need offsetting against higher labour inputs. Ways of calculating the net benefit will depend on how farmers (and individual members of farm households) calculate the value of, and returns to, on-farm labour resources. This can vary substantially. For example, some authors claim that participation in the off-farm economy provides important stability in farm income that encourages investment in long-term sustainability measures within the farm. Other studies (see case study of Zagora in Morocco) suggest the opposite: that the economic and cultural attractions of participation in the cash / tourist economy are a barrier to the maintenance and development of labour intensive ecological farming systems.

of \$50 per farmer, the project led to an annual increase in incomes of circa \$1.2 million in these five projects. (Schoenmakers *et al*, 2002)

However, many of the benefits of organic farming do not register in the cash economy but manifest themselves in other ways. Most small-scale farmers in Africa only grow a small portion of their crops for sale, with the large majority for domestic consumption or local trade and barter. Organic farming techniques are widely recognised as increasing food security, especially in the rain-fed agricultural systems that characterise the great majority of Africa. This is likely to be an equally, if not more important, consideration for farmers, (see SWOT analysis, in table 2.5)

2.4 Driving Forces for Certification in Africa

Despite the evident benefits of certified organic production presented above, it also involves many costs and many risks. This section looks first at the actors involved in setting up certified organic production systems in Africa, before going on to explore some aspects of the present day situation.

Certified organic schemes tend to be driven either by the private sector or come about as the result of development ‘trade not aid’ projects. Private sector schemes come about either as a result of farms or farmers’ groups looking to develop new markets, or buyers in the North looking for new sources of organic products and approaching existing (conventional) producers. In private sector schemes the farms involved tend to be larger, better organized, more commercialized and already involved in export-oriented agriculture. Thus there is often a supply chain already in place and farmers have some experience of the quality and logistical requirements of northern buyers. Often the most challenging aspect of such enterprises is the conversion of farming systems from conventional (and sometimes relatively monocultural and/or high input) to organic systems. Examples of this type of approach would include many of the larger farms in North Africa, Tanzania, Malawi, Mauritius, Zimbabwe and South Africa (see country profiles).

For development led projects the challenges can be quite different as these are designed to benefit poorer, small farming households, who often do not meet these preconditions. Frequently, these farmers are already farming organically – or almost organically, although more often by default rather than design. They may have had little exposure to Northern values, standards and norms. The challenges facing such projects include creating viable producer associations and supply chains that can ensure full traceability from farm to point of sale as well as helping enhance the sustainability of the productive base and solving problems related to organic techniques. Farmers and other actors in the supply chain have to understand and adhere to organic practices and Western quality standards. Separate, or at least segregated, collection, storage and, if necessary, processing arrangements and facilities need to be set up, as well as national and international transportation and market outlets arranged. Examples of this include the successful projects run by EPOPA in Uganda and Tanzania and GTZ/Protrade’s activities in several other countries.

2.5 The Challenge of Certified Organic Production in Africa

Certified organic export-oriented organic schemes face two types of problems. The first, which should not be underestimated, is the general lack of reliable infrastructure in most of sub-Saharan Africa, a problem faced by all export-marketing initiatives in Africa. Poor quality and badly maintained roads and vehicles, rail links and rolling stock all pose problems for transportation. Lack of refrigeration, erratic power supplies, poor communications, underdeveloped banking and credit systems and, sometimes, political and economic instability, all raise serious and often insuperable logistical problems. Cultural misunderstandings can often further complicate the effective and efficient management of supply chains.

The second issue specific to organic systems is that of certification which is a necessary precondition for tapping into premium organic markets in the North. Yet in countries where food security and nutritional shortages are more pressing problems, it is understandable that governments dedicate relatively few resources to developing standards and inspection systems that are only applicable to a very small minority of producers, and perceived as a luxury “niche”. Consequently, organic production systems tend to be regulated by “fly-in” certifiers and inspectors from “first world” organisations. The cost of such services is a major barrier to market engagement. Moreover, inspection procedures developed in the North are not always well adapted to local conditions, especially where there are large groups of smallholders, and where it would be impractical to visit each one¹⁶. The lack of local standards, certification and inspection capacity also means that Southern countries contribute relatively little to the development of standards (Rundgren and Lustig, 2002). It also has the disadvantage of impeding an African sense of ownership of organic farming which, *in extremis* can lead to it being viewed as a new form of neo-colonialism.¹⁷

At present, Tunisia is the only African country with its own organic (EU compatible) standards, certification and inspection systems. Egypt and South Africa have both made significant progress in this direction. Hermann (2003) reports that Madagascar has also made some progress in this respect but it may be some time before a fully functioning system is in place, given the political instability that the country faces. All other African countries are reliant upon foreign standards and certifying bodies, which is a major constraint on the development of the organic sector. Often it creates a “chicken and egg” situation, where the market does not develop because the necessary infrastructure is not in place and the infrastructure is not there because the market is inadequately developed.

SIDA, which has financed much of the EPOPA programme, is currently giving consideration to funding the development of local certification and inspection capacity for South and Eastern Africa in the next phase of the EPOPA programme. SIDA is

¹⁶ These problems can be overcome through internal quality control schemes which remove the necessity to inspect every farm.

¹⁷ In Latin America, debates of this type (and the underlying issues of trade and self-reliance) have led to serious divisions between the organic and agroecology movements, which although practising a very similar style of farming, have radically different perspectives on why they do so.

reviewing a recently completed report that identifies the work required and the countries that are in a position to take such initiatives forward (Rundgren and Lustig, 2002). These are most likely to include South Africa, Uganda, Tanzania, Zambia and Kenya. Other countries in the region may also be able to benefit by participating in inspection and standard setting programmes.

However, six years ago a similar attempt at developing certification capacity was initiated in West Africa. The Ecofair Foundation (Netherlands) prepared a report on strategies for certification in West Africa. They were supported in this effort by IFOAM and NOVIB and organised national consultation meetings in Senegal and Ghana. Yet the results of this initiative remain unclear.

In compiling this report we have been struck by the number of organic projects that have fallen by the wayside. More often than not, this has been due to the structural, political and economic challenges of working within Africa rather than the peculiarities of organic production and certification. Examples of projects that have fallen by the wayside (reported in more detail in the country profiles) include:

- Two of the three sugar plantations in Mauritius that converted to organic production are reported to have subsequently abandoned it (agronomic reasons and problems of meeting standards)
- Exports of organic pineapples from several West African countries (including Cameroon, Togo, Ghana and Cote d'Ivoire) have collapsed because of a failure to find an alternative method to induce flowering after new organic standards were introduced. This in turn has made it difficult to plan production or set delivery targets with buyers or shippers.
- Several initiatives in Madagascar have fallen by the wayside, for a number of reasons, including inability to maintain quality control, communication and political instability.
- Political instability in Zimbabwe and Cote d'Ivoire has effectively halted organic exports from these countries, with the exception of vegetables and herbs.

This sad catalogue illustrates that there are many challenges and obstacles involved in setting up and maintaining certified organic schemes in Africa. One further element of instability in the certified organic sector appears to be that of maintaining trade relationships with European markets. Judging from the examples above, this apparently is not always caused by the peculiarities of organic requirements, which sometimes can be a contributory factor, but is more of a structural problem. Local standard setting and certification schemes may well help to overcome some of the problems outlined in this section and will also go some way to help increase African sense of ownership. However, at the same time they will need to be sufficiently rigorous and transparent to maintain the support and confidence of importers and consumers in Europe.

A further difficulty facing “trade not aid” development projects, which we briefly wish to touch upon, is that by their very nature they tend to be set up for a fixed time, after which point they are expected to become viable, self sustaining and locally managed projects. In many cases, considerable attention is given to developing the capacity to

make such projects sustainable in the long term, through various “flanking activities”. Examples of sustained projects are sesame production in Burkina Faso, Sekem in Egypt and Lango in Uganda. In other cases the challenges involved in maintaining long term viability prove too great: maintaining certification is one of the largest problems here. This problem is not limited to trade based initiatives but is one of the central paradoxes involved in setting up “projects for sustainability.”

2.6 IFOAM in Africa

IFOAM began its first programme for enhancing organic agriculture in Africa, Asia and Latin America in 1995, when it established the Third World Working Group. The programme “Organic Agriculture until 1999” (OA99) started in April 1996. It was sponsored by HIVOS, Novib and the Dutch Government and was completed in 1999. Based on the experience and the evaluation of the OA 99 programme, the OA 2002 programme was developed during 1999, but limited funds prevented it from being fully implemented. At the end of 2000 IFOAM finalised the planning of its new four-year programme “I-GO”, which is again funded by HIVOS and the Biodiversity Fund of the Dutch Government. The decision to open an IFOAM centre in Africa represents a new level of commitment in IFOAM’s involvement in Africa, and a challenge for African members and potential members to shape its activities. At present there are seventy-two full or associate members of IFOAM in Africa, which represents 8% of the world total. IFOAM has members in 20 African countries, and there is a very high proportion of NGOs within the membership.

Table 2.3: IFOAM’s African Membership Levels 2003

Members (Number)	North Africa	West Africa	Eastern & Southern Africa
9	Egypt		
8		Togo	Kenya
7			South Africa
6			Uganda
5		Benin, Senegal	
3		Burkina Faso, Ghana	Rep. Congo, Malawi
2		Cameroon	Mozambique, Zimbabwe
1	Tunisia	Mali	Madagascar, Réunion, Zambia, Ethiopia
total	10 (14%)	27 (37%)	35 (49%)

Source: IFOAM (2003)

2.7 Organisations Promoting Organic Farming in Africa

A large number of organisations are explicitly involved in promoting organic farming in Africa. This section provides brief details on those organisations that have developed specific programmes to promote organic farming. This listing focuses on those organizations whose interest extends beyond the boundaries of one specific country¹⁸. We have grouped them into a number of categories: International African networks; international organisations; governmental aid agencies; NGOs and civil society organisations and private sector consultants. Like-minded movements that incorporate organic farming as a strategy to meet broader development objectives are discussed in section 2.9 .

African Networks

In recent years a number of international African networks began to emerge which have a strong interest in promoting organic and agro-ecological farming. These include:

- The Participatory Ecological Land Use Forum (**PELUM**), based in Zimbabwe, is a network of civil society organisations working with local communities in the areas of sustainable agriculture and natural resource management in nine countries in Eastern and Southern Africa. www.pelum.org/index.html
- **Agrecol Afrique** is a training and information network based in Senegal, which aims to develop and propagate organic farming across West Africa. It collects and disseminates documents and materials about ecological cultivation methods, particularly in West Africa, often including grey, unpublished information. It supports documentation of local knowledge of indigenous trees, while testing different documentation methods, and publishes a periodical, ACACIA, three times a year and contribute to broadcasting regular radio shows on ecological farming across Senegal. www.agrecol-afrique.sn
- The African Council of Organic Associations (**ACOA**). Based in Zambia this relatively new network aims to develop the (formal) organic sector in Africa. www.acoa.organic-earth.net/index.php
- **PAN AFRICA**, another Senegal-based organisation, is concerned primarily with highlighting the dangers of pesticide use but also with promoting sustainable (and organic) farming www.pan-africa.sn/english/letter.htm

A potentially important role for the IFOAM Africa centre is to link up with, and work in synergy with these existing networks. This could help to:

- raise the profile of the organic movement in Africa

¹⁸ Those organisations working within individual countries are described in the individual country profiles.

- create multiplier benefits in terms of the efficiency of the work of the IFOAM Africa centre
- enhance the sense of belonging to a broader movement that many small scale organisations might otherwise lack and
- facilitate exchange of information about problems and their solutions

International Organisations

The United Nations Food and Agriculture Organisation (FAO). In recent years the FAO has established an Interdepartmental Working Group on Organic Agriculture (IDWG/ORGA). The organic programme was approved as a Priority Area for Interdisciplinary Action. Recently, a number of conferences and seminars on organic and related approaches to agriculture were organised and a book on the relevance of organic approaches was published which stressed its role in promoting food security and countering environmental degradation (Scialabba and Hallam, 2002). The FAO also regularly liases and works with other UN agencies. The 17th session of the Committee of Agriculture (COAG, 2003) contains details of present activities (FAO, 2003a). This includes a project to collect data on organic production and trade. This will be published as an FAO statistical yearbook. The topics that it will cover include:

- Legislation relating to organic agriculture.
- Government policy for organic agriculture.
- Inspection and certification of organic products marketed domestically.
- Inspection and certification of organic export products.
- Domestic market of organic products.
- Training, rural extension and technical assistance on organic agriculture.
- Public awareness of organic food

At present FAO's activities for organic agriculture are more strategic than project oriented. Specific projects in Africa include:

- A Technical Co-operation Project (TCP) in Tunisia.
- A crop and grassland service project promoting organic farming in schools in South Africa
- Exploration of alternatives to traditional certification methods for communal grasslands in North Africa and the Near East.

Attempts are being made to increase the budget available to support the activities of the IDWG/ORGA and to prioritise its work. Several African representatives on COAG support this position. However, the FAO is bound to the wishes of governments and therefore finds itself promoting both organic agriculture and biotechnology. Thus, in one recent publication, the potential of both organic and GM technologies are discussed in the same chapter (FAO, 2003b). A strengthening of the support given to organic

agriculture in Africa will only be achieved through the lobbying efforts of national government representatives. FAO's organic activities are described in www.fao.org/organicag/frame2-e.htm.

International Trade Centre (Geneva). ITC's interest in organic farming is based on economic development through trade. It has published a number of organic market surveys which also include production data for some African countries¹⁹, the first of which was entitled "*Organic food and beverages: world supply and major European markets*" (1999) and was one of the first and most authoritative publications of this type. Since then it has promoted a series of seminars on export development of organic products in 16 developing countries in Africa and Asia. More recently it jointly published "*World markets for organic fruit and vegetables*" (ITC et al, 2001). The ITC has identified certification issues as a major barrier to the development of trade in organics. They commissioned a study, "*Regional Certification and Export Marketing in Africa*", by John Myers in May 2001, with the aim of identifying future developments in this sector. The study focussed on Uganda, Tanzania, Kenya, Zambia, Malawi and South Africa and recommended the development of regional certification organisations. Consequently, some steps have been made in this direction. Current projects include cocoa trade practices (ITC, 2001) which includes a chapter on trade in organic cocoa. A similar publication on coffee is in production. A new project, *Export Development of Organic Products from LDCs and other low-income DCs*, is currently in progress. www.intracen.org/mds/sectors/organic/welcome.htm

United Nations Development Programme (UNDP) This organisation produced a number of publications in the early and mid 1990s extolling the benefits of agro-ecological farming (UNDP, 1991: 1994:1995). We have found little indication of how these ideas were developed, influence policy or led to programme initiatives, with the exception of the African 2000 network, which has significantly promoted organic farming in Uganda (and possibly elsewhere).

United Nations Environment Programme -Global Environment Facility –UNEP-GEF. The Organic Food and Farming sector of SANet is a venture of UNEP/GEF and the GTZ. SANet's clients are farmers, co-operatives, consultants and entrepreneurs interested in organic food and fibres, as well as decision-makers in governments and NGOs wishing to support organic agriculture for its multiple benefits. The Organic Food & Farming sector is a relatively new programme, although SANet has been supporting organic farming projects as part of its sustainable agriculture programme. IFOAM was initially involved in the creation of the SANet programme, and the introduction of an organic food and farming sector could be of potential benefit to the organic sector in Africa. Its main activities include co-financing feasibility studies and

¹⁹ The country profiles in this report from Cameroon, Zambia and Madagascar are largely based on individual chapters in ITC et al, 2001.

providing support for setting up local Help Desks which can facilitate communication, networking, translation and co-financing. www.SustainableAlternatives.net

Governmental Development Agencies

Gesellschaft für Technische Zusammenarbeit (GTZ). GTZ has a long history of involvement in organic agriculture. In 1987, they financed one of the early publications on organic farming in the tropics (Kotschi, 1989) and have continued to develop projects and provide other forms of support since then. They have been one of the main promoters of organic agriculture for a number of years and organise an annual round table to co-ordinate donor activities related to organic agriculture. They are one of the few aid /donor agencies that have a specific programme to support organic agriculture instead of merely integrating organic agriculture projects within other programmes. This programme has nine components, several of which have a relevance for Africa. There are GTZ /Protrade projects in Senegal, Uganda, Tanzania, Kenya, Madagascar and Mauritius which are also similar in approach to the EPOPA Programme below. Private/Public Partnerships exist in several other countries. They are also co-funding the development of the African Council of Organic Associations (ACOA), based in Zambia. GTZ has also published a number of valuable technical manuals relating to organic production, certification and marketing. The organic programme is closely related to more general work carried out by the Office for Social and Ecological Standards. www.gtz.de/organic-agriculture/en/index.html

Swedish International Development Agency (SIDA). SIDA is currently supporting EPOPA (Export of Organic Products from Africa, www.grolink.se/epopa/) which is currently the largest certified organic programme in sub-Saharan Africa. The programme was set up in 1994 and is currently active in Uganda and Tanzania. A second phase of the project will start this year and is expected to extend EPOPA's activities to other countries, most likely to Zambia and Ethiopia, and possibly Kenya. There are also proposals for developing certification and inspections capacity in those Southeast African countries where the organic movement is already well developed. The programme is strongly export driven and under the responsibility of the agencies, Grolink and Agro Eco (see consultancy listings below).

Swiss Import Promotion Programme (SIPPO). SIPPO is a Swiss trade promotion programme funded by the Swiss Government. It has been quite strongly involved in promoting organic production, certification, and imports, mainly through subsidising the costs of foreign certification. SIPPO supports exporters of organic products by funding marketing advice, participation at trade fairs like BioFach, buyers meetings and certification. The "organic" programme is increasing. Target groups are small and medium sized entrepreneurs, the Chambers of Commerce and Export Promotion Agencies. SIPPO currently has a mandate to work in 30 developing or transition countries, two of which are in Africa (South Africa and Ghana).

US Agency for International Development USAID has supported a number of organic projects in Africa, including, to our knowledge, projects in Madagascar and Uganda.

NGOs and Civil Society Initiatives

African Organic Farming Foundation. The objectives of this US based organisation are to introduce, teach and promote sustainable organic farming in Southern Africa in order to improve agricultural productivity, enhance food security and stimulate rural livelihoods while conserving the region's natural farmland resources and ecology. Contact: Ged Buffee, President, P.O. Box 1906 Middleburg, VA 20118 United States, Tel: +1 540 364 2601 Mobile: +1 415 722 2833.

Helvetas (Switzerland). Helvetas is a private Swiss Association for International Cooperation which receives substantial support from the Swiss Government. It concentrates on developing rural infrastructures, promoting sustainable development, and furthering education and culture. Helvetas does not have a specific organic programme but is known to support organic agriculture within several of its projects / project countries. At present HELVETAS is known to support two organic cotton projects (Mali and Benin) and to be running training programmes on composting in Mali. A new strategy program entitled, “*Sustainable Management of Natural Resources – Market Oriented Sustainable Agriculture, Animal Husbandry and Forestry*”, started in 2003 and organic and sustainable agriculture will play an important role here. www.helvetas.ch/english/wel_engl.html

Henry Doubleday Research Association (HDRA – UK). The HDRA is Europe's largest, and one of its longest established, organic membership organisations. It is dedicated to researching and promoting organic gardening, farming and food. Amongst its activities it has been involved in supporting organic projects in partnership with KIOF (Kenya) and GOAN (Ghana). It has published a number of short technical manuals relevant to tropical agriculture, particularly about composting and leguminous trees and shrubs, and has done consultancy work for the UK Department of International Development on the extent and potential of organic agriculture in sub Saharan Africa (Harris *et al.*, 1998). www.hdra.org.uk/about.htm

International Union for Nature Conservation (IUCN-Switzerland). This international organisation has, in the past, collaborated with IFOAM and WWF in discussing links between biodiversity issues which culminated in the Vignola Declaration (see Stolton *et al.*, 2000). It is presently developing a plan to support biodiversity businesses in Africa, (KIJANI), with assistance from the International Finance Corporation which is a member of the World Bank. This project is not yet fully funded but looks as if it may be offering new opportunities to organic entrepreneurs. www.kijani.com

Misereor (Germany). Misereor is the overseas development agency of the German Catholic Church. It supports socially and ecologically sustainable development projects with an emphasis on promoting self-reliance. Organic agriculture is often supported as a means to achieving this aim. It currently has projects in a number of Africa's poorest countries including Angola, Burkina Faso, Ethiopia, Mozambique and Chad. www.misereor.de

Weltfriedensdienst e.V. (Germany). This is a German NGO that supports grass root projects in developing countries. Sustainable agriculture plays an important role and

includes organic agriculture. They have a project in Zimbabwe where they are providing training and educational support to an OA project run by an environmental organization. www.wfd.de

Consultants

There are a number of consultants offering technical assistance to the organic movement of which the following are members of the IFOAM Forum of Consultants who have had recent experience in African countries.

Agro Eco is a Dutch-based consultancy currently involved in a number of organic projects in Africa. These include co-managing (with Grolink) several projects in the EPOPA Programme in Uganda and Tanzania, developing the organic cotton sector in Benin, the development of a fair-trade organic sector in Ghana (see country profiles for details). They have offices in Tanzania, Zimbabwe, Uganda, and Ghana. Contact: office@agroeco.nl, website: www.agroeco.nl

Agrecol is a network of rural development experts and practitioners dedicated to promoting organic farming. They are involved in promoting a South-South dialogue and have sister networks in Senegal (Agrecol-Afrique, see Africa Networks, above). They recently hosted a seminar in Germany and an Internet dialogue on organic farming in the South. Contact: Johannes Kotschi kotschi@agrecol.de, website: www.agrecol.de

BIOHERB is a German consulting company specialising in the fields of organic agriculture and medicinal and aromatic plants. The main consultancy activities cover the production, processing and marketing of organic agricultural products from tropical and subtropical regions as well as the domestication, production and marketing of medicinal plants. In Africa they have working experience in Benin, Egypt, Kenya, Malawi, Madagascar, Mauritius, Morocco, Mozambique, Nigeria, Senegal, Tanzania, Uganda and Zimbabwe. Contact Info@bioherb.de, website: www.bioherb.de

Ecotropic is a UK-based consultancy, specialising in biodynamic and organic farming. It has extensive experience of working in Africa, particularly on organic fruit and vegetables (Gambia, Kenya, Senegal), organic cotton (Egypt, Kenya, Senegal, Zambia and Zimbabwe) as well as on export promotions, feasibility studies training and workshops. Contact: Tadeu Caldas info@ecotropic.com website www.ecotropic.com

Gabriele Stoll is a specialist in natural crop protection methods: participatory training and extension methodologies and approaches for sustainable and organic agriculture, incl. Farmer Field Schools. Her current responsibilities include co-ordinating an online information service on natural crop protection and strategy development for organic farming research in developing countries. Her experience in Africa includes projects in South Africa, Zimbabwe, Tanzania, Senegal and Madagascar. Contact: gabriele.stoll@ginko.de

Grolink is a Swedish organic consultancy which is particularly active in the fields of standards, certification, policy development, development programmes, and creating certification capacity in the South. It is one of the driving forces behind the EPOPA

project. The Chief Executive of Grolink (Gunnar Rundgren) is currently president of the IFOAM World Board. www.grolink.se/grolink

Eco-Consult is a specialist organic viticulture consultancy which has worked on developing organic table grapes in South Africa and Egypt. Contact Dr. Uwe Hofmann uhofmann@netart-net.de

Kern & Uttenweiler GmbH is a German based organic consultancy with special expertise in feasibility studies for new projects; crop protection and the cultivation of desert areas. Their Africa experience includes projects in Egypt, Morocco, Tunisia, Senegal, and Kenya. Contact: Dr. Johannes Kern kernu@t-online.de website www.t-online.de/home/kernu

ConsultantForOrganicTrade is a German consultancy specialist in marketing of organic products, product development, product sourcing, logistic and quality management. Their Africa experience includes projects in Tunisia and Zambia. Contact: Conrad Thimm ConraThimm@aol.com, website: www.ConsultantForOrganicTrade.de

F3 - Foundation for Local Food Initiatives is an English consultancy specialised in conversion to organic and management of organic farms, large scale commercial plantations and smallholder schemes, large scale composting, use of processing by-products, development of local marketing initiatives including farmers' markets and food cooperatives. Their working experience in Africa includes: Somalia, Sudan, Zambia, Nigeria. Contact: Alan Chubb, alan@quoins.demon.co.uk; website: www.localfood.org.uk.

2.8 Like-Minded Initiatives and Approaches

A large number of initiatives, approaches and projects in Africa are promoted by organisations which do not regard themselves as constituting part of the organic movement but who nonetheless use organic methods as part of their toolkit. We will explore these initiatives within the scope of the thematic groupings outlined below.

- Increasing food security
- Soil fertility management (and anti-desertification initiatives)
- Integrated Pest Management (IPM)
- Tree planting and agro-forestry
- Nature Conservation and Biodiversity Programmes
- Agro-biodiversity initiatives (including in situ genetic conservation and animal husbandry programmes which emphasise the importance of local breeds)
- Climate change
- Urban Agriculture.

