



**TRADE AND INDUSTRY CHAMBER  
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GROWTH AND EQUITY (FRIDGE)**

**STUDY TO DEVELOP A VALUE CHAIN STRATEGY FOR  
SUSTAINABLE DEVELOPMENT AND GROWTH OF  
ORGANIC AGRICULTURE**

**Compiled by**

**Institute of Natural Resources**

**In Association With:**

**GrolinkAB**

**Urban Econ**

**Phytotrade Africa**

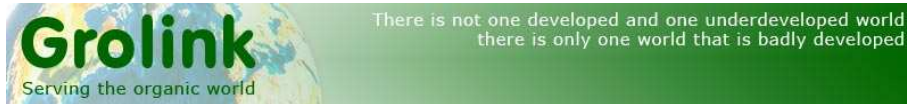
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## List of Acronyms

AQIS	Australian Quarantine and Inspection Service
ATTRA	Appropriate Technology Transfer for Rural Areas
BMPs	Best Management Practices
CBOs	Community-Based Organisations
CCOF	California Certified Organic Farmers
DAEA	Department of Agriculture and Environmental Affairs
DED	Department of Economic Development
EMS	Environmental Management System
EPOPA	Export Promotion of Organic Products from Africa
FAO	Food and Agriculture Organisation
FIBL	Research Institute of Organic Agriculture (English Translation)
GDP	Gross Domestic Product
GM	Genetically Modified
GMO	Genetically Modified Organism
GOAN	Ghana Organic Agriculture Network
GTZ	Gesellschaft für Technische Zusammenarbeit
GWP	Global Warming Potential
IBS	IFOAM Basic Standards
IFAD	International Fund for Agricultural Development
IFM	Integrated Farm Management
IFOAM	International Federation of Organic Agriculture Movements
IMO	Institut für Marktökologie
IOAS	International Organic Accreditation Service
IOFGA	Organic Farmers and Growers
ISO	International Standards Organisation
ITC	International Trade Centre
ITF	International Task Force
KOAN	Kenya Organic Agriculture Network
KZNDED	KwaZulu-Natal Department of Economic Development
LUMP	Land Use Management Programme
LEAF	Linking Environment and Farmers
MEF	Middle East Food
NFA	Natural Food Associates
NGOs	Non-Governmental Organisations
NOGAMU	National Organic Agricultural Movement of Uganda
NOP	National Organic Program
NOPE	Natural and Organic Products Exhibition
NOSB	National Organic Standards Board
NRDC	National Resources Defence Council
OACC	Organic Agriculture Centre of Canada
OF&G	Organic Farmers and Growers Ltd
OFDC	Organic Food Development Centre
OFF	Organic Food Federation
OFPA	Organic Foods Production Act of 1990
OFRC	Organic Food Research and Consulting Centre
OGS	Organic Guarantee System

OPAC	Organic Product Advisory Council
OPPAZ	Organic Producers & Processors Association of Zambia
OSA	Organics South Africa (previously OAASA - Organic Agriculture Association of South Africa)
QAI	Quality Assurance International
RCOs	Registered Certification Officers
SACU	Southern African Customs Union
SADC	Southern African Development Community
SEPA	State Environmental Protection Administration
SIDA	Swedish International Development Agency
SIPPO	Swiss Import Promotion Programme
SÖL	Stiftung Ökologie & Landbau
SOPA	Scottish Organic Producers Association
SSA	Sub-Saharan Africa
TOAM	Tanzania Organic Agriculture Movement
UK	United Kingdom
UKROFS	United Kingdom Register of Organic Food Standards
UNCTAD	UN Conference on Trade and Development
UNDP	United Nations Development Programme
UNEO-GEF	United Nations Environmental Programme – Global Environment Facility
USAID	US Agency for International Development
USDA	United States Department of Agriculture
ZOPPA	Zimbabwe Organic Producers' and Processors' Association
ILO	International Labour Organisation
DTI (thedti)	National Department of Trade and Industry
DoA	National Department of Agriculture
DEAT	National Department of Environmental Affairs and Tourism
PDA	Provincial Departments of Agriculture
PPECB	Perishable Products Export Control Board
NAMC	National Agricultural Marketing Council
PGS	Participatory Guarantee System
FAWU	Farm and Allied Workers Union

# 1 METHODOLOGY

## 1.1 *Research Methodology*

The methodological approach used in gathering information in this study was as follows:

- Literature Review

An extensive literature review of information pertaining to organic agriculture was undertaken. This formed the basis on which further information and research was identified. A large proportion of the literature reviewed was from international sources as a result of the paucity of available information and research on organic agriculture in South Africa. Of the international information reviewed, a significant percentage was obtained from the European Union, which indicates the high degree of market development and research in that region. Where South African information was identified, attempts were made to maximise the use of the information, within the limits of its credibility. The full literature review may be found in Appendix A.

- Primary Research

During the literature review, a range of stakeholders, including certifiers, government agencies, Non Government Organisations (NGOs) and producers were identified. A number of key informants were contacted, and meetings held, for information and perspectives related to organic agriculture in South Africa to inform the initial development of the strategy. In addition, a number of farm visits were undertaken to inform components of the study and provide insights on a case study basis.

A stakeholder database was compiled and a survey in the form of a detailed questionnaire was distributed to organic farmers. Response to the survey was low and telephonic follow ups were made to enhance the validity of the information gathered in the survey. Qualitative information was assessed using the SPS statistical programme and quantitative information interrogated utilising Microsoft Excel. The survey assisted in informing, to a large degree, the demand for and production of organic produce in South Africa.

- Strategy Development

The information gathered during the research was used to inform a draft strategy. Three national multi-stakeholder workshops were held, giving an opportunity for stakeholders to participate in developing the strategy for organic agriculture in South Africa. The draft strategy arising from the workshops was circulated to stakeholders for comments, which were used to inform the final strategy.

## **1.2 Report Layout**

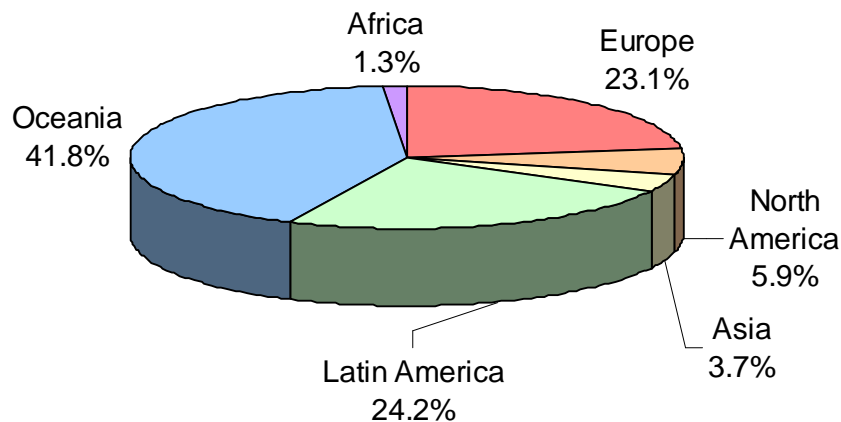
The outcomes of the research are presented in the document as seven separate sections , with associated appendices as follows:

- SECTION 1: METHODOLOGY - Project methodology and report layout.
- SECTION 2: INTRODUCTION - Summarises the findings of the literature review of organic agriculture, including the history of organics, definitions and principles, certification and accreditation and benefits of organic agriculture.
- SECTION 3: BIOTECHNOLOGY AND WASTE MANAGEMENT - An overview of the role of biotechnology in organic agriculture.
- SECTION 4: REGULATORY AND TRADE ENVIRONMENT - The development and impact of the regulatory and trade environment on organic production is reviewed and its implications for South Africa assessed.
- SECTION 5: THE AFRICAN CONTEXT - Investigates the status of organic production in Africa and South Africa, and profiles stakeholders in the South African organic sector.
- SECTION 6: DEMAND, SUPPLY AND DISTRIBUTION: DOMESTIC AND EXPORT - Investigates production, availability, supply and demand for organic produce locally and internationally.
- SECTION 7: RESULTS OF RESEARCH - Summarises the findings of the survey of certified organic producers and looks at two case studies of local production and provides a SWOT analysis of South African Organic Agriculture.
- SECTION 8: TRENDS IMPACTING ON THE ORGANIC SECTOR - A review of global trends affecting the organic sector is provided
- SECTION 9: COST BENEFIT ANALYSIS - Provides an overview of costs and benefits associated with organic agriculture.
- SECTION 10: CONTRIBUTION OF ORGANICS TO SOCIO-ECONOMIC THEMES - Socio-economic themes in relation to organic agriculture are reviewed here, including the concept of Ubuntu, the African Renaissance and NEPAD. Opportunities for BBBEE, Skills Development and Job Creation as well as the food security and health benefits of organic production are assessed.
- SECTION 11: SUSTAINABILITY STRATEGIES FOR THE ORGANIC SECTOR - A review of measures and approaches that can be used to grow the sector.
- SECTION 12: APPROACHES USED ELSEWHERE TO DEVELOP THE SECTOR - Reviews approaches used in other countries to grow the organic sector.
- SECTION 13: STRATEGY - The final section of the study details strategies that should be implemented for the growth and development of the organic sector in South Africa.
- SECTION 14: CONCLUSION.

## 2 INTRODUCTION

### 2.1 *The Need for a Development Strategy for the Sector*

During the last decade, the organic agriculture industry has experienced rapid development worldwide. Between 2002 and 2005, sale of organic food and drink worldwide increased by 43%, from USD 23 billion to 40 billion (Willer *et al.*, 2008). Today, over 31 million hectares are currently managed organically, and certified as such, in approximately 120 countries and involves at least 623 174 farms (Willer & Yussefi, 2006). At present, Australia accounts for greatest area under organic management (12.1 million hectares) followed by China (3.5 million hectares) and Argentina (2.8 million hectares). The distribution of area under organic management for each continent as at 2004 is indicated in Figure 1 below. While Oceania (Australia, New Zealand and other Pacific countries) has the largest share, some 41.8%, it should be borne in mind that no distinction is made between areas under extensive livestock and those for more intensive forms of production, and therefore can be misleading. Africa has the smallest area certified organic, only 1.3%, indicating that there are opportunities for expansion of certified organic agriculture in Africa. In addition to this, there are many farmers who farm using organic principles who are not formally certified and it is probable that the area farmed using organic principles is larger than this.



**Figure 1: Total area under organic management – share by continent (adapted from Willer & Yussefi, 2004).**

The international growth of organic agriculture is not necessarily reflected in South Africa and other African countries. Consequently, a study was commissioned by the Department of Trade and Industry in partnership with the National Department of Agriculture to investigate organic agriculture and develop strategies to support the development of the sector in South Africa.

## **2.2 The History and Development of Organic Agriculture**

To understand the current state of the international organics industry, it is helpful to first understand how the “organic movement” evolved into the industry it is today. It could be argued that all farming prior to the green revolution was “organic”, which it was in as much that no artificial chemicals were applied to the land<sup>1</sup>. Organic farming has developed through a combination of pioneer farmers and scientists and the formation of organic organisations and associations. In the beginning, several scientists including Sir Albert Howard, Lady Eve Balfour, Rudolf Steiner, Hans Mueller and Hans Rustch formulated ideas and undertook various research activities.

The organic farming concept as it is known today is generally agreed to have been pioneered by Sir Albert Howard. In the early 1900s Howard conducted a variety of notable experiments at agricultural research centres in India. He observed the reaction of properly grown varieties of plants subjected to insect and other pests and found that the key aspect of soil management was the maintenance of soil fertility. He believed that crops grown on land treated with a consistent supply of fresh humus prepared with vegetable and animal wastes resisted common pests and that this resistance was passed on to livestock who fed on these plants. His conceptualisation of soil fertility emphasized the connectivity of the health of crops, livestock and mankind. He also felt it better to adapt species through breeding to the local conditions of the area than to supplement a western strain with chemicals to encourage growth. In 1940 he published a landmark book, *An Agricultural Testament*, in which he argued that relying on fertilisers was unwise as it could not maintain farmland indefinitely. The system of agriculture advocated by Howard was coined ‘organic’ and was used in reference to a system ‘having a complex but necessary interrelationship of parts, similar to that in living things’ (Heckman, 2006).

Lady Eve Balfour was one of the first women to study agriculture at a UK University in 1919. In 1939, she launched the Haughley experiment, the first long term scientific experiment comparing organic and chemical based farming. In 1943, she published ‘The Living Soil’, a book which combined her research and initial results on the Haughley experiment and three years later she co-founded and became the first president of the Soil Association, an international association promoting sustainable agriculture that is well known to this day (Balfour, 1977).

In 1924 Rudolf Steiner, an Austrian philosopher and founder of anthroposophy<sup>2</sup>, established the spiritual foundation of farming later known as Biodynamic agriculture. Biodynamic agriculture recognises the basic principles at work in nature and takes these principles into account to bring about balance and healing. Although biodynamic agriculture differs from organic agriculture in that it is spiritual, mystical and astrological, it was prophetic in its criticism of industrial agriculture. In his courses, Steiner considered the farm as a living organism and proposed that the ideal self contained farm should include just the right

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<sup>1</sup> The definition and principles of organic farming are summarised in 2.4 and detailed in Appendix A.

<sup>2</sup> A movement based on the concept that there is a spiritual world accessible to pure thought through a path of self-development.

number of animals to provide manure for fertility and that these animals should in turn be fed by the farm. As a result of Steiner’s actions, the first organic certification and labelling system, ‘Demeter’ was developed (The Biodynamic Farming and Gardening Association website; Kristiansen *et al.*, 2006).

In the 1940s and 1950s, interest in organic farming grew slowly but steadily through informal local markets in Europe. In the 1960s and 70s there was a proliferation of organisations and associations promoting organic agriculture and in 1972 a number of organisations joined to found the International Federation of Organic Agriculture Movements (IFOAM) (Fersino & Petruzzella, Unkown).

The organic movement as it is known today is generally recognised as originating in Europe in the first half of the twentieth century. Internationally, however, growing interest in organic farming also developed during this time.

**Table 1: Timeline of events contributing to the development of the Organic Industry in Europe (adapted from Willer & Yussefi, 2004)**

1900s	Sir Albert Howard carried out agricultural experiments in India
1924	Rudolf Steiner’s ran course on bio-dynamic farming
1939	Lady Eve Balfour conducts the Haughley experiment – the first long-term scientific comparison on organic and chemical-based farming
1930s/40s	Formation of the first bio-dynamic associations in Europe (‘Demeter’)  Dr Hans Mueller active in Switzerland (Organic - biological farming otherwise referred to as ‘Bioland’ or ‘BioSuisse’)  Sir Albert Howard publishes land mark book – An Agricultural Testament
1943	Lady Eve Balfour published ‘The Living Soil’
1946	Lady Eve Balfour founded the Soil Association in the UK
1972	International Federation of Organic Agriculture Movements (IFOAM) founded
1973	Research Institute of Organic Agriculture FiBL founded in Switzerland
1975	Foundation Ecology & Agriculture SOEL founded in Germany
1980s	The majority of other organic organisations and associations founded
1990	First BioFach Fair takes place in Germany, now the biggest fair for organic products worldwide

1991	IFOAM European Union Regional Group founded EU regulation 2078/92 published in official Journal of the European Union which established area based support for organic farming in most EU countries
1992	IFOAM Accreditation Program established
1995	First action plan for organic farming launched in Denmark
1999	Global <i>Codex Alimentarius</i> standards on organic agriculture published
2000	Agenda 200 implemented which established support measures for organic farming including continuation of area-based payments
2001	January – BSE crisis in Europe which resulted in an attitude shift toward organic farming May – Initial consideration of European Action Plan for organic farming
2003	European consultation on the action plan for organic farming Various research projects related to organic farming accepted under the first call of the sixth framework program

### ***2.3 The History of Organic Agriculture in Africa***

The history of organic agriculture in Africa dates back to 1898 when the first organic garden was established at Peramiho in southern Tanzania. Since that time, the garden has been fertilised only with compost, wood ash, stable and latterly green manure thereby maintaining the soil fertility.