In addition, movements for valorising and disseminating **indigenous knowledge**, promoting participatory development, promoting the status of **marginalized communities**, particularly **the role of women** and **developing appropriate (or**

intermediate) technology all have a strong resonance with organic approaches. Actual or potential synergies between the organic movement and these different movements are discussed within individual country profiles.

With very few exceptions, initiatives with the objectives listed above (or combinations of them) are not engaged in formal certified organic farming. Yet, together they represent a very large existing “user base” for organic approaches which has a great potential for enhancement. In the remainder of this section we will sketch out actual or potential links that exist between organic farming and these broader movements, identifying examples of where organic farming in Africa is contributing to meeting these objectives, and vice versa.

Very often the boundaries between these movements and approaches are blurred and many programmes contain elements of several of these strategies. Where possible we have sought to identify opportunities for tapping into global, national and regional programmes that, while they may not specifically set out to promote organic farming, is compatible with, and could be strengthened through engaging with the organic movement. We have also, where possible, tried to identify the obstacles (actual and perceived) to more explicit co-operation between the organic sector and this, often diverse, range of social and environmental movements.

Food Security Approach

The problems of hunger and malnutrition are more widespread in Africa than in any other continent. FAO calculations estimate that a very high proportion of the population of many of the countries profiled in this report are malnourished. This is particularly true of Southern and Eastern Africa, where the FAO states that c.40% of the population of Zimbabwe and Madagascar, c.45% of the population of Ethiopia and Kenya, c.50% of the population of Tanzania and Zambia and c.55% of the population in Mozambique are malnourished.

When used with extrapolations of trends in food production and population increases - and in more sophisticated models, changing dietary preferences- such statistics are frequently used to justify intensifying food production systems²⁰ as the only solution for averting catastrophic future levels of hunger and resource degradation. Compelling though these arguments may seem, it overlooks the natural and social constraints to agricultural intensification in rural Africa and the fact that intensified production does not increase the access to food experienced by the poorest and most marginalized communities.

The introduction high input technologies into African farming has not been widely successful. For a number of reasons people have resisted attempts at encouraging them to modernise. The adoption of, and specialisation in, higher yielding varieties can increase their risk of exposure to drought and pest attack and runs contrary to the food security strategies of resource-poor farmers. There is also increased risk as adoption

²⁰ This same argument is presently being used to support the expansion of GM technologies into resource poor countries.

usually implies going into debt. Generally, such farmers prefer to use a range of tried and tested varieties in the knowledge that even in adverse circumstances they will have a crop, rather than face the destitution that would certainly occur if a high yielding crop fails. Moreover, the cost of participating in more intensified systems is beyond the resources of most poor farmers who tend only to do so when the inputs are heavily subsidised, which is far from a sustainable solution. With the reduction and dismantling of these subsidies and the marketing boards which underpinned such strategies, increasing numbers of farmers have been reverting to low and no input methods.

The experiences of organic farming in the North, where farmers have generally had to convert from intensive and heavily subsidised practices, have created a misleading impression that organic farming leads to lower yields. As such, organic farming faces an image problem whenever the issue of food security is discussed. Aware of this problem, IFOAM produced a report in 2002 (Rundgren, 2002a) demonstrating how organic farming can make a positive contribution to increasing food security. FAO's recent publication on organic farming also repeatedly stresses the key contribution that organic farming can play in enhancing food security at the household level (Scialabba and Hattam, 2002). Examples within this report (see particularly country profiles for Ethiopia, Senegal and Kenya) further support this.

Several aspects of organic farming contribute to the potential for increasing food security and are worth emphasising, e.g.:

- The use of manures, composts and mulches increases the water retaining capacities of the soil thus making it less vulnerable to drought
- Mulches and inter-cropping increase soil cover, thus diminishing soil erosion
- Mixed cropping reduces the possible effects of drought and reduces susceptibility to disease and pests.

A number of global and regional programmes either explicitly or implicitly recognise this potential. They include the FAO's Special Programme for Food Security, the work of the Africa 2000 Network in Uganda (and elsewhere in Africa) and the work of the Environmental Capacity Enhancement Project (ECEP) in South and East Africa (see Devlin and Zettel eds., 1999).

This said, it should be noted that no agricultural system could, in itself, guarantee food security. Access to food is determined by complex social, political and economic forces operating at a range of levels from the local to the global level. It has often been noted that the world already produces more than enough food for everybody to be adequately fed. Organic farming systems make greater use of locally available inputs (including labour) and do not seek to displace them with external inputs and capital. It is likely to make a positive contribution to promoting food security as opposed to intensive systems, reliant upon external inputs and knowledge to maintain productivity.

Programmes to Manage Soil Fertility Management and to Combat Desertification

One of the most significant problems facing agriculture in much of Africa is that of poor and further deteriorating soil quality, e.g. nitrogen and phosphate deficiencies. These in turn are linked to the broader problems of overgrazing, over-cultivation, and loss of tree cover and associated soil exhaustion and erosion. There are a number of national and international programmes designed to address these problems (Scoones and Toulmin 1999 p.98-99 provide a concise overview of those within Africa.). Many of these initiatives in Africa are being pursued within the context of the International Convention to Combat Desertification²¹.

The range of programmes currently in place is wide ranging and it is beyond the scope of this report to review them. Such approaches range from the intensive high external input approaches (e.g. those advocated by Sasakawa Global-2000 projects) through to the organic. Many advocate primarily organic approaches, supplemented by the sparing use of artificial fertilisers. For example, the Soil Fertility Management Unit in Burkina Faso which is part of the African Soil Fertility Initiative aims to achieve sustainable increases in agricultural production while preserving the environment. Its strategy has three components:

- The promotion of soil amendments (using locally and naturally available phosphorous and dolomite);
- The promotion of cultural practices such as cereal legume rotations, anti-erosion techniques and the use of Zai pits (see country profile for more details), mulching and the use of organic and artificial inputs;
- The development of input and output markets (Anon., 2000).

Many, though certainly not all, elements of this programme appear to be compatible with the organic philosophy and standards. Many soil improvement programmes in Africa (especially those based on a farm household needs approach as opposed to a macro-modelling nutrient deficiency approach) stress and prioritise the importance of organic methods and materials as the most appropriate solutions for farmers (see *ibid.* Appendix 4 pp. 102-128). Reij *et al* (1996) provide 28 case studies of indigenous soil and water conservation strategies: in the majority of cases these appear to be organic by nature, although not by name.

Thus, there are very significant overlaps between the organic approach and many soil fertility programmes that adopt a sustainable “farmer first” approach. Many of these programmes explicitly recognise that resource-poor farmers have little opportunity, or a well-founded reluctance to use agrochemical inputs. In consequence, they often advocate the use of organic management systems without calling them such. They do so, not from a sense of conviction about the benefits of organic farming, but from one of pragmatism. Most actors engaged in this type of work do not subscribe to the view of the organic movement which believes that the use of fertilisers damages the micro-

²¹ See www.unccd.int

ecology of the soil, and its ability to sustain life or a productive agriculture. In this respect, the organic movement is often considered to be dogmatic in its outright rejection of the use of fertilisers. There is an obvious need for more dialogue over this issue; one in which the organic movement might fully substantiate its position on the harmful effects of fertilisers and in turn win over many practitioners. From the literature, many of these actors appear to have only a residual belief in the benefits of intensive agriculture.

Integrated Pest Management (IPM) Initiatives

It is more than forty years since Rachel Carson's "Silent Spring" awoke people to the dangers of the indiscriminate use of pesticides. For many people the damaging effects of pesticides, insecticides and herbicides are the most unacceptable feature of agrochemical farming. Their disruptive effect on ecology, the residues issue and the health effects on farm workers, particularly those in the developing world, who are often illiterate and unable to afford protective clothing have all been well documented (see Shiva for work in the context of India, and Ton, 2000). Together, they deliver one of the most powerful arguments against industrial farming techniques.

From an organic perspective IPM approaches can be seen as a "reformist" response to these problems, advocating reduced or minimised spraying frequencies and concentrations, etc. As with the issue of soil fertility we often find that IPM approaches advocate *de facto* organic approaches to pest control. These include the use of mixed cropping systems that deter infestations of disease or pests, the use of botanical (organic) solutions that are locally available and can be processed by farmers themselves, as well as enhancing local ecological knowledge so that pest/predator relationships can be better managed. Good IPM often results in a *de facto* organic system. There are many IPM projects that appear to be genuinely organic and have no reliance on synthetic inputs. One such project is discussed in the country profile for Ethiopia. Organic cotton in Egypt proved that the step from good IPM to organic is a small one. There are obvious parallels with the section on soil fertility (see above). The most consistent and convincing reason for this would appear to be a perception that the label "organic" contains elements of ecological dogmatism which the scientific and development communities find it difficult to accept. Again there is a potential for stronger dialogue between the organic and IPM communities to identify similarities and differences in approaches, philosophy and working practices.

Tree Planting and Agro-forestry Approaches

Tree planting is not necessarily an organic activity – nor the reverse, but there are very strong links between the two – which, in a degraded environment, are often necessary complements to one another. As Sue Edwards of the Institute for Sustainable Development in Tigray notes (2000, cited in Parrott and Marsden, 2002).

In windy areas the windbreak effect of trees can significantly reduce the loss of water through evapotranspiration. Trees also maintain and restore soil

fertility and control erosion. Their leaves can be used as fodder as well as for composting. They provide soil cover when the pruned branches and leaves are left on the soil. These increase soil nutrients, suppress weeds and improve soil structure. Tree roots help bind the soil together and promote the infiltration of water. The deep rooting systems of trees help recycle nutrients by returning leached cations to the soil as leaf litter. The ability of certain species to survive the dry season and maintain their green leaves means that there will be active roots in the soil when there is a flush of mineralised nitrogen at the start of the rains. The roots act as a safety net capturing the nitrogen that would otherwise be leached away.'

Trees also serve a range of other functions. They can be a source of food, particularly during the “hungry” season. Sometimes their fruits can be marketed. They provide the farm with fuel and construction materials, attracting birds and wildlife and they also provide shade for livestock and people. Tree planting can play an important role in anti-desertification programmes, in helping promote food security, and in maintaining the natural resources of a farm. One study from India found that organic farms had on average five times more trees per hectare tree density than conventional farms (Van der Werf, 1993). This was the most notable difference in the physical and management structure of the farms and illustrates the strong connection that exists between the two approaches.

There are strong links between tree planting and maintenance, and the organic movement. In hostile farming environments, trees provide an element of stability that can underpin the productivity of organic farming practices. Several organic research institutes - notably the HDRA- place great emphasise on the importance of trees within tropical agricultural systems. Our research shows several examples of where organic farming projects have grown out of tree planting initiatives (see for example the case study of Forikrom in Ghana). Equally the World Agroforestry Centre is cautiously sympathetic to the organic message (see section 2.9, below).

Biodiversity and Nature Conservation Approaches

Organic agriculture seeks to work with, not against, nature. It depends on stabilising agro-ecological systems, maintaining ecological balances and developing optimal biological processes. Wild species perform a number of valuable services in organic farming, including pest control, maintenance of soil fertility and pollination. Hence farmers have an interest in enhancing biodiversity. By the same token, because they do not use artificial pesticides they do not have the same damaging effect on the local ecological balance as conventional farms do. Thus there is a symbiosis between organic farms, biodiversity and nature conservation. This has been explicitly recognised by the Convention of Biological Diversity whose work programme states that farming practices which stop environmental degradation while restoring and enhancing the environment should be encouraged, and that this includes organic farming (Scialabba and Hallam, 2002). Extensive research has shown the beneficial impacts of organic farming on biodiversity (see *ibid.* pp. 34-53 for an overview). Biodiversity benefits are widely accepted as an important justification for introducing subsidies to organic farming in the North.

In 1999 a joint workshop was held between IFOAM, the World Conservation Union (IUCN) and the WorldWide Fund for Nature (WWF) designed to explore the inter-relationships between organic farming and biodiversity. Several papers were presented illustrating how organic farming was being used in different parts of the developing world to promote and maintain “biodiversity hotspots” and to maintain and enhance community standards of living (Stolton et al, 2000). Although none of these projects were located in Africa, the potential for developing them does exist. Walaga (undated) discusses the benefits of organic farming for biodiversity in Uganda where several EPOPA projects are located near areas with high biodiversity and where pressure on these areas has diminished as a result of the projects. Within most EPOPA projects, tree planting is an important element.

Agro-biodiversity Initiatives

A critical element of the biodiversity issue is the maintenance of agro-biodiversity: of the seeds, strains, varieties and landraces of cultivated crops. The growth of industrialised farming has brought about a huge reduction in the range of variety of crops that are planted (Thrupp, 1998). Usually these varieties have been developed by commercial interests to perform well under intensive agricultural systems. They are often bred to meet the requirements of the food processing and distribution industries – such as long shelf life and uniform appearance. These same varieties often perform poorly in low input systems, or under conditions of stress. Their high yielding characteristics also mean that they are often less resistant to pests and disease. It is generally not possible for farmers to save and reuse the seeds of hybrid varieties.

Seed saving is a long established strategy of resource-poor farmers. It enables them to select and develop breeds that are most suited to their local agro-ecological conditions, (e.g. pest, disease or drought resistant varieties) and that “fit” with local socio-economic practices and cultural preferences (see, e.g., Mango and Hebinck, 2003). Although maintenance of agro-biodiversity is not restricted to organic systems it is a fundamental aspect of organic production systems. It offers important opportunities to develop links with farmers and NGOs engaged in saving and distributing seeds, propagating varieties that are best suited to local agro-ecological systems and cultural preferences. Links already exist between the organic movement opposing “biopiracy” and the development, and unknown consequences on genetic variety, of GM farming systems in the developing world. Links between the organic movement and farmers groups devoted to maintaining the genetic inheritance of their germplasm are already strong and, given that there a few perceptual barriers between the two, can be further strengthened (see also ITDG, undated). Of related importance is the emerging recognition of animal husbandry programmes that emphasise the importance of local breeds, which are often particularly suited to the ecological niches in which they have developed. Unlike high yielding species developed in the North these species may well fulfil a number of functions, providing traction and manure as well as milk and/or meat. Many such species are often neglected by researchers, and are often in danger of extinction (see Ecology and Farming’s (2001) special issue on livestock, and Millstone and Lang, 2002, p. 54).

Promotion of Urban Agriculture

Urban agriculture plays a key role in providing many Africa cities with fresh food supplies and in maintaining employment, municipality and income opportunities. For example over 20% of Dar-es Salaam (Tanzania) is used for agriculture and urban farmers provide some 90% of the fresh leafy vegetables consumed in the city, 60% of the milk and raise over 6.5 million chickens. In Libreville (Gabon), 80% of families are engaged in urban farming and 60% of vegetables consumed in Dakar (Senegal) are produced within the city limits (Millstone and Lang, 2003 pp. 50-51).

Urban farming performs a number of valuable functions. It can:

- provide incomes and food security for those engaged in it;
- provide valuable food sources for the city as a whole, in countries where infrastructure is poor and deliveries unreliable;
- make use of the often large amounts of organic waste that accumulates in cities (whose disposal might otherwise cause problems):
- provide an occupation and, sense of self esteem, for recent rural migrants;

One of the major downsides to urban agriculture is the quality of water that is used which unless suitably treated may be contaminated with human or industrial waste thus raising issues about the quality and safety of the food. Danso et al (2002) have done some interesting work exploring the hazards of conventional highly intensive farming systems in Ghana where there is excessive use of pesticides, and exploring the opportunities for developing market niches amongst this farming community who are highly market sensitive.

A number of NGOs in Africa who work with urban farming are specifically promoting organic approaches. These include the **Rodale Institute** in Dakar (Senegal), the **Food Gardens Foundation** (South Africa) and **The Forum for Eco-Agriculture** in Nairobi, Kenya. Urban Agriculture (2002) recently ran a special edition on ecological urban agriculture – which featured projects in Ethiopia, South Africa and Ghana. In general these projects are aimed at generating employment and food security. A further potential benefit is that of generating additional incomes if they can tap into organic niches (to local elites, expatriates and tourists) within local markets. Details about urban farming projects in Africa can be found on the web pages of “City Farmers” and “Urban Agriculture Magazine” (see Appendix 3).

Approaches to Reduce Global Warming and Carbon Sequestration

Organic farming has the potential to make an impact on global warming through a number of mechanisms. Firstly, the absence of artificial fertilisers in organic systems reduces the use of fossil fuels for their manufacture and distribution. Given the low levels of use in Africa at present this is not a strong argument for organic farming. The carbon sequestration potential of organic farming is rather stronger. Several options are available to raise carbon sequestration levels on smallholder farming systems. These include:

- increasing organic matter levels in the soils;
- conversion of annual croplands to agroforestry, orchards or woodlots;
- establishing living fences along farm boundaries;
- agroforestry approaches;
- planting drought reliant relay fallows at the end of the rains and
- creating low quality crop residues as litter and soil inputs.

Wommer (2002) has done some initial valuations of the technical potential of carbon sequestration approaches within African smallholding systems. There are many potential social and practical constraints to developing such approaches, not the least of which is the unfamiliarity of most African peasant farmers with the concept, and the relatively low priority that they would probably accord it. Potential ways of sequestering carbon (see above list) may have other benefits which are strong enough in themselves to justify the uptake of these practices. There is a potential - though as yet this is relatively unexplored- that under the terms of the Kyoto Protocol some degree of cross subsidisation might be found in order to assist with the development of programmes of this nature. Organic agriculture should be on the watch out for these as this may be used as a conversion subsidy.

2.9 Organic Farming and Research Institutes

One of the most notable features of the organic sector in Africa is the lack of integration, or even contact, between practitioners (whether in NGOs or international donor programmes) and the research community (whether in national agricultural research institutes, universities, or the various international research institutes located within Africa). This has several unfortunate consequences of which one is that the majority of knowledge and expertise on organic farming in Africa remains the property of the practitioners. Thus, it remains buried in “grey” reports (Walaga, 2003) or is unpublished, and is effectively only shared through personal and professional networks²². This is a handicap both for the dissemination of information amongst other potential user groups who are not “in the loop.”

It also reduces the opportunities for a more independent testing of the claimed successes from projects.

The other negative consequence of this lack of contact is that the organic movement misses out on interesting, sometimes even practical information which research institutes may have to share that would benefit organic farmers who are struggling with

²² Moreover, such knowledge is often costly to acquire and some individuals and organisations (both in Africa and the “first world”) regard it as a source of competitive advantage and can be reluctant to share it. In many cases, project outcomes are rarely verified. The successes of past and present projects are sometimes talked up, to enhance the credibility or status of those involved. Such practices present a problem for the development of the organic sector and its credibility in the wider world.

a variety of technical problems. Research institutes sometimes publish their experiences in accessible books that may be well worth reading.

Peer reviewed scientific articles about the results, potential and obstacles faced by organic approaches in Africa are extremely difficult to identify. This may in part be because of the fragmented nature of science (see previous section). It may also be that the reductionist and single goal perspectives of much agricultural science are difficult to reconcile with the context-dependent nature of organic systems (see box 2.1). Research institute findings nowadays are becoming slightly more accessible through the use of web sites.

However, one could say that there is a complete lack of cohesion between the organic movement and the scientific community²³ in Africa.

A further consequence of this lack of integration is the limited profile that organic research has within research institutes. Some of the international research institutes in Africa – notably ICRAF and ICIPE have done outstanding and valuable work and utilise organic principles (see box in the country profile for Kenya). Moreover they often explicitly recognise that they are using an organic approach, or express that they want to work with organic initiatives.

Several other research institutes have agendas similar to that of the organic movement, but the potential for collaboration has not yet been realised. These include:

The **International Livestock Research Institute** (ILRI), Nairobi, Kenya, works to improve the well being of people in developing countries by enhancing the diverse and essential contributions livestock make to smallholder farming. It focuses mainly on the improved management of ruminants, an aspect sympathetic to many organic advocates in the North. Its objectives include: provision of high-quality food, use of animal traction and transport, manure to fertilise croplands, additional income through dairying, and insurance against disaster. All objectives fit in well with the organic philosophy.

See www.cgiar.org/ilri/

²³ We have tried wherever possible in this report to identify researchers with a known involvement and interest in organics. However, given the short time frame of this project, this exercise has in practice been limited to drawing on past reviews of the literature, scanning recent proceedings of IFOAM conferences and reporting those links that were fed back to us through the survey.

Box 2.1: Reductionist and Holistic Approaches: The Case of Water Hyacinth Control

The difference between reductionist and holistic approaches is best illustrated by different approaches to the control of water hyacinth that have been developed by scientific research institutes and resource poor farmers around Lake Victoria.

Water hyacinth is an imported aquatic weed that chokes many waterways in Africa. It displaces native plants and leads to loss of aquatic habitats and species. It hampers waterborne transport, interferes with fishing and reduces the quality of available water. It also increases disease breeding grounds, providing an ideal habitat for mosquitoes.

Conventional scientific research has tended to focus on its control through the use of pathogens and mycoherbicides. Several have been successfully developed and their efficiency and environmental impact studied and tested. But many resource poor communities do not have access to funds to purchase such compounds. Manual removal of the weed is tedious, requires substantial community co-operation and may prove to be a wasted effort if current or wind changes lead to a recurrence of the problem.

Groups in Kenya have been working to find ways to use the weed as a resource. They have identified three technologies for processing water hyacinth into compost, silage and fibre. The compost has proved to be a useful organic fertiliser for vegetables and a main ingredient for potting compost. The silage is proving to be a useful food supplement for ruminants (but not poultry) and the fibres are used to make a range of crafts, including furniture, which has been exhibited and sold at international trade fairs (Amoding *et al*, 2002). By thinking in terms of solutions rather than problems such groups find ways of making the best use of natural resources, controlling environmental hazards and generating cash incomes.

The International Institute of Tropical Agriculture (IITA) was founded in 1967 with a mandate for improving food production in the humid tropics and developing sustainable production systems. . Its centres in Ibadan, Kano and Onne (Nigeria) Cotonou (Benin), Yaounde (Cameroon) and Namulonge (Uganda) carry out a range of research programmes related to soil fertility, pest management, and the conservation and use of plant biodiversity (see www.iita.org/ for details).

Its **Biological Control Centre** in Cotonou, Benin, has a strong focus on host plant resistance and biological control, which should make it a suitable partner for organic research initiatives. One of their projects developed here (LUBILOSIA) has led to the development of a mycopesticide called Green Muscle® which is based on the spores of the insect pathogenic fungus *Metarhizium anisopliae* var. *acridium*. This is a successful and specific control agent for short-horned grasshoppers (*Acridoidea: Acrididae* and *Pyrgomorphidae*) which are widely distributed in Africa and under (un) favourable conditions can destroy entire crops in a short space of time. It provides an alternative to the use of Dieldrin or other less persistent but more frequently used pesticides. This fungus can be easily mass-produced in a relatively low-tech environment and can be used on a small-scale field scale. It is however most successful when mass-produced and sprayed on large areas from the air. Whereas the technology appears to correspond to the organic approach it does not connect. There has been little or no recognition of this innovation within the organic movement.

In the organic cotton project in Benin, a co-operation was envisaged between IITA and the NGO OBEPAB, to experiment with the release of a virus to control the cotton

bollworm, *Helicoverpa armigera*, in organic cotton. However, this co-operation did not materialise as IITA's budget was beyond OBEPAB's means and IITA could not tap its regular funding sources.

There are thus significant differences in 'wave length' between the organic movement and research institutes (particularly those located within the CGIAR).

Recent months have seen the Non-Governmental Organisations Committee (NGOC) take the unprecedented step of freezing its seat on the CGIAR Executive Committee. This was done largely as a response to the CGIAR giving priority to two programmes on GM crops (Functional Genomics and Biofortification), its failure to respond to the NGOC's call for an immediate moratorium on the release of GMO crops in centres of crop origin, the admittance of Syngenta Foundation as the first wholly private sector dependent CGIAR member and the more general perception that the CGIAR is adopting a corporate agenda (Mulvany, pers. comm.). It remains to be seen whether and how these differences can be resolved. They are occurring at a time when the CGIAR is also coming under review from the UN.

In spite of these obstacles there is a very real need for the organic community to engage more fully with research communities. There is an equal need to develop training programmes at an equivalent to diploma or degree level. Graduates of such programmes have a vital potential in providing the trained support network required to back up the many hundreds of local initiatives, which often rely on fieldworkers with a minimum of educational qualifications. They can also provide the bridge for the organic movement to enter into dialogue with mainstream agricultural research (Mukhwana, undated).

Table 2.4: SWOT Analysis for Organic / Agro-ecological Farming from an Institutional perspective

<p>STRENGTHS</p> <ul style="list-style-type: none"> • Donor agencies attracted to OA projects • OA addresses poverty alleviation and environmental degradation (often simultaneously) • OA offers opportunities for empowerment, particularly of women • OA can offer market access for small producers • There is a market demand for OA produce 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Lack of supportive policy framework in most African countries • Lack of infrastructure for developing export markets • Lack of demand and disposable income for developing domestic premium markets. • Lack of certification capacity and local markets • Perception that organic production will lead to decline in yields and is not relevant to food insecure countries. • Non export / trade benefits of OA are rarely appreciated by governments • Lack of published and peer reviewed data to support organic movements claims that OA increases food security and farmers' self-reliance in the absence of export markets.
<p>OPORTUNITIES</p> <ul style="list-style-type: none"> • Opportunity to tap into premium export niche markets and increase overseas revenues and balance of payments • OA can enhance national, regional and local self reliance 	<p>THREATS</p> <ul style="list-style-type: none"> • OA runs counter to professional training and belief / value system of 'elite' scientists and policy makers. • OA poses threat to established business interests

Table 2.5: SWOT Analysis for Organic / Agro-ecological Farming from a farmer's perspective

<p>STRENGTHS</p> <ul style="list-style-type: none"> • OA is often close to existing practice • OA can be based on, valorise and develop local knowledge systems. • OA can valorise local resources and create new markets for inputs • OA can create new on-farm employment opportunities • Farmers do not need to take out credit to utilise OA techniques. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • OA can involve additional labour input, especially in the initial phase. • Investment of time and other resources might not seem worthwhile if there are more pressing problems or if farmer lacks security (e.g. of tenure). • Lack of knowledge and readily available information • Poor, or non-existent, public sector extension services which often promote conventional approaches. • Lack of local markets • Cost and complications involved in certification • High illiteracy rates make record keeping problematic
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Possibility for greater food security and selling surpluses locally • Possibility for premium prices if certified • Opportunities for greater social contacts through project meetings etc. 	<p>THREATS</p> <ul style="list-style-type: none"> • Belief in modernisation • Peer group ridicule

3 North Africa

3.1 Overview

This study identifies four North African countries that are engaged in organic production: Algeria, Egypt, Morocco, and Tunisia. All benefit from proximity to, and cultural ties with, European markets, which is the destination for much organic produce.

Products typically include fruits, nuts (almonds, pistachios) and off-season vegetables for the European market. Olive groves account for around 74% of organic land in Tunisia. Egypt, and especially the company Sekem that received the Right Livelihood Award in 2003, was leading the development of biodynamic methods of cotton cultivation. Cotton has remained an important organic crop with much of the harvest being processed, made into clothes and sold locally. There is evidence of interaction between the organic movement and scientific research institutes in all of these countries, and in Egypt this is significant.

With between 25-33% of the population in these countries engaged in agriculture, there is far less direct dependence on agriculture in North Africa than in sub Saharan Africa. Similarly these countries are far less dependent upon agriculture for their export earnings. Sekem has developed a substantial domestic market in Egypt - and to a lesser extent in neighbouring countries- which now accounts for more than half of their sales.

There is relatively little information on agro-ecological (i.e. improved but non-certified organic) farming practices although it should not be assumed that this means that they are absent – rather that aid/donor community activities tend to be concentrated in other parts of Africa. There is also relatively little information about related research and support activities.

Most of the North African countries identified are members of the Agro Bio Mediterraneo – the IFOAM working group that covers the Mediterranean region.

3.2 Algeria

Background

Algeria is Africa's second largest country and has 600km of Mediterranean coastline. Its population is 30.23 million (with an additional 2.5 million Algerians resident in France). GDP per capita is \$1,650.

Much of the country is composed of mountains and desert and only 3.5% of the land is used for agricultural purposes. Agriculture accounts for between 16-25% of the

labour force (depending on the source) and c.10% of GDP. The main crops are wheat, barley, oats, grapes, olives and citrus fruits. It has a high rate of pesticide use (see Appendix 1). There is a profitable wine export industry, accounting for c. two thirds of agricultural exports. There is a conflict of interest over access to land and water resources between the wine sector and cereal producers. Algeria is a substantial importer of staple foodstuffs, which it is able to finance through exports of oil and gas, which account for most of its foreign earnings. The country's history over the past few years has been marred by violent political conflict. (Arnold, 1997; Millstone and Lang, 2002)

Formal Certified Organic Sector

There is no data available for organic farmland in Algeria, but it is believed to export certified honey (Walaga, 2003) and dates (ITC, 1999) to the European market. According to local sources there are a range of organic products currently being produced. These include certified wine and olive oil. Dates are grown organically but are not yet certified. In addition, there are growers engaged in organically cultivating small amounts of soft and hard wheat, barley beans, chickpeas and lentils. An experimental farm run by ITGC and MADR is currently running trials with barley and hard wheat. (Moali-Grine, *pers. comm.*)

There are currently no IFOAM members in Algeria.

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3.3 Egypt

Background

Egypt's strategic location has enabled it to play a unique role as a bridge between two continents since the earliest times. The country has regarded itself as "the gift of the Nile" since earliest times. 90% of the population live alongside this river, the world's longest. The remainder of the country is desert. All of Egypt's agriculture is irrigated by the river, and there is a very high ratio of (>20) people to hectares of cultivated land. Egypt has a highly developed economy, yet is also highly dependent on aid and food imports. Per capita GDP is just over \$1500. Agriculture accounts for 16.5% of GDP and employs c.40% of the population. Egypt is the sixth largest producer of cotton in the world and cotton products account for 13% of exports. The other main crops are rice, maize, wheat, beans, fruit and vegetables. Livestock and fish make an important contribution to the national diet. With such a high demand on a small

amount of available land, rates of pesticide and fertiliser use have traditionally been very high. Problems associated with this have, at least in part, been responsible for stimulating interest in organic production. (Sources: Arnold, 1997; Millstone and Lang, 2002)

Formal Certified Organic Sector

Egypt has the most developed organic sector in North Africa. The company Sekem has been responsible for most of the early development of the organic movement in Egypt. It established its first biodynamic farm in the late 1970s and has since helped build up the biodynamic movement. It established the **Egyptian Biodynamic Association** (joint winners of the SARD prize in 1997), which offers training and extension services for biodynamic farmers and those considering conversion. Sekem also established an independent certification agency, the **Centre for Organic Agriculture in Egypt** (COAE) and has broader social aims than merely promoting biodynamic farming, although this approach is at the core of its economic and philosophical basis.

More recently the **Egyptian Centre of Organic Agriculture Society** (ECOAS), was established in order to promote the organic sector, provide training and support for organic farmers, promote conferences, seminars and research and act as a local certification and inspection body (El-Araby, 1999). ECOAS is also establishing an international presence, having recently run workshops and training seminars in Tunisia and Palestine, it helped establish an organic project in Bosnia and trained organic inspectors from eight other African countries (*ibid.*).

Box 3.1: The wider application of organic knowledge: Pheromone traps in conventional cotton production in Egypt.

As a result of its early successes in herbs, cereals and vegetables, the Sekem initiative was asked to apply its experience to cotton production, where use of pesticides was giving rise to growing concerns about public health without achieving the expected benefits in terms of pest management. Collaboration with scientists, farmers, consultant and consumers led to the adoption of pheromones as the principle pest control agent within a holistic bio-dynamic approach. This approach is now employed on 80% of Egypt's cotton fields, and the total pesticide intake of Egypt's cotton sector is now 320 tonnes (compared to 1,800 tonnes previously). Thus, the knowledge of the organic movement has become "mainstream", making a significant contribution to reducing pesticide burdens (Sciallaba and Hattam, 2002, p. 120).

The formal organic sector in Egypt is growing rapidly. SÖL (Walaga, 2003) identifies more than 460 organic and biodynamic farms, covering more than 15,000 hectares. Other reports suggest that these figures are an underestimate. Dr. Yousef Hamdi, of ECOA one of the two national certification bodies, reports that there are c. 400 farms and 17,000 hectares of organic land. In addition there are 52 registered exporters and processors of organic products (Pecerolla, pers. comm.).

Many of these farms are ‘desert’ farms, using irrigation water from the Nile. They grow a wide variety of crops, including fruits (notably grapes, citrus, dates, mangoes and strawberries), vegetables, cereals and spices as well as non-food crops such as cotton and medicinal plants. While much produce is exported, primarily to Europe, there is also strong demand within Egypt and other parts of the Arab world for a number of products. Today, the majority of Sekem’s production is aimed at domestic markets, which offers it the opportunity to add value through processing rather than exporting commodities. In the early days, Sekem’s ratio of domestic sales to exports was 1:4. It has now reversed this and only exports around 20% of its produce, relying on domestic markets for the large majority of its sales (Abouleish, 2001). The example of Egypt shows that it is possible to develop local value adding capacity and local markets and thereby diminishing reliance on exports. The development of local training, extension and certification procedures embeds the organic market and concept into local social and cultural mores and practices (Abouleish, 2002).

Two local certification agencies, ECOA and COAE, provide inspection services for farms and processing companies. The Italian certification organisation Istituto Mediterraneo di Certificazione has an office in Egypt and organises training. Bioagricoop, the Soil Association (UK), BCS (BCS Oko-Garantie GmbH), Naturland (Germany) and IMO (Switzerland) are active certifying agencies in Egypt. There are close trading links between Egypt and Italy which are becoming formalised through a “Green Corridor Agreement.” This intends to facilitate the export of agricultural and food products within the framework EU legislation, and to maintain a preferential line of communication which will be maintained by the Egyptian Agricultural Affairs Office in Rome and the Italian Embassy in Cairo (Pecerolla, pers. comm.).

A draft regulation on organic standards has been issued and is being reviewed prior to implementation. The government also established a Central Laboratory for Organic Research in October 2002 within the Ministry of Agriculture and Land Reclamation. Its main functions are fivefold: The dissemination of organic technologies among farmers, processors and exporters; controlling the local market for organic produce; establishing a data base on organic production in Egypt; undertaking research to address identified problems; and controlling inputs in organic systems.

Agro-ecological / Related Initiatives

We found no evidence of informal agro-ecological initiatives.

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3.4 Morocco²⁴

Background

Situated on the northwestern tip of Africa, Morocco has strong trade and cultural links with Europe. It has a population of almost 30 million and a GDP per capita of just over \$1000. Around 20% of the country is cultivated – the remainder is either desert or mountain. Agriculture accounts for around 14% of GDP and c. 40% of the workforce. Exports of citrus fruits, vegetables and wines earn valuable foreign currency, and food exports (excluding fish) account for 26% of foreign earnings. Fishing is also an important industry and accounts for > 14% of exports. The country has more than 16 million head of sheep, and 2.5 million head of goats and cattle, which, together with the fishing industry, represent a major source of nutrition. Despite high levels of food exports, the country is a net importer of food. With a rising population and increasing dependence on industry and tourism this reliance on imports is likely to increase in the future. In 2000, almost 70,000 tonnes of food were

²⁴ Most of the information in the section (unless otherwise indicated) is derived from Kenny and Hanafi, 2001

imported under the World Food Programme (Arnold, 1997; Millstone and Lang, 2002).

Formal Certified Organic Sector

Morocco has almost 12,000 ha of certified organic land and 555 certified farmers (Walaga, 2003). Around 1,000 hectares of this land is under cultivation and the remainder is used for the production of 'forest products'. The export trade benefits from its close geographical proximity to Europe, and a variety of vegetables (tomatoes, zucchini, bean, cucumber, melon and eggplant) are grown under plastic to meet off-season demand in Europe. Tomatoes, carrots and cucumbers account for 80% of this type of production. Organic citrus fruits are produced in and around Marrakech. In the northern part of the country, small farmers are growing organic caper (*capparis spp*) and a wide range of medicinal and culinary herbs, with the main centres located around Rabat, Marrakech, Taroudant and Agadir. The country is also the only producer of organic argan oil, highly appreciated by the local population for its high nutritive value. The fruit is similar to an olive and the tree is endemic to south Morocco. Argan oil is now exported to several countries and has gained a worldwide reputation for its high cosmetic value. Women in the countryside carry out more than 90% of the business of organic argan.

Box 3.2: Organic Date Production in Morocco: Conflicts Between Tradition and Modernity

UNDP (1992, p. 77-81) reported on an organic date project in Zaragora which began in 1987. One of the varieties of date is exported; the others are for local consumption. The project is commercial, i.e., aimed at achieving higher prices, but also aims to increase the sustainability of farming systems. Farmers are not only involved in date production but also keep goats who roam the surrounding hills during the day and are kept in stalls at night - thereby bringing nutrients into the farm system. They also grow grains (barley, corn and alfalfa) for the goats and wheat and vegetables for home consumption. Husks from the dates are returned from the factory to the organic farms as goat fodder. The organic systems do not suffer from the same pest problems as the higher intensity production methods. Processing the dates raises some issues, as conventional fumigation methods (using methyl bromide) are not permitted under organic systems. Instead, a system of fumigating with carbon dioxide has been developed. The system is under some strain as it does involve some additional labour compared to the low external use systems that are more widely practised. Opportunities in tourism in nearby regions are attractive to the younger generation who are starting to reject traditional values and practices. If they farm at all they prefer to farm part- rather than full-time.

In 2001, the first national legislation on organic farming was anticipated, following the work of an *ad hoc* committee on organic standards, there is, however, no evidence of this having been completed yet. A number of European certifiers have a presence in the country. SKAL International BV has an office in Morocco. Other certifiers known to be working in the country include Ecocert (ITC, 1999), Consorzio per il Controllo dei Prodotti Biologici (Italy), Naturland (Germany) and Qualité France (Hermann, p.2003). There are two interest groups promoting organic farming: APFB, (Association des Producteurs de la Filière Biologique) the producers and growers organisation, and Maghrebio (a national NGO working on food safety and

environmental issues). There is little local demand for produce at present and little evidence that the potential tourist demand has been explored.

In 1997, the Hassan II Institute of Agronomy and Veterinary Medicine (IAV) launched a programme of research and training on organic farming and more recently has initiated a link with an Italian Institute (IAM- Bari) for training fifth year students in organic farming. Plans for the future include a short course on organic agriculture for developing countries to be held in September 2004 in Agadir.

Agro-ecological / Related Initiatives

There are no IFOAM members in Morocco and little evidence of agro-ecological initiatives was discovered, although this does not imply that none exist.

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3.5 Tunisia

Background

Agriculture in Tunisia accounts for 13% of GDP and employs around 25% of the population. Olives, dates, oranges, almonds and wine are the principal export crops and olive oil accounts for c. 6.5% of foreign earnings. GDP per capita is a little over \$2000. The main staples are wheat, barley, tomatoes, watermelons, sugar beet, potatoes and alfalfa. The livestock herd includes 7 million sheep, 1.5 million goats and 660,000 cattle. The fish catch averages 85,000 m. tonnes p.a. More than 30% of the total land is used for agricultural purposes and 30% of this is for permanent cultivation crops (fruit, olive and nut trees and vines). Periodic drought can adversely affect agricultural production. The population per hectare of cultivated land is substantially lower than for any of the other North African countries in this survey, but the country is still not self-sufficient in foodstuffs. Trade with Europe is an important part of the national economy. Almost 50% of foreign earning is generated by the clothing and accessories industries.

Formal Certified Organic Sector

Organic farming in Tunisia developed, on an almost hidden basis, in the 1980s. Estimates of the cropland and farms involved vary slightly, although they are more or less comparable. Walaga (2003) estimates that there are 18,255 hectares and has just over 400 certified organic farmers. Other reports (Biofach, 2003) put the figures slightly lower at 16,800 ha and 250 farms. On either count it vies with Egypt as one of the two main organic producers in North Africa. Biofach estimate that 74 % of organic land in Tunisia is dedicated to growing olives, many of which are processed into oil. Other crops include dates, jojoba, almonds, fruit and vegetables, honey and aromatic plants. The Horchani Group, a large corporation, is known to export organic "oasis" dates.

Tunisia is one of the few countries where the government is actively supporting the development of an organic sector. It was the first country in Africa to develop its own organic standards and has now developed its own certification and inspection system. In addition, the government has established a national commission for organic agriculture (Hermann, 2003, p. 30). It also provides some financial support; including help with up to 30% of investment costs to farmers and 70% of certification costs over the first five years. Tunisia is one of the few countries in the world where a government ministry has become a member of IFOAM.

In February 2003, the Istituto Mediterraneo di Certificazione (IMC) received authorisation from the Tunisian National Commission of Organic Agriculture for the control and certification of organic food and farming in Tunisia. They plan to open an office there in the near future. Other certifiers working there at present include Ecocert, QC&I, BCS and Bioagricert.

One constraint faced by the organic sector in Tunisia is a poor supply of organic fertiliser, but research is being undertaken as how to best utilise waste from the food processing industry to overcome this (Scialabba, 2000).

There is an institute for organic agro-technology in the city of Sous . The contact there is a member of the ISO FAR board.

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4 West Africa

4.1 Overview

In terms of formal certified production West Africa significantly lags behind the other regions, containing just 5% of Africa's certified land. Outside of Ghana, Senegal, Benin and Cameroon the formal organic sector is virtually non-existent. West Africa has long been thought of having a potential for developing a formal certified sector, particularly in regard to tropical fruits and cocoa (three countries in the region – Ivory Coast, Ghana and Nigeria account for 63% of the world's cocoa supply). Yet for a number of reasons hardly any sustainable organic trading links have been established

We also found very little evidence of an emerging or “joined-up” agroecology movement. We found evidence of individual initiatives that explicitly promote ecological farming in Senegal and Ghana and know that Togo has a large IFOAM membership, however very little information is available about what these organisations are doing. In several countries (notably Mali, Burkina Faso, Ghana and Senegal) organic approaches have been widely used as part of broader strategies for promoting rural development, enhancing food security and combating desertification and salinity.

Part of the problem may be one of communications. There has been very little published in the organic literature about the extent, role or potential of organic farming in West Africa. Responses from the region to e-mail requests for feedback on country profiles were markedly lower than from either South and Eastern or Northern Africa²⁵. This may be, in part, a language issue. Most West African countries are French speaking, but most of the organic literature is in English. The problem may also be a reflection of the relatively poor development and co-ordination of the organic movement in this region. Whatever the causes, we feel that the status and potential of the organic movement in West Africa deserve fuller investigation. We suspect that this report underestimates the prevalence of organic agriculture approaches in West Africa. At the same time, far more resources would be needed to collate an adequate database, given that - language issues aside- information does not appear to be as well collected or presented as it is for Southern and Eastern Africa.

²⁵ These requests were either translated into French, or requested that respondents reply in French. Time and budgetary constraints did not allow for translation of the texts.

4.2 Benin

Background

Agriculture contributes about 33% to Benin's GDP and employs around 55% of the population. Benin is highly dependent on cotton and palm oil as export crops, with the former accounting for around 25% of export earnings. The cotton sector is highly dependent on fertiliser and pesticide use with, in the later instance, an appalling record of fatalities as a result of exposure, particularly to Endosulfan. Cotton is probably the only crop where there is significant use of artificial inputs as farmers only use these when they expect to recover their expenditure. With many farmers now withdrawing from cotton production, the agro-industrial sector is starting to encourage use of its products on food crops. The planned opening of a new fertiliser factory in the country may intensify this drive. Compared to other West African countries, fertiliser use is relatively high, an estimated 22kg per hectare (see appendix 1).

Government involvement in agriculture has declined in recent years. Financial constraints imposed by the IMF led to a moratorium on recruitment to the extension service resulting in a reduction in size and demoralisation of staff. This issue is now being addressed and INRAB (Institut National de Recherche Agricole de Benin) has instituted measures to make agricultural research responsive to the needs of producers. The organic movement hopes that recent political decentralisation may open the possibility for some regions opting for more sustainable approaches to agriculture.

Formal Certified Organic Sector

According to Walaga (2003) Benin has just 81 hectares of certified organic land and 119 farms, all involved in cotton production. However, OBEPAB's latest project report (2003) claims that this has risen to 617 producers and 423 hectares in just one project. The figures for land are likely to be conservative estimates as this covers only land under cotton cultivation, whereas in practice the entire systems (i.e. 3 to 4 times as much land) are under organic management. Cotton is the only organic export commodity (production in 2002-3 was 185,000+ kg), although efforts are still being made to develop a local processing capacity. Attempts are also being made to find export outlets for other products from the same certified system (i.e. sesame, and groundnuts) but to date this has not proved possible. The ITC (1999) also reported exports of certified coconut, sesame and dried fruit, but we have been unable to confirm this or identify any producers.

Experimental organic cotton production began in Benin in the 1996/7 season and has been increasing ever since. The main organization driving the initiative is OBEPAB (Organisation Beninoise pour la Promotion de l'Agriculture Biologique). OBEPAB now has four areas where cotton projects are in place. Financial support has come from the bilateral Dutch- Beninoise Sustainable Development Treaty who runs the

Centre Beninoise pour la Development Durable - CBDD and PAN UK. OBEPAB now has four villages where organic cotton is being promoted. Helvetas Benin have developed a further two projects and are cooperating with OBEPAB in their development. AgroEco (Netherlands) and PAN UK have provided technical assistance.

The initial motivating drive was the serious adverse health effects that were being experienced as a result of pesticides, including substantial mortalities. Low farm gate prices for conventional cotton, and sometimes non-payment, were a further motivating factor. OBEPAB's projects have achieved a high level of involvement of women farmers (c.30% of producers in 2000-01) who are able to engage in organic cotton production because it reduces health risks and also does not involve prior financing. Research is ongoing on ways of maintaining soil fertility and managing pests as well as finding markets for the other products within the cropping system (OBEPAB, 2003). In 2002, OBEPAB organised a Pan African conference on organic cotton production, the proceedings of which are due to be published in CD form later this year. The conference was opened by the Minister of Agriculture who expressed support for the aims of the organic movement in Benin.

Agro-ecological and Related Initiatives

There are a number of other NGOs involved in promoting organic approaches in Benin. The two main organisations (apart from OBEPAB who also maintains a library and resource centre on organic farming and have links with the National University at Calavi-Abomey) are REDAD and Songhai.

REDAD (Réseau de Développement d'Agriculture Durable). Established in 1992 this NGO is working as a network consisted of resource-persons, more than 60 NGOs and hundreds of farmers' organisations. The main areas of activity are: **Information:** they maintain libraries at Cotonou and in four others cities inside the country, produce a newsletter in French and a simpler one in three local languages. They also promote exchange visits between farmers in different areas in Benin and also in other countries close to Benin like Togo, Ghana, Burkina-Faso and Niger so that they can learn from and inspire each other.

- **Action research:** experimentation to find the best way of addressing problems of environmental degradation, maintaining soil fertility, etc.
- **Capacity Building:** Trainings are organised for NGOs according to their domain of priority. Many of these NGOs (sub-contracting) train groups of up to 20 farmers in five villages so that they can become model farmers in sustainable and organic agriculture, teach and inspire others.
- **Lobbying:** a relatively new area of work but one that they think will become increasingly important. Previously they were trying to fill a gap that was left by the state (see above) but are now trying to influence state policy. The decentralisation policy offers opportunities to influence prefectures and sub prefectures to adopt sustainable agricultural approaches

REDAD has just produced a report looking at the potential of rice farming in the shallows (bas fonds). Recently they started focusing on organic soya bean as an alternative to the use of chemicals referring to the case of conventional cotton production. They expect to attract many producers to this new opportunity (René Tokannou, pers. comm.).

Songhai, is a long established training centre, founded by the Nigerian Priest, Godfrey Nzamujo, which is based on the belief that self-reliance for Africans is both possible and desirable. They have their HQ at Porto Novo where they run an agro-ecological training centre. They also have five other demonstration / training farms in different areas of the country, each with different agro-ecological conditions. As well as teaching organic /agro-ecological farming techniques, Songhai also demonstrates small-scale stock breeding and primary value adding and processing skills, such as soya milk, soaps, gari and fruit juices.

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4.3 Burkina Faso

Background

Landlocked Burkina Faso is one of West Africa's poorest countries, with a GDP per capita of around \$220. More than 90% of the (c.12 million) population are engaged in agriculture, which accounts for 34% of GDP. Cotton accounts for 25% of exports, animal hides and animals for a further 10%. Shea nuts, sesame, and timber are other important export commodities. Much agriculture is subsistence, with sorghum, millet and maize being the main crops. Burkina Faso is subject to drought, desertification and deforestation.

Formal Certified Organic Sector

There is no available information about the amount of certified organic land in Burkina Faso (Walaga, 2003), although it is known to export sesame and dried fruit (ITC, 1999) and is believed to have been the first country to have exported certified organic produce (sesame) to Europe. As early as 1991 the UNDP (pp. 82-5) described a number of organic and agro-ecological projects in Burkina, including a certified sesame project covering 100 villages around Bobo-Dioulasso. This project had a number of problems including a reluctance of participants to engage in soil fertility building activities or to forego use of artificial inputs on other parts of their farms, and we do not know whether it has been discontinued because of these problems.

Burkinature have a web site offering organic sesame, green beans, cucumbers, sweet potatoes, fresh and dried mangoes. There is another producer group, **Raw Bio Process** (also covering neighbouring Niger and Mali, who participated at the 2000 Biofach exhibition. Ecocert are the most actively involved certifying agency and have recently opened a West Africa office in Bobo-Dioulasso.