The development of sustainable, organic and ecological agriculture in Africa has mainly been in response to problems associated with production decline and increasing input prices. Most of these initiatives were based on practices and principles, which are today embedded in organic agriculture.

In Cameroon, organic agriculture has been driven through an organisation called EXPORT AGRO, which started in 1990. EXPORT AGRO was pioneered by Jean-Martin Tetang and has organised and secured production through a dense channel of small-scale producers. The objective of this initiative is to value the local small-scale production and to ensure regular revenue to very small producers<sup>3</sup>. A collection channel of the controlled and certified production has been established in the main provinces of Cameroon.

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<sup>3</sup> Generally speaking, a small scale producer can be considered to be a farmer producing on an area of less than 2 hectares. A very small producer would be farming less than 0.5 hectares. This figure is, however, dependent on the crop being grown and general production conditions (climate, soil etc). For example, with agronomic crops such as sugar cane, cotton and maize, where relatively low margins can be achieved, a small producer can be up to 20 hectares in extent. In the case of vegetables, an equivalent income can be obtained from a much smaller area, but with more intensive management requirements.

In Kenya, formal organic agriculture began in the early 1980s with the establishment of organic training institutions. At the same time, some horticultural companies started growing organic vegetables for export. Initial efforts to develop organic agriculture were through rural development non-governmental organisations (NGOs), faith-based organisations, individuals and community-based organisations (CBOs). These organisations aimed to assist rural farmers to address declining agricultural productivity, land degradation, poverty, food insecurity and low incomes. Low incomes meant that farmers were not able to purchase conventional inputs at a high cost. Organic systems of agriculture presented a low cost opportunity to improve farm productivity. As a consequence, organic farming was associated with poverty and this “poor man” perception of organic agriculture continues and is considered to be a reason for the low level of commercialisation of organics at the smallholder level (Taylor, Undated).

In Uganda, the development of organic agriculture was driven by the export market. In 1994 commercial companies began engaging in organic agriculture, seeking the export market. There was also a general movement in the agricultural sector to develop sustainable agriculture as a means of improving livelihoods. Many NGOs, CBOs and, importantly, the government promoted an approach to agriculture which would allow for the safeguarding of food security, provide income, maintain soil fertility and control pests. This provided a solid foundation for the development of organic agriculture. The emphasis on the nature of organic agriculture (such as use of local knowledge and traditional farming systems) also appealed to the Ugandan people, which may have enhanced the uptake of this farming system (Taylor, Undated).

In South Africa, organic farming has grown from small informal groups producing organic products to a rapidly growing and formalised industry. While there is no formal detail on the history of the organics industry in South Africa, the formalisation of the industry can be considered to have begun with the establishment of the Organic Agriculture Association of South Africa (OAASA) in 1994, (Jackson, T. *pers comm.*). According to Mead (Undated), organic sales remained relatively low until 2003, after which rapid growth was experienced in both local and export markets. There are a number of different estimates of the value and extent of the industry in South Africa (Mead, Undated; Van Zyl, 2000; Parrott and Elzakker, 2003), which range from 200 to 250 farmers cultivating between 45 000 and 515 000 ha of land. Due the lack of formal legislation or record keeping for organic agriculture in South Africa, the actual value and extent of organic agriculture has yet to be determined accurately. Nevertheless, South Africa has a robust and growing domestic market for organic products and exports are increasing.

## **2.4 What is Organic Farming?**

Organic farming (also known as ecological or biological farming) is commonly recognised as a farming system that excludes the use of synthetic fertilisers and pesticides. This is a rather simplistic view of organic agriculture as it differs from other farming systems around the management of the entire system. Organic farming is a clearly defined production system that takes a holistic approach to production, considering the entire farm or production system as an ecological unit.

Central to the organic farming system, in terms of physical production, is the management of the soil. Soil is managed in such a way as to optimise soil health through the management of the inorganic and organic soil processes to enhance biological processes that improve plant health. Crop combinations and rotations are also managed in such a way as to improve plants' competitive ability and create a favourable environment for the presence of natural predators of crop pests. In livestock, animals are managed to enhance natural resistance to pests and diseases through good nutrition and management practices such as interrupting host / pathogen relationships. These practices reduce the necessity for external inputs to manage disease and fertility (FAO, 1998; Scottish Agricultural College, 2005).

Organic farming is not only about managing the soil – plant – environmental interaction in a holistic manner – it also has food quality, human health, animal welfare and socio – economic aims. As a result of these principles and philosophies, organic food has a strong brand image in the eyes of the health-, environment- and socially-conscious consumer. Organic agriculture is therefore not only driven by farmers' philosophical approaches to agriculture, but is also drawn by consumer demand (Scottish Agricultural College, 2005). This strong brand image combined with generally limited supply means that organic produce can command higher prices for retailers and farmers than conventionally produced food.

There is no universally recognised definition or description of organic farming. Many organic organisations have proposed definitions, but no single definition has been adopted by organisations as an accepted definition/description (FAO, 1998). A good working definition is provided by the International Federation of Organic Agriculture Movements (IFOAM)<sup>4</sup>:

“Organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibres. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimise quality in all aspects of agriculture and the environment. Organic agriculture dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilisers, pesticides, and pharmaceuticals. Instead it allows the powerful laws of nature to increase both agricultural yields and disease resistance.”

An extensive literature search did not reveal a South African definition for organic farming.

#### **2.4.1 Principles of Organic Agriculture**

According to IFOAM (2005), organic agriculture is based on four fundamental principles:

- The principle of health
  - Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible. The health of individuals and communities cannot be separated from the environment.
  - The role of organic agriculture is to sustain and enhance the health of ecosystems and organisms. Organic agriculture aims to produce high quality, nutritious food that contributes to preventive health care and well-being. It should

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<sup>4</sup> A number of additional definitions are provided in Appendix A

avoid the use of fertilisers, pesticides, animal drugs and food additives that may have adverse health effects.

- The principle of ecology
  - Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them. It is rooted within living ecological systems and production is to be based on ecological processes and recycling.
  - Organic farming, pastoral and wild harvest systems should fit the cycles and ecological balances in nature and organic management must be adapted to local conditions, ecology, culture and scale. Inputs should be reduced by reuse, recycling and efficient management of materials and energy in order to maintain and improve environmental quality and conserve resources.
  - Organic agriculture should attain ecological balance through the design of farming systems, establishment of habitats and maintenance of genetic and agricultural diversity. Those who produce, process, trade, or consume organic products should protect and benefit the common environment including landscapes, climate, habitats, biodiversity, air and water.
- The principle of fairness
  - Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities
  - Fairness is characterised by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings.
  - This principle emphasises that people in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties, should provide everyone involved with a good quality of life, contribute to food sovereignty and reduction of poverty. Animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being.
  - Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.
- The principle of care
  - Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.
  - Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions. Practitioners of organic agriculture can enhance efficiency and increase productivity, but this should not be at the risk of jeopardising health and well-being. Consequently, new technologies need to be assessed and existing methods reviewed. Given the incomplete understanding of ecosystems and agriculture, care must be taken when introducing new technologies.

- This principle of care views precaution and responsibility as key concerns in management, development and technology choices in organic agriculture. Science is necessary to ensure that organic agriculture is healthy, safe and ecologically sound. However, scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional and indigenous knowledge offer valid solutions, tested by time. Organic agriculture should prevent significant risks by adopting appropriate technologies and rejecting unpredictable ones, such as genetic engineering. Decisions should reflect the values and needs of all who might be affected, through transparent and participatory processes.

## **2.5 Benefits of Organic Farming**

This section summarises information pertaining to the various and diverse benefits of organic production gathered during the literature review.

### **2.5.1 Food Security and Long Term Productivity**

According to the FAO (2003), food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern. Section 0 provides a detailed analysis of the impact of organic agriculture on food security. In summary, organic agriculture can contribute to food security through:

- Increased productivity - particularly in areas prone to food shortages<sup>5</sup>
- Provision of safe food that supports a varied diet
- Increased income or return on labour
- Reduced costs of production
- Risk reduction through diversification
- Increased awareness of the need for sustainable production and consumption and the need to protect the environment
- Supporting innovation and recognising and integrating indigenous knowledge
- Long-term sustainability.

### **2.5.2 Environment**

#### **Biodiversity**

Biodiversity refers to the variety of life on earth and is usually assessed at three distinct levels:

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<sup>5</sup> Rundgren (2002) points out that converting from intensive conventional systems, a yield drop of 5-20% can be expected, while on irrigated land, yield tends to stay the same. Importantly, however in "traditional" rainfed systems, it is often the case that yields are increased after conversion to organic farming systems (see also Section 0).

- Genetic diversity – a measure of the variation within a given species in an area or across areas
- Species diversity – diversity of species within a given area
- Ecosystem diversity – the diversity between or within a given ecosystem.

Biodiversity provides important ecosystem services, such as nutrient cycling, water production, flood mitigation, carbon absorption, oxygen production and regulation of species numbers. Efforts to preserve biodiversity have, until recently, focussed on natural (undisturbed) ecosystems, which is important, but these only account for 10% of the earth's surface whereas 37% of the earth's land surface is under some form of agricultural production (bearing in mind a large proportion of this is extensive grazing). There exists, therefore a significant opportunity for agricultural systems to contribute to biodiversity conservation and management (Stolton, 2002).

### **Does Organic Farming Affect Biodiversity?<sup>6</sup>**

This is the title of the most recent comprehensive study on biodiversity benefits of organic agriculture. Hole *et al.* (2005) undertook a full literature review of scientific papers that explicitly compared the impacts of organic and conventional systems in terms of biodiversity. Conventional in this case referred to “any non organic farming system” that was typical of farming systems in the regions where the studies was undertaken, and relied on external inputs to achieve high yields. The study did not research the specific impacts in terms of biodiversity of particular farming practices within the organic and conventional systems. Seventy-six individual studies were identified, and qualitative reviews of these were undertaken. The general findings of the review are summarised as follows:

- **Flora**

With the exception of one of fifteen studies, a higher species richness and weed abundance was found in fields under organic management, irrespective of the crop being grown.

- **Soil Microbes**

Of nineteen studies that investigated soil microbes, overall differences between conventional and organic systems were found to be limited. It was, however, noted in some cases, that there was “a general trend towards elevated bacterial and fungal abundance/activity under organic systems”. This may be attributed to manuring on farm, which increased soil organic carbon

- **Invertebrates**

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<sup>6</sup> Other detailed or long term studies include

[www.fao.org/organicag/doc/soil\\_biodiversity.htm](http://www.fao.org/organicag/doc/soil_biodiversity.htm)

[www.soilassociation.org](http://www.soilassociation.org) The Biodiversity Benefits of Organic Farming

[www.newscientist.com](http://www.newscientist.com) Organic farming boosts biodiversity

Thirteen studies of earthworms observed higher earthworm abundance, a higher density of earthworms and larger earthworms. Reganold *et al.* (1993) are cited in the report as observing densities as high as 175/m<sup>2</sup> in a biodynamically managed soil, compared with 21/m<sup>2</sup> under a conventional system. These higher numbers are attributed to the use of manures as well as the lack of pesticide use that may affect juvenile earthworms and anecic earthworms that live close to the soil surface.

Three studies directly compared spider populations, while a further seven recorded spider abundance as part of a broader study. The three direct studies found that either abundance and species richness, or a combination of both, to be higher under organically managed systems. One study found that the two generally most common spider species for the area were present in higher densities in conventional systems but at the expense of less common groups.

The seven more general studies all reported a higher abundance of spiders in organic systems, but it should be noted that differences between study sites and across years were not always statistically significant.

Eleven studies directly investigated beetle populations, and an additional ten studies included beetles as part of their study. Twelve of these studies found a higher abundance of beetles on organic lands as well as some indication of increased species diversity. Four studies found that the opposite was true. Other studies found no clear patterns or differences. Most of the studies did find inconsistencies in the beetle communities, with some groups or individual species of beetles preferring organic fields and others conventional fields.

Ten studies investigated other arthropods. The results of all ten indicate that organic fields have a higher abundance and richness of arthropods than conventionally managed lands.

- **Vertebrates**

There are fewer studies on mammals and birds. These studies tend to investigate farm-scale differences, probably due to the higher general mobility of these species.

Two directly comparative studies on mammals were found. In one study, activity levels of small mammals were higher in organic, although overall there was not much difference in density. The other study looked at bats and found that bat activity and foraging activity was higher on organically managed habitats, although again no difference was found between species richness. Nevertheless, two rare species of bats were found only on organic farms.

Five major studies compared bird communities as a whole, through assessing bird abundance and / or species richness. The five studies all found that there was either greater abundance or species richness, or a combination of both, on organically managed systems.

## **Findings**

The study did note that there were methodological issues in the reviewed research that may have affected the results, such as:

- General landscape differences (soil, microclimate, slope etc) may have caused some of the differences found

- Some studies were only carried out over one season or year, which would not take into account stochastic / seasonal variations
- Different studies used different methods of measuring biodiversity, preventing direct comparisons across studies.

Several factors may also have resulted in the underestimation of the biodiversity benefits of organic farming:

- Large conventional farms tended not to be used as there were few organic farms of equivalent size in a similar region
- A possible time lag between conversion to organic farming and the environmental response to conversion
- Organic farms tend to be islands in a sea of conventional farms resulting in the lack of spatial continuity. If organic farming is practiced at the landscape scale, the benefits may be greater and more readily identified.

The study found the need for more rigorous, long term scientific research on the issue of biodiversity comparisons. Nevertheless, it was found that the majority of studies “clearly demonstrate that species abundance and / or richness, across a wide-range of taxa, tend to be higher on organic farms than on locally representative conventional farms”. It further found that many of the positive differences applied to species that have experienced declines as a result of agricultural intensification, some of which are now protected through biodiversity conservation legislation.

It should be pointed out that these studies were undertaken in the US and Europe. Nevertheless, given the differences in approach and philosophies between organic and conventional farming systems, it is likely that such differences would be identified in other places where large scale conventional farming systems have developed. The evidence points to organic farming contributing positively to biodiversity.

### **Soil**

Most agricultural systems require soil in which crops must grow. They are therefore one of the most important assets of a farming enterprise. Pfiffner (Undated) confirmed that soil is one of the most important natural resources for agriculture and therefore soil fertility enhancement is a key objective of any farming enterprise, particularly organic farming. It was found that organic farming tends to conserve soil fertility better than conventional systems, indicated by a higher richness and quantity of soil life in organically managed soils. These soils usually have a higher organic matter content, which drives the richness of soil biodiversity. Most organic farming practices were also found to have high erosion control potential.