Agro-ecological and Related Approaches

Burkina Faso hosted the only IFOAM conference to have been held in Africa (in 1987). There was extensive participation of local interest groups, suggesting a far larger agro-ecological sector than official statistics or IFOAM membership figures would suggest. A number of NGOs, women's and farmers' organisations are involved in promoting organic, participative agriculture primarily for environmental and food security reasons (Ouedraogo, 1989b). The **Ligue des Consommateurs** in Ouagadougou promotes organic agriculture and defends consumers' rights (ITC, 1999). More recently a pilot centre for technological training in organic food processing has been set up by AVAPAS under the aegis of the IFOAM OA2002 programme. There are three Burkina NGOs registered as members of IFOAM.

In the late 1980s there was some evidence of governmental support for organic initiatives through the Ministry for Peasant Co-operative Action (Ouedraogo, 1989a), we lack details, however, of how this support has developed since then. UNDP (1991 pp.86-94) describes several promising projects in Burkina Faso. The first run by the **Centre Ecologique de Albert Schweizer** – CEAS- a Swiss NGO in association with the **Association des Femmes de Zabre** focused on compost making as a response to problems of desertification and decreasing yields. Related, but broader, approaches have been developed by the **Association for the Development of Agro-ecological Techniques and Practices (ADTAE)**. These projects both contributed significantly to food security in the dry years when yields were significantly higher.

Rediscovery of the traditional technique of Zaï has proved of benefit in restoring desertified land, improving yields and establishing food security. This method involves digging small pits in abandoned fields and placing some compost in each before planting (see Parrott and Marsden, 2002, p. 39). Some 100,000 hectares of degraded land have been restored with this method, which has also generated new employment opportunities in remoter rural areas. The use of this technique has now

spread to neighbouring countries (see several chapters in Reij et al, 1996 for details). Other projects promoted by the Ministry of Agriculture have included bund building to act as micro-water catchments and tree planting programmes (UNDP, 1991).

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4.4 Cameroon²⁶

Certified Organic Production

Estimates of certified organic production in Cameroon suggest that it has 2,500 ha of certified land (Walaga, 2003). However, local sources claim that this is higher (5,000 hectares) and that there are a further 2,000 hectares of parcels of organic coffee and cocoa that are currently in conversion (Tetang, Pers. Comm.). We are told that the main export crops grown on this land include pineapples (1,000 tonnes), mangoes (750t.), papaya (300t.), coffee (150t.) and cocoa (10t.) (*ibid.*) However, we see little evidence of such volumes of organic tropical fruits available on European organic markets and assume that, for whatever reason, these fruits are not being exported in any thing like the same volume. Other certified products include herbs, spices, tubers

²⁶ The information in this country report is taken from Tetang *et al* (2001) unless otherwise referenced.

and medicinal plants. There is a growing emphasis on processing some of the fruit crops through drying, pulping and juicing. Estimates suggest that almost 20% of the land under pineapple cultivation is under organic management and that 30% of the papaya crop in the Moundou region is organically cultivated by default.

Certified Organic Production has been led by two companies (EXPORT AGRO and EXODOM), who formed a joint venture called EXA Biologique. They have not received any public support and have been unsuccessful in getting local authorities to give specific support to organic production. There are currently seven exporters active in the country and two support groups in Cameroon. **ASPABIC** (Association for the Promotion of Organic Agriculture in Cameroon) and **AVEGRO** in the English speaking area, plus a few individuals able to provide advice. The former of these two groups has about 100 members and concentrates on raising public awareness, promoting the sector, providing technical assistance and training. Certification is currently undertaken by two organisations, IMO and Ecocert. Naturland (Germany) are also reported to have some projects in Cameroon (Hermann, 2003).

Farms fall into three main types: small-scale family farms, often of less than 0.5ha; more commercial farms of 2-10ha; and larger scale commercial farms, sometimes of 100 ha or more. Despite the emphasis on export production, estimates suggest that exports of fresh fruits account for only around 10% of production, with the remainder being sold through informal and embryonic local markets. There is strong demand for 'natural' pineapples in the main cities (Yaounde and Douala) because of their better flavour. This feeds through to higher prices, up to 100% above conventional produce.

Natural constraints at present include problems of pest control (nematodes, *Cochenilles*, locusts and *Iules*), diseases (*Phytophthora* and *Thialaviopsis*), weeds and maintaining soil fertility. The latter involves transporting and distributing large volumes of compost, and adds to labour requirements. Technically there is a lack of trained personnel, organisational infrastructure and awareness of organic regulations. There are currently no national standards, no foreign aid for developing the sector and no government support for organic agriculture, on either the production or export promotion side. Nonetheless, there is a strong potential for developing the organic sector to meet export opportunities and create a more sustainable form of agriculture. Higher prices for organic products, the increasing costs of synthetic farm inputs and a lack of public support for agriculture as a whole have led to some entire areas spontaneously converting to organic farming.

Pretty (2002) reports on the Macefcoop Organic Coffee project. Local farmers set this up after the government relinquished its monopoly on coffee and cocoa marketing. Producers did not use pesticides or herbicides and wished to access European markets. Set up in 1994 the group had 600 members by 1999 and with support from buyers and a European NGO was able to ship out the first six hundred bags of organically and fair traded Robusta coffee to leave Africa.

Agro-ecological and Related Initiatives

No details of agro-ecological or related approaches in Cameroon are available- although this should not be taken as meaning that they do not exist.

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4.5 Ghana

Background

Ghana is an essentially agrarian society, where agriculture accounts for c.60% of employment, 50% of GDP and 70% of total export earnings (Ecofair, 1999). It has a wide variety of climatic and soil conditions from the relatively fertile and humid coastal regions to the dryer northern area bordering Burkina Faso. Grains (maize, millet, sorghum, rice, cowpeas, soybean and groundnuts) and tubers (cassava, yams, cocoyams and sweet potatoes) are the main staples. There is a wide range of tree crops, including cocoa which is one of the main export earners. Other important tree crops include coffee, shea, cashew and tropical fruits like mango and bananas. Traditionally the country has been reliant on cocoa, timber and gold) for its export earnings. Attempts have been made to diversify the export base. Many have met with limited success – although a successful palm oil processing sector has developed (EcoFair, 1999). The country has higher crop yields than other West African countries.

Agriculture provides employment for some 3.7 million people. Even though physical and climatic conditions are favourable, Ghana is a net importer of food and a recipient of food aid. A relatively high percentage (20%) of Ghana's land is used for agriculture and the population density per hectare of cultivated land is relatively high (4.5 people per hectare). According to EcoFair (1999) the main constraints on productivity include:

- Limited access to land

- Low capital input
- Limited access to extension and research support
- Poor post-harvest management techniques and facilities
- Poor transport and marketing facilities (one other report stresses that a majority of Ghanaian smallholders live more than half a day's walk from a road passable all year round)

According to Ecofair (*ibid.*), soil fertility is not a significant problem in the forest areas where trees help maintain soil cover and provide organic material although in some areas extraction of timber poses a problem. In the northern areas there is considerable pressure on soil fertility because of increasing population and declining fallow periods. The declining resource base in the north also promotes competition, rather than co-operation, between pastoralists and farmers.

Formal Organic Sector

According to the SÖL report there is an estimated 5,453 hectares of organically cultivated land in Ghana, (the majority of which is at present in conversion). This appears to be a substantial underestimate. Our research has identified the following certified producers.

The largest organic project in Ghana is the **Ghana Oil Palm Development Company** (GOPDC). This has 18,500 ha of organic land certified by Ecocert. It converted to organic in 1999 and consists of 4,000 ha plantation and 14,500 ha from outgrowers. Until now it has been using organic fertilisers imported from Europe and some of the organic waste generated by the mill. But it is now aiming to start a composting project that will reduce the company's considerable waste problems, empty fruit bunches and other waste from the mill account for 30% of the mill's input. West African organic palm oil has a great potential for the European and American markets. A series of scandals with Malaysian and Indonesian palm oil imports contaminated with diesel and pesticides, and environmental disasters including forest fires has convinced some European companies to source their palm oil products from elsewhere. GOPDC claims that wildlife and biodiversity is better protected inside the plantations than outside. Domestically, palm oil is also a very important commodity for household consumption. Of the five oil palm factories in Ghana, GOPDC is the only organic one (Gallat, Pers. Comm.). See also www.gopdc-ltd.com.

Paradise Farm is a 300 hectare holding 60km north west of Accra. The farm covers 300 hectares and has a number of outgrowers. It has around 100,000 papaya trees, 10-15,000 pineapple trees and had planted 250,000 mango trees. At the time of writing they were exporting 20-30 tonnes of papaya a week and 10-15 tonnes of pineapple a week. Mango exports were expected to come on-stream in 2000. They employ 270 workers, excluding their outgrowers and part of the farm is certified by the Swiss based IMO. This farm is currently negotiating its sale to a French company based in Cote d'Ivoire which wants to plant bananas and it is thought unlikely that it will maintain its organic status. (Ecofair, 1999: Gallat, pers. comm.)

Other farms in the certified sector include:

- Volta River estates recently converted 60ha of its land to organic banana production and there are plans to increase to 300 ha by 2005. (Leijdens, 2002).
- Tacks Farm which has 600 hectares of organic land is inspected by Bio Inspecta. They currently have 125ha of mangoes, 25 hectares of pineapple and smaller areas of vegetables and herbs.
- Blue Skies is a fruit processing company producing mainly chilled fruit salads (mostly pineapples) for the European market. They currently process 200 metric tonnes per week of which 10-15% is organic. They draw supplies from smallholder farmers in a designated area, who grow a local variety “sugarloaf”. Traditionally organic by default they have now acquired certified organic status as suppliers to Blue Skies.

There is limited export of fair trade cocoa from Ghana through Kuapa Koko, however the country has not yet developed a real organic supply and some sources have claimed that there is a reluctance among authorities to do so for fear of permitting the spread of capsids. The Cocoa Research Institute of Ghana has done some research on natural methods of controlling capsid with Neem, which have proved successful, although capsid infestation is not a major problem for organic cocoa.

Sources report that there is some demand for a range of organic produce in South African owned supermarkets in Accra. First steps have been made to team up the various producer groups to provide a consistent form of packaging.

We have heard reports of an attempt by Athena Foods Company to produce organic fruit concentrates, but latest reports are mixed about what really happens in the field. Ecocert is the certifier.

Ecotrader is an umbrella organisation of 15 Ghanaian NGOs that was set up in 1997 with the aim of promoting and developing ecological and fair trade principles. Other established actors, such as the Ghanaian National Board for Small Scale Industries, National Standards Board etc., subsequently joined this grouping, which placed the development of standards and certification capacity high on their agenda. Little has been heard from this organisation in recent times.

Agro-ecological approaches

Ghana Organic Agriculture Network (**GOAN**) is a grouping of organic NGOs which has worked actively with the Henry Doubleday Research Association, DfID and PAN-UK in developing a range of programmes. It has more than 150 member groups and organisations, representing almost a thousand individual members. It has established an organic agriculture centre to provide information, training and advice. The centre aims to gather and disseminate global and indigenous knowledge. It has trained over 1000 farmers during a full season as Trainers of Trainers using Farmer Field School modules but also provides 3-day training courses. GOAN has also set up links with research institutes to examine alternative methods of pest control, particularly for cocoa, oil palm cotton, cereals and fruit and vegetables. Together

with the African Network for Development of Ecological Agriculture (**ANDEA**) they were the joint winners of the SARD prize in 1999 (SARD, 2002), but at present little has been heard about their activities. The Traditional Organic Farmers' Association (**TOFA**) are also involved in promoting organic farming amongst smallholders. The Ecumenical Association for Sustainable Agriculture and Rural Development (**ECASARD**) is involved in a number of organic projects, including a joint project with the Ghana Rural Reconstruction Movement where they are working on the development of agroforestry, soil and water conservation systems (Owusu, 2002). It was the leading actor in the **Ecotrader** group together with GOAN and the Standards Board of Ghana.

Northern Ghana is the poorest sector of the country. The majority of farmers cannot afford chemical fertilisers and other agro-chemicals. Soil fertility is poor and declining, with consequent low yields. A number of NGOs have introduced small-scale composting, manuring and soil improvement projects in response to farmers' lack of access to chemical fertilisers. This is targeted at subsistence farming, which produces food crops for household consumption and some surplus for local sale.

Hannah Zemp-Tapang has written extensively on some of these organic farming developments in Northern Ghana. Some of her work can be found on the Farming Solutions web pages (Greenpeace, 2003). This report identifies a number of farms, and sometimes whole villages, in Northern Ghana that have taken up organic farming practices in response to a number of pressures, not the least the increasing price of fertilisers (ILEIA, 2003). Elsewhere in Northern Ghana joint participatory research between ILEIA and NGLWG has led to a number of organic approaches to improving soil fertility and pest control being adopted (*ibid.*). The Dutch donor ICCO has been supporting a network of local church-based NGOs called ACDEP in various livelihood improvement strategies, including composting.

David Aggongo has recently set up a new NGO, the Zasilari Ecological Farms Project (ZEGP), in Walewale, which places organic farming at the centre of its focus on rural development. At the moment they are working with 16 communities in the region and want to start two new initiatives every year. Funding has been secured through to 2007, and the project is currently able to employ 6 full-time staff. The group has strong links with Prof. Dittoh at the University for Development Studies (UDS), an institute that has a specific mandate to promote rural development (van Veluw, pers. comm.).

Ghana is also the home of **CECIK** (Centre for Cosmivision and Indigenous Knowledge), the West African co-ordinator of the Pan African movement for the Enhancement of Indigenous Agricultural Knowledge in Africa (**ENIAKA**). They have been tracking and recording examples of indigenous knowledge in the north of the country as the basis for promoting culturally acceptable sustainable development (Millar and Aniah, undated). Indigenous Knowledge was an important stepping stone in the setting of an organic project in the Brong Ahafo region of Ghana (World Bank, 1999). Disputes over water rights and breaking of taboos about using water led to a series of conflicts in Forikrom, a village of about 6,000 people. Village discussions eventually led to a greater understanding of the reasons for the river drying up, and to

a determination to plant trees around the source to protect it. This led to the creation of a local environmental protection association, which in turn set up a training and demonstration farm based around organic principles. This in turn has opened up new opportunities for school-leavers who have increased their income from vegetable growing, moved on to growing cashew trees and organised themselves into co-operatives located along the banks of the river that was the source of the original dispute (World Bank, 1999).

Danso *et al* (2002) have done some interesting work exploring the constraints on the development of organic market gardens in Kumasi, one of Ghana's main cities, such as the lack of awareness of the hazards of high levels of pesticide, the need for high returns and low consumer demand.

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4.6 Mali

Formal Organic sector

There are no details about the amount of organic land within Mali (Walaga, 2003) although ITC (1999) identifies that it exports organic honey and sesame. The only organic project that we are aware of is a cotton programme being developed by Helvetas (the Swiss International Development Agency). They are co-operating with CMDT, the Malian company for textile development. It is still a rather small project with around 200 ha. Until very recently, the CMDT, which is one of the largest cotton producing companies in Africa, was very hesitant about introducing organic cotton but has now realised that it could be an alternative to replace some of the conventional

cotton produced in the country. To our knowledge, there are no other organic projects at the moment.

Agro-ecological Approaches

Mali is the only African country where two community groups have been honoured by winning the SARD prize. This was won by **Harmonie du Développement du Sahel** Group in 1997 and by **ADASF/Gallé** in 1998. Information about other projects is difficult to find and we have not even been able to identify addresses for these two projects.

Between 1988 and 2000, several agro-ecological projects were carried out by the main cotton producing para-statal companies, with the assistance of GTZ and German Agro Action. These PAE (Projet Agro-Ecologie) focused on soil conservation, integration of farm animals into the cropping systems, composting and biological plant protection. Thousands of small-scale farmers benefited from these projects.

Another project run by Unitarian Service Committee of Canada has begun operating a grassroots rural development programme in the Douentza district. Fofana (2002) reports how, through the use of organic soil conservation techniques, agroforestry, seed conservation, biodiversity promotion, market gardening and fruit tree planting, substantial inroads have been made in addressing problems of food insecurity and rural emigration.

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4.7 Senegal

Background

Senegal is situated in the most westerly part of Africa. It has an area of around 192,000 km² and a population of almost 9.5 million. 75% of the population are rural with a similar proportion working in agriculture. With a GDP per capita of c. \$500 dollars it is relatively wealthy compared to many other countries in the region. Despite this, a high proportion of the population are malnourished (c.25%) and the country is the largest recipient of food aid in West Africa. Average crop yields in Senegal are lower than in any other of the profiled West African countries at <725 kg, (of grain) per hectare.

As in many other coastal Western African countries there is a marked difference in the potential and productivity of land in the coastal region and inland areas. Coastal areas benefit from more regular and prolonged rainfall, whereas the inland areas have more Sahelian characteristics, with low productivity and a high pressure on the resource base. Fishing plays an important role in the coastal region, employing 75,000 people. Livestock and poultry account for half of income from agriculture and the country is self-sufficient in meat production. By contrast, production levels in staple crops such as corn, millet or sorghum are stagnant or declining and Senegal imports more than 35% of its food requirements (EcoFair, 1999). Government policies have encouraged high levels of agrochemical usage and in some areas this has led to resistance to pests, siltation and a depletion of organic soil content. In others, slash and burn agriculture, decreased fallow periods and a lack of control measures against erosion have all contributed to land degradation (*ibid*). Traditionally the country has been highly dependent on groundnuts. The potential for developing horticulture, particularly along the fertile Niayes strip has been widely recognised but as yet undeveloped. The country benefits from rich sources of natural rock phosphate, a mineral often in short supply in African soils and an acceptable soil amendment in certified organic systems. However, attempts to subsidise its extraction and use in agriculture have proved largely unsuccessful, often resulting in it being used as a building material rather than as a soil amendment. Declining yields from conventional agriculture, the withdrawal of subsidies from artificial inputs and the devaluation of the CFA have all created a climate in which many farmers' organisations are well disposed to adopting organic approaches (El Hadji *et al*, 2001)

The Formal Organic Sector

Senegal has had an active organic movement for more than twenty years and has more certified organic land than any other West African country, with 2,500 certified hectares of land and 3,000 farms. Despite the relative size of the organic sector we have relatively little information apart from the cotton projects run by ENDA PRONAT (see below). Earlier projects have included the export of mangoes to France, but we do not know if this trade still exists.

Historically the organic movement took root in the arid interior of the country in the 1980s. Usually these first organic farms were very small and mostly involved women farmers. Critics of the organic movement questioned whether these experiments could be transferred to larger areas. A second wave of biological farming was encouraged by the experiences of larger programmes in Burkina Faso. These led to the setting up of training and experimental farms in five or six regions of the country, which has inspired some of the local peasantry to adopt these methods.

Although the Senegalese government is said to be open to supporting and integrating organic agriculture into mainstream agriculture, the organic sector appears to be divided and has not been able to present a common platform and agenda that can bring all the actors together. These divisions were reflected in the failure of an initiative in 1996, when a set of meetings was organised by EcoFair to bring together stakeholders to discuss the development of a national organic movement and

certification capacity within the country (EcoFair Foundation, 1997). While some who were involved in this initiative saw it as a genuine attempt to bring together the divided organic movement, others saw it as a divisive initiative. In this atmosphere it is difficult to comment upon who the main players within the organic movement are and what influence they have. COSAB (Conseil Sénégalais de l'Agriculture Biologique) is known to be one of the main players, although it is not clear whether it has the support of the whole organic community.

At the moment new actors and initiatives are emerging to promote organic farming. **SODEFITEX** (La Société de Développement des Fibres et Textiles) has plans to introduce 600 hectares of organic cotton in the coming (2004) season and **FENAGIE** (Fédération Nationale des Associations et Groupements d'Intérêt Economique) has plans for producing organic bananas for the local market (Bassoum, pers. comm.)

Box 4.1: Organic Cotton in Senegal

The ENDA PRONAT organic cotton project was the first of its kind in West Africa. It aimed at, and succeeded in, overturning the widespread belief that cotton could not be grown organically in West Africa and has paved the way for other projects in Mali and Benin. Due to a series of problems it did not succeed in marketing its product. The first project was established in Kousounnar (central east Senegal) in 1995-6, and a second in Velingara (south east of the country) two years later. The first project grew very rapidly from 53 producers in the first year to 152 in the second and nearly 500 in the third. This rapid growth created workload problems and the support staff were unable to give the support and advice required to all participants. Yields declined dramatically and the project was riven by internal disputes. By 2000/1 the project was back to a manageable size (150 participants with almost 40% female) with higher yields. It has proved difficult to attract new funding to the project because of its chequered past. The second project was set up by a local trader in collaboration with a consultant from the first project. This project was also marred by disputes between different agencies, including the state-owned cotton marketing board, over credit and stocks. Although some organic cotton was finally ginned these disputes overshadowed the rest of the project (Ton, 2002).

Agro-ecological approaches

Senegal has an active NGO sector promoting agro-ecological farming. PRONAT is a group working within ENDA (Environment and Development Action in the Third World) and has currently several other initiatives in Senegal. These include a market gardening initiative in the Niayes region, using organic soil restoration techniques, Neem as a biocide, and tree planting. This project has had considerable success in restoring previously salinated land. This initiative also trains women in raising sheep, and Project Dimitra promotes the role of women in rural development and in using organic techniques. They have also carried out an action research programme to promote organic farming along the basin of the river Senegal and research on the use of local phyto-genic plants. They also maintain a library and database on agroecology and pesticides.

The 1989 IFOAM conference in nearby Burkina Faso presented an opportunity for several Senegalese NGOs to publicise their work. Badji (1989) describes an urban refuse composting project in Louga (population 70,000) in the Sahel. The scheme was developed as a reaction to the declining adequacy of traditional techniques (fallowing,

straw burning and use of manure) to cope with pressure for growing more food. Component activities of the project involved collection and sieving of refuse (93% of refuse from samples was compostable), experimenting with composting techniques and evaluating the chemical and physical properties of the compost. Though short on qualitative data, the paper notes three main benefits: improved sanitation in the town; creation of a productive green belt which also protects against desertification; and the creation of new jobs and market gardening opportunities.

The US-based **Rodale Institute** has become involved in promoting urban composting schemes in Senegal. It was recently awarded the 'President's National Prize' for work with women's groups on developing composting techniques. It has set up the Regenerative Agricultural Research Centre. It is also involved in developing regenerative organic practices in the "Peanut Basin", where soils were becoming depleted. It conducts projects with around 2000 farmers in 59 groups promoting stall-fed livestock, composting systems, use of green manures, water harvesting systems and rock phosphate. Yields of millet and peanuts have increased dramatically. Because the improved soils have a greater water retaining capacity, fluctuations in yields are less pronounced between high and low rainfall years. According to one organiser the main benefit of the project is that "*crop yields are ultimately uncoupled from annual rainfall amounts. Droughts while having a negative effect on yields, do not result in total crop failure*". (Diop quoted in Pretty, 2002: see also Diop, 2002).

Thiam and Dieng (1989) provide an account of a market gardening project in the fertile 'Niayes' coastal strip area of Senegal, set up in response to problems of agrochemical use and declining soil fertility. The project includes manuring and biological pest control regimes, field afforestation and monitoring production data. At the time of writing, more funding had been obtained to extend the project with the aim of disseminating the results through the extension service.

Today a number of indigenous NGOs promoting organic agriculture are operating in Senegal. These include **Recours à la Terre**, which runs a 5-hectare organic demonstration garden and experiments with organic techniques appropriate to the marâichage. These include soil fertility, water conservation techniques and experimentation with species that provide protection against salt winds. It has engaged in joint projects with the **Institut de Recherche Agricole** on the use of *Sesbania*, a nitrogen fixing bush species, the banana producers group of Senegal and regional producer groups (Sarr, *pers. comm.*) Elsewhere, the **Fédération des Agropasteurs de Diende** is engaged in experimenting with improved composting techniques, which includes the use of fish meal, and in developing rice cultures in saline and poor farming areas (Gueye, *pers. comm.*).

Senegal is also the home of the African regional office of **Agrécol**, a centre that provides training in organic farming and gathers and disseminates information about organic agriculture across West Africa. It collects documents and materials, specifically related to West Africa that provide concrete examples and experiences of ecological cultivation methods. These often include grey, unpublished information

that can be of value to farmers and extension workers. Agrécol also document local knowledge of indigenous trees (Agrécol, 2003). It publishes a periodical ACACIA, three times a year. This is published in both French and English and addresses current themes within ecological agriculture. They also provide information for regular radio broadcasts on ecological farming. www.agrecol-afrique.sn

Senegal is also home to the **Pesticide Action Network Africa (PAN-AFRICA)**, which runs an information service on pesticides, IPM approaches, sustainable and organic farming. Although primarily concerned with exposing the hazards of pesticide use, it devotes some attention to highlighting alternative approaches, including organic ones. The network has members in the following African countries: South Africa, Ethiopia, Ghana, Kenya, Liberia, Mali, Niger, Uganda, Senegal, Sudan, Tanzania, Togo, Zambia, Zimbabwe. www.pan-africa.sn/english/letter.htm

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4.8 Togo

The Formal Organic Sector

There are no details available in the literature about the amount of organic land within Togo and of the types, if any, of organic exports (Walaga, 2003). Our understanding is that there have been, or is, some exports of pineapples, fresh fruit and vegetables via Pro Nature in France.

Agroecology

Togo has a large and growing IFOAM membership, nearly all of who appear to be community development groups. The only organisation for which we have details is **Groupe des Jeunes pour l'Entraide et le Développement (GJED)**, a young peasant farmer group promoting organic farming in the western plateau area of Togo. The main aims of the group are experimentation with organic approaches and dissemination of successful methods amongst villages. They have established a primary school where organic garden and teachings are at the heart of the curriculum. Although they intended this to be a pilot project, they have not yet raised funds to replicate the venture in other villages. They have also established an information / documentation centre where people can come and find out more about agroecology. They are seeking funding to translate key texts and information into local languages so that villagers can more readily avail themselves of this resource. It is also one of the few African countries to have its own WWOOF (**Worldwide Workers On Organic Farms**) organisation.

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4.9 Other West African Countries

GAMBIA

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IVORY COAST

There were some reports of a formal organic sector in Ivory Coast which is the world's largest exporter of cocoa. The ITC (1999) identified the country as exporting organic cocoa, and other reports suggest that organic bananas and pineapples were being exported. There was little data on informal organic production and the current political instabilities are likely to hinder any further development of a formal certified organic sector in the short term, or even information flows in the short to medium term.

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5 South and East Africa

5.1 Overview

As this survey covers 11 South and Eastern African countries that stretch from Ethiopia in the north to South Africa, it is difficult to make generalised or sweeping statements about the extent to which organic farming is being practised, or the context in which this occurs. Yet, in several of these countries it appears to be acquiring a critical mass and becoming regarded as a legitimate and credible approach to farming.

Three broad approaches to organic farming can be recognised. The first involves the conversion of, or often parts of, large-scale, commercial, export-oriented enterprises, specialising in a few products. These have market links with the North, and access to good infrastructure. The main problem faced by these enterprises is achieving an acceptable level of production. New fertility strategies and cropping patterns have to be adopted that can compensate for previously high levels of use of artificial inputs. This type of organic farming is the most common in Malawi, Mauritius, Zambia, South Africa where much produce is for local markets, and, prior to the recent troubles, in Zimbabwe. It is also found in Kenya and Uganda in the fertile Rift Valley farms.

At the other extreme, many development organisations (donor organisations and local bodies) are making use of informal organic farming approaches as a way of tackling issues of low food productivity, low household food security and environmental degradation in marginal rural areas. Similar approaches are being used in some peri-urban areas, such as South Africa's townships. These schemes vary from local projects, which started from the initiatives of a few farmers (e.g. LOMADEF in Malawi) to large-scale regional projects initiated by the international donor community (e.g. the A2N project in Uganda). The relevance of these approaches to meeting development needs and reversing the interlocking cycles of poverty and environmental degradation is becoming more widely appreciated. Several donor agencies are starting to develop programmes that give organic farming a more central role. National and transnational networks are emerging in several different parts of South and East Africa which place organic farming at the centre of a broader agenda for promoting rural development and self-reliance (e.g. NOGAMU in Uganda, FORMAT in Kenya, and PELUM in Zimbabwe and surrounding countries). In these cases these movements have arguably moved beyond an initial challenge of proving the viability of organic approaches – and now face a second challenge, mainstreaming such ideas, through developing grassroots linkages and appropriate institutional support structures.

A third way is also emerging in several Southern and Eastern African countries, that of certified smallholder production. This approach involves linking smallholder farms which are often already *de facto* farming organically, to premium markets. Examples of such initiatives include the EPOPA projects in Uganda and Tanzania and

GTZ/Protrade initiatives in several other countries. This approach and the benefits that it brings is described in more detail in section 2 of this report.

5.2 Ethiopia

Background

At more than one million square kilometres, Ethiopia is one of the larger countries in Africa. Most of the country consists of a high plateau with a central mountain range divided by the Great Rift Valley. The country experienced thirty years of civil war and military strife between 1961 and 1991. This was followed by the secession of Eritrea which deprived the country of an access to the ports.

Ethiopia is imprinted in the memories of the North as the scenes of the worst famines in recent decades and has remained the largest recipient of food aid in Africa. It is subject to periods of extensive drought and suffers a range of environmental problems including deforestation, over-grazing, soil erosion and desertification. Less than 30% of the population has access to safe drinking water. With per capita GDP at circa \$100 it is one of the very poorest countries in the world.

Agriculture is the main economic activity, accounting for more than three quarters of the country's workforce. Half of this is subsistence level farming. State farms are responsible for much of the cash crop production, mostly coffee and oil seeds. Coffee is the most important crop and accounts for more than two thirds of exports. Animal hides account for another 16%, and cotton and oilseeds also make an important contribution. The main staples are maize, sorghum, barley, wheat, pulses, potatoes, millet and yams. Ethiopia is also recognised as one of the centres of agricultural biodiversity, particularly for unexploited varieties of coffee, sorghum, chickpeas, wheat, barley and several other grains.

Formal Certified Organic Sector

There are, as of yet, no records of organic exports or of certified organic land in Ethiopia. There appears to be a strong potential for developing an organic coffee sector, as the country already has a high reputation as a quality producer and it is widely considered that up to 80% of coffee produced is *de facto* organic without being certified as such (Sciallabba and Hattam, 2002). ITC received funding to set up a certification programme a few years ago but these plans were undermined by conflicts. More recently the **Amber Foundation** has started working in co-operation with the OCFCU (**Oromia Coffee Farmers Cooperative Union**), a collection of 35 co-operatives with about 23,000 members, in order to produce and market organic shade-grown and fair trade coffee in the Jima region of Oromia. The 35 co-operatives involved are certified by the German BCS Öko-Garantie (organic) and by Max Havelaar (fair trade). This project was only begun in 2002 and neither production figures nor data on certified land are yet available.

Agro-ecological and Related Initiatives

The Save the Children Fund UK initiated an organically based “integrated pest management programme” in Amhara (North Ethiopia), which has identified natural and locally available treatments to combat 15 important pest species. The treatments include use of fermented cow’s urine and sisal juice (for bush crickets), extracts of wild onions which drives away rodents, and plants like the crocodile climber, which kills weevils that attack stored grains. Local farmers have hailed the pilot scheme - which was adopted over a nine-month period in several rural villages of the Amhara region - a success. The project is now being scaled up across the region - which has a farming population of 16 million - with a pledge of €1 million from the EU (Greenpeace *et al.* 2003).

In Tigray (in the north of the country) **the Institute for Sustainable Development** has, in cooperation with Tigray Agricultural Bureau, developed a pilot programme of ecological restoration for marginal and degraded areas in four villages. (see Parrott and Marsden, 2002, p. 77-8).

Ethiopia is one of the richest areas of genetically diverse farmers’ varieties in the world, due to ongoing interactions between wild and domesticated varieties of a number of important food crops including wheat, barley, sorghum, teff, chickpeas, coffee and other less-appreciated but potentially useful crops. The Global Environment Facility is financing the **Biodiversity Conservation and Research Institute** to run a programme: “Dynamic farmer-based approach to the conservation of Ethiopia’s plant genetic resources” to aid the maintenance and distribution of these endowments. (Greenpeace *et al.*, 2003).

An Ethiopian student (Kippie, 2003) recently completed a PhD at Wageningen University, documenting the practices of the **Gedeo**, a group in Southern Ethiopia who practice intensive organic farming methods. The secret of their success lies in diversity of crops used as well as the times of sowing, which results in permanent soil cover, minimises erosion and disease and staggers harvests across the year. He now wishes to examine whether this system can be applied to Northern Ethiopia where monocultures have led to erosion, disease and food deficits (WB, 2001).

Yilma Getachew is a consultant in urban agriculture that analyses bio-intensive urban agriculture in Ethiopia. Over ten years, c. 800 families have been receiving training and the method is reputed to have trickled across to over ten times as many families. Moves are now afoot to develop a training school for urban agriculture in Ethiopia, based upon bio-intensive methods (Getachew in *Urban Agriculture*, 2002, p. 18-20). An earlier work of his, also catalogues an extensive range of local agro-ecological knowledge and practices across Ethiopia (Getachew, 1987).

Pretty (2002, p. 148-9) identifies two organic initiatives in South and South-West Ethiopia, both of which rely entirely on organic principles. The first, promoted by FAO’s Freedom from Hunger project, works with farmers to improve food security. New crop varieties (including potatoes) have been introduced to promote food security and degraded lands are being replenished through soil conservation and

compost application. Multiple cropping has been introduced and pesticides displaced by Neem. Farmers are now more able to cope with drought, when previously they migrated, and family incomes have doubled since the project was initiated. The other project in Cheha has focused on introducing new varieties of crops and trees, promoted manures for soil fertility, botanicals for pest control and introduced veterinary services. There has been an overall 60% increase in yields and 70% improvement in nutritional levels. Some farmers are now producing surpluses to sell at markets. An area that was once dependent on food aid is now becoming more self-reliant. More importantly the project is taking root at the farmer level, with farmers replicating activities on their own initiative and the ideas spreading beyond the initial project area. Taken together these two projects involve some 15,000 families with more than 7,000 hectares under organic cultivation.

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5.3 Kenya

Background

Kenya comprises almost 600,000 sq. km and has a population of more than 30 million, with a growth rate of 2.7%. It has one of the most developed and diversified economies in sub-Saharan Africa based chiefly around agriculture. Its capital Nairobi is a regional centre for East Africa. It is home to a number of UN organisations, including UNEP, HABITAT and the regional UNESCO headquarters. There are also a number of international agricultural research institutes based here. Mombassa on the East coast is one of East Africa's major ports and serves as a port of entry to Kenya's landlocked neighbours. GDP per capita is around \$300.

Kenya is a major exporter of tea and coffee, for which it has a reputation for high quality, fruit, flowers and vegetables. Many exporters are plantation style farms,

although smallholder exports are important, too. Agricultural products account for 65% of exports, with tea and coffee accounting for 42%. There is a large cattle herd, and meat and dairy products are also exported. Around 75% of the population is engaged in agriculture. Production is having difficulty keeping up with the population growth and agriculture is increasingly encroaching onto marginal areas. Despite being a major exporter of cash crops, Kenya is also the second largest recipient of food aid in Africa (Arold, 1997; Millstone and Lang, 2002)

According to local sources (Mulagoli, *pers. comm.*), the emphasis of the government agricultural extension service is primarily upon meeting food security needs, with export promotion a secondary priority. The government has a long tradition of supporting soil and water conservation measures and since the start of the 1990s has moved towards whole river-basin water catchment strategies, utilising participatory techniques to engage the farming communities on their own terms (Pretty and Hine 2001). Moreover, *'the ministry extension service includes organic farming messages in its training curriculum'* (Mulagoli, *pers. comm.*). Since 1998, some government programmes have been introduced to provide support for farmers reverting to organic management strategies. This includes the development of 'farmer extension workers' whose plots often serve as demonstration farms. Thus the government's position on organic agriculture appears to be moving from one of hostility to one of support (Wachira, 2000).

Formal Certified Organic Sector

Records show that Kenya has just 494 hectares of organic land (Walaga, 2003), although we believe that the figure is much higher. Many of the exporters are large-scale farmers, already engaged in export agriculture and horticulture who are diversifying into organic production to meet demand from their established customers. Certified organic produce includes French beans, runner beans, mange tout, salads and tea (for the UK), hibiscus tea and jam (for Japan and Austria) and macadamia nuts and oils (for Germany and Japan) (Walaga, 2003). There is a potential for producing organic coffee, which has not yet been realised because of the state control of coffee exports and marketing. According to Rundgren and Lustig (2002) there are about 12 organic operators (individual farmers or producers' associations) in Kenya. Some are already licensed and others are in various stages of conversion.

A recent training programme was carried out by **the Kenyan Institute for Organic Farming** for participants across East Africa on establishing organic guarantee systems, standard setting and accreditation certification. The **Association for Better Land Husbandry** has been developing a certification programme for Kenya. This was initiated in partnership with the Soil Association (UK) but is now being run with new partners, the Organic Food Federation (OFF), another UK-based organisation.

The Kenyan government has recently appointed **Foodlink Research Institute** (an agriculturally based research organisation that undertakes issues and problems which are linked directly or indirectly to organic agriculture), to undertake a feasibility study to determine all the parameters that would go into optimal production of organic

cotton in the country. **Sacred Africa** recently organised a regional conference for sugar stakeholders from East and Southern Africa in Kisumu (Kenya) in May 2003. They expected about 200 farmers and sugar industry specialists and hoped that it would provide a forum for market organic agriculture ideals and practices (for more details about SACRED see agro-ecological initiatives below).

Kenya is not presently part of the EPOPA programme - but consideration is being given to extending the programme there and several producer groups have already expressed an interest in participating in this programme. These include a project for growing and harvesting wild products such as a wild forest oil, called Cape Chestnut or Yangu oil as well as cosmetics such as soaps, face creams, colognes and bath oils using the above oil, and other African ingredients. They are interested in extracting traditional perfumes from plants and producing organically grown essential oils, wild harvested honey, and medicinal herbs. Another group has just secured a cotton ginnery in western Kenya and want to start a project that would enable farmers to grow and sell organic cotton.

The most active certification organisations in Kenya are The Soil Association and Ecocert. The former has local inspectors while the latter use inspectors from overseas.

Agro-ecological Initiatives

Kenya has a very active agro-ecological sector, with more IFOAM members than any other Southern or Eastern African country; the great majority of these are NGOs. There was a strong response from Kenyan organisations to an earlier survey (carried out by the authors, Parrott and Marsden, 2002) and there is a wealth of literature and case studies regarding the development of organic and agro-ecological farming in Kenya. Some of the institutions which have been leading the way in this field include: the Kenya Institute of Organic Farming, Association for Better Land Husbandry, Manor House Agricultural College, Baraka Farmers Training Centre, Sustainable Agriculture Community Development Extension Program, SACRED Africa and Mount Kenya Organic Farm. There is some rivalry between these groups and despite SACRED's initiatives in organising a common forum (FORMAT – see below), Kenya has not yet developed a unified organic movement.

The Kenyan Institute of Organic Farming (KIOF) was founded in 1987 by Dr. Njorogye in response to the problems of declining yields faced by small-scale but highly intensive and productive farmers in the Kenyan highlands. KIOF's mission is fivefold and includes: training, extension, information dissemination, external consultancy and outreach (Stolton, 1997). Methods advocated by KIOF include composting, double deep digging and water harvesting. KIOF offers training and extension facilities and to date it has trained over 200 farmer groups with over 5000 individual members (Ker, 1995; International Development Research Centre, 1997). Its training programmes range from week-long courses for interested farmers through to a one and a half year certificate course for school leavers.

KIOF has run Farmer Field Schools in association with CABI (Kiani *et al*, 2000). It has recently been involved in a research project with the Dutch-based consultancy

Education Training Consultants to assess the potential and limitations of organic farming in different agro-ecological and socio-economic conditions within Kenya. Prior to this study it had been assumed that organic farming was most suited to ‘high potential’ agricultural areas. The study showed that medium potential areas are also very suitable for organic agriculture. This study found that maize cultivation using compost alone fared significantly better than that with manure / fertiliser mixtures (Stolton, 1997). Overall, organic systems were found to be producing good yields, significantly out-performing conventional systems in some areas in terms of grain yields, net cash benefits and returns to labour and capital. It also found that women were particularly drawn to organic farming systems (Scialabba, 2000). KIOF is mainly aimed at smallholder farmers and it is not involved in export markets. KIOF was one of the first winners of the SARD prize (in 1987) and is often seen as “the” representative of the organic movement in Kenya.

The **Association for Better Land Husbandry (ABLH)** is another NGO promoting low-cost methods of conservation-based farming. It focuses on developing local skills, knowledge and social co-operation to develop sustainable agricultural systems. Its approach requires almost no cash investments, but considerable initial labour input. It particularly promotes the use of double dug beds, incorporating compost, animal and plant manures. Members of groups working with ABLH find that the investment made in their land provides a better return than taking outside jobs: it enriches the soil and enables them to grow vegetables well into the dry season. A review of 26 districts involved with the scheme, found that 75% of households have attained all-year food security, and the proportion buying in vegetables has declined from 85% to 11%. Greater continuity of food supply has led to a noticeable improvement in children’s health and a reduction in susceptibility to disease (Pretty and Hine, 2001). They have also been involved in starting to develop organic standards, and certification and inspection capacity. They have a well-presented and informative web site: www.ablh.org

Sustainable Agriculture Center For Research and Development In Africa.

SACRED Africa offers short-term training courses in organic farming ranging in duration from one week to three months. They annually train over 300 participants, including farmers and government and NGO representatives. They also have a project with a group of nearly 500 women farmers in Teso District who are producing vegetables, and processing soya, groundnuts, and sesame for the local market. They have also promoted maize inter-cropping systems, and published a wide range of reports on the practical and organisational aspects of organic farming, as well as broader related issues. SACRED was involved in setting up FORMAT Kenya. (details at www.acts.or.ke/sacred). FORMAT has acted as a forum for organic and like-minded initiatives over recent years. It has served to improve communication between the organic movement and other key stakeholders, including government and the media. It has promoted three events that have highlighted the beneficial role of organic farming and related activities. Its accomplishments include:

- Achieving better access in the media (national newspapers and farmers magazines) on organic activities, research and organisations.

- Producing two television programmes that attracted widespread interest and have been shown on several occasions.
- Exhibitors at FORMAT acquiring contracts both locally and overseas, improving sales and receiving invitations to attend overseas trade shows. These include: Hyacinth Crafts, a rural handicrafts group who use water hyacinth stems to make furniture and decorations: the Kayole Environmental Management Association, who recycle urban waste into compost, fuel briquettes and crafts, and the Millenium Fuel Project who also make fuel briquettes from organic waste
- Developing a forum through which local level NGOs develop advocacy skills and have been able to work together and provide input into government strategies on poverty eradication and rural development.
- A 32 chapter book “Organic Resource Management Practices and Technologies in Kenya” is due for publication in the summer of 2003. (www.formatkenya.org)

Other agro-ecological initiatives include:

- **The Green Farming Group**, a small community farming group with a 16ha demonstration farm in Othaya. They are mostly involved in teaching farmers about composting and water conservation techniques. (Parrott and Marsden, 2002)
- **Hope Community Development Programme** (Misikhu) A training organisation based in Western Kenya involving >1000 farmers, with four extension workers. They have recently set up a small sunflower oil processing unit for local farmers with aid from ICCO, a Dutch funding organisation (*ibid.*)
- **The Forum for Eco-Agriculture in Kenya**, which is developing organic food farming systems in Nairobi in order to meet the cities’ growing food requirements and generate urban employment initiatives (*ibid.*)
- **The Sustainable Agriculture & Rural Development Initiative** work with communities in the Gilgil district in order to develop organic systems to increase food security through a community indigenous seed programme. These seeds have been shown to be more resistant to harsh drought conditions (Wairegi, 2000)
- **Manor House Agricultural Centre**. Set up in 1984 in response to a drought, the centre provides training to farmers, young people and governmental and NGO staff in bio-intensive farming. The centre has trained some 6,000 farmers in 185 community groups, half of who are known to have adopted bio-intensive agriculture. Methods adopted include double digging, composting and inter-cropping and companion planting to reduce diseases and pests. Farmers who have noted phosphorous shortages now add bone meal to their compost pits. Farmers are encouraged to train others (Pretty, 2002).
- **Community Mobilisation Against Desertification**. This is an initiative in the low potential area of South Nyanza. The programme began as a tree planting initiative and then expanded to include soil conservation and fertility and organic

cultivation. It now adopts a whole farm approach. It works with about 500 farmers who have 1000 hectares between them. They have seen maize yields double and incomes increase through fruit tree cultivation. Local jobs have been generated and improved cultivation of vegetables in home gardens has further strengthened food security (*ibid.*).

- **Mumias Education for Empowerment Project.** This project is based in an area where severe food insecurity afflicted 25% of the population and many households only had food security for 1-3 months a year. Severe malnutrition, high infant mortality rates and low literacy levels blighted the area. The project uses structured learning processes to encourage groups to identify new solutions based on locally available resources. Cover crops, green legumes, raised beds and biological pest control methods all form part of their organic approach. Yields of beans and groundnuts have doubled and the food security period for the typical household, of which almost 2,100 are participating in the programme, has been extended to 3-6 months every year. Childhood nutrition levels have shown marked improvement (*ibid.*)
- **The Kihara Zero Grazing Group** is a farmers' group from Central Kenya who cultivate Napier grass as fodder for their cattle and, unlike their neighbours, do not experience feed shortages in the dry months (www.formatkenya.org)
- The **Kenya Woodfuel and Agroforestry Programme (KWAP)** encouraged farmers in the Busia District of Western Kenya to take part in an on-farm experiment in pest control. The method, which used *Tithonia diversifolia* (wild sunflower) is useful in controlling termites and decomposes quickly, releases plant nutrients readily, and is particularly rich in phosphorus (ILEIA, 2003;Wanjau et al, 1997). Other agencies, including SACRED, continue to do research on the value of this crop and promote its use among resource poor farmers.
- The German Development Agency GTZ has assisted the IPM horticultural project in Kenya in developing a small-scale Neem processing plant with a capacity to process 150 tons of seeds per year in Nairobi (Forster, 2000).
- The Intermediate Technology Group (ITDG) have many projects that are complementary to organic farming (including low cost food processing) and have their East Africa Office in Nairobi.

Box 5.1: Agro-ecological Research in Kenya

Kenya is also blessed with a number of international research institutes with a commitment to promoting sustainable agriculture. Some of their work is having major impacts in promoting organic farming methods within Kenya and creating initiatives that are being taken beyond its borders. The **International Centre for Insect Physiology and Ecology (ICIPE)**²⁷ has done pioneering work in controlling the stem borer, which causes major yield losses in subsistence cereal production throughout

²⁷ Full details of ICIPE's research activities can be found in their Business Plan and Research Outlook, (ICIPE, 2002).

sub-Saharan Africa. Its Director Hans Herron was awarded the World Food Prize in 1995 for his success in finding a natural predator for the mealy bug, which threatened to wipe out Africa's manioc harvest. More recently research led by Sear Khan, the current research director, has found a solution for pests that attack maize as well as competing weeds. It has developed a push-pull system for controlling damage to maize and sorghum. Field margins are planted with 'trap crops' that attract stem borer: the two most successful species used have been Napier grass (*Pennisetum purpureum*) and Sudan grass (*Sorghum sudanensis*). The crops themselves are inter-planted with molasses grass (*Desmodium uncinatum*) and two legume species: silverleaf (*D. intortium*) and greenleaf (*S. hermonthica*). *Desdemonium spp.*, which also fixes nitrogen in the soil, offers ground cover preventing erosion and suppresses parasitic weeds, particularly St. John's Wort. Using this system some maize farmers in Kenya have enjoyed a five fold increase in yields (ILEIA, 2003). Attempts are being made to transfer this approach to other countries, particularly Ethiopia and Tanzania, and Hans Herren has donated his prize money to set up an organisation "Biovision" to spread the method more widely. While there is always a shortage of funds to support the propagation of such biological approaches, large multinational companies are preparing to open up Kenya for new GM variants of maize which most farmers will not be able to afford (ILEIA, 2003). ICIPE has expressed an interest in collaborating more formally with the organic movement. Quite recently, a collaboration has been agreed between GTZ and ICIPE to establish an organic certification body within ICIPE.

The **World Agroforestry Centre** (formerly the **International Research Centre into Agroforestry (ICRAF)**) is currently undertaking research and extension work on the use of leguminous tree fallows such as *Sesbania Sesban*, *Crotolaria Grahamiana* and *Tephrosi*. These species recycle up to 150 kg of nitrogen per tree per annum – enough to significantly increase soil fertility and productivity. IRCAF has also introduced a tree species (*Calliandra calothyrsus*) from Mexico that provides animal fodder at a low cost, thereby increasing milk and manure yields. Farmers who have adopted this species on their holdings, talk of a move from 'subsistence' to 'sustenance' agriculture (Collis, 2000). Elsewhere in Kenya, the **Coffee Research Foundation** has introduced a species of naturally pest-resistant coffee which has now been adopted by one third of small coffee growers.

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5.4 Madagascar

Background

Madagascar is a large island, 430 kilometres east of Mozambique. Its interior is largely mountainous, humid in the north and arid in the south. The coastal climate is tropical. It has a very diverse ecology and an unusual racial mix, which includes Portuguese, Arabs, Africans and people from the South Asia and Pacific regions. It has a population of 14 million people and a per capita GDP of c. \$240.

Agriculture employs around 75% of the population and accounts for 32% of GDP. Cash crops include coffee, vanilla, sugarcane, cloves, and cocoa. Cotton, both seed and cloth, and shrimps are also important export products. Levels of pesticide and particularly fertiliser use are low, the latter estimated at 4kg/ha. The main food crops are rice, cassava, beans, bananas and peanuts. Madagascar is almost self-sufficient in rice. The country has over 10 million head of cattle and cattle raising is a growing activity. More than a quarter of the country is under forest cover, although there are problems with deforestation, overgrazing, soil erosion and desertification (Arnold, 1997; Millstone and Lang, 2002).