Horticultural Research International (2002) examined key functional indicators of soils to compare and contrast organic and conventional farming systems using vegetables and arable crops. Vegetables have more rapid rotations and usually involve more soil disturbances (ploughing, ripping, etc.) as opposed to arable crops. They found that there

were differences between organic and conventional systems as well as within organic systems in chemical and biological soil characteristics, which included:

- Organic vegetable rotations had no effect on soil chemical quality relative to conventional arable management, but organic arable rotation appeared to improve soil chemical quality.
- Organic arable (field crops e.g. wheat) had a higher composition of light fraction organic matter and labile N<sup>7</sup> when compared with organic vegetable and conventional arable systems. These factors are beneficial for long term nutrient retention and soil organic matter development.
- Organic systems had increased presence and volume of fungi, a larger proportion of 'active' compared with 'resting' biomass (indicator of soil health and increased available carbon) and increased metabolic diversity.
- In terms of soil structure, it was found that rather than the benefits of one system over the other, it was the damaging effect of vegetable production. It was considered likely that increased levels of organic matter in organic systems would mitigate the damaging effects of vegetable production.
- The study also found the need to measure a range of indicators to get a true picture of soil quality, as many of the 'traditional' measures such as soil organic matter and biomass nitrogen do not indicate changes in soil functional attributes. They point out that analysing biomass N alone would have indicated limited differences between the organic and conventional systems in terms of microbial communities.
- Productivity of newly converted organic vegetable systems could be negatively affected by inherited low fungal and inoculum diversity following conventional management.

### **Climate, Air and Carbon**

Global climate change is an extremely urgent and real environmental problem. According to El-Hage Scialabba (2003), agriculture contributes 20% to the total anthropogenic sources of greenhouse gas emissions which consist primarily of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). While carbon dioxide is present at much higher concentrations in the atmosphere than the other gases, methane and nitrous oxide have a much higher global warming effect.

Pfiffner (Undated) found that CO<sub>2</sub> emissions were 40-60% lower on organic farms, although emissions on a per unit output of production basis, may be higher than on conventional systems. There is little research into N<sub>2</sub>O and CH<sub>4</sub>, emissions, although calculations indicate that these emissions probably show the same trends as CO<sub>2</sub> emissions. El-Hage Scialabba and Hattam (2002) state that CO<sub>2</sub> emissions per hectare of organic agriculture systems are 48 to 66 percent lower than in conventional systems. Similar findings were recorded by the Rodale Institute.

([www.newfarm.org/depts/NField\\_trials/1003/carbonsequest.shtml](http://www.newfarm.org/depts/NField_trials/1003/carbonsequest.shtml)).

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<sup>7</sup> Nitrogen in a readily available or changeable form, such as NH<sub>3</sub> or NO<sub>3</sub> (As opposed to stable N<sub>2</sub>)

## **Water Pollution**

Water pollution through nitrate leaching is generally lower in organic agriculture. Trials from the late eighties showed that with organic farming practices, nitrate leaching was up to 50% less on organically managed farms. Improved nitrogen management on conventional farms has decreased this difference, and leaching rates were found to be on average, 20% lower on organic farms (Pffifner, Undated). It has been noted that ploughing in of legumes at the wrong time followed by the incorrect crop (that does not have high nitrogen demands, for example) as well as using compost or manure on freely draining soils can potentially cause significant nitrogen leaching in organic systems. Obviously, pesticide contamination in ground and runoff water is reduced in organic systems due to its prohibition.

## **Summary**

Scialabba and Hattam (2002) provide a good summary of the environmental benefits of organic agriculture:

- Soil
  - Organic matter content is usually higher in organically-managed soils, indicating higher fertility and stability of organic soils as well as moisture retention capacity, which reduce the risk of erosion and desertification.
  - Organically-farmed soils have significantly higher biological activity and a higher total mass of micro-organisms, making for more rapid nutrients recycling and improved soil structure. While the proportion of soluble nutrient fractions is lower on organically managed soils, there is no decrease in organic yields since higher biological activity and higher mycorrhizal root colonization counteract nutrient deficiency.
- Water
  - Organic agriculture poses no risk of ground and surface water pollution through synthetic pesticides.
  - Nitrate leaching rates per hectare are significantly lower in organic agriculture compared to conventional systems.
- Air
  - Organic agriculture enables ecosystems to better adjust to the effects of climate change and has a major potential for reducing agricultural greenhouse gas emissions.
  - Organic agricultural strategies, by recycling organic matter and tightening internal nutrient cycles, contribute to carbon sequestration.
- Energy
  - Organic agriculture performs better than conventional agriculture on a per hectare scale, both with respect to direct energy consumption (fuel and oil) and indirect consumption (synthetic fertilisers and pesticides).
  - Efficiency of energy use of organic farms is high.

- Biodiversity
  - Agriculture genetic resources, including also insects and micro-organisms, have all been shown to increase when land is farmed organically.
  - Wild flora and fauna within and around organic farms are more diverse and abundant than in conventional or integrated agriculture.
- Ecological services
  - Organic agriculture offers vast food resources and shelter for beneficial arthropods and birds, thus contributing to natural pest control.
  - Organic agriculture contributes to the conservation and survival of pollinators, thanks to the banning of synthetic chemical pesticides and herbicides and the enhanced ecosystem diversity.
- Landscape
  - Organic agriculture systems create diversified landscapes, which contributes to functional diversity and aesthetical values.
  - The establishment of semi-natural habitats within organic systems and the avoidance of pesticide use contribute to maintaining the biological connectivity and the larger ecological web, which benefit both agriculture and nature conservation.

It can therefore be reasonably concluded that (well managed) organic agricultural systems provide better environmental benefits (or less environmental harm) in most respects, when compared with conventional farming systems. Organic systems can counteract resource depletion (soil, water, energy, nutrients), contribute positively to climate change and can help to maintain and enhance biodiversity.

### **2.5.3 Social Benefits**

It is generally accepted that organic farming operations offer greater social benefits than conventional agricultural systems. For example, IFOAM's basic standards include consideration of "quality of life conforming to the UN Human Rights Charter to cover their basic needs and obtain an adequate return and satisfaction from their work, including a safe working environment" as well as consideration of "the wider social and ecological impact of the farming system". The broad recommendations from the IFOAM Basic Standards (Chapter 8) are as follows:

- Compliance with International Labour Organisation (ILO) conventions and UN Charter of Rights for Children
- Access to potable water, food, housing, education, transportation and health services
- Provision of basic social security needs of the employees, including maternity, sickness and retirement benefits
- Equal opportunity and adequate wages when performing the same level of work regardless of colour, creed and gender

- Adequate protection from noise, dust, light and exposure to chemicals within acceptable limits
- Contracts should be fair, open to negotiation, and honoured in good faith
- The rights of indigenous people should be respected, and land whose inhabitants or farmers have been or are being impoverished, dispossessed, colonised, expelled, exiled or killed, or which is currently in dispute regarding legal or customary local rights to its use or ownership should not be used or exploited.

These recommendations refer mainly to conventions as defined by the International Labour Organisations (ILO). Within the standards it is clearly indicated that production methods which violate human rights cannot be certified as organic.

According to FAO (1998) the following general social benefits are associated with organic production systems:

- The site specific nature of organic agriculture means that indigenous plant species and indigenous knowledge are important. Further, farmers may welcome a management system more aligned to their own traditions and not driven by the production paradigm (i.e. maximising yields through the use of artificial inputs).
- Relying on local knowledge of complex interactions and variations of conditions from place to place tends not to favour large production areas. With the tendency for reduced farm size, equitable access to land may be enhanced.
- Consistent labour requirements associated with crop diversity provide income stability.
- Fair trade, where buyers demonstrate a concern for social justice by buying fair trade products, is part of the ethic of organic agriculture and is in the IFOAM guidelines.
- Improving the situation of women in agriculture is an important issue, particularly availability of work, gender distribution of labour and positions of greater responsibility.
- Using local inputs can potentially bring benefits to the community through stimulating the local economy and reducing the need to purchase external inputs on credit.

El-Hage Scialabba and Hattam (2002) indicate that in changing to organic farming practices, many aspects of the operation, including labour demand, social structures, and decision-making processes change. They also point out that organic systems often require more labour input to replace external energy and capital inputs. Further, as a result of crop diversification, different planting and harvesting schedules associated with crop rotation practices, distributes labour demand through the season. These practices stabilise employment, reduce turnover, and reduce problems related to migrant labour as well as spreading the overhead costs per employee more evenly over the year. Finally, diversity in agricultural production and value added products can increase income-generating opportunities and spread the risks of failure over a wider range of crops and products.

An African example used in the report is the SEKEM initiative of biodynamic farms in Egypt. SEKEM successfully farmed 70 hectares of desert land initially and is noted for its efforts to integrate social, cultural and economic aspects into the initiative. Through this success, other farmers cooperated with the initiative, and the result is that 180 farms were cultivating

approximately 2 700 ha using biodynamic agricultural practices throughout Egypt in 2002. Economically, SEKEM developed a value chain from the farmer to the consumer through several specialised companies producing high quality products with justified prices that include social considerations of employees and farmers.

Furthermore, the study noted that a growing number of certified organic agriculture commodities produced by small-scale farmers organised in democratic cooperatives meet fair trade requirements whereby farmers are paid adequately to cover costs of production as well as a social premium to improve the quality of life. Finally, it was noted that the organic movement shares a consensus that social requirements are necessary, however specific standards are controversial and there are concerns that imposed social standards may be insensitive to national sovereignty and the cultural context governing social and economic relations. Imposition of such standards could create trade barriers to organic exports in some developing countries. Alternatively, such pressure could also trigger social and economic reforms in many countries.

Lohr (Undated) found in the US, that even in small numbers, organic farmers are influencing mainstream agriculture to shift toward greater sustainability. Socially, it was concluded that:

- Counties with organic farms have stronger farm economies and contribute more to local economies through total sales, net revenue, farm value, taxes paid, payroll, and purchases of fertiliser, seed, and repair and maintenance services.
- Counties with organic farms have more committed farmers and better support rural development with higher percentages of resident full-time farmers, greater direct-to-consumer sales, more workers hired, and higher worker pay.

In a survey of 188 organic and mixed farmers in California, Getz, Feenstra and Shreck (2005), found that there was little support for adding social certification requirements to the current US national certification requirements, with more than half being opposed to the proposal. Although organic farmers might philosophically agree with ideas of social benefits, some felt that organic certification was not the best way to address this. It was found that others, who believed organic agriculture should ensure fair and healthy working conditions for farm workers, felt it was not economically viable given market realities. Most respondents felt that inclusion of these criteria would create an unacceptable financial burden. It was concluded that while the definition of organic agriculture under the USDA's NOP excludes certification criteria concerning farm workers' rights or working conditions, the broader international organic community, including many in the US, is moving closer to addressing these needs to ensure that organic agriculture is socially as well as environmentally and economically sustainable. It should be noted that of the approximate 800 000 hired farm workers in California, 82% are male, 95% are foreign born and more than 42% are not authorised to work in the US. The study ends by quoting a California Certified Organic Farmers Federation (CCOFF) member: "You go organic and get there and you're still in a system set up for failure. It's failing the farms, and it's failing the farm workers, and it's failing the farm communities." and concludes that to create production conditions that are favourable to a broader sense of social justice, change is needed in the entire food system and not just at the point of production.

## 3 BIOTECHNOLOGY, WASTE MANAGEMENT AND ORGANIC FARMING

This section summarises some organic production practices and reviews the use of biotechnology in organic agriculture. More detail on these and other organic production practices are contained in the full literature review (Appendix A).

### 3.1 Biotechnology

The United Nations Convention on Biological Diversity defines biotechnology as:

*"...any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use."*

Biotechnology may be regarded as the use of micro-organisms, like bacteria or yeasts, or biological substances like enzymes, to perform specific industrial or manufacturing processes. Applications include the production of certain drugs, synthetic hormones and bulk foodstuffs as well as the bioconversion of organic waste. Biotechnology involves manipulating organic and inorganic materials to work as part of a single unit, and bridge the gap between living and non-living components and their ability to function together.

Biotechnology has applications in four major industrial areas, including health care, crop production and agriculture, non food uses of crops (e.g. biodegradable plastics, vegetable oil, biofuels), and environmental uses. For example, one application of biotechnology is the directed use of organisms for the manufacture of organic products (examples include beer and milk products). Another example is using naturally present bacteria by the mining industry in bioleaching. Biotechnology is also used to recycle, treat waste, clean sites contaminated by industrial activities (bioremediation), and produce biological weapons.

Biotechnology and waste management are closely interlinked and this section will focus on how these two concepts function together. The different components of agricultural biotechnology will be discussed, leading on to the role of waste management within this, focusing on both the sources of waste and the use that organic production can make of this.

#### 3.1.1 Agriculture and Biotechnology

Biotechnology in agriculture plays an integral role in:

- The control of pests and diseases
- The release and transformation of essential nutrients so that they can be utilised by plants
- The transformation of waste products such as animal manure and silage into usable inputs in agricultural production.

Early agricultural processes and methods have been refined over the decades. Through early biotechnology, farmers were able to naturally select the best suited and highest-yield crops to produce enough food to support a growing population. Other uses of biotechnology were required as crops and fields became increasingly large and difficult to maintain.

Specific organisms and organism by-products were used to fertilise, restore nitrogen, and control pests.

Modern scientific developments have, however, begun to artificially manipulate the natural biotechnology process, with modern genetic engineering transferring genes into the DNA of some plant cells and regenerating a whole plant from the transformed tissue. This branch of biotechnology is hotly contested and as such clouds out the other natural biotechnology processes and benefits available today.

### **3.1.2 Genetically Modified Organisms (GMOs) and Organic Production**

It is unfortunate that when one speaks of biotechnology in agriculture this is seen to be synonymous with genetically modified organisms. While this section does not seek to explore the GMO debate, it acknowledges its place in biotechnology, thus it is best that the issue of GMO's be addressed at the onset and excluded from further discussion.

Genetic engineering is a process which attempts to artificially transfer a desired characteristic from one living thing to another. This is achieved by inserting the gene which controls this function in its natural environment, into the genetic code of the host.

The underlying principle of organic production involves the restoring of nature's balance to improve production systems and reduce pest and disease pressures created as a result of man's interventions. Organic farming systems have been designed to produce food with care for human health, the environment and animal welfare. The use of genetically engineered crops is not compatible with this philosophy, a position shared by the organic movement worldwide.

### **3.1.3 Micro-organisms**

There are billions to hundreds of billions of soil micro-organisms in a handful of soil. That single handful contain thousands of different species of bacteria (most of whom have yet to be classified), hundreds of different species of fungi and protozoa, dozens of different species of nematodes plus an assortment of various mites and other micro-arthropods. Almost all of these soil organisms are not only beneficial, but essential to the life giving properties of soil, helping to:

- Break down plant and animals residues and wastes
- Breakdown and then convert materials into plant nutrients as well as holding these nutrients in place and making them available to the plants
- Control plant disease
- Protect plants and assist in their physiology.

Biotechnology uses these natural organisms and their biochemical processes to enhance growing conditions, improve soil fertility and control pests and diseases.

#### **Micro-organisms and Soil Nutrition**

Soil micro-organisms are very important as almost every chemical transformation taking place in soil involves active contributions from soil micro-organisms. In particular, they play

an active role in soil fertility as a result of their involvement in the cycle of nutrients such as carbon and nitrogen, which are required for plant growth. For example, soil micro-organisms are responsible for the decomposition of the organic matter entering the soil (e.g. plant litter) and therefore in the recycling of nutrients in soil. Certain soil micro-organisms such as mycorrhizal fungi can also increase the availability of mineral nutrients (e.g. phosphorus) to plants. Other soil micro-organisms can increase the amount of nutrients present in the soil. For instance, nitrogen-fixing bacteria can transform nitrogen gas present in the soil atmosphere into soluble nitrogenous compounds that plant roots can utilise for growth. These micro-organisms, which improve the fertility status of the soil and contribute to plant growth, have been termed 'biofertilizers' and are receiving increased attention for use as microbial inoculants in agriculture to improve soil fertility. Similarly, other soil micro-organisms have been found to produce compounds (such as vitamins and plant hormones) that can improve plant health and contribute to higher crop yield. These micro-organisms (called 'phytostimulators') are being studied for possible use as microbial inoculants to improve crop yield.

### **Bio-pesticides and Pest Management**

Pest management is an ecological matter. The size of a pest population and the damage it inflicts is, to a great extent, a reflection of the design and management of a particular agricultural ecosystem. Therefore, the first step in sustainable and effective pest management is looking at the design of the agricultural ecosystem and considering what ecological concepts can be applied to the design and management of the system to better manage pests and their parasites and predators. The routine use of biological poisons in food systems has become normal and has disrupted the natural balance between pests and their predators creating ideal environments for pests to flourish.

Integrated pest management, as it was originally conceived, proposed to manage pests through an understanding of their interactions with other organisms and the environment. Biological control is the use of living organisms - parasites, predators, or pathogens - to maintain pest populations below economically damaging levels, and may be either natural or applied.

Natural biological control results when naturally occurring enemies maintain pests at a lower level than would occur without them, and is generally characteristic of biodiverse systems. Mammals, birds, bats, insects, fungi, bacteria, and viruses all have a role to play as predators and parasites in an agricultural system. By their very nature, pesticides decrease the biodiversity of a system, creating the potential for instability and future problems. Pesticides, whether synthetically or botanically derived, are powerful tools and should be used with caution.

Applied biological control, also known as augmentative bio-control, involves supplementation of beneficial organism populations, for example through periodic releases of parasites, predators, or pathogens. This can be effective in many situations, for instance well-timed inundative releases of *Trichogramma* egg wasps for codling moth control.

Most of the beneficial organisms used in applied biological control today are insect parasites and predators. They control a wide range of pests from caterpillars to mites. Some species

of bio-control organisms, such as *Eretmocerus californicus*, a parasitic wasp, are specific to one host—in this case the sweet potato whitefly. Others, such as green lacewings, are generalists and will attack many species of aphids and whiteflies.

Information about rates and timing of release is available from suppliers of beneficial organisms. It is important to remember that released insects are mobile; they are likely to leave a site if the habitat is not conducive to their survival. Food, nectar, and pollen sources can be “farm-scaped” to provide suitable habitat.

Biopesticides fall into three major categories; firstly, microbial pesticides containing a micro-organism (e.g., a bacterium, fungus, virus or protozoan) as the active ingredient. For example, fungi that control weeds, and bacteria that control plant diseases. Secondly, plant-pesticides which consists of pesticidal substances that plants produce from genetic material. Thirdly, biochemical pesticides are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are synthetic materials that usually kill or inactivate the pest. Biochemical pesticides include substances, such as pheromones, that interfere with growth or mating of the pest.

### **3.2 Waste Management**

Biotechnology plays an integral role in providing a comprehensive system to deal with waste and to manage it so as to incur benefits from it, rather than it becoming a point of contention. Biotechnology can be used to process organic waste so that it may be used in agriculture. There is also the question of the use of the word “waste”. There are many useful products that are labelled as waste which can be recycled and reused and are therefore not “waste”, but are, in fact, wasted resources.

#### **3.2.1 The Role of Biotechnology in Waste Management**

Biotechnology contributes to the challenge of waste reduction by utilising optimised micro-organisms and enzymes to process organic waste. It can further lead to the development of new generation organic based agricultural products with the following characteristics:

- Nutrient uptake enhancement
- Plant growth promotion
- Biological nitrogen fixation
- Disease suppression.

There is also need to change the perception of waste organic matter and encourage the adoption of properly processed waste as an important and safe input into agricultural production. Organic waste may be used to improve agricultural soil fertility for (subject to proper and safe processing, such as effective composting procedures) and can:

- Improve yields
- Increase water use efficiency
- Reduce chemical usage

- Fertilizers
- Herbicides
- Pesticides
- Provide fresh healthy food.

The products and practices available to organic producers vary somewhat depending on the organic certification association they belong to. Inputs such as composted garden waste may not be allowed due to concerns related to the presence of chemical residues. More research is required to determine if this is necessary as proper composting of these materials should breakdown the residues.

### **3.3 Supplying Nutrients Organically**

The application of biotechnology produces many products that contribute to providing nutrients in an organic system. The main products and practices that will supply crop nutrients organically are the following:

- Applying animal manure (Waste product)
- Composting (Waste product)
- Green manuring or green following
- Growing properly inoculated legumes in the rotation
- Rotating high and low nutrient demand crops
- Rotating deep and shallow rooted crops
- Applying acceptable organic crop nutrient products
- Use of registered nutrient solubilizing microbial inoculants
- Following using conservation tillage.

#### **3.3.1 Animal Manure**

Animal waste materials usually contain the primary plant nutrients, nitrogen (N), phosphorus (P), and potassium (K), the secondary plant nutrients calcium, sulphur, and magnesium, and minor plant nutrients zinc, copper, boron, iron, and manganese. However, nutrient analysis can vary, depending on many factors, including the composition of animal feed materials, the type of poultry operation, flock size, flock replacement cycle, animal waste material management, storage method, and moisture content

Applying animal manure to a field is an effective way of increasing both nutrients and organic matter content in the soil. Animals typically pass, as waste, 75-90 per cent of the nutrients they are fed.

The concentration of the different nutrients in the manure varies according to the type of animal, type of feed, how the manure is stored and how it is applied. However, animal manure contains some level of all the essential nutrients. In most places, soil testing laboratories can test manure for its nutrient content and the soil from the field where the

manure will be applied so the correct amount can be applied to correct the nutrient deficiencies.

Organic certification may require that manure be composted before application, depending on its source. Certification requirements for off farm (imported) manures are generally as follows:

- Manure from extensive agriculture can be applied directly onto the field
- Manure from intensive agriculture must be composted before application in the field
- Manure from factory farming (such as feedlots and battery chicken farms) may NOT be used.

Poultry manure and poultry litter (manure with bedding) is commonly used as a soil amendment and nutrient source for organic crop production. However, unless a farmer has an on-farm poultry facility, manure must be outsourced and delivered to the farm.

The National Organic Program in the USA defines manure as "faeces, urine, other excrement, and bedding produced by livestock that has not been composted." The USA provides guidelines for the use of raw animal manure which must be composted unless it is:

- Applied to land used for a crop not intended for human consumption
- Incorporated into the soil not less than 120 days prior to harvest of a product whose edible portion has direct contact with the soil surface or soil particles
- Incorporated into the soil not less than 90 days prior to harvest of a product whose edible portion does not have direct contact with the soil surface or soil particles.

Since tree crops like citrus may have low hanging fruit that may or may not come into direct contact with soil or soil particles, following the 120 day rule is a reasonable application of the above criteria.

### **3.3.2 Composting**

Next to crop rotation, composting is one of the most important tools an organic farmers uses to manage the soil and enhance fertility. For this reason, the process is described on some detail. Composting is the controlled aerobic biological decomposition of organic matter into biologically active humus as a result of intense microbial activity (Jones & Martin, 2003). Composting is a natural process, which is accelerated by mixing organic waste with other ingredients in a manner that optimises microbial growth. During composting, micro-organisms use the organic matter as a food source, producing heat, carbon dioxide, water vapour, and humus as a result of their activity. Application of compost to the soil promotes good soil structure, improves water and nutrient holding capacity, enhances soil microbial activity and helps control erosion. Finished compost typically consists of 60% humus. Composting stabilises the N in raw manure, thereby reducing N losses. Nutrients from compost are released slowly and steadily for plant use throughout the season. Composting also reduces the bulk and mass of the material, reducing transportation costs.

Effective composting requires that the initial compost mix have:

- A balanced source of energy (carbon) and nutrients (primarily nitrogen), typically with a carbon-to-nitrogen (C:N) ratio of 20:1 to 40:1.
- Sufficient moisture, typically 40% to 60%.
- Sufficient oxygen for an aerobic environment, typically 5% or greater.
- A pH in the range of 6 to 8.

### **Compost Microbes**

The active microbes in compost are predominantly bacteria, actinomycetes and fungi. Most of the microbes that break down organic matter into compost are aerobic. Consequently, presence of oxygen is important for effective composting. The microbes in the compost live in water films that adhere to the organic matter. Sufficient moisture in the compost must be maintained to ensure their survival. If the moisture water content is too low, the microbes will die. If the moisture content is too high, oxygen is excluded from the system creating anaerobic conditions, which is detrimental to the composting process.

Fungi penetrate throughout the composting material and decompose the more persistent organic matter fractions, such as lignins and cellulose. Fungal hyphae<sup>8</sup> physically stabilise the compost into small aggregates, providing the compost with improved aeration and drainage. Ecologically, fungi play a vital role in breakdown of dead plant materials.

Bacteria are the most numerous biological component of compost, which can often exceed 1 billion micro-organisms per gram. Bacteria (with the exception of actinomycetes) do not contribute as much to the overall microbiological mass as fungi because of their relatively small size. Bacteria are typically associated with the consumption of easily degraded organic matter. They are the dominant population throughout the entire composting process, whereas the actinomycetes and fungi typically proliferate in the later stages.

Actinomycetes are visually similar to fungi in that they have networks of individual cells that form filaments or strands, but are actually a type of bacteria. These filaments allow for a colony of actinomycetes to spread throughout a compost pile, where they are typically associated with the degradation of the more recalcitrant compounds. Actinomycetes number between 0.1 and 10 million propagules per gram of soil. Their filaments contribute to the formation of the stable organic aggregates typical of finished compost. Actinomycetes are tolerant of lower moisture conditions than other bacteria and are responsible for the release of geosmin, a chemical associated with the typically musty, earthy smell of compost (CIWB, 2001; Rees, 2007; Soil Association, 2007).

### **The Composting Process**

Composting occurs in a sequence of three distinct stages, where the type and number of microbes are affected by changes in temperature and nutrient availability. Temperature is a key determinant of the rate at which material is broken down and the type of microbes that

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<sup>8</sup> Root-like structures that penetrate through the soil.

facilitate the process in each stage. At temperatures of 10-40<sup>0</sup>, mesophilic bacteria dominate and break down

- **Initial stage**

In the process of building the compost pile, the feedstock is exposed to microbes which occur naturally in the surrounding environment. In the initial stage, mesophilic bacteria (bacteria whose optimal temperature range is 10-40<sup>0</sup> C) decompose (oxidise) easily digestible sugars, proteins, fats and starches. These bacteria multiply rapidly, releasing heat from the easily digested compounds. The release of heat from breakdown and the high insulating properties of the compost pile results in a rapid increase of temperature in the pile. Within hours, the temperature can increase to above 40<sup>0</sup> C

- **Active stage**

Above temperatures of 40<sup>0</sup> C, thermophilic bacteria ("heat loving" bacteria whose optimal temperature range is 40 – 70<sup>0</sup> C) dominate the microbial community. The active stage is typically the stage where most of the organic matter is converted into carbon dioxide and humus. The micro-organism population grows rapidly and the rate of decomposition in the pile fast, due to the high rate of chemical and biological reactions associated with the high temperature. The thermophilic population continues generating heat by decomposing the remaining organic matter. A number of important processes occur during this stage, which are of significance to the organic farmer:

- Pathogens such as human viruses and infectious bacteria are usually unable to persist in such a hostile temperature environment and are destroyed.
- Seeds of plants are rendered non-viable; the temperature in the pile denatures enzymes and proteins required for germination.
- Other undesirable elements, such as GM plant material and some organic pollutants are broken down into their constituent components, rendering them harmless.

During this stage, it is important to ensure that sufficient oxygen is available for the bacteria to continue decomposing the organic material and generate heat. This can be achieved by mixing or turning the pile, which also incorporates the cooler outer surface into the high temperature zone inside the pile. In static compost piles (piles that are not turned), incorporating layers of coarse material into the pile will assist oxygen to enter the pile. While static piles require less labour and energy, the outer surface is never exposed to the high temperatures within the pile, and consequently, pathogens and weed seeds may persist in this zone. If a pile overheats (exceeds 75<sup>0</sup>C), most microbes will be destroyed and microbial activity will cease.

- **Curing stage**

As the bacteria run out of easily digestible organic compounds, their activity will decrease significantly and temperatures will return to ambient temperatures. Most of the remaining material consists of cellulose and lignins which are not easily broken down, and humic compounds. During this stage, the fungi and actinomycete populations dominate as they can

break these compounds down. The curing process can vary in duration, but is usually 3 – 12 months. A longer curing period provides more assurance that the compost is free of pathogens and phytotoxins. If the compost is incompletely cured (i.e., not stable), it maintains a higher microbial activity, leading to increased oxygen consumption. When unstable compost is applied in the field, it can thereby decrease the supply of oxygen available to plant roots. As the curing stage proceeds, there is a gradual increase in the humus fraction. Humus is the major mechanisms for the retention of nutrients (e.g., nitrogen, phosphorus) and micronutrients (e.g., copper, zinc, iron, manganese, calcium) in the soil. This is because of its high surface area to volume ratio, providing a large surface area for adhesion and cohesion of water and nutrients. As a result, humic compounds are also sites of high biological activity, including micro-organisms, protozoans, invertebrates (e.g., worms, springtails) and plants (CIWB, 2001).

Compost is commonly perceived mainly as a source of plant nutrients, but it is the combination of nutrients and large diversity of micro-organisms that offer significant benefits, such as:

- Nutrient cycling – microbes facilitate the cycling of inorganic nutrients into plant available forms.
- Disease suppression – beneficial microbes compete with pathogens for energy and nutrients, decreasing pathogen populations. It is in “dead” or unbalanced soils that pathogenic organisms flourish.
- Degradation of pollutants – properly made compost is an effective tool for reducing organic pollutants in contaminated soils and water, including chlorinated hydrocarbons, solvents, pesticides, and petroleum products.
- Organic material, which (1) provides food for micro-organisms, (2) holds nutrients and water and (3) forms aggregates and increases porosity.

### **3.3.3 Compost and human pathogen concerns**

Producing food for human consumption requires management of the production system in manner that ensures that food is safe for human consumption. The introduction of compost into the production system should not introduce human pathogens into the system. The eradication of pathogens from organic wastes during composting is primarily due to:

- Heat generated during the thermophilic phase of the composting process
- The production of toxic compounds such as organic acids and ammonia
- Lytic activities of enzymes produced in the compost
- Microbial antagonism, such as the production of antibiotics and parasitism.