Formal Certified Organic Sector

First initiatives in organic export agriculture were made by a German and a French company in 1990. The first products exported were coconut oil, palm oil, cashew nuts and some spices such as vanilla, pepper and cloves. The 1990s saw a rapid expansion of the sector which now comprises several thousand small holders and about twenty processing and export companies.

Madagascar grows a wide range of organic commodities (see Table 2.2). Main exports include: cocoa (1,142 tonnes), sugar (726 tonnes) coffee (369 tonnes.), palm oil (216 tonnes), processed fruits (62 tonnes), black pepper (17 tonnes), vanilla (15 tonnes), and green pepper in brine (11 tonnes). Other exports include a range of spices and herbs such as cinnamon, turmeric, ginger, cloves, chillies, nutmeg, and red peppers, and essential oils including Ylang ylang, ravintsara, and cloves.

Yet despite this range of produce, the commercial sector has remained small and prospects for future growth are limited. Attempts have been made since 1993 to develop a commercial organic sector in Madagascar, and have attracted the support of several international development agencies, including GTZ/Protrade, COLEACP, USAID and CDI. In particular there have been several failed attempts to export fresh fruit and vegetables, either focused on exotic fruits, such as lychees, or out of season ones such as apples and green beans. Frequently these have foundered because of poor quality produce, poor communication between buyers and sellers, non-competitive prices and high transport costs.

Originally, organic products from Madagascar were either gathered from the wild or grown in remote areas that had never seen synthetic inputs, products included herbs, essential oils, cashew nuts, coconuts and palm oil. Premium prices provided the main attraction and it was relatively easy to meet certification requirements. However, there was no detailed knowledge of intensive organic methods, and together with a lack of awareness about certification and logistical requirements, they remain constraints today. Fruit pulp and juices are exported to France and attract a market premium of about 20%. Most fruits come from out-growers, usually managing small family farms with an average size of 0.5 ha.

The main organic organisation in Madagascar is PROMABIO. Founded in 1993 by three entrepreneurs under the name PROBIOMAD, it has now expanded to include 15 members involved in production, processing and export. Ecocert handle <90% of certification applications. There is no government support for organic agriculture in Madagascar. A USAID initiative is developing a new organic coffee plantation which will be the largest in the country. Ecocert is the most active certifying agency and has some local inspectors based there who also work in Mozambique

Agro-ecological Initiatives

Madagascar is home to the revolutionary Intensive Rice System (IRS) pioneered by the late Fr. Henri de Laulanie. This system, which involves new planting and irrigation methods, was initially conceived as a system to be used in conjunction with chemical inputs, but became organic when prices put these out of reach of many producers. Some hundreds of farmers around Ranomafana have increased their irrigated rice yields from 2 tonnes/ha to up to 8 tonnes/ha and more- even out yielding the demonstration farms maintained by research stations and dependent on high levels of inputs. The system continues to be developed and spread by the **Association Tefy Saina** and the **Institute de Promotion de la Nouvelle Riziculture**. It has even attracted the interest of the International Rice Research Institute (IRRI) and is being tested in other parts of the world, including China. This system has been widely written about by Norman Uphoff at the Cornell International Institute for Food, Agriculture and Development (CIFAD) (Uphoff, 1999, 2003b)

Stoll (2001) also reports on a project (**PATAT –Projet d’Amélioration de Plantes Tubercules**) run by CARE, which aims to improve quantities and quality of manioc, sweet potato and potato. It promotes the use of organic fertilisers in order to improve soil fertility.

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5.5 Malawi²⁸

Background

Malawi is a small (118.5 sq.km) landlocked country in South-East Africa, with a population of 11.5 million. Population growth is slower than in most other countries in the region (at 1.8%). GDP per capita is variously estimated at being between \$160 and \$230 per capita. Ninety per cent of the population live in rural areas and c. 85% are engaged in agriculture, which contributes 31% of GDP and accounts for nearly all export earnings. The principle cash crops are tobacco (70% of all exports by value), tea (7.5%), sugar (7 %) and cotton (0.5%). Tobacco and tea are produced both on large estates and on smallholdings. The country has access to freshwater fish from Lake Malawi, ownership of which is disputed with Tanzania (Sources: Arnold, 1997; Millstone and Lang, 2002).

Formal Certified Organic Sector

Malawi has 6 certified farms of which only 3 are 100 % organic. The others have just converted part of their estates. Three more farms are in conversion. All are organised through the Shire Highlands Organic Growers Association (**SHOGA**) in the south of the country. Estimates of the amount of certified land vary from almost 300 hectares (Walaga, 2003) to 466 hectares (Rundgren and Lustig, 2003). SHOGA have set up herb processing and packaging facilities for export (ITC, 1999). The organic crops include herbs and spice such as bird's eye chillies, cayenne peppers, calendula, hibiscus, lemon grass, lemon verbena, black pepper and ginger. Other products include echinacea, annatto, sesame, sunflower seeds, groundnuts, pigeon pea, and various kinds of beans. One producer has specialised in organic essential oils. Certification is undertaken by Ecocert. SHOGA is actively promoting the idea of setting up a regional organisation which can carry out inspection locally. Major players within SHOGA are Mr. Arthur Schwarz of Hortiflora Ltd. and Mr. Arthur Stevens of Pirimiti Trading Ltd.

Agro-ecological and Related Initiatives

²⁸ We are greatly indebted to Brigitt Boor of Bioherb for her comments and suggestions regarding this section.

The other main organic organisation in Malawi is Lipangwe Organic Manure Demonstration Farm (**LOMADEF**). LOMADEF was set up in 1993 by a group of farmers experiencing food shortages, declining soil fertility levels and increasing input costs. They decided to experiment with organic soil fertility techniques, setting up their own experimental farm and later receiving funding. Their first experiment was with manure. While farmers in the region experienced withered crops, their crops fared well and neighbours soon started to take an interest in what they were doing. Today more a dozen other similar “clubs” have been set up in the surrounding region. Government and other NGOs have taken an interest in their work (Kanjanga, 2002). LOMADEF recently undertook a study in the central region of Malawi, to develop a profile, and understand the relevance, of indigenous knowledge systems to sustainable development. They found that 90% of the population in their study area were rich in indigenous knowledge (IK), that 47% use it in their day to day lives and that those who use it in their farming systems have better maize yields (Kanjanga *et al.* 2002).

Ca. 40 km outside of Lilongwe, Mr. Glyvyns Chinkhuntha has established Tikondwe Freedoms Garden. This 10 ha swamp land has been developed to a wonderful organic garden. Products include fresh fruits, vegetables and flowers for the domestic market. Buyers are generally expatriates. Mr. Chinkhuntha is a member of MOGA (Midland Organic Growers Association) that has received some funding from GTZ. MOGA is promoting organic farming for the domestic market but is not certified. Buyers usually visit farms and have a look at the production. (Boor, pers.com).

The International Centre for Living Aquatic Resources Management (**ICLARM**) is working on integrating pond fish culture into low input farming systems in Malawi. The project has worked with some 2,000 individual farmers on developing fishponds and vegetable improvements in home gardens. Intensification of these two (inter-related) components of the farm system often accounts for only a small proportion of farm size (typically 0.5ha on a 1.5ha. plot). Yet this results in significant increases in food security – the fishpond representing a new source of food for the farm, with household and vegetable yields increasing by c.50% (from 2,700 kg/ha to 4000 kg/ha). These farms also produce significantly more cash income, largely from improved vegetable production. As farmers become familiar with these systems the productivity of the ponds increases steadily, which is in stark contrast to conventional extension practices where improvements often drop away as farmers lose control of the systems which are sold to them (see Pretty, 2002 and Brummett, 2002).

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5.6 Mauritius

Background

Mauritius is a small island in the Indian Ocean of just 2,000 sq. km. and a population of just over 1.1 million. In per capita terms, it is the richest country in this survey with a per capita income of almost \$4,000. Its economy is dominated by sugar, textiles, tourism and an Export Processing Zone. Agriculture contributes just 9% of GDP and employs about 14% of the workforce. 90% of cultivated land is given over to sugar cane. Tea is the second crop, grown mainly by smallholders in the inland mountains. Staple crops consist of maize, potatoes, bananas and pulses. Subsistence agriculture is on a very small scale and the island imports substantial amounts of food, particularly rice and fish (Arnold, 1997; Millstone and Lang, 2002).

Formal Certified Organic Sector

Mauritius has 175 ha of organic land according to the ITC (1999) – but these are just three sugar plantations. Moreover, recent reports suggest that two of these have dropped out of certification programmes. This is due to a number of technical problems including: the variable composition of organic manure which led to under and over fertilisation, problems associated with manual weeding and problems with clarifying the juice (as clarifying aids are not permitted). The halving of organic sugar prices probably also contributed to this decision (Mauritius Sugar Research Institute, cited in CBI, 2002).

The Government has recently released its Non-Sugar Sector Strategic Plan for 2003-2007, which includes the development of organic farming on a national scale. The Plan outlines a number of initiatives being offered to farmers wishing to convert to organic farming. The Plan also includes the establishment of standards for organic produce and the setting up of certification bodies for the same. The Faculty of Agriculture is actively involved in all these initiatives (Facknath and Lalljee, Pers. Comm.)

Related Initiatives

Two staff members (S. Facknath and B. Lalljee) at the faculty of Agriculture at the University of Mauritius, have carried out a large amount of research work on different aspects of organic agriculture, particularly on organic pest control, crop fertilisation, soil amendments, composting, etc. Much of this work has been published in

international, regional and national publications. They also both contributed to the 14th IFOAM world conference (Facknath, 2002) (Lalljee, 2002).

They have conducted interviews with planters, community leaders, the general public and NGOs. Training courses were organised for community leaders on organic practices, e.g. composting . Two booklets for the Agricultural Research and Extension Unit of the Ministry of Agriculture, on Organic Pest Control & Organic Crop Fertilisation were prepared. They are currently in the process of preparing a Masters course on Sustainable Agriculture and a Post-Graduate Certificate in Organic Farming which will be offered from 2004-2005 onwards. Short non-award courses on Organic Gardening are also in preparation.

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5.6 Mozambique

Background

After thirty years of brutal struggle, Mozambique entered the 1990s as the poorest country in the world (with a per capita income of \$80). Yet with its fertile land, rich fisheries, mineral wealth and strategic position it has a huge development potential. Much formerly productive agricultural land has fallen into disuse as a result of the conflict. Agriculture employs c. 85% of the population and accounts for 31% of GDP. Cotton, cashew nuts, sugarcane, tea and shrimps are the main exports. The principal staples are cassava, maize, coconuts, sorghum and bananas. Livestock plays a small role in agriculture. Export and staple crop production could be both enhanced if abandoned land is bought back into production (Arnold, 1997; Millstone and Lang, 2002).

Formal Certified Organic Sector

Mozambique has 5000 certified organic farms, although there are no details of the amount of certified land (Walaga, 2003). Its two export crops are coconut oil and herbs and spices. Both these projects are certified by Ecocert. There was formerly a organic cotton project, run by EPOPA, with around 400 producers, but this has now been closed down for several reasons which included poor training of farmers and extension officers and the management of the project being transferred to a company with interests that conflicted with organic farming. Which company this is, we have not been able to ascertain. There are plans for developing organic mango, coconut milk and flake and honey. **Guira Isso** is currently involved in the production of organic coconut oil. **Bioherb** is currently working with **SunSmile de Mozambique** on a project developing organic chilli production with small-scale farmer groups (with about 5,000 smallholders) for export to the EU.

The main actor in the organic sector in Mozambique is ABIODES, (**Agricultura Biológica, Biodiversidade e Desenvolvimento Sustentável**), an NGO promoting organic agriculture. The Government of Mozambique is interested in developing organic agriculture, mainly as an option for market access. There have also been attempts in the past by the Ministry to promote alternative plant protection tools. The **National Institute for Normalisation and Quality** (INNOQ) is open to discuss and lead the development of organic standards in the country. There are two trained (local) inspectors available, but currently not employed in work of this kind.

A recent seminar was held on the feasibility of developing organic standards in Mozambique. 30 people from the private sector, government and international agencies attended. It was agreed that Mozambique still has a very low volume of production, which is not really sufficient to justify developing a national certification organisation in Mozambique yet. While the sense of unity within the sector and government interest make Mozambique a relatively strong candidate for developing a

certification agency it may also consider acting with other countries to set up a joint programme with local inspectors (Rundgren and Lustig 2002)

Agro-ecological / Related Initiatives

There was recently a GTZ project in Beira promoting sustainable agriculture.

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5.7 South Africa

Background

South Africa covers almost 1,25 million square kilometres of the southern tip of Africa and has a population of 43.5 million. It is the most developed economy in Sub-Saharan African. GDP per capita is almost \$3,000 per annum, but there are significant inequalities in its distribution. The country has, in many senses, one foot in the first world and one in the third. While it has a modern infrastructure in some parts, in others it is characterised by abject poverty. This is one of the unresolved inheritances from the apartheid era, which remains the source of considerable social tension.

Agriculturally the country is well endowed with much highly productive land. Climatic conditions vary from the near Mediterranean around the Cape to savannah conditions in the North. Agriculture contributes 4.6% of GDP, accounts for 7% of exports and employs 13.3% of the population. The country is self-sufficient in food and is a substantial exporter of many foodstuffs. Water shortages pose a considerable constraint in some areas. Production includes poultry, eggs, meat, dairy produce, maize, wheat, sugarcane, citrus fruits, grapes and tobacco. The country has a growing reputation as a producer of quality wines. The removal of sanctions has opened new

possibilities for developing export markets. Despite these surpluses there are also pockets of great need and food insecurity in the country. Organic approaches are quite polarised between market-oriented commercial production and increasing the productive capacity of marginalized communities (Arnold, 1997; Millstone and Lang, 2002).

Formal Certified Organic Sector

South Africa has had an organic farming movement for many years, although it has grown in 'fits and starts' (Geernat, pers. comm.). It has 45,000 hectares of certified organic land (20% of the total in Africa), with 250 certified farms (Walaga, 2003). Certified organic produce started with mangoes, avocados, herbs, spices, rooibos tea and vegetables (ITC, 1999). It has now expanded to include a much wider range of products. Organic wines, olive oil and dairy products are now being produced (Scialabba and Hattam, 2002, p.80-81). The OAASA estimates that there are approximately 100 non-certified farmers (farming c. 1000 ha) following organic principles who market informally through local village or farmers' markets (*ibid.*)

It is one of the two African countries - the other is Egypt - with a robust domestic market, although it is undeveloped and there are few, if any, premia for organic products (Walaga, 2003). Most organic growers look to Europe as their export market. Yet at the same time, South Africa also imports organic produce, including processed foods from Egypt, Europe, the USA and New Zealand. Two domestic retailers (Woolworths and Pick 'n Pay) sell reasonable amounts of organic produce and both are now starting to insist on certification for this produce.

The South African government is in the process of drafting organic standards, which were expected to be completed by autumn 2002. These draw on IFOAM and Codex standards as well as EU standards, which represent its main, export market. The process of developing these standards is well advanced and most players in the organic movement believe that a good job has been done. Some technical issues remain to be resolved (notably those relating to equivalence to EU standards) and the need to set up a representative standards council has been recognised (Rundgren and Lustig 2002).

A recent attempt has been made to create a comprehensive database on organic agriculture in South Africa. This was paid for by the Western Cape provincial government, which is the only South African province to have taken on board the importance of organic agriculture within its agricultural strategy. This is presently unfinished but should be completed in the coming months. Agricultural extension is a provincial, not national, competence under the new constitution. At present, the organic sector gets more assistance from departments of trade and industry -who look at markets- than from provincial departments of agriculture. The notable exception is Western Cape -again, market-led -, which sees organic, high-value agriculture as an important aspect of its land reform efforts. Some of the 15 agricultural research institutes which make up the Agricultural Research Council have research and

extension programmes for organics. The co-ordinator of organics within the ARC is Dr Emmy Reynton.

A few larger farmers are now beginning to get involved in organic farming as they recognise the opportunities here, but few smaller farmers are pursuing this approach, seeing conventional intensification as the line to success (ibid.). The government does not recognise the potential of agroecology in meeting food security needs in the poorer rural communities although some private and para-statal institutions are exploring these options (see agro-ecological approaches below).

There are eight different certification organisations active in the country, two of which are local (the **Biodynamic and Organic Certification Authority** (BDOCA) and **Africa's Farms Certified Organic** (AFRISCO) who both started operating in 2001. Reports suggest that BDOCA has been successful in helping develop the organic market and keeping its costs down (Walaga, 2003). AFRISCO is the only certifier that has made it a major objective to certify groups of small farmers, including the necessary fundraising. Ecocert, SGS and SKAL both have offices in South Africa. South Africa has at least seven companies either manufacturing or distributing organic fertilisers and or pesticides.

Agro-ecological and Related Initiatives

There are also several NGO projects of interest, most with an emphasis on food security. Auerbach (2000) describes a pilot project, the **Rainman Land Care Foundation** in which an existing wetland has been used as a reservoir, yielding enough water to irrigate 3 hectares of previously rain-fed land. Combined with organic management practices (composting and mulching), farm income increased from 1,000 to 30,000 Rand per year. This pilot project is now being extended to sixty-five other sites within the same river catchment area.

Boshoff (2000) describes the activities of the **Food Garden Foundation**, which encourages poor households to adopt trench gardening methods using domestic and locally available compost materials. Their activities help provide food security, improved health and additional income to almost 300,000 people in Guateng Province. The programme also helps restore soil fertility, conserve water and empowers people. The Food Garden Foundation was the African winner of the SARD prize in 2002.

Small, in an article featured in the Urban Agriculture Magazine, (2002 pp. 31-32) reports on successful ecological organic projects from the Cape Flats Townships. These are supported by an NGO called Abalmi Bezakhaya ("Planters of the Home"). The article focuses on the SCAGA (Siyazama Community Allotment Garden Association) project, which the author describes as one example among an emerging movement of sustainable organic community gardens which offer new opportunities to otherwise economically disenfranchised recent migrants to one of South Africa's largest cities. The University of KwaZulu-Natal is developing extension and training packages, largely based on organic principles, to Zulu communities in the state of KwaZulu-Natal (Adey et al, 2003).

Other NGOs active in this area include:

- Food and Trees for Africa (FTFA) who promote permaculture on a national level at schools, and Ecolink in the Northern Province who run an ecological Landcare programme
- Umthati Training Trust who operate a home gardening and community gardening program in Grahamstown, in the Eastern Cape and
- ACAT- (the African Christian Agriculture Trust) one of the oldest NGOs in the country who promote ecological community gardens mainly in Natal. (Small, pers. comm.)

The Kara Heritage Institute, headed by Dr Mothole Motscheka, is working with traditional healers to transfer their work of collecting traditional medicines to cultivating them organically. Lindros Whole Earth Consultants are involved in this project as well as running small-scale training courses for the organic and like-minded sectors.

In general, there is a vocal and articulate environmental civil society sector which is promoting the organic agenda in one form or another. BioWatch is currently challenging the Government on GMOs. The Environmental Justice Networking Forum (EJNF) represents hundreds of NGOs on issues ranging from Food Security through to Local Agenda 21. One of the oldest NGOs, Earthlife Africa functions in a similar way to Greenpeace, bringing a range of environmental issues to public attention.

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5.8 Tanzania²⁹

Background

Tanzania occupies almost 1 million square kilometres and has a population of 35 million, which is growing at 3% a year. GDP is low at c. \$270 per capita. The climate along the coast is tropical, but the western highlands are temperate. Water shortages and the presence of the Tsetse fly are handicaps to developing agricultural productivity. More than 40% of the country is forested.

Agriculture contributes 58% to GDP, employs 80% of the population and accounts for the greater part of exports. Nonetheless, the majority of agriculture is subsistence-oriented. Coffee and cotton are the two most important export crops which account for more than 50% of foreign exchange earnings. Other exports include tea, pyrethrum, cashew nuts, tobacco, and cloves. Staple crops include cassava, maize, sugarcane, bananas, plantains, sorghum, rice, coconuts, sweet potatoes, millet and potatoes. The country has around 13 million head of cattle, 10 million goats and 4 million sheep. Fish catches make a significant contribution to meeting dietary requirements (Arnold, 1997; Millstone and Lang, 2002).

Formal Organic sector

Tanzania has been producing organic crops for just over ten years. The SOL survey identifies 5,000 hectares of certified organic land and almost 1,000 certified farmers (Walaga, 2003). However, our survey suggests that this may be a considerable underestimate and the results suggest that there may be many more. Bio-Re Tanzania's cotton project claims to have 30,886 ha of certified organic land, of which cotton is grown on c.10% (3, 698). There are 750 families involved in this project, with plans to increase this to 1,000 by the end of the year (Ratter, pers. comm.) The same consultant also regularly visits another organic farm, cultivating dried herbs and spices. This farm has 350 ha of certified land and is presently cultivating 200 ha of this.

According to Boor, (pers. comm.) Za-Ge (or Zanz-Germ) has 800 contracted and certified smallholders (Boor, pers.com). Production occurs mainly through small-scale producer groups organised by commercial companies and on a few estates. A wide

²⁹ We are greatly indebted to Birgit Boor of Bioherb and Saro Rater of Bio-Re Tanzania for their comments and suggestions regarding this section.

range of products is exported. Areas of production include Mwanza (cotton), Kagera (coffee), Mufindi district (black tea), Mbeya (cocoa), Kigoma (ginger), East-Usambara, Zanzibar and Pemba (spices), Morogoro, essential oils (lemon grass) and herbal teas, Tabora (honey) and Mtwara (cashews). Other crops include fruits (fresh; citrus, papaya, guava, mango; and dried: banana, pineapple, mango, papaya); herbs and spices (cinnamon, ginger, turmeric, vanilla, chilli, paprika, pepper, cardamom, clove, curry, lemon grass and hibiscus). There are also oil seeds (sunflower) and oils (palm oil, sunflower oil), vegetables (mostly fresh peas), processed vegetables e.g. garlic and onion powder (Rundgren and Lustig, 2002; Boor, pers. com.).

Box 5.2: Exporters in Tanzania assisted by EPOPA

EPOPA currently assists various exporters in Tanzania:

- Premier Cashew Industries aims to involve 500 farmers in an area south of Dar Es Salaam and produces 400 tonnes of organic cashew nuts, shelled and packed locally, some of it in retail packaging.
- Dabaga Vegetable and Fruit Canning Company develops canned pineapples with existing natural pineapple farming communities in the region east of Njombe (in the SW of the country). The pineapple is processed into retail and catering cans.
- The Kagera Co-operative Union project involves 3,500 farmers with an estimated 8,400 hectares of land. They produce 300 tons of certified Robusta coffee beans and 15 tonnes of instant coffee. Part of that is marketed fair trade, some Hand in Hand, some as simple organic.
- The Kilimanjaro Native Co-operative Union operates a project involving more than 2,000 farmers in three areas on Mount Kilimanjaro. The target is to export 300 tons of high quality Arabica coffee to markets around the world, notably Japan. Part of this is fair trade too.
- Matunda Mema develops dried fruit using professional driers that do not rely on sunshine except in order to produce a high quality product that can pass any microbiological test in Europe.

(Source Van Staaldin, pers. comm. and EPOPA promotional literature)

Organic cotton production in Mwanza has been in place since 1994/5. Initiated by a Swiss yarn trader the project was supported in its early years by ProTrade (GTZ) and later by the Dutch financed Rural District Development Programme. The project has developed in a context where conventional cotton producers have hardly been using any artificial inputs, save perhaps one or two spraying of insecticide per season, for a number of years, largely due to the removal of their subsidies. The project has grown slowly over the seven seasons to 2000-1; from 46 farmers in the first season to 450 in 2000/1, (and from 141 hectares to 1676). The project is currently managed by Bio-RE (see above). Yields however have dropped considerably from 750 kg/ha in the first year to 365 kg/ha in the most recent. This is reportedly due to adverse climatic conditions in recent years and has in part been offset by an increase in the premium paid – which has increased from 10% in the first five years to c.20% in the last season. The project does not record female participation rates but 50% of its extension staff are women, a situation likely to facilitate women's participation. Bio Re is planning further training of the field officers and to investigate ways of marketing other crops within the rotation, such as chickpeas (Ton, 2002)

Kimango Farm Enterprises Ltd is one of the main commercial farms and Za-Ge, one of the main export companies. It is involved in contracting smallholder farmers from both the islands and mainland to produce organic spices for export to European markets. Other companies include TAZOP, dealing with spices, and ZSTC which deals with essential oils.

Some of the smallholder projects are a result of the GTZ/protrade programme (1991 to 1997) and later the EPOPA initiative. Plans for the development of a national certification programme are now under way as part of the second phase of the EPOPA programme. **The Board of External Trade** encourages local farmers, food processors, exporters and others already involved or wishing to be in organic food production, to take advantage of the potential and growing market.

Four foreign certification bodies are active in Tanzania. The Swiss/ German company IMO has an office in Zanzibar that caters for its East Africa projects. KRAV, Ecocert and the Soil Association are the other certifiers involved. They mostly use either local inspectors or those from neighbouring countries, such as Kenya and Uganda.

There are organisations that are devoted to promoting organic agriculture such as KIHATA and TOFO. They are also interested in a certification role, TOFO in particular. The Export Promotion of Organic Products from Africa (EPOPA) Programme has been active in Tanzania 1998, and is currently expanding its activities. The Tanzania branch of PELUM has showed an interest in the development of certification.

Agro-ecological initiatives

Sokoine University of Agriculture is keen to promote organic farming through the Department of Farmer's Education and Extension. Charles Yongolo, at the Tanzania Commission of Science and Technology, is a member ISO FAR. The agricultural programme of the **Shinyanga Diocese** has also financed the training of organic gardening groups.

Richard Pfeiffer (cited in UNDP, 1991, 108-115) reported on a Soil Erosion Control and Agroforestry Project established in Lushoto District. It experimented with the alley cropping systems making use of grass lines, bushes and shrubs and macro-contours. It yielded benefits in reducing soil losses, increasing fodder for ruminants and the availability of firewood and increasing farmers incomes. The SECAP project was carried out by the German GTZ from about 1980 to 1998 and was subsequently expanded into the Handeni District.

The GTZ SECAP Project has promoted sustainable, ecological agricultural methods in the West Usambara Mountains for more than 20 years. This initiative included, erosion control, crop rotation, compost production, agro-forestry systems, etc.

The Sunhemp seed bank has been promoting the use of sunhemp (*Crotalaria ochroleuca*) as a means of controlling weeds, particularly Striga. Although not completely rejecting the use of artificial inputs the organisation has found that

sunhemp helps promote vigorous growth, and if inter-cropped with cereals eliminates the need for fallowing. This plant attracts pests that infest vegetables and fruits.

The slopes of mount Kilimanjaro are home to the Chagga who have developed a complex agroforestry system that takes advantage of the different microclimates within a small geographic area and which supports a high-density rural population. Some of their produce (coffee) is now certified (see Parrott and Marsden, 2002, p14).

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Indicates former IFOAM member. There are presently no IFOAM members in Tanzania.

5.9 Uganda

Background

Uganda is highly dependent on agriculture, which accounts for 45% of GDP, and employs 80% of the population. Over half of agricultural production is for subsistence purposes, there are around 3 million households cultivating plots of around 2 hectares. In general, most farms are small-scale. Many small farmers do not keep large livestock - most will have a few chickens and perhaps a goat - and therefore face a problem in building and maintaining soil fertility Average income is \$240 per capita. Population growth is running at 3% p.a. and this is placing enormous pressure on the country's natural resources. Conversion of natural systems to agriculture and over-harvesting of wild produce poses a large threat to biodiversity conservation and environmental sustainability. Forests which cover about 5 million hectares (c.4% of the land) are disappearing at a rate of 70,000-200,000 hectares a year, to meet demands for firewood, charcoal, timber and non- wood products.

Coffee is a major crop which used to account for c.50% of export earnings. Likewise since 1990, the share of Traditional Exports (TE) of coffee, tea, cotton and tobacco

has fallen from 87.5% to 38.3% (2001) while Non Traditional Exports (NTE) increased from 12.5 to 61.7% (Source: Uganda Export Promotion Board). The major NTEs include fish, cocoa, vanilla, fruits and vegetables, cut flowers, cattle hides, sesame seed, beans and maize. Farmers who are engaged in the production of the above crops rarely use chemicals or fertilisers. More exporting companies are now showing an interest in organising their out-growers into organic farming as they realise the difficulty of introducing chemicals to farmers who are not used to this system. However at the moment the certification costs and procedures remain hindrance factors (Matovu, pers. comm.)

Political instability over two decades has hampered agricultural modernisation, and, in consequence, fertilisers and pesticides are not widely used except on tea, coffee and other export crops (e.g. tomatoes and salads). The government is deeply committed to commercialising agriculture, raising it from the subsistence mode, eradicating poverty and increasing capacity for agri-food processing. Whilst a conventional high input/output model is favoured, certified organic is attractive if it can be shown to be profitable. Large amounts of money are currently being ploughed into agriculture through the PMA and NAADs, with the aim of increasing commercial demand which the private sector can then respond to. In the future it is envisaged that responsibility for agriculture and extension will fall increasingly to the private sector (Taylor, pers. comm.). The task facing the organic movement in Uganda is to convince the state and farmers not to go down a conventional path but to focus on developing natural methods of building soil fertility and controlling pests (Wajje, 2000; see also Hauser and Walaga, 2002). Current research is also investigating the role of extension agencies in facilitating the spread of organic farming in Uganda, a study that could have wider implications (Hauser *et al.* 2002).

Formal Certified Organic Sector

Uganda has more than half of all the certified organic land in Africa (122,000 hectares and around two thirds of certified farmers (28,200) (Walaga, 2003). Certified products include coffee, cocoa and vanilla, avocados, bananas, cotton, dried fruit, pineapples, sesame and vanilla. Table 5.1 summarises the currently known organic projects in Uganda.

Table 5.1: Certified Organic Projects in Uganda

Company Name	Project Started	Expected Export 2001/02	Number of Certified Farmers	Certification organisation
Lango Union	1994	200 tonnes cotton lint 200 tonnes sesame	12,000	EcoCert
Kawacom	1998	500 tons Arabica FAQ 300 tons Robusta	8,000 in three regions	KRAV
Outspan Enterprises	1999	500 tons sesame	6,000	KRAV

Ltd		recently added bird's eye chillies		
Suntrade/ African organic	1993	500 tons fresh fruits & vegetables. 10 tons dried fruits.	62 (Estate without growers)	IMO
Gumutindo Project	2001	100 tons FT Arabica	not known	KRAV
Ibero (U) Ltd	2001	50 tons Robusta	Targeting 200	KRAV
ESCO (U) Ltd	2001	200 tons organic cocoa 500kg organic vanilla	1,700	KRAV
Kahangi Estate	2001	Passion fruit, tea, coffee	One 56 acre estate	KRAV
Tropical Ecological Foods Uganda Ltd TEFU	2000	5,5 tons dried tropical fruit	31 certified/in the process	KRAV
Masaka Organic Producers MOP	2000	2 tons dried tropical fruit	35 certified/in the process	KRAV
Bio Tropical Garden	1997?	fresh fruit		KRAV
Bark Cloth	2003	bark cloth	400 farmers	??

Source: Rundgren and Lustig 2002: van Stallduinen and Matovu, Pers. Comm.

One project, the Lango Co-operative, in the north of the country, has more than 12,000 farmers in 266 villages involved in growing organic cotton and sesame over more than 100,000 acres. This project was initiated in 1994 by EPOPA but is now continuing without their support. Northern Uganda is particularly well-suited to organic cotton production - enjoying fertile soils and a species of black ant which predates many pests. Yields are consistently among the highest for all cotton projects in sub Saharan Africa (720 kg/ha) and in the last two years (to 2000-01) premia have been 30% or more. In addition, the project was the first one that managed to market other certified produce from the cropping system (sesame). Others have been developing markets for more than one crop, grown on the same agricultural land, especially the fruit growers, but also vanilla is being cultivated alongside cocoa (in Bundibudgio) and pineapples in coffee areas (in Luwero).

Lango's success has not been without its own problems, however. It has experienced difficulties in securing access to markets and providing sufficient infrastructure – both in terms of storage and processing capacity, and extension facilities. Manager of the project is Bo Weevil who is trying to get the project to address these problems and is seeking the finances required to provide an infrastructure that can meet the expectations of farmers who have converted to organic production.

A second organic cotton project was set up by a local company, Outspan, in 2000-1. This organisation was already involved in organic coffee and sesame production and decided to diversify into organic cotton. In the first year this initiative attracted 2,541 farmers, cultivating an average of 0.5 hectares (of cotton) each and has now grown to

5, 000+ farmers cultivating 47.000 ha of certified organic land (van Staalduinen, pers. comm.) Yields were above average at 600kg/ha but the company was only able to purchase about 10% of the total crop, so will need to find new markets in order to meet the expectations of its producers (Ton, 2002). EPOPA are also supporting two other projects. The project has now expanded to include 5,200 farmers. Farmers have tripled their sesame yields since starting on the project.

EPOPA's largest Ugandan project at the moment is the **Kawacom Organic Coffee Project**. This involves 14,000 farmers in the production of mixed *Arabica* and *Robusta* coffee from three regions of Uganda (Nebbi, Kapchorwa and Bushenyi) (van Staalduinen, pers.comm.). The average farmer has 2-3 hectares of land and 200-350 trees. Kawacom currently employ 25 field staff to support and organise the farmers' groups. This project has grown slowly but is already exporting 1000 tonnes of organic coffee annually, mostly to Europe. This project is now also certified to US standards to gain access to American markets as well.

The **ESCO Organic Cocoa and Vanilla Project** is another EPOPA project which currently works with 1,800 smallholder farmers on 4,800 hectares of certified land. This project was started in 1997 but then halted between 1998-2001 because of security problems in the area. It is expected to be marketing organic vanilla by the end of 2002. Most recently EPOPA has developed two other projects. One uses bark cloth, a traditional, leather-substitute material from the Masaka / Rakai districts. This is made from the bark of a local tree, which can be harvested without damaging the tree. Small amounts of non-certified bark cloth have been exported. The second is developing a range of fresh and dried fruits- the country has an abundant supply of exotic fruits, often growing naturally, only a small proportion of which are harvested and consumed. A final project for processing shea butter is under development. This is a traditional product derived from nuts of the Shea tree, which are processed into cooking oil. The nuts can also be used to make high quality butter for skin creams and cosmetics. This project is currently on hold due to security problems in the area.

The Ugandan organic movement held its first conference in January 2001 to mobilise support and unity across the sector. It intends to set up a certification committee which aims to develop domestic capacity for standard setting and certification. There have been discussions for years about the development of a local certification organisation- these were initiated in 1998 within the EPOPA programme but the process stopped due to lack of funds. A proposal has been submitted to SIDA to develop a national certification organisation in Uganda and Tanzania as part of the EPOPA Programme. The government of Uganda has shown some interest in this process and consider that the Uganda ISO member body (the Ugandan national Body of Standards) could be in charge of the development of standards. The EEID/Commonwealth Secretariat has initiated some activities for organic agriculture and is working with the Uganda Investment Authority. Among the things they have been considering is the development of a local certification organisation. The NGO NOGAMU (see below) is also active in supported standards development and seems to have support from most stakeholders. **NOGAMU** has launched a first draft of a Uganda Organic Standard and plans to establish a separate organic certification

organisation by early 2004. Capacity building to this end is taking place at the moment and is being co-ordinated by Charles Walaga.

In April 2004, the **Uganda Coffee Development Authority** will be hosting the 3rd international IFOAM Organic Coffee Conference. The Ugandan organic movement believes that 10-15% of Uganda's coffee exports could realistically be certified as organic within 5-10 years (Wajje, 2000), but the lessons of Lango show it is not only the farming element that needs to be developed in order to establish successful schemes (Parrott and Marsden, 2002).

Agro-ecological and related initiatives

There is also a strong NGO sector promoting organic agriculture in Uganda.

Mirembe Self Help Organisation of Uganda is an active NGO group within the Ugandan OA scene. They established a demonstration farm for organic farming and agroforestry in 1992 and provide extension and training facilities. Their interests also cover appropriate technology and are renowned for having developed a cassava flour substitute for cement. They have now been elevated by the government to the status of **The National Resource Centre for Sustainable Agriculture and Participatory Rural Development (NRC-SAPRD)** and are expanding their role from a regional to national level. They are also centrally involved in setting up the first national organics conference and trying to develop the organic sector.

Luyiga (1997) identifies thirty NGOs directly involved in this field normally under the title of "Promoting Sustainable Agriculture" which builds on Uganda's legacy of a fertile environment and low artificial input use. Church organisations are heavily represented and play an important role in fostering rural development. The **Department of Social and Economic Development (SED)** is one such organisation. It runs an organic demonstration farm and has trained over 300 *animateurs* and almost 1600 farmers in soil fertility techniques, soil and water conservation, agroforestry, pest control methods and the role of livestock. Those who have been involved in the project have noticed increases in food production and household nutritional status (Luyiga, 1997). Other NGOs include the **Anziaceni Integrated Rural Development Project** in Arua, which works with school drop-outs, teaching them the principles of sustainable agriculture and environmental protection, and the **Bukonzo Sustainable Agriculture Development Association**, which promotes organic dairy farming in Kasese (*ibid.*). More recently the **Kulika Charitable Trust** has relocated to Kampala where it intends to provide year-long training courses in organic methods (Cadoret, *pers. comm.*).

The Africa Participatory Development Initiative, an indigenous NGO working on rural development in the Kumi District since 1996, places great emphasis on organic farming techniques in reversing problems of soil depletion and erosion, increasing yields and food security and generating local employment (Ichol, 2002). Founded ten years ago by John and Josephine Kizza, **The St. Jude Training Centre for Sustainable Integrated Agriculture** was the African winner of the SARD prize in 2002. By 1996, about 15,000 people had visited their farm and attended training

courses in small business and organic agriculture. Today the centre conducts training for about 200 participants weekly. Many local farmers and official programmes have adopted the ideas generated at St. Jude's (SARD, 2003). Uganda also is the home of **CIOF**, a regional branch of a Pan African movement for the Enhancement of Indigenous Agricultural Knowledge in Africa (ENIAKA).

Africa 2000 Network Uganda (A2N Uganda) as it is now known, is the offshoot of a UNDP project that operated in 13 African countries (Uganda, Kenya, Tanzania, Mauritania, Burundi, Rwanda, Burkina Faso, Ghana, Zimbabwe, Senegal, Botswana). In 2001, the organisation became an autonomous NGO in Uganda - it is taking on a different legal status in other countries. It has run a large-scale project in Iganga District – Poverty Eradication Through Environmentally Sustainable Technologies (PEEST). This project reached 23,465 families between 1997 and 1999, and intensive activities such as training, extension and credit (in kind) reached 10,000 families. The project is described in some detail in Scialabba and Hallam (2002, p. 217-226). Its focus is far broader than merely being an organic extension programme – extending to challenging illiteracy, promoting energy conservation (through distributing more efficient cooking stoves) and gender sensitisation and many other areas. The organisation has moved into facilitating local community institutional building through the formation of associations for collective action in the areas of marketing, processing and advocacy. It promotes organic approaches as a sustainable means for the target farmers but also in a bid to preserve environmental and human health.

It has promoted a range of organic farming techniques, training farmers in soil fertility management and fodder production, provided seeds of legumes, improved local indigenous food crop varieties and helped increase livestock production. 99% of the farmers involved in the first phase of the project reported an increase in food supply as a result of adopting improved organic techniques, and 44% of those with increased incomes claimed that this was solely as a result of the project. The project is now in a second phase, hoping to reach out to 50,000 farmers in the surrounding area. A2N is unusual as a development organisation in that it explicitly recognises that it is promoting organic technologies and its Ugandan office has recently become a member of IFOAM. Other commentators suggest that they have promoted the limited use of pesticides in some of the programmes, which would appear to undermine this position – but this goes to show the difficulties of drawing rigid lines between organic and LEISA approaches.

The (UK-based) Commonwealth Fund for Technical Co-operation has recently started working with small farmers' groups in the field of organic agriculture in Uganda. Charles Ssekya, at the Uganda Martyrs University, is a member of the ISOFAR Board.

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5.10 Zambia³⁰

Background

Zambia is a large land-locked country of more than 752 000 square kilometres. The country has a sub-tropical to tropical climate and one rainy season a year (November to March). Despite the good climate and sufficient water supply, both through rainfall and in the form of large rivers, only 20 % of Zambia's arable land is under cultivation. Reasons for this are the lack of infrastructure, lack of local industries to produce any inputs or machinery for the agricultural sector and high transport costs: sea harbours

³⁰ Data on Zambia largely derived from Dieters and De Vos (2001) and Diane Callear (Pers. Comm.)

are far from agricultural production centres. In particular, the transport costs make it difficult to compete with South Africa, which has superior transport linkages with overseas markets. As a result, the only agricultural products that are exported are the high value, low volume fresh horticultural and floricultural products. In the past, Zambia relied on its rich copper deposits as its main source of employment and export revenue. Poor world prices and declining reserves no longer make this possible and agriculture is being looked upon as the main productive sector for the country. Zambia has rich soils and a good agricultural climate. Most of the people live off the land, in most cases from subsistence agriculture, often without chemical inputs because of the high cost. There is a fast expanding commercial agriculture sector as a number of the farmers who lost their land in Zimbabwe have relocated to Zambia.

Formal Certified Organic Sector

In Zambia today there is almost 2,000 square kilometres of certified land. Around 70% of this is virgin land for wild harvesting of products such as honey, mushrooms and extraction of indigenous tree seed oil. The remainder (approximately 30%) is commercial land, which is used for the production of export vegetables, herbs, spices and medicinal plants, groundnuts, sesame, green manures and locally marketed crops (such as soya and maize).

Zambia has been producing certified organic produce since the early 1990s. The first products included organic honey, from the North-Western Beekeepers Association and fresh vegetables from Agriflora. The area of organic certified land developed significantly following the instigation of the **Organic Producers and Processors Association of Zambia**. **OPPAZ** was set up in November 1999 as a body affiliated to the Zambian National Farmers Union to promote the organic movement in Zambia and worked to develop a technical advisory service for its members. It provides marketing, certification and technical advice to farmers from the smallholder sector to the large-scale commercial enterprise. OPPAZ has developed an initiative over the last year to develop national certification for the national market. In collaboration with Ecocert, it is also in the process of developing a certification office based in Zambia with the aim of improving efficiency and reducing costs for international certification. OPPAZ presently comprises a growing membership of which 14 producer groups and 15 individual companies are certified as organic. The main certifiers are Ecocert and the Soil Association - the latter organization was also involved in the early development of the organic honey sector. OPPAZ has hosted three regional organic seminars over the last few years to encourage co-operation and networking between actors in the organic movement in the region. As a result of this initiative, in 2000, the African Council of Organic Associations (ACOA) was set up. ACOA is a networking service provider for producers, processors and traders (see below).

Agriflora Ltd. is Zambia's biggest commercial vegetable and flower grower. It has farms and outgrowers in each of Zambia's three geographical zones in order to ensure year-round supply. In 1994, it started with the export of "high-value/low-volume" conventional vegetables. It began organic production in 1998 in response to requests from United Kingdom supermarkets. At present 240 ha of land is dedicated to organic

vegetable production (although 1660 ha is certified as organic). 40 ha of this land is used for outgrowing by the adjacent **Kasisi Training Institute** (see below). Its main products include mange tout (80 tonnes), baby corn (55 tonnes), runner beans (36 tonnes), sugar snaps (79 tonnes), baby carrots (38 tonnes) and fine beans (204 tonnes).

UK supermarkets pay at least 30 percent premium over conventional prices and this is absolutely necessary to cover the lower yields and the outgrades. Organic systems can only support two (as opposed to three) crops a year- the third growing period is used for a green manure crop. Agriflora is investigating what to do with the high amounts of rejected organic vegetables, which are still suitable for consumption, but need to be processed. Other issues facing the company concern the need for fertility building and pH management and helping growers learn about organic methods of pest control. It has developed a sophisticated composting system.

York Farm started exporting conventional high-value/low-volume conventional vegetables to the United Kingdom supermarkets in 1989 and started with a 10 ha organic trial plot in 1999 in order to access the organic "niche" market for future years. OPPAZ (see below) assisted with the setting up of York Farm's trial plots and assists with the commercial production and marketing contacts. The first trial plot was certified in 2001 and another 200 ha in June 2002. They export organic baby corn, fine bean and carrots. The crops are grown, year-round, interspersed with barrier crops like fennel, coriander, garlic, tephrosia, echinacea, basil, calendula (marigolds). They have embarked on large-scale compost making.

Forest Fruits was originally established to mill maize for local consumption. It diversified in 1994 by marketing wild mushrooms and in 1997 diversified further to year-round production of 70 ha of pineapples by 20 small-holders for processing (drying) and buying and selling bee products (honey and wax) for the domestic market. In 1998, the company obtained organic certification for its bee products for export. These are currently purchased from more than 1,000 registered producers and obtain 40 percent above conventional prices. They have an outreach organisation called Forest Fruits-Zambia which works with small-scale producers and which provides training in bee-keeping to farmers without imposing sole purchasing contracts on them.

Rafeen Organic Producers was started in April 2002 and has around 300 members, all small-scale, mostly women, farmers. They are situated north east of Mazabuka in the Southern Province. Many farms of the women are already certified, others are in conversion (certified by Ecocert). They produce organic groundnuts, lemongrass and sunflower.

One of the early pioneers of the organic movement was Ian Landless who learnt about organic farming in the UK and on his return to Zambia in 1989, started farming 5 ha organically, growing maize and different legumes. He formed an organic association with the assistance of the Zambia National Farmers Union (ZNFU). This association became the **Environmental Conservation Association of Zambia** (ECAZ) in 1990.

The **Ministry of Agriculture, Food and Fisheries** (MAFF) is in the process of developing policies concerning organic agricultural production. This policy was

supposed to be ready in June 2001, but is still under development. However the Ministry continues to support the organic movement. **The Agricultural Consultative Forum** (Government, NGOs, private sector and donors are represented in this forum) expressed their commitment to the development of organic farming in Zambia, during the annual meeting in December 2000, as has the Minister of Agriculture. A number of Zambian Non-Governmental Organizations support the organic movement. These include CLUSA (**Corporate League of the United States**, sponsored by USAID), CFU (**Conservation Farming Unit**, which falls under the umbrella of the ZNFU), LMC (Land Management and Conservation Farming, the former SSAFE, funded by SIDA) and EEOA (**Economic Expansion in Outlying Areas**), CARE-CONASA, PELUM (**Participatory Ecological Land-Use Management**) Zambia.

A number of international organisations are involved in supporting the organic movement. These include: USAID, ITC, SIDA, NORAD, PSDP (Private Sector Development Programme, which is funded by CDE (Centre of Development of Enterprise, Brussels), the Netherlands Embassy, and GTZ. The Soil Association (UK) and Ecocert are active as certifying agencies.

USAID is very interested in organic agriculture, with a view to poverty alleviation. Between 1998 and 2002 it stimulated the growth of organic agriculture, with a view to increasing the incomes of the rural population. In most of the rural areas traditional agriculture is still practised without the use of modern agro-chemicals. USAID believes that this provides a strong basis for the development of certified organic crops in Zambia.

Agro-ecological and Related Initiatives

The Kasisi Agricultural Training Centre (KATC) is run by a Jesuit society. Brother Paul Desmarais started the Agricultural Training Centre in 1974 with a two-year intensive course for groups of 10 farmers at a time. Trainees are provided with a house and a piece of land and they have to grow something on the land to support themselves. Brother Paul's motivation was to grow healthier food and to work towards a better environment. For the trainees the main motivation is a more sustainable and viable way of growing their crops. The vegetables (cabbage, rape, tomato, onion, pumpkin) produced at Kasisi are sold at Lusaka's Soweto central market. The produce is believed to have a better shelf life than the conventionally produced vegetables.

Since 2000, a 1³/₄ ha plot has been inspected and certified. On this plot about 20 different types of vegetables are grown, mainly for training purposes. A second 40 ha plot has been certified where fresh vegetables are produced for the EU market under supervision of Agriflora.

Training is given to small-scale farmers, primary school teachers and government extension officers. Since 1997, five-day training courses have been given in sustainable agriculture, covering: soil fertility, crop rotation, inter-planting, conservation tillage, green manure, biological control, compost making and agro-forestry. Kasisi has developed study group manuals that contain about 10 lessons on

topics like agro-forestry, sustainable agriculture and minimum tillage. The lessons are linked in with radio transmissions. Approximately 35 percent of the farmers being trained at Kasisi are female. The course fees are paid by the Swedish Cooperative Centre and so far they have trained 1,200 Zambian small-scale farmers. Kasisi encourages people from all over Southern African to come and attend the five-day courses. Since 2002, Kasisi has assisted with the development of an association of organic producers in the Chongwe District. In 2003, this association underwent a second year of certification under Ecocert and currently has a membership of 130 farmers.

NRDC-ZEGA Training Trust (NZTT) has developed a diploma course as well as "on-farm" training. In the third year, trainees have a module in organic production, integrated pest management and conservation farming practice. During the course they are taught "Good Farm Management Practices" and they are made aware of the impact of the use of chemicals on the environment. OPPAZ has been involved in the development and the delivery of the organic farming course at NZTT.

Zambia is also home to the **African Council of Organic Associations**. ACOA is a network that aims to assist the development of the Organic Sector in Africa. This initiative, organised by OPPAZ, came about as a result of an international seminar "Organic farming, the Emerging Industry for Africa", held in Lusaka in November, 1999. This seminar brought together actors and interested parties in Africa and organisations and companies from Europe, USA, Japan and Australasia. Membership is open to organic producers, processors, wholesalers, retailers, certification agencies, specialist organic advisory bodies and consultants, government and non-government organisations, and anybody else interested in the organic movement in the region. They have been financially supported by GTZ, ITC, PSDP, CBI and the Amber Foundation. They currently have a website and a newsletter. Funding has mostly been short term and ACOA is still trying to set up a permanent team to move the organisation forward and satisfy the expectations of stakeholders and members. ACOA currently has 10 subscribing members and 20 more potential ones and is in the process of setting up databases that will be accessible via the website.