Noble *et al.* (2004) undertook a series of controlled tests for the presence of animal and plant pathogens in composted materials. These included the Endohaeamorrhagic *E. Coli*, *Salmonella typhimurium* and *S enteriditis* human bacterial pathogens. These pathogens were introduced into the compost at much higher concentrations that would naturally occur. After one hour at 55°C, these pathogens were not detectable. They results of the study indicated

that green compost would not be a significant risk for the spread of most bacterial diseases. Jones & Martin (2003) found that the risk of human pathogens in compost was mostly theoretical. They found that most pathogens were inactivated by the composting process where a residence time 3 days with a temperature greater than 55<sup>o</sup>C occurred. It was found that if inefficient compost making procedures were used, there was a danger that E coli and Salmonella species may survive. This highlights the importance of proper and effective compost making practices. Noble & Roberts (2003) found that temperatures of 55<sup>o</sup>C were sufficient to eliminate most plant pathogens, but that systems where composts were not turned may allow pathogens in the cooler outer layer to survive.

In conclusion, there appears to be limited risks associated with human pathogens in compost. However, the composting process must be effective and properly managed to ensure the composting process results in thermophilic conditions through the management of aeration, moisture and the C:N ratio. It is further important that all parts of the compost are exposed to the high temperature zone within the compost.

### **3.4 Opportunities for Biotechnology**

The use of biological cycles and ecosystems is the basis of organic farming, however conventional farming methods, climate change and the ever reducing areas available for agricultural production requires that biological cycles be enhance and stimulated to restore the natural balance.

Many opportunities exist in organic farming for the research, development and application of biotechnology. Opportunities range from the use of earthworm in waste management to the application of *Bacillus thuringensis* (Bt) spray to control insects. However the development of commercial products requires much research into developing products which are reliable, of a uniform quality and efficacy and have the required shelf-life. This requires a large investment into research and development programmes. It is also necessary to understand the long term impact of certain biotechnology uses, such as Bt sprays, and other soil amendments, such as effective micro-organisms, which may introduce foreign micro-organisms into the system.

## **4 REGULATORY AND TRADE ENVIRONMENT**

### ***4.1 Development and Establishment of Organic Certification and Accreditation***

#### **4.1.1 History**

Based on the definition and principles of organic agriculture, there was a need to establish what organic farming systems meant in practice. Consequently, standards were required to ensure that organic production and processing systems uphold the definition of organic farming. Organic standards detail the minimum requirements of the farming system in order to ensure that the definition of organic farming is upheld (FAO, 1998).

Organic certification is a process by which producers and retailers of organic agricultural products, including farmers, seed suppliers, food processors and restaurants can be certified. The process is intended to assure quality, to assist organic producers in identifying suppliers of products approved for organic operations and to provide consumers with assurance that the goods have been produced organically.

In the 1960s the organic industry consisted mostly of small independent farms selling to the local market. Organic 'certification' was a matter of trust, dependent on the relationship between the farmer and consumer. In the late 1970s, organic certification programs started to develop. The need for certification arose out of the recognition that the term 'natural' had lost its meaning in the marketplace and producers and consumers were concerned that the term 'organic' would end up with a similar fate. In the 1980s, private organisations, comprised mostly of farmers, developed standards for production, inspection and certification. Many governments took over this task in the 1990s (Willer & Yussefi, 2004).

The number of certification bodies has continued to grow and in 2003, the Organic Certification Directory published by Grolink (2003), listed 364 bodies offering organic certification services. By 2007, this had increased to 468 (Grolink, 2007). The majority of these organisations are found within the developed countries of the European Union, USA, Japan, Canada and Brazil. Many of these certification bodies offer their services in developing countries. Africa has only 7 home-based certification organisations and Asia has just 13, outside of Japan. In total, only 57 countries have a home-based certification body (Willer & Yussefi, 2004). South Africa has no home-based certification body but there are 9 bodies that provide certification services in South Africa. Five of these have offices in South Africa. Four certify a few farms in South Africa, but have no offices in the country (see section 7 for more detail).

#### **4.1.2 Certification and Labelling**

To ensure that the minimum standards are upheld, independent third party assessments are required to ensure that the farming system adheres to the given standards. Consequently producers have to be certified in order to indicate that they are adhering to minimum standards established for organic production (FAO, 1998).

The definitions used by certification bodies are as follows (Institute of Natural Resources, 2006):

- Accreditation - The procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks. In a certification system, an accreditation body will accredit, or approve, a certification body as competent to carry out certification.
- Certification Body - A body that is responsible for verifying that a product sold or labelled as a certified product is produced, processed, prepared, handled, and traded according to the certification standards. Certification bodies should be impartial third parties with necessary technical competence in certification.
- Certification - A procedure through which recognised (or accredited) certification bodies provide written or equivalent assurance that a product conforms to certain principles, criteria or standards.

Certification systems generally comprise two key components:

- A set of principles (usually in the form of a code of conduct), criteria, standards and guidelines against which a product is certified.
- A reporting or monitoring mechanism that assures the product has been produced according to the certification principles.

#### **4.1.3 Organic Labelling**

What is the difference between certification and labelling? Certification means that a given product or company has been checked by an independent third party for meeting a given set of standards. Most certification systems will also use labelling as a tool to help consumers recognise products that meet certification standards. A label however is not necessarily backed up by an accredited certification process. Green labelling or eco-labelling is generally focussed on smaller producer groups who supply directly, or through a very short value chain, to discerning end consumers. Labelling in this case may be misused but despite lack of formal certification, there is generally a high set of standards that are applied before such labelling can be approved to the producer/supplier (Institute of Natural Resources, 2006).

Organic certification makes labelling with the word “organic” possible. Organic producers, processors and suppliers must be certified in order to use the word ‘organic’ on their product. In many countries, the term is legally recognised and is governed by trading standards legislation (About Organics Website). Labelling requirements do vary between countries, but are generally supported by strict legislative requirements to ensure consumer confidence and assist with branding of products.

#### **4.1.4 Institutional and Legislative Arrangements Related to Certification**

##### **Standardisation, Accreditation and Certification**

- **International Organisation for Standardisation (ISO)**

The International Organisation for Standardisation (ISO), a non-governmental organisation, is the world’s largest developer of standards consisting of a network of national standards

bodies from more than 150 countries (International Organisation for Standardisation (ISO) Website). Established in 1947, ISO aims to facilitate international exchange of goods and services and to develop cooperation in the spheres of intellectual, scientific, technological and economic activity.

The ISO has a set of guides as well as a set of standards. The guides are systems or standards to which a certification body or accreditation body must adhere, while the standards refer to systems and processes that need to be adhered to in order to be certified as compliant to a given standard. The ISO Guides for accreditation are:

- ISO Guide 58: General Requirements for Laboratory and inspection body accreditation
- ISO Guide 61: General Requirements for Assessment and Accreditation of Certification/Registration Bodies.

The guides for a certification bodies are:

- ISO Guide 62: General Requirements of Bodies Operating Quality Management Systems
- ISO Guide 65: General Requirements for Bodies Operating Product Certification Systems
- ISO Guide 66: General Requirements for Bodies Operating Environmental Management Systems.

ISO Guide 65 is of relevance to the organics industry, in terms of organic certification and may be described as follows:

“ISO Guide 65 specifies general requirements that a third-party operating a product or service certification system shall meet if it is to be recognised as competent and reliable. Adherence to the ISO Guide 65 Program ensures that the certification body operates a third-party certification system in a consistent and reliable manner.” (USDA, Undated).

ISO does not itself publish standards for organic production, however many countries make use of ISO Guide 65 for the accreditation of certification bodies. *A certification body therefore should be ISO 65 compliant to operate a product certification system, such as organic certification.*

- **The International Accreditation Forum**

The International Accreditation Forum, Inc. (IAF) is the world association of Conformity Assessment Accreditation Bodies. The purpose of IAF is to ensure that its accreditation body members only accredit competent bodies and to establish mutual recognition arrangements, known as Multilateral Recognition Arrangements (MLA), between its members.

Accreditation body membership of IAF is open to organisations that accredit bodies for certification/registration of management systems, products, services, personnel or similar programmes of conformity assessment. It has programmes in place to ensure certification bodies are competent and ensure the consistent application of conformity standards

Through the MLAs, the IAF aims to provide assurance of the equivalence of the operation of certification/registration bodies in those countries with accreditation bodies that are IAF MLA members (IAF website).

- **South African National Accreditation System**

Most countries have a national accreditation system that has membership with IAF. The South African National Accreditation System (SANAS) is the National Accreditation Body that provides accreditation that an organisation is competent to perform specific tasks in South Africa. SANAS accreditation covers Laboratories, Certification Bodies, Inspection Bodies, Proficiency Testing Scheme Providers and Good Laboratory Practice (GLP) test facilities.

SANAS provides accreditation of Certification bodies to ISO Guide 65 (and the IAF interpretation thereof), and includes accreditation for organic certification. Inspection Bodies are accredited to ISO/IEC/17020 standards. (SANAS Website)

In effect, SANAS is a body that provides assessment and accreditation to conformity assessment bodies, such as organic certification bodies in South Africa. The National Department of Agriculture has officially recognised SANAS as the authority for the regulatory scope covered by the Department of Agriculture, which has significance when South African National Organic Standards are promulgated (see section 4.4.1).

The role of other certification systems, such as ISO 58 is also of relevance to the testing of foods for the presence of toxic substances, pathogens and Genetically Modified foodstuffs. Organic regulations do not supersede existing legislation and therefore organically produced goods must comply with food safety and other legislative requirements. The presence of genetically modified organisms in organic produce is prohibited and consequently the use of certified laboratories to test for the presence of these is also relevant, particularly for export produce where stringent tests may be applied in destination countries for the presence of GM organisms.

- **Certification Bodies**

Certification bodies usually provide certification for a range of products or processes. Some certification bodies, such as the SGS Group, certify for a range of standards including organic standards. Others provide certification only for organic standards. Because many countries have their own organic standards, and within countries, some organisations have private standards, a certification body will usually certify for a range of different organic standards, such as EU 2092, USDA NOP, JAS as well as private standards, such as Naturland or Soil Association. A certification body has to be *separately accredited* for each standard to which it certifies. In South Africa, a certification body does not have to be accredited by SANAS, but should be accredited to ISO 65 or equivalent. This is usually an accreditation body that operates in the country or region to which organic produce is exported. For example, if a certification body operating in South Africa provided certification services to the USDA NOP and the EU 2092 standards, the certification body would need to follow the relevant approval and accreditation conditions of the standards of the country / region for which it is certifying.

## **International Standards and Regulations**

Organic certification is based on standards. Standards are used, in part, to establish an agreement within organic agriculture about what an "organic" claim on a product means. Regional groups of farmers and supporters began developing standards as early as the 1940s. The organic market is comprised of numerous private sector standards and government regulations and two international standards for organic agriculture, IFOAM and The Codex Alimentarius (commonly known as "Codex"). These are outlined below.

- **IFOAM Standards**

The basic standards for organic production were first published in 1980 by the International Federation of Organic Agriculture Movements (IFOAM). IFOAM identified the need for standards harmonisation to facilitate international trade. The IFOAM Basic Standards (IBS) provide the *framework* (i.e. "standards for standards") for certification bodies and standard-setting organisations worldwide to develop their own certification standards which are more detailed and take local conditions into consideration (Organic Europe website). The IFOAM standards form the basis for the European Union Standards which have been developed using the IFOAM Basic Standards framework. The South African organic standards have also been based on the IBS framework and the European Union standards.

- **The Codex Alimentarius**

The Codex Alimentarius Commission was created in 1963 to develop food standards, guidelines and codes of practice (Codex Alimentarius website). The Codex is a joint FAO and WHO Food Standards Programme initiative. The program objectives include protecting consumer health and facilitating fair trade in food through the harmonisation of food standards. Two committees of the Codex Commission, the Committee on Food Labelling and the Committee on Food Import and Export Inspection and Certification Systems, are responsible for developing guidelines on the production and certification of organic products (Sawyer, Undated). The requirements in these Codex Guidelines are in line with IFOAM Basic Standards and the EU Regulations for Organic Food (Willer & Yussefi, 2004).