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5.11 Zimbabwe³¹

Background

Landlocked Zimbabwe is a nation of some 400,000 square kilometres which is traversed by a central plateau of 1000-1500 m altitude. Its population is almost 13 million. This cooler area also attracts reasonable rainfall, creating favourable farming conditions. The lower parts of the country are dry and hot and used mainly for ranching, and irrigated sugar cane and citrus cultivation.

Zimbabwe possesses a strong agricultural sector with an important export driven commercial sector. However, because of the large mineral reserves and a strong manufacturing base the country has not been as highly dependent on agricultural exports as most other African countries. GDP per capita has also been significantly above the regional average at around c. \$500. About 40% of the land was in the hands of around 4,500 commercial farmers, whilst communal lands accounted for a further 40%. Until recently much of the most productive land remained in the hands of white farmers who had managed to retain their land when Zimbabwe gained independence in 1980. The recent “Accelerated Land Resettlement Programme” has led to many of these farms being abandoned. Thus agriculture is currently in a state of some flux.

Zimbabwe had levels of pesticide use (535 kg. per hectare) that are, with the exception of Zambia 10 times higher than in any other South East African country profiled in this report. It also had the highest level of fertiliser use. Until recently commercial agriculture accounted for about 10% of GDP and employed 26% of the workforce. Around 63% of the population are engaged in agriculture. Main export crops included tobacco, maize (except in drought years), cotton, coffee and sugar.

³¹ We are greatly indebted to Brigitt Boor of Bioherb for her comments and suggestions regarding this section and to Rene Fisher and Diana Callear for contributions on the development of the organic sector in Zimbabwe.

The main staples are wheat, vegetables, sorghum, soybeans and groundnuts (Arnold, 1997; Millstone and Lang, 2002).

The organic sector reflects the characteristic division into large-scale commercial and small-scale or communal farming sectors that evolved during colonial times and persisted during the recent post-colonial period. Whereas relatively few commercial operators became involved in certified organic production, a bustling network of support and representative organisations developed around the various aspects of sustainable land use.

Formal Certified Organic Sector

The Zimbabwe Organic Producers' and Processors' Association (ZOPPA) was formed in 1990 as a membership association to promote and support organic farmers. It has focussed on information exchange, organic certification and marketing. Membership reached about 50 and one of the notable achievements of ZOPPA was to offer a local inspection service through a regional inspector with Ecocert. Major products grown by ZOPPA farmers were herbs and spices, essential oils (tea tree, *Tagetes minuta* and *Lippia javanica*), tea, mushrooms and bambara nuts. In 1997 Friedrich Ebert Stiftung supported Tulimara Ltd. in setting up an out-grower system for bambara nuts and mushrooms. More recently, membership of ZOPPA has shrunk partly due to the land acquisition programme. Some of these farms have been abandoned and activities have been hampered by the general economic downturn and erratic fuel supplies. Several actors have recently moved to Zambia and a management committee is trying to keep the organisation alive. While the statistics about organic land in Zimbabwe point to only 40 hectares of certified organic land and 10 certified farms (Walaga, 2003), local sources identify significantly more (see below).

Table 5.2: Formal Organic Produce in Zimbabwe

Name	Certified area	Produce	Market
Mitchell&Mitchell	Not known	runner beans and other fresh vegetable export,	EC, mainly U.K. supermarkets
Gubinchem Farm Karl Wolf	100ha	80 tons mandarins	Local and regional export
Four Seasons, Mike Jack	50 ha plus out-growers in Zim and neighb.countries	12 tons herbs and spices, soya beans and essential oils	Local and exports U.K., Japan
Rosalind Tea	100ha	235 tons black tea	Export
Earth oil Ltd. Wayn Barratt	100ha	30 tons tea tree oil	Export
Maweni Farm, René Fischer	3 ha	fresh vegetables and protea cut flowers	Local, flower export

Source R. Fisher/B. O'Connor (2003, pers. comm.)

To the best of our knowledge there has been only one attempt to develop a smallholder certified organic sector which was promoted between 1994-7. This project is reported in Ton (2002) and Greenpeace *et al* (2002). Starting from an initial 40 producers and 8 hectares of organic cotton in 1995/6, the project grew to 400+ producers on 150+ hectares of land in 1998/99 before falling back to 47 producers and 18 hectares of land in 1999/2000. This was largely due to project management problems, but also to opportunistic behaviour on the part of producers, who obtained seeds on credit from Cargill ginnery, but then sold their cotton to other conventional cotton companies. As the seed loans were not paid back and little cotton was available for ginning, Cargill withdrew from the project in early 2000. Yields also fluctuated significantly from a disastrous 37 Kg/ha in 1997/8 to 355 Kg/ha in 1999/2000. The project was abandoned in 2000 although some producers continue to grow good yields and quality on organic principles. One interesting feature of this project was the introduction of a conditional ‘special wives exemption’, under which a wife can have her unsprayed cotton field certified, even though her husband is still a conventional farmer. Women’s involvement in this field was particularly high. Cotton is historically considered a ‘man’s crop’, but many AIDS widows are keen to grow cotton in order to generate a cash income. Organic techniques make cotton production possible because there is no need for the costly inputs associated with conventional cotton production.

Agro-ecological and Related Initiatives

Zimbabwe appears to be one of the hot spots of informal organic activity in Southern Africa. The following section illustrates some of the most active organisations.

Fambidzani was started as a small agricultural co-operative in 1981. It evolved into the **Fambidzanai Permaculture Centre** in 1988, with the aim of providing training and resources in Permaculture and other sustainable agriculture approaches. Various training courses have been developed which are held at the centre at Mt. Hampden and there is also some outreach training beginning. Nutrition for HIV/AIDS mitigation has become part of most of the training. In addition, a garden and nursery of useful plants and demonstrations is maintained and newly completed conference and accommodation facilities are available. The centre published the book **Propagating plants: an organic approach.**

The **Zimbabwe Institute of Permaculture (ZIP)** was founded in 1990 to promote sustainable agriculture. There are five separate units within ZIP. Fambidzanai, Natural Farming Network, ZIP Research (now AfFOResT), SCOPE and Pelum Zimbabwe (see below for details). In the same year the Permaculture Association of Zimbabwe (PAZ) was formed as a membership organisation, publishing a newsletter called GROUNDCOVER. This association ceased operation in 1998 because of its committee members’ lack of activity. .

In 1992, the **Natural Farming Network (NFN)** was founded to network the various institutions promoting sustainable agriculture. Initially they took over the outreach

training, initiated by Fambidzanai and later took over the publishing of **GROUNDCOVER** from PAZ. NFN has also published two other books, **Production without Destruction**, and, **Natural Pest and Disease Management**.

In 1994, **SCOPE** was formed as a joint project with the Ministry of Education. The focus is on Permaculture design in schools. Pilot projects have been undertaken in primary and secondary schools in all regions of the country. **SCOPE** now has one school with an active Permaculture project in every District and publishes a newsletter.

In the same year, the **Participatory Ecological Land-Use Management Association (PELUM)** began as a joint initiative between Fambidzanai and the Permaculture Trust of Botswana to promote curriculum development in sustainable agriculture. This was eventually launched as a regional association incorporating Eastern and Southern Africa. It now has 138 members in nine countries in Eastern and Southern Africa (Botswana, Kenya, Lesotho, Malawi, Uganda, South Africa, Tanzania, Zambia and Zimbabwe). The association is a regional network of civil society organisations with a commitment to fighting regional poverty, remedying social injustices and building capacity in the region. Ecological agriculture plays a key role within these broader objectives.

PELUM Zimbabwe is under the chairmanship of Mr. Rob Sacco, and has 24 members. Training programmes have been initiated on various aspects of sustainable agriculture and community development. Pelum Association publishes the magazine **GROUNDUP** and also assists in the publishing and distribution of other useful books. The group is currently undertaking a review of ecological farming practices in Southern and Eastern Africa.

PELUM College Zimbabwe (PCZ) was started about 4 years ago as a university without walls. It runs a two-year course in which students spend time with members in different parts of the country, and learn aspects of ecological agriculture and community development. The second intake is about to begin its second year. Initially this was a sub-project of PELUM Zimbabwe but it has now set up its own management structure. The PCZ has now been accredited by the Ministry of Higher Education.

The **African Farmers' Organic Research and Training (AfFOResT)** is a local NGO, established in 1995 in order to bring science to African farmers through the promotion of Farmer Field Schools (FFS), the provision of farmer-participatory training and research in Natural Pest Management and zero-input/organic agriculture. The training and follow-up methods used are adapted from the FAO FFS programme. While the FAO focuses on training government extension workers to facilitate the "Farmer Field Schools", AfFOResT gives this training directly to farmers for the following reasons:

- Most extension workers are men who tend to work with male farmers, whereas most farmers, particularly organic farmers, are women
- Extension workers do not depend on farming for their income, so may not be well motivated to "practice what they preach"

- Once trained, extension workers may seek more highly paid work
- By training farmers directly the new information stays in the community

Moreover, AfFOResT emphasizes zero pesticide use and NPM rather IPM which is the norm for the FAO FFS's. AfFOResT employs graduates of crop science who are able to transform useful scientific knowledge into farmer-friendly, learning resources and thus bridge the gap that exists between academic/institutional science and subsistence farmers. They are able to transmit the relevant aspects of complex scientific systems such as biological control, microbiology, soil physics, immunology, on-farm research and genetic engineering to semi-literate and illiterate farmers, using farmer-friendly techniques such as "learning through discovery", "mind-mapping" and role-playing. Learning through discovery takes place in the Eco-Lab³², the AfFOResT garden and the farmers' own fields.

Farmers learn the under-lying principles of NPM which is that the conservation of *Farmers' Friends* or those organisms that prey on pests is of prime importance. Farmers' friends are conserved through creating diversity which in turn is created through the preservation of trees in and around fields, the planting of live fences, crop rotation, intercropping and strip-cropping. Zero-input vegetables are carefully rotated to avoid root-knot nematodes and intercropped with pigeon pea and tree tomato to encourage red spider-mite predators. Organic cotton is strip-cropped with sweet sorghum and sunhemp to trap bollworms and attract predatory wasps, intercropped and under-planted with finger millet and cowpea to attract predatory ants and rotated with cereals and groundnut to improve food security and add nitrogen to the soil. Interestingly, many organic cotton farmers say they prefer this cropping system as it improves family food security.

In addition, AfFOResT has trained small-holders, mainly women farmers, as trainers in natural pest management and organic vegetable production. Each trained farmer then passed on her knowledge to 10 other farmers. With follow-up support, this group of producers now numbers 120 and regularly markets pesticide-free vegetables to Classic Supermarket and a local restaurant. It has also trained smallholder cotton farmers in the Zambezi Valley in organic cotton and groundnut production and has pioneered a system of *Farmer-Participatory Research (FPR)*, in which FFWs and innovative farmers are able to conduct on-farm research with follow-up support from AfFOResT staff. It is now preparing a series of training manuals to accompany its scientific training, FFS and FPR programs. A series of supportive posters will be produced (once funds become available). There is also a demonstration garden to promote *healthy living with HIV*. This contains indigenous food crops and herbs, recommended for the prevention and treatment of opportunistic infections that are associated with HIV/AIDS.

³² The Eco-Lab is based at the Permaculture Centre, Mount Hampden (20.5 Km NW of Harare). The first Eco-Lab was built in 1995, using Norad funds. This was destroyed by fire following a stroke of lightning in February 2000 but has since been rebuilt using funds provided by Misereor and is being equipped with microscopes and other scientific equipment by the British High Commission.

The **Chivi Food Security Project** aims have emphasised the production of drought tolerant local crop varieties, good water harvesting techniques, the use of livestock manures, multi-cropping and the use of botanical pesticides. Farmers report that their yields have increased in ten years and that they are now more able to extend the growing season of several types of crop. More than 500 farmers have been trained in these techniques and are encouraged to pass their knowledge on to other farmers in their areas. More than 20 local resource management groups have emerged, who are learning to develop their own self capacity and actively seek solutions to problems of resource depletion etc. This project has been supported by ITDG (Pretty, 2002, p. 157). This group who have many projects that are complementary to organic farming (including low cost food processing) have their South Africa Office in Harare.

Another Zimbabwean project is the **Silveira House Sustainable Agriculture Project**. This is a farmer-oriented agro-ecological training programme which trains farmers in improved farming practices, including introducing them to new projects and then encouraging them to train others in their villages and form village groups (ibid.). Food security in participating villages has significantly increased and farmers have completely stopped using artificial fertilisers and pesticides in their farming.

Jekesa Pfungwa/Vulingqondo (JPV) is an NGO, empowering and training women throughout the country. In 36 Districts through the 5 operational provinces, JPV has a membership of approximately 2000, of which 94% are women. JPV's activities are structured into 5 programmes, including Sustainable Agriculture and Food Security, in which they have run 113 courses with more than 900 participants. Other courses include HIV/AIDS and Nutrition, Small Scale Enterprises, Gender and Development and Organisational Development.

Zimbabwe is also the home of **AZTREC**, a regional branch of ENIACA (Enhancement of Indigenous Agricultural Knowledge in Africa). They have been working with traditional leaders and spirit mediums in the Zimuto region, using traditional knowledge and value systems to develop sustainable practices based on local cultural values and mores. Starting from reviving the traditional rules that governed the use and management of woodlands and sacred shrines, they subsequently developed tree nurseries and now have a network of twelve eco-cultural villages where organic agriculture is being re-established (Gonese and Tivafri, 2001).

Pennsylvania State University researcher, Ylva Besmer, is working with Roger Koide, professor of horticultural ecology, and Robert Myers, soil scientist with the International Crops Research Institute for the Semi-arid Tropics (ICRISAT), to find ways to increase the presence of the beneficial mycorrhizal fungi in Zimbabwean soils. They have identified that phosphorous deficiency is a main constraining factor on maize yields and that mycorrhizal fungi can help increase the uptake of this important element (Greenpeace et al 2003).

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5.12 Other Countries in Southern and Eastern Africa

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denotes former IFOAM member.

Lesotho

Pretty (2002, p.152-3) writes of a new farming system developed by Dr. Machobone a local agronomist who experimented for thirteen years on his own land before launching it among fellow farmers. Elements include inter-cropping legume and cereals, the use of kitchen ash as a locally available fertiliser, manuring and the introduction of potatoes as a cash crop. The system shows many advantages, i.e. higher yields, greater drought and pest resistance and more cash income through the potato crop. Some 2,000 farmers are now practising this system, the amount of land needed to provide food security for an average size family under this system is 0.4 ha, compared to 1.5 ha under unimproved, and rapidly degrading, systems.

Namibia

A recent report on certification potentials in South Africa identifies that Namibia is currently exporting organic Devil's Claw (a herbal remedy) to Germany and the UK. The Ministry of Agriculture has developed a discussion paper assessing the prospect of a large-scale conversion to organic farming in Namibia. This recognises the environmental and economic constraints implicit in competing in conventional markets and identifies a number of measures necessary to develop organic production within the country. A number of potential export products have already been identified, including beef, goat, sheep, game, mahangu and sorghum. There is keen interest in developing this strategy but a number of technical and marketing issues need to be resolved before a programme is rolled out (Rundgren and Lustig 2002).

Réunion

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APPENDIX 1: KEY DATA

NORTH AFRICA	ALGERIA	EGYPT	MOROCCO	TUNISIA
Size (1,000 hectares)	238,174	99,545	44,630	15,536
Total Agricultural land 1000 ha. (% of total)	8,040 (3.4%)	3,300 (3.3%)	9,595 (21.5%)	4,900 (31.5%)
Population (1000)	30,291	67,884	29,878	9,459
Projected Increase 1998-2015	2%	1.9%	2.0%	1.5%
Population per hectare agricultural land	3.8	20.6	3.1	1.9
Irrigated land (as % of agricultural land)	7%	100%	13%	8%
Crop Yield (kg. per hectare)	980	6,681	1,215	1,240
Pesticide Use (kg. per hectare)	835	1,293	n/a	n/a
Fertiliser Use (kg. per hectare)	8	343	32	25
% Population employed in Agriculture	24%	33%	36%	25%
Tractors per 1000 Population	37.1	10.4	10.4	37.5
Average Calorie supply per capita (1997)	2,853	3,287	3,078	3,283
GDP ³³	1650	1530	1190	2070
Food Aid – World Food programme Tonnes 2000	13,251	30,552	68,390	none

All data from Millstone and Lang (2002) except ³³ World Bank

KEY DATA - continued

WEST AFRICA	BENIN	B.FASO	CAMEROON	GHANA	MALI	SENEGAL	TOGO
Size (1,000 hectares)	11,062	27,360	46,540	22,754	122,019	19,253	5,439
Total Agricultural land 1000 ha.	1,595	3,440	7,160	4,550	4,650	2,266	2,430
Population (1000)	6,272	11,535	14,876	19,306	11,351	9,421	4,527
Projected Increase 1998-2015	3.0%	2.5%	2.5%	2.5%	2.6%	2.5%	2.7%
Population per hectare agricultural land	3.9	3.4	2.1	4.3	2.4	4.2	1.9
Irrigated land (as % of agricultural land)	1%	1%	0%	0%	2%	3%	0%
Crop Yield (kg. per hectare)	1,096	729	1,274	1,365	1,004	719	876
Pesticide Use (kg. per hectare)	n.a.	1	253	2,333 ³⁴	136	183	95
Fertiliser Use (kg. per hectare)	22	10	5	4	8	12	6
% Population employed in Agriculture	54%	92%	59%	57%	81%	74%	60%
Tractors per 1000 Population	0.1	0.4	0.1	0.7	0.6	0.2	0.1
Average daily calorie supply per capita (1997)	2,487	2,121	2,111	2,611	2,030	2418	2,469
GNP per capita \$	380	220	580	290	230	490	270
Food Aid – World Food programme Tonnes 2000	3,090	1,141	362	3,621	10,184	25,217	None

All data from Millstone and Lang (2002) except ¹ World Bank

³⁴ We have reservations about this figure, which is out of proportion to all other data for West Africa.

KEY DATA - continued

SOUTHERN AND EASTERN AFRICA												
	ETHI	KENY	MADA	MALA	MAU	MOZA	S.AFR	TANZ	UGAN	ZAMB	ZIMB	
Size (1,000 hectares)	100,000	56,914	58,154	9,408	203	78,409	122,104	88,539	19,965	74,339	38,685	
Total Agricultural land 1000 ha. (% of total)	10,500 (10.5%)	4,520 (9.1%)	3,108 (5.3%)	1,710 (18%)	n.a	3,180 (4.1%)	16,300 (13%)	4,000 (4.5%)	6,810 (34%)	5,265 (7%)	3,210 (8.3%)	
Population (1000)	62,908	30,669	15,970	11,308	1,161	18,292	43,309	35,119	23,200	10,421	12,627	
Projected Increase 1998-2015	2.8%	2.7	2.9%	1.8%	0.9%	3.0%	1.8%	3%	3.1%	2.6%	2.1%	
Population per hectare of agricultural land	6	6.8	5.1	6.6	n.a.	6.0	2.7	8.8	3.4	2.0	3.9	
Irrigated land (as % of agricultural land)	2%	1%	35%	2%	0%	3%	8%	4%	0%	1%	5%	
Crop Yield (kg. per hectare)	1,206	1,535	1,961	1,224	n.a	827	2,200	1,261	1,248	1,585	1,283	
Pesticide Use (kg. per hectare)	34	n/a	28	n/a	n.a	n.a.	57	n.a	17	317	531	
Fertiliser Use (kg. per hectare)	16	27	4	31	n.a	2	51	9	0	10	59	
% Population employed in Agriculture	82%	75%	74%	83%	12%	81%	10%	80%	80%	69%	63	
Tractors per 1000 Population	0.1	1.2	0.6	0.3	6.1	0.7	54.3	0.6	0.6	2.3	6.6	
Average daily calorie supply per capita (1997)	1,858	1,977	2,022	2,043	N.A	1,832	2,990	1,995	2,085	1,970	2,145	
GNP per capita \$ (1)	100	350	260	160	3,830	210	2,820	270	260	320	480	
Food Aid – World Food programme Tonnes 2000	604,717	274,437	8,293	10,478	none	68,390	none	14,463	48,820	19,724	none	
Agricultural produce as % Foreign Earnings (2)	>85%	65%	>55%	>85%	25%	>65%	c.7%	>75%	>75%	13%	10%	(GDP)

All data from Millstone and Lang (2002) except (1) World Bank and (2) Arnold (1997)

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APPENDIX 3: ELECTRONIC RESOURCES

- African Council of Organic Associations www.acoa.organic-earth.net/indes.php
- Agrécol (Senegal) www.agrecol-afrique.sn
- Agroecology Links www.agroecology.org/links.htm
- Association for Better Land Husbandry (Kenya) www.ablh.org
- Technical Centre for Agricultural and Rural Co-operation www.agricta.org
- City Farmer (African Pages) www.cityfarmer.org/subafrica.html#africa
- Convention of Biological Diversity www.biodiv.org/decisions
- Consultative Group on International Agricultural Research www.cgiar.org/
- Export Promotion of Organic Products from Africa (EPOPA) www.epopa.info
- Egyptian Center of Organic Agriculture www.ecoa.com.eg
- ENDA /Pronat (Senegal) www.enda.sn/pronat/index.htm
- Farming Solutions www.farmingsolutions.org/
- Food and Agriculture Organisation
- Organic Farming Pages www.fao.org/organicag/frame2-e.htm
 - Special Programme for Food Security www.fao.org/spfs/
- FORMAT KENYA www.formatkenya.org/organic
- HELVETAS www.helvetas.ch/english/wel_engl.html
- International Centre for Insect Physiology and Ecology www.icipe.org
- Institute for Low Input Agriculture www.ileia.org
- International Institute of Tropical Agriculture www.iita.org/
- International Livestock Research Institute (Nairobi) www.cgiar.org/ilri/about/about.cfm
- International Society of Organic Agriculture Research www.isofar.org
- International Trade Centre www.intracen.org/mds/sectors/organic/welcome.htm
- Participatory Ecological Land Use Forum (Zimbabwe) www.pelum.org/index.html
- Pesticide Action Network Africa (PAN-AFRICA) www.pan-africa.sn/english/letter.htm
- SEKEM (Egypt) www.sekem.com/main_n.html
- Sustainable Agriculture and Rural Development Prize www.sard-mallinckrodt.de
- Sustainable Agriculture Centre For Research and Development in Africa www.acts.or.ke/sacred
- Urban Agriculture Magazine www.ruaf.org
- World Agroforestry Centre www.worldagroforestrycentre.org/level1a.htm

APPENDIX 4: GLOSSARY OF ABBREVIATIONS

ASPABIC	Association for the Promotion of Organic Agriculture in Cameroon
AfFOResT	African Farmers' Organic Research and Training (Zimbabwe)
CBI	Centre for the Promotion of Imports from Developing Countries (Netherlands)
CDE	Centre for the Development of Enterprise.
CECIK	Centre for Cosmivision and Indigenous Knowledge, Ghana
CGIAR	Consultative Group on International Agricultural Research
COAE	Centre for Organic Agriculture in Egypt
COLEACP	Europe-Africa-Caribbean-Pacific-Liaison Committee for the Promotion of ACP Horticultural Exports.
CTA	Technical Centre for Agricultural and Rural Co-operation (Netherlands)
ECOA	Egyptian Centre of Organic Agriculture
EPOPA	Export Programme of Organic Products from Africa
ENIAKA	Enhancement of Indigenous Agricultural Knowledge in Africa
FAO	Food and Agriculture Organisation
FFS	Farmer's Field Schools
GTZ	Gesellschaft für Technische Zusammenarbeit (Germany)
ICIPE	International Centre for Insect Physiology and Ecology
ICRAF	International Centre for Research in Agroecology (now the World Agroforestry Centre)
IFOAM	International Federation of Organic Agricultural Movements
IITA	International Institute of Tropical Agriculture (Nigeria)
ILEIA	Institute for Low Input Agriculture (Netherlands)
ILRI	International Livestock Research Institute (Nairobi)
IPM	Integrated Pest Management
ISOFAR	International Society of Organic Agriculture Research
ITC	International Trade Centre (Geneva)
ITDG	Intermediate Technology Development Group
IUCN	International Union for the Conservation of Nature
KIOF	Kenyan Institute of Organic Farming
LEISA	Low External Input Sustainable Agriculture
NGO	Non Governmental Organisation
NGOC	Non Governmental Organisations Committee (of CGIAR)
NPM	Natural Pest Management
SIDA	Swedish International Development Agency
SÖL	Stiftung Ökologie & Landbau (The Foundation for Ecology & Agriculture)
USAID	US Agency for International Development
WWF	World Wide Fund for Nature (formerly World Wildlife Fund)
WWOOF	Worldwide Workers on Organic Farms