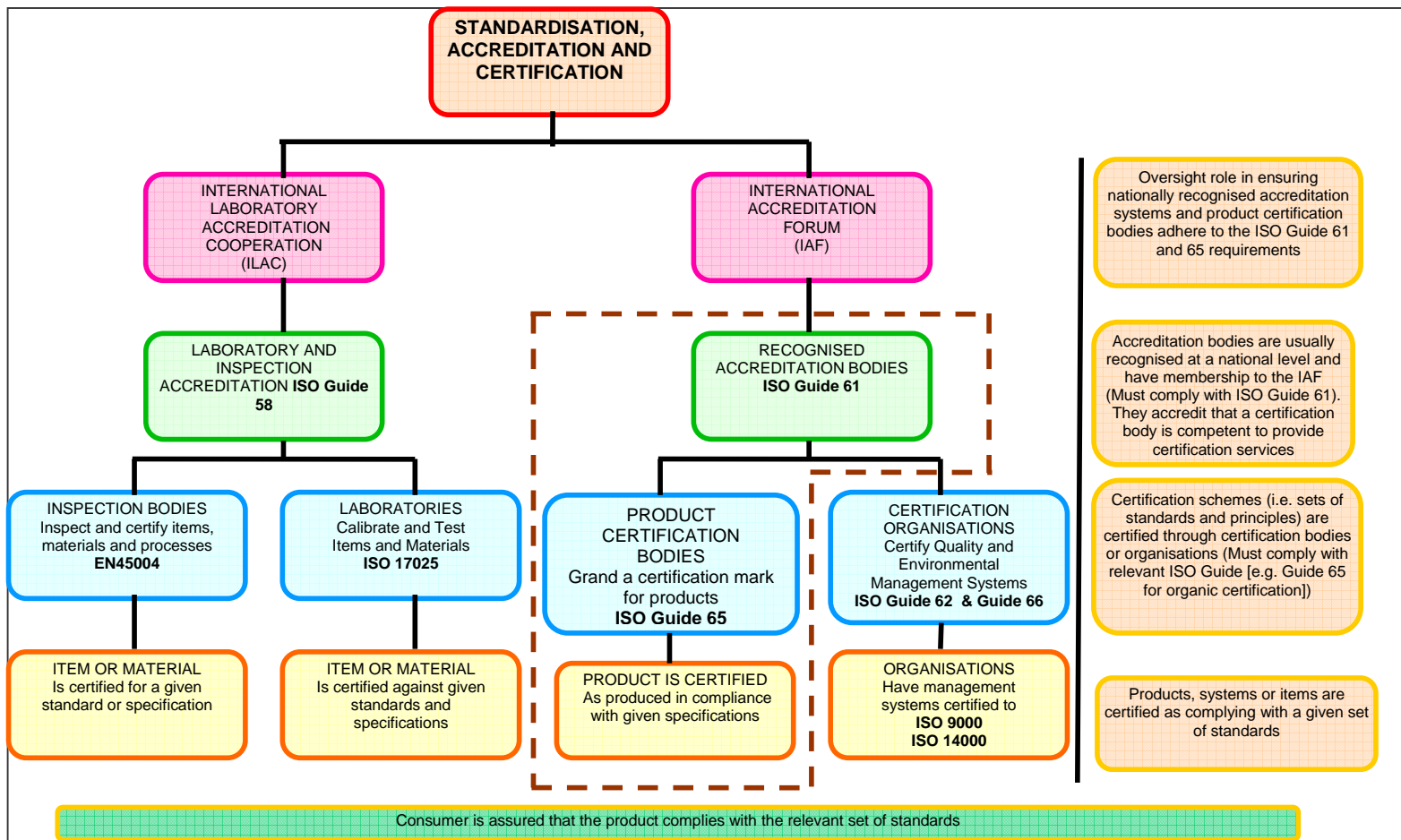
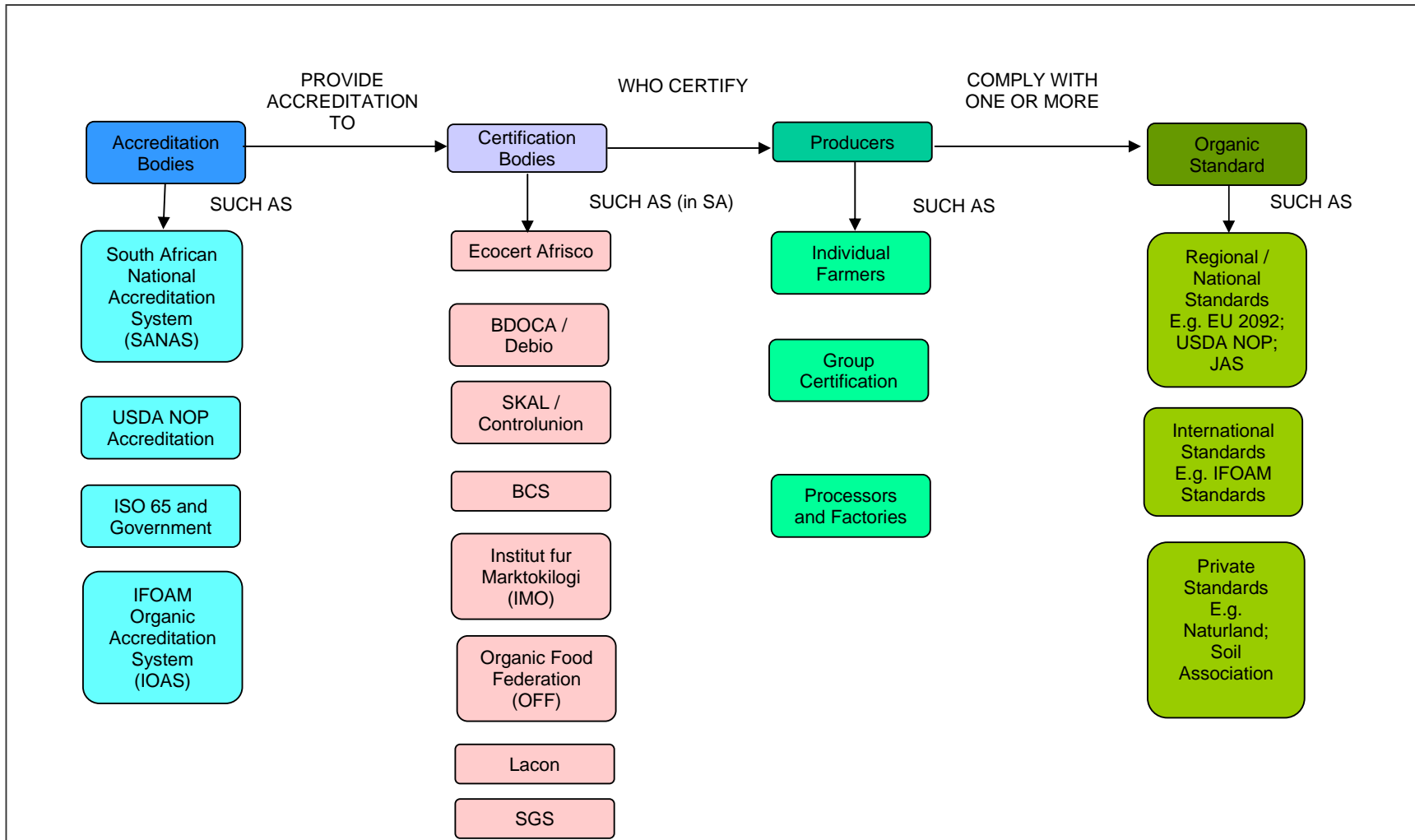


Figure 2: The general organisation of standardisation systems for ISO (the dashed boundary indicates area where organic certification applies).



**Figure 3: General Organisation of Organic Certification Systems.**

## **Regional and National Regulations**

- **European Union Standards**

The basic framework for the European Union's organic standards were created by the Council Regulation No.2092/91 which was published on the 24 June 1991, commonly known as 'EU 2092' (European Action Plan for Organic Food and Farming). EC Reg. 2092/91 required that from 1 January 1993, all fresh and processed produce from plant origin, must meet the requirements set out in the regulation. The majority of EU countries have designated a single government body to act as the Competent Authority, undertaking inspections and certifications under the Regulation (Lampkin *et al.*, 1999; Anon, 2004). These standards are being revised (see section4.3.6)

- **United States standards**

In 1990, as part of a larger law governing USDA programs from 1990 to 1996, Congress passed the Organics Food Production Act (OFPA) (Rawson, 2006). The Act authorised the formation of the National Organic Program (NOP) to create standards for producers and processors of organic food. The regulations under the OFPA set minimum uniform standards for organic production (Rawson, 2006).

- **Australian standards**

The Organic Certification Program in Australia functions under the legal framework provided by the Export Control Act of 1982 and the Export Control Orders of 1997. These Acts require every person who produces or manufactures organic produce for export to be certified. Certification of products for the domestic market is optional, but is controlled, in part, by the national Trade Practices Act of 1974 and state laws that afford legal protection against misleading and deceptive practices (Australian Government Department of Agriculture, Forestry and Fisheries, 2004). Australia, one of the first countries to publish national organic standards, did so in 1992 when the Organic Product Advisory Council (OPAC) published The National Standards for Organic and Biodynamic Produce (Sawyer, Undated). The Standards provide guidelines for labelling of organic and biodynamic products.

- **Japanese standards**

In April 2001, the Japanese government implemented new regulations for plant-based products which required that all organic products carry the mark of the Japanese Agricultural Standard. The regulations also required that certification bodies become Registered Certification Organisations under the Ministry of Agriculture, Forestry and Fisheries (Sawyer, Undated).

## **Private Standards**

In many countries in the EU, private organisations had already formulated their own standards and labelling schemes prior to the implementation of national regulations. These standards were mostly guiding principles rather than detailed production and processing standards but were trusted by many consumers. The implementation of national regulations forced private standards to comply with them. Private standards determined the basic content of the IFOAM Basic Standards (Willer & Yussefi, 2004).

## **Certification around the Globe**

Specific requirements for certification vary between countries but generally include a set of production standards for growing, storage, packaging and shipping.

- **United Kingdom**

Organic certification in the United Kingdom (UK) is handled by various organisations. The largest of these is the Soil Association which certifies approximately 70% of organic food produced in the UK. The Soil Association operates its own set of standards which are stricter than those prescribed by the United Kingdom Register of Organic Food Standards (UKROFS) (The Natural Collection website). UKROFS is the government authority responsible for the approval and supervision of organic certification bodies. Other UK certification bodies include The Organic Food Federation (OFF); Organic Farmers and Growers Ltd (OF&G); Demeter (BDAA); The Irish Organic Farmers and Growers (IOFGA) and The Scottish Organic Producers Association (SOPA).

- **United States of America**

In the USA, California Certified Organic Farmers, founded in 1973, was one of the first organisations to carry out organic certification (California Certified Organic Farmers (CCOF) website). Certification is now handled by the state, private and non-profit organisations which have been approved by the US Department of Agriculture (USDA). The USDA may accredit any organisation or person who complies with their National Organic Program (NOP). To receive or maintain organic certification, the NOP requires that a current organic system plan is in place, applicable records are maintained and regular site inspections are permitted. Since the establishment of the NOP in 2002, all agricultural products sold, labelled or represented in the US must be certified by a USDA accredited certifying agent (Sawyer, Undated). The largest organic certification body in the US is Quality Assurance International (QAI), a private US corporation with a partner in Japan (Wikipedia - The Free Encyclopaedia Website).

- **Japan**

In Japan, certification bodies are required to be registered under the Ministry of Agriculture, Forestry and Fisheries. In order to qualify as a certifier, a certain level of education in a particular field must have been achieved. Certification is then granted for each individual field rather than the farm as a whole. Registered Certification Officers (RCOs) are required to educate farm managers on certification and inspection processes and may certify process managers, manufacturers, sub-dividers and importers. Foreign bodies may become RCOs provided they have negotiated equivalency with Japan (Kristiansen *et al.*, 2006).

- **Australia**

In Australia, organic certification is overseen by The Australian Quarantine and Inspection Service (AQIS), which is a division of the department of Agriculture, Fisheries and Forestry Australia (Madge, 2005). AQIS is the default certification organisation as government only becomes involved with organic certification at export. There are no domestic standards for organic produce and no system for monitoring the labelling of organic produce sold within

Australia. Currently, private inspection bodies submit their own private standards or 'Quality Management Manual' to AQIS who ensure that these comply with the minimum requirements of the national standards. If AQIS approve these standards, then the inspection agency receives an "Approved Certifying Organisation Certificate" and is registered as an "Approved Certifying Organisation" (Sawyer, Undated). In 2006, there were seven AQIS-approved certifying organisations authorised to issue Organic Produce Certificates and in 2004 there were 2345 certified operators (Wikipedia - The Free Encyclopaedia Website)

- **Africa**

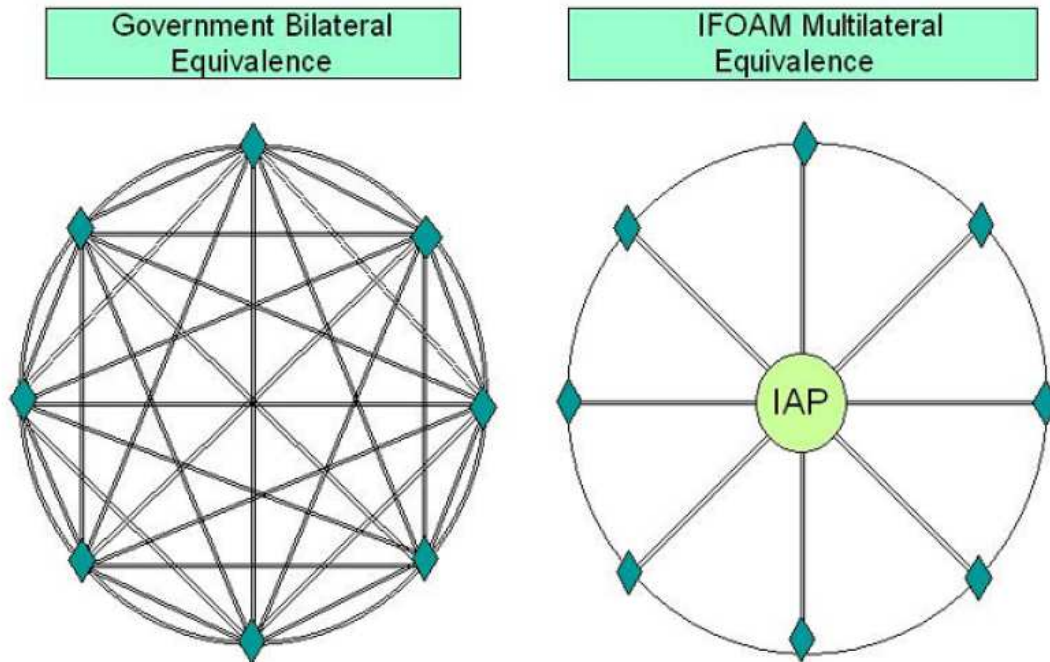
In 2002, few certification organisations existed in Africa and African organic products for export were certified by European or American certification organisations. Consequently certification costs were high and procedures poorly adapted to local conditions. Lack of local certification capacity is viewed as a major obstacle in the development of the organics industry of developing countries. Rundgren & Lustig (2002) found that there were a few countries in Africa with comparatively strong organic sectors (South Africa, Tanzania, Uganda, Zambia, Zimbabwe), while some had small, but developing organic sectors (Ethiopia, Kenya, Madagascar, Mozambique). At the time of the study, no local certification bodies were found, but a number of countries with well developed sectors had 2 – 4 foreign certification bodies. Notably, South Africa was the only country to have an active local certification body (Afrisco) active and the largest number of foreign certification bodies (six).

#### **4.1.5 Equivalence / Harmonisation**

There are a huge number of standards and regulations for organic production. Furthermore, many national governments are increasingly regulating their organic markets. These factors inhibit trade and standardisation as a result of the proliferation of many different regulations and schemes with different requirements. Consequently, governments now have to work out bilateral agreements with each other to trade in organic produce which acts as a non-tariff trade barrier.

There is a growing recognition that equivalence and harmonisation of standards would reduce the administrative complexity of managing certification and make international trade in organic produce easier. IFOAM are therefore seeking to promote harmonisation through acting as a multilateral equivalence agency to harmonise the range of certification schemes (Figure 4). This should negate the need for individual governments to regulate organic standards. IFOAM's accredited certification bodies are continuously developing functional equivalence with each other in order to streamline trade for clients. This is done formally through multilateral agreements between governments.

IFOAM suggests that, should all governments adopt their Organic Guarantee System (OGS) for regulating the organic trade. This would allow for complete harmonisation between schemes for international trade. However, in the context of current regulations and "other political realities", it is unlikely that this will be achieved in the short term.



**Figure 4 IFOAM Multilateral Equivalence Model [IAP stands for the IFOAM Accreditation Programme (IFOAM Website)].**

#### **4.1.6 Alternative Certification Models**

Organic certification is a formal and highly structured system of ensuring the integrity of organic claims. It is necessary particularly for international trade in organic produce and requires the producer to have proper systems in place to ensure appropriate records are kept and that *all* the requirements of a given organic standard are adhered to. This form of certification is costly and requires high managerial and administrative inputs and is usually not appropriate for smaller growers and those supplying to local markets. This has been recognised and two alternative models are also used. One is the group certification model, which is still a third party certification system, while the participatory guarantee system is a first party certification model. Manner of operation of these systems is discussed below.

##### **Group Certification with Internal Control Systems**

Most certification bodies offer group certification to smallholder producer groups, with the aim of reducing individual certification costs and administrative burden. In order for a group certification scheme to be recognised, an internal control system (ICS) has to be implemented within the group.

According to IFOAM,

“An Internal Control System (ICS) is the part of a documented quality assurance system that allows an external certification body to delegate the periodical inspection of individual group members to an identified body or unit within the certified operator. This means that the third party certification bodies only have to inspect the well-functioning of the system, as well as to perform a few spot-check re-inspections of individual smallholders.” (Source: IFOAM Website)

An internal control system is therefore a system established to ensure that organic standards and integrity are maintained within a smallholder group. The system is established in participation with, and implemented and maintained by, the smallholder group. In effect, the group monitors its own performance against the given standard. The ICS must ensure adherence to the organic standard or standards for which the group wishes to be certified. The certification body then ensures that the ICS is functioning properly through systems such as checking ICS records. The certification body then only needs to inspect a sample of the smallholders to ensure that the ICS records reflect what is happening on an individual smallholder's farm to maintain certification.

### **The Participatory Guarantee System (PGS)<sup>9</sup>**

IFOAM recognises that any system of agriculture complying with the Principles of Organic Agriculture (Section 2.4.1) can be regarded as “organic agriculture”. Where produce is sold domestically and within a relatively small geographic location it is not necessary to have costly independent third party certification. Kholsa (2006) points out that in many cases, third party certification tends to discourage small producers from being certified. This can limit domestic trade in organic produce, and consequently the growth of the organic movement and as a whole. The reasons for this centre primarily around the technical requirements, particularly record keeping, and the cost of third party certification. The Participatory Guarantee System (PGS) offers an alternative method of certification for these circumstances.

The PGS is a form of *first party* certification whereby a group of producers agree to uphold a given set of publicly documented standards. It is, in effect, a system similar to the trust system used in the early days of organic agriculture, but has stated standards to which participants in the scheme all agree to abide to.

Kholsa (2006) lists the following benefits associated with the PGS system of certification:

- Low Direct Cost - making it affordable for small farmer groups.
- Less Paperwork and Administration - PGSs rely more on trust and less on affidavits / declarations.
- Regionally Appropriate - can be easily adapted to take into account local conditions, unlike rigorous and bureaucratic third party certification systems.
- Peer Appraisals instead of Professional Third-Party Inspections – this reduces cost, promotes information sharing and capacity building.
- Horizontal (as opposed to hierarchical Organisation of Participants – encourages grassroots participation, sharing of responsibility and promotes equality.
- A Credible Organic Guarantee – with consistent, transparent steps in the certification process.

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<sup>9</sup> Further discussion of this is provided in Section 12.4

- Mutual Recognition and Support between Regional PGS Groups - while the PGS is designed for direct and local sales, working with wider networks and cooperative processing can create opportunities that are not available to smaller groups.
- Training and Support Built into the System - because farmers are in control, they invest more in supporting and advising each other as they are ultimately mutually dependent.
- Empowers the farmer with increased capacity building.
- Market Freedom – often, group certification systems, are underwritten by packhouses or exporters and producers are effectively “locked in” to this market channel and are effectively excluded from accessing potentially lucrative market opportunities. This is not the case in PGS. Farmers may, however be encouraged to work cooperatively for the common good.
- A good PGS can transition into a Third - Party Certified Internal Control System to take advantage of international marketing opportunities.
- Millions of Hectares, Millions of Farms – PGS can bring a much greater number of farmers into certified organic status than conventional third party accreditation systems.

This system is becoming increasingly popular and more widely recognised with large numbers of farmers in Brazil (such as the Ecovida Network which includes 12,000 people organized into 270 groups, associations and cooperatives all working to maintain a shared Brand and Label) and the USA utilising this system. It is also the certification system being used by the Bryanston Organic Market in Johannesburg, South Africa (Callear, *pers comm.*).

## ***4.2 Organic Agriculture and the Challenges of Globalisation***

There are three basic perspectives on globalisation and sustainable development, namely:

- Growth without borders
- Growth within limits
- Growth and ecological injustice.

The first, growth without borders, is the dominating perspective of modern, Western culture, whereas the second and, in particular the third, are generally less prevalent. Within the organic movement, the last two are of key importance. They both focus on problematic aspects of the present development, i.e. the ecological limits to economic growth and differences in how environmental deterioration impacts on different individuals and local communities.

The challenge to certified organic agriculture is to fully address the problems of sustainability and ecological justice in its principles and standards. Certified organic agriculture suggests a way to solve these problems in a globalised market by certifying the process behind these products and providing the consumers with a choice of more sustainable and just products. Non-certified organic agriculture has a prospect for solving the same problems in less developed areas by building on local resources as an alternative to high input agricultural

development strategies. The first perspective, on the other hand, seems blind to the prospects of non-certified organic agriculture.

#### **4.2.1 Addressing the Challenges of Increased Globalisation of Organic Food Chains**

Globalisation gives rise to trends such as global competition and increasing free trade, long distance trade, specialisation, economies of scale, commodification of common goods and lack of transparency. Entering into global trade on these terms threatens to dilute the special characteristics of organic agriculture. The perceived threat is that globalisation of certified food chains may compromise organic principles.

The organic food system has, over the past two decades, been transformed from a loosely coordinated local network to a globalised system of formally regulated trade which links socially and spatially distant sites of production and consumption. Though preferences for local organic food persist, Northern countries are increasing their reliance on organic imports, particularly from the global South, including products competing with locally-produced conventional products. Supermarket sales of organic products have been increasing, dominating sales in the UK, Switzerland and Denmark. This will in turn put pressure on organic farms towards increased specialisation at the cost of diversity, both in terms of farms and in terms of number of enterprises per farm. Effects of this trend may include lack of transparency and trust among producers and consumers, increasing food miles, specialisation and concentration of production at the cost of smallholders and reduction in diversity in crops and farm types.

To the extent that demand by the Developed countries drives production of organic products, there might not always be a strong ownership of certification schemes and organic principles among producers, especially as increasing numbers of new farmers enter what is perceived to be a booming market. From the South African perspective, the concern arises as to how to strengthen the small farmers' role in the certification process and their ownership of organic principles. Compliance then becomes the motivation for organic certification rather than a belief in the principles themselves.

There has been an unprecedented growth of monoculture production in Argentina and Brazil, where over 14 million hectares of land in Argentina alone have been planted to glyphosate-tolerant GMO soyabeans. This has coincided with the expansion of zero-tillage technology, a herbicide and pesticide dependent but efficient farming system. The exclusion of tillage, particularly tillage methods which invert the soil, has a number of significant benefits from a soil health perspective. However, the loss of biodiversity in the production system is a major concern, and in this particular instance, a serious mining of phosphorous (P) out of the soil is taking place in the production areas. This is associated with an induced surplus of potassium (K) and eutrophication in those countries importing the soyabean oilcake as a livestock feed. It is the awareness of precisely these types of issues that has driven the increased public support and spread of organic agriculture.

At policy level in the European Union, environmental subsidies under the revised Common Agricultural Policy (CAP) support organic agriculture and other greener forms of production.

This has been motivated by problems of overproduction and intensification that has caused environmental degradation (Brunner and Huyton, 2007). At the individual consumer level, motives for buying organic produce are related to personal health, taste and food safety issues, and to concerns for animal welfare. At the level of the grower in developing countries with low external inputs, organic agriculture improves local food production and soil fertility, and offers a potential market for their produce if the hurdles of certification and transport can be overcome.

Fertiliser use and the food production per capita in sub-Saharan Africa (SSA) have not increased significantly over the past 3 decades. It may be, therefore, that transition to organic agriculture in areas where production is in any event sub-optimal, will not necessarily lead to significant reductions in crop yields. The benefits of limiting external inputs into these production systems may well outweigh any negative consequences resulting from the introduction of organic agriculture. However, in order for organic agriculture to be sustainable in this context, its introduction would have to be accompanied by capacity building of the growers in terms of understanding the principles of soil nutrient cycling, sustainable crop rotations, biological pest control and environmentally sound agronomic management. In such a context, there are a number of advantages of organic agriculture which do not depend upon certification.

Where the market requires certification, the need arises for a system of low-cost certification procedures. The main factor in the cost of certification is the economy of scale, where the total area certified per single trip of the certifying officer determines the unit cost per area for certification. Group certification is therefore a strategy which might be considered in this regard. A difficulty to be addressed in the development of a sustainable organics strategy is the non-alignment of certification standards in the producing country with those in the importing country. Since it is ultimately the buyer who determines the specifications for a consignment of produce, the producer may find that, in spite of compliance with local standards, the produce may not be acceptable to certain buyers or importing countries. There are currently 57 countries with their own certification organisations, and it is to be expected that these certifying organisations may not have an understanding of agro-ecological conditions in the producer country. In most such countries, the local market for certified organic produce is very small if it exists at all, so exporting may be essential to the survival of producer operations in developing countries.

It bears investigation, in light of the above, whether non-certified organic agriculture (NC-OA) would have merit as a strategy in developing countries, especially if buyers' specifications for the products grown there are particularly onerous for the growers in these countries. Where lack of external inputs is a factor, or cost precludes the purchase of external inputs, NC-OA is indeed a strategy for ensuring long-term sustainability and soil and environmental health. Training and capacity building in the principles of agro-ecology remain an important success factor in improved agricultural production, food security and health in such regions and this is not different for South Africa and a training and extension strategy is important or supporting organic production.. The training is necessary to overcome the natural reticence among poor people to take risks which may affect their families' food supply in the short term. Poor families cannot afford the risk associated with a new technology for a long term

environmental or resource-base benefit if it does not also provide an immediate food benefit. Another sustainability issue in SSA is that of phosphorous depletion in soils. Large areas of SSA are P deficient, and organic agriculture limits the options for P additions. Rock phosphate is acceptable in organic agriculture, but the deposits of rock phosphate are scarce in large areas of SSA, and the low concentration of P in rock phosphate makes it uneconomical to transport over long distances. Unless organic agriculture certification rules can allow for “exemptions” for chemically-treated phosphate, this remains a serious constraint to sustainable production.

All countries prohibit the use of sewerage as an organic additive for improving soil fertility. Concerns over its use relate to the other elements in sewerage such as heavy metals, many of which accumulate in the soil and in the food chain. In addition to this, there is the contention that human waste, like some manures from conventional farms, are a non-organic import, and as such cannot be used in certified organic production systems.

### **4.3 Organic Market Regulatory Development**

#### **4.3.1 The benefits of mandatory regulations**

In a few countries and in some US states, governments became involved already in the eighties in establishing a regulatory framework for the organic market in order to protect consumers from misleading claims and producers from unfair competition. The EU established an organic regulation in 1991<sup>10</sup> and the USA in 2002<sup>11</sup>. By 2005, 70 countries had organic regulations in various stages of implementation (Table 2). The first regulations normally contained some basic production standards and very simple rules for certification, if any. Regulatory objectives such as strengthening the competitive position of domestic producers, increasing farm income, and protecting the environment have been added to the initial ones relating to truthful labelling. Most notably, in the EU, the regulation for organic marketing also forms the foundation for directed support to organic farmers under the agri-environmental programs of the Common Agriculture Policy.

When they become interested in organic agriculture, most governments embark on an ‘organic regulation’. These regulations are typically market regulations that try to limit the use of a word, ‘organic’, to products produced according to standards set by the government and certified by an organisation approved by the government. In Organisation for Economic Development (OECD) countries these regulations are often, but not always, triggered by a concern for the domestic market, while in most developing countries they have been installed mainly, and in some case apply only, for exports. The main push for organic regulations comes from producers or organic certification bodies that want to have fair competition; consumers are rarely involved.

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<sup>10</sup> Council Regulation (EEC) 2092/91

<sup>11</sup> National Organic Program (7 CFR Part 205)<sup>12</sup>

**Table 2: Overview of countries with organic regulations (Commins, 2004 & Kilcher et al., 2006)**

Region	Fully implemented	Final not implemented	In draft
EU	25		
Rest Of Europe	6	5	1
Asia & Pacific	7	1	5
Americas & Caribbean	3	5	7
Africa	1	1	2
Middle East	1	-	1
Total: 71	43	12	16

Three main reasons are quoted for why mandatory regulations are considered to be the right policy response to develop the organic sector: (1) Giving organic agriculture a more respectable and credible image, (2) Access to export markets and (3) Development of the local market. The merits of these responses to developing the organic sector are discussed below.

### **Giving Credibility to the Sector**

It is obvious that the introduction of an organic regulation means an official recognition of organic that will strengthen the sector; make it visible and credible and remove some biases against organic both in the public and private sectors. Once the government has acknowledged organic farming through an organic regulation, it is hard to ridicule or ignore organic farming. However, a mandatory regulation is hardly the *only* way for a government to accomplish this.

### **Export Market Access**

The EU, Japan and the USA have implemented systems for import approval of organic products. As these are based on mandatory governmental regulations it can be assumed that the easiest way to get access to these markets is to implement similar systems in the exporting country and through equivalence (see Section 4.1.5) get market access. However in all three markets very few products<sup>12</sup> enter the markets through an equivalence agreement. Not even between these three markets is there any equivalence agreement: Japan has granted limited equivalence to the EU and the USA, while neither the EU nor the USA has granted any equivalence to the others. Some countries have been granted

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<sup>12</sup> In the EU the estimate is that less than 20 percent of the imported products come from approved countries, in Japan even less.

equivalence by the EU based on export regulations, i.e. the use of the claim organic has not been regulated in the domestic market. Australia and Argentina are two such countries.

The main way for products to get access to the US and EU markets, is by certification by a certification organisation that has got acceptance in those markets (Bowen, 2004).<sup>13</sup> Exports of organic products are flowing from countries without regulations, e.g. Chile, Egypt, Thailand and South Africa. Regulation through equivalence is seen as a tool for assisting organic producers to access export markets through equivalence agreements, but the real need for this is not apparent. In any case, it is not a quick solution (e.g. Chile applied for EU recognition 2000 and this is still pending) and it is a time and resource consuming process. Often the result of national regulation is just another layer of complication for producers, who apart from having to fulfil the export market requirements, now also have to fulfil a domestic regulation.

### **Development of Domestic Markets**

The demand for a domestic organic regulation would arise from any of these situations or a combination of them:

- The marketing of many different organic products claiming adherence to different standards and thereby creating confusion in the market place
- The wide-spread selling of non-organic products as organic in the market place, i.e. fraud or consumer deception
- Lack of confidence in the credibility of organic products by consumers
- Lack of confidence in the credibility of organic products by organic producers, fearing that they compete with other organic producers that are not following the same standards.

It is believed by some that consumers will not trust organic products unless the government has set standards and a mandatory system of certification; this is also expressed by some stakeholders in South Africa. However there is little empirical evidence for this assumption. Until year 2001 the US market for organic products developed to a USD 7 billion value without a federal regulation in force. There were however several state regulations. Also the EU countries had developed a substantial organic market in the early nineties, at a time where only Denmark and France had national regulations (Rundgren, 2002)

Nevertheless, it sounds plausible that in a situation with real market confusion and widespread fraud, in countries with a general high confidence in government, that a domestic market regulation might be of some use. Still, also in countries with regulations in place for ten years, there is consumer scepticism about the reliability of organic products and fraud still exists. Linked to this is that what the sector is usually seeking is efficient market surveillance and to identify fraudulent producers. The reality is that the implementation of

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<sup>13</sup> The details of the import regulations in the US, the EU and Japan are complicated but well explained in other papers and therefore not expanded on here. In addition the EU and the Japanese systems are in a process of change.

most organic regulations has put the emphasis on surveillance and control of those that are already certified and of the certification bodies, while few resources are allocated to actually monitor the market place.

In some countries with mandatory regulation there are special rules for small farmers, e.g. in the US NOP, farmers selling organic products for less than US\$ 5000 annually are exempt from certification, i.e. they can make the organic claim, they have to follow the standards but do not have to be certified.

#### **4.3.2 Process and Implementation**

***There is widespread underestimation of the time and resources needed to put in place organic regulations.*** In many countries (e.g. the USA and Brazil), the process from the original act or standard until all pieces are put in place has taken 10 years. Many countries have passed mandatory regulations on organic, but then failed to implement them. This is worse than having no regulation at all, as an unimplemented mandatory regulation puts everything in limbo. Lack of implementation is reportedly the main factor for why countries fail to get approval as a third country by the EU (Crucefix, 2005). More detail on the development of various organic standards is available in the literature review (Appendix A).

#### **4.3.3 Export of Organic Produce to the EU**

The regulatory environment for organic production in the EU is subject to changes. The current main regulation 2092/91 has been amended more than 50 times and is now due to expire at the end of 2008, when a completely new regulation<sup>14</sup> will enter into force. Regarding imports, the provisions in Regulation 2092/91 was thoroughly amended by the regulation 1997/2006. The regulation 1997/2006 introduces requirements and procedures for the approval of imports that are more or less identical to the provisions in the Regulation 834/2007.

Both in the old system and in the new system organic products can be exported to the EU provided that:

- The product has been produced in accordance with production standards equivalent to the production rules laid down in EU 2092
- The operators have been subject to inspection measures of equivalent effectiveness to those referred to in EU 2092
- The product is covered by a certificate of inspection issued by the competent authorities, certification bodies<sup>15</sup> or authorities of the third country. The original of the certificate must accompany the goods to the premises of the first consignee.

The EU allows access by third countries to their organic food market through equivalence. This means that documentation and inspection processes for the producing country must be

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<sup>14</sup> Council Regulation (EC) No 834/2007

<sup>15</sup> The terminology used in 2092/91 is “inspection body” and in the 834/2007 they are called “control bodies” – but the bodies referred to are certification bodies.

equivalent to that of the EU. This does not necessarily mean identical procedures, but there should be a fundamental similarity in the procedures. However, in reality the concept of equivalence is not very clear, and it remains sometimes a subjective exercise to determine if one system is equivalent to another.

The main difference in the new system is that certification bodies outside the EU can seek direct approval/recognition by the EU, something that was not possible under the regulation 2092/91.

**4.3.4 The Situation Up to End of 2006**

**Article 11(1)**

Under Article 11(1), third countries (i.e. countries not part of the EU) can be recognised as having a system equivalent to the EU. This list is held as a commission regulation and is published as a law. The list may have restrictions, such as a limit on the products, or limits on the region within the country from which they originate. To be listed under article 11(1), the countries production standards and inspection arrangements are equivalent to those applied in the EU. Few countries supply the EU through this path, as it in reality has proven to be slow and very resource-demanding.

**Table 3: Countries Exporting to the EU through the Article 11(1) Procedure**

Argentina	India	New Zealand
Australia	Israel	Switzerland
Costa Rica		

**Article 11(6) (case-to-case)**

The second path lets a company in the EU intending to import organic products apply for a permit to import such products. The importer must show (to the competent authority) that the product is produced according to equivalent standards and certification procedures. Once a permit has been provided, product can be marketed throughout the EU. This is known as the “case-to-case” import permit procedure and is managed by national or regional authorities of member states in the area to which to the product is being imported. There is a database where all the issued import permits are recorded. If a certification body has been listed there once, it is easy to get new approvals certified by the same organisation.

Importantly, the *importer* is responsible for declaring that the products exported from third countries are produced and monitored according to EU 2092. Also, an original certificate from the competent body issued to the third country exporter must be produced for these exports. Most of these products are certified by an EU based certification organisation, but increasingly products certified by organisations based in the exporting country have been accepted.

Over 100 countries supply organically certified produce through the Article 11(6) procedure, indicating that it by far the most common procedure of acceptance.

### **Labelling and Packaging**

Article 5 of Regulation 2092/91 deals with rules for labelling products as being organic. The most important rule for labelling is that the operator, who wants to label a product as organic, has to be certified by a recognised body. The same article classifies processed foods into categories depending on the proportion of organic ingredients in the product:

- Organic - more than 95% organic agricultural ingredients(Organic may be part of the “sales description”)
- Partly organic - between 70% and 95% organic agricultural ingredients. The organic indication may only appear in the panel of ingredients.

Regulation (EC) No 331/2000 regulates the use of a European Union wide logo for organic farming in the European Union. The EU logo itself has not been universally accepted by producers or certification agencies, and many certifiers still rely on their own logo, which equally demonstrate compliance with EU 2092 regulations. A number of these logos are shown below.

Some logos are government owned while others are private. Some have additional requirements, for example:

- The AB logo in France cannot be used on organic products imported from outside the EU, if they can be grown in the EU
- Some logos, like Demeter, KRAV and Soil Association, are based on private standards that are stricter on some issues than the EU regulation.

As consumers are familiar with the logos of these organisations, operators in these countries sometimes feel obliged to use these logos on their consumer packages. This can result in re-certifications and extra costs (PROFOUND, 2005).

#### **4.3.5 Regulation 1997/2006 from 1 Jan 2007**

This regulation clarifies that for the assessment of equivalence not only the EU regulation itself should be taken into account but also the international guideline Codex Alimentarius CAC/GL 32, guidelines for the production, processing, labelling and marketing of organically produced foods. The system of a list of approved third countries will be maintained, but the provisions in article 11(6) are no longer in place. The regulation (in article 5) *introduces a system for direct recognition of certification bodies operating in other countries* (something that the US and Japanese systems already had in place). There is no explicit requirement for the certification body to be accredited, however they should be under some kind of system of supervision or accreditation.

The current authorisations to market products imported from outside the EU that were granted based on article 11(6) prior to 31 December 2006 to importers will expire on 31 December 2007. However the member states will still be allowed to issue import permits

until the list of recognised certification bodies has been published and an additional 12 months after the first publication. The labelling rules remain the same.

#### **4.3.6 Regulation 834/2007 from 1 Jan 2009**

While the regulation 1997/2006 is an amendment to the regulation 2092/91, the regulation 834/2007 repeals 2092/91. The Council regulation 834/2007 still leaves quite a number of issues open as it mandated the EU Commission to draft more detailed implementing rules. However for the imports the picture is quite clear, except for the procedures to be followed. The regulation 834/2007 rules for imports are very similar to the ones in regulation 1997/2006. The regulation contains the following three options:

1. *Products certified according to the EU regulation by certification bodies recognised by the EU Commission.* The certification bodies shall be ISO 65 accredited (article 32). The exporter shall have a valid certificate.
2. *Products certified to equivalent standards to the EU regulation or the Codex Alimentarius by certification bodies recognised by the EU Commission.* The certification bodies shall follow equivalent rules to the ones in the EU regulation and needs to be under the supervision of an accreditation body or a competent authority. (art 33 par 2). The products must be followed by a certificate of inspection.
3. *Products from countries put on a list of recognised third countries.* Such countries need to have a system that ensures that the exported products are produced to equivalent rules and certification procedures as the EU regulation or the Codex Alimentarius (art 33, par 1 and 2). The products must be followed by a certificate of inspection. The last option is more or less the same as the current third country list; the only difference is the explicit reference to the Codex Alimentarius.

Another change of some relevance is that under the new regulation organic products from within the EU *shall* bear the EU organic logo. Imported products *may* carry the logo. If the EU logo is used the country of origin should also be indicated.

The labelling requirement in the new regulation also differs slightly from the previous regulation:

- More than 95% organic agricultural ingredients: Organic may be part of the “sales description”
- Below 95% organic agricultural ingredients, rules for processing must be followed and production process needs to be certified: The organic indication may only appear in the panel of ingredients
- If the main ingredient is from hunting or fishing (for which there are no organic standards), and all other ingredients are organic: The organic indication may appear both in the sales description and in the list of ingredient, in both cases referring to the organic ingredients.

#### **What are the Implications for South Africa?**

The first option gives simpler access to producers that are certified directly to the EU regulation, and means that products certified by EU based organic certification bodies can

get direct and simple access, even when they are from outside the EU. However certification bodies that are ISO 65 accredited outside the EU, can also be approved this way. Compared to the current situation (where SA products are imported under article 11.6 provisions), the main benefits are that SA based certification bodies can get a direct permanent approval and that exporters don't have to supply the certificates of inspection for each shipment. The main disadvantage of this system is that the producer must follow the exact requirements of the EU regulation, some of which are less well adapted to the situation in South Africa, e.g. the requirements for organic seed and the restrictions on what kind of manure that can be used.

Option 2 also gives the same opportunities but with more flexibility regarding standards and accreditation. The main advantage of options 2 and 3 is that there is not a need to follow every detail of the EU regulation. Compared to the current situation, non EU-based certification bodies will be provided with the opportunity to be recognised, providing an export market for producers and exporters certified by them. It is unclear at this stage what kind of supervision or accreditation that will be acceptable by the Commission, but it is certain that ISO 65 accreditation will be accepted, as is the case in option 1. Further, it can be expected that IFOAM accreditation and government approval will qualify. The extent to which the regulations may differ from the EU standards for production which might be permissible is unclear at this stage. Only time will tell how this is implemented in practice. A disadvantage of options 2 and 3 is that the individual shipments will have to be accompanied by a certificate of inspection, which is also the case in the current regulations. This causes additional costs and sometimes delays which can result in damage to perishables.

Option 3 is more or less the same as with the current regulations, but may have a bit more flexibility. It is not possible to assess if it will be quicker or easier for SA to be approved through this route than through the current article 11.1 route which has proven to be tedious (see above),

The immediate response to the changed regulation would be for local certification bodies to seek approval either for option 1 or for option 2, or for both – the same certification body could very well be recognised under both options. Option 1 seems to be a clearer and safer route, but option 2 has the potential to give producers better conditions.

For export facilitation by government, it will be necessary to appoint a government body to be responsible for supervision of certification bodies that want to get approval by the USDA and the EU (as per option 2). It is also possible to request EU recognition as a country based on this system (as per option 3). For EU approval of certification bodies SANAS accreditation to ISO 65 *may* be sufficient in itself; for the USDA approval this is not likely to be the case.

## **4.4 South African Legislative Context**

### **4.4.1 The South African Organic Standard**

Organic stakeholders have been lobbying the National Department of Agriculture for the development of a South African National Organic Standard since 1994 (Jackson. S. *pers comm.*). Parrott and Elzakker (2003) indicated that South Africa had started developing

organic standards that were expected to be completed by the end of 2002, drawing mainly on IFOAM, Codex Alimentarius and EU standards. Willer & Yussefi (2002) also indicated that the National Department of Agriculture had presented a draft that would cover all aspects of organic production and is in line with the EU regulation and the IFOAM standards. They indicated that it was expected to become law by 2002 and represented a strong opportunity for local certification bodies. Again in 2004, Willer & Yussefi indicated that South Africa had made significant progress in that direction. They further note that the absence of local certification and inspection capacity is a “critical bottleneck” that needs to be overcome to develop the organics industry.

The third draft of legislation for organically produced products for sale in South Africa was closed for public comment on 15 February 2007. As at June 2008, the draft is awaiting approval from the National Department of Agriculture after which it must be vetted by the World Trade Organisation (WTO), in terms of technical barrier to trade agreements that South Africa has entered into (Erasmus, *pers comm.*). It is not clear how long this process may take, but could range from 6 months to two years. This process is being managed by the Directorate: Food Safety and Quality Assurance of the National Department of Agriculture who are responsible for controlling the quality of agricultural produce and management systems used in the agricultural industry under the Agricultural Products Standards Act (Act 119 of 1990). The draft of the standard is provided in Appendix B

#### **4.4.2 Relevant Legislation for Agriculture, Including Organic Agriculture**

The following national legislation applies to the management and control of agricultural enterprises, including organic production:

- *Agricultural Pests Act (No 36 of 1983)* – governs the prevention of the introduction of agricultural pest from abroad
- *Agricultural Produce Agents Act (No 12 of 1992)* – regulates the operations of market agents
- *Agricultural Product Standards Act (No 119 of 1990)* – controls the sale, import and export of agricultural products
- *Animal Health Act (Act 7 of 2002)* – provides for measures to promote animal health and control diseases and includes the regulations controlling the import and export of animals
- *Customs and Excise Act (No 91 of 1964)* – to control the import and export of goods and provide for levies related to customs and excise
- *Fertilisers, Farm Feeds, Agricultural and Stock Remedies Act (No 36 of 1947)* – provides for the registration and regulation relating to the use of farm inputs
- *Foodstuff, Cosmetics and Disinfectants Act (No 54 of 1972)* – controls the sale, manufacture and importation of foodstuffs, cosmetics and disinfectants
- *Genetically Modified Organisms Act (No 15 of 1997)*:
  - Promotes the responsible development, production, use and application of genetically modified organisms.

- Ensures GMOs are appropriate and do not present a hazard to the environment.
- Establishes procedures for the notification of specific activities involving the use of GMOs.
- *International Trade and Administration Act (No 71 of 2002)* – Establishment of the International Trade Administration Commission to, among others:
  - Provide for the implementation of aspects of the Southern African Customs Union (SACU) agreement
  - Control the import and export of goods and make amendments to customs duties
- *Marketing of Agricultural Products Act (No 47 of 1996)* – authorises regulatory measures relating to the marketing of agricultural products, including levies on agricultural products
- *Perishable Products Export Control Act (No 9 of 1983)* – control of perishable products intended for export from South Africa.

#### **4.4.3 Departmental Competencies**

##### **National Department of Agriculture**

The Directorate of Plant Health and Quality within the National Department of Agriculture administers the Agricultural Pests Act, 1983 (Act No. 36 of 1983), the Liquor Products Act, 1989 (Act No. 60 of 1989) and, of *relevance to organic agriculture, the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990)*, which the Directorate of Food Safety and Quality Assurance is responsible for.

These Directorates are responsible for the following measures to promote and regulate the availability of healthy and productive plant material and the quality of agricultural products in South Africa:

- The standardisation, publication and regulation of norms for certain agricultural and related products
- The promotion and provision of propagation material of superior quality
- The prevention of agricultural pests and diseases being imported exported or distributed
- The analysis of certain agricultural products to ensure compliance with prescribed standards on local and foreign markets.

(Source: National Department of Agriculture website – [www.nda.agric.za](http://www.nda.agric.za))

##### **National Department of Health**

The National Department of Health, Directorate: Food Control is responsible for ensuring the safety of food from a primary health care perspective for the South African community, including the right to make informed choices without being misled. This is achieved through scientifically founded legislation, auditing and information actions.

The main functions of this directorate are to:

- Administer, compile and publish legislation relating to food safety, food labelling and related matters
- Initiate, coordinate and evaluate general as well as more specific food monitoring programmes
- Audit and support provinces and local authorities with food law enforcement
- Inform, educate and communicate (IEC) food safety and related matters to stakeholders such as industry, consumers and other departments
- Act as the national contact point for the joint FAO/WHO Codex Alimentarius Commission
- Evaluate agricultural remedies and chemicals and food produced by means of biotechnology.

(Source: Department of Health Website – [www.doh.gov.za](http://www.doh.gov.za))

#### **4.4.4 Export Control**

In terms of exporting organic produce, the Perishable Products Export Control Board (PPECB) is responsible for the enforcement of the requirements under the Agricultural Product Standards Act, (Act 119 of 1990) on exported products. While there is no specific provision for organic produce, there is a clause regarding misleading or spurious claims. Therefore, if a product being exported indicates that it is organic then it must be organic. The PPECB requires a certificate issued by a certifying organisation that is accepted in the country of destination to ensure that this is the case. In the case that the organic product is analysed for pesticide residues and residues are found, the PPECB refuses the export of the product because organic production does not allow the use of commercial pesticides. There is no specific tracking system within the PPECB to monitor the export of organic produce.

#### **4.4.5 Import Control**

In terms of imports, legislation can also affect organic products. For example, the Agricultural Pests Act (No 36 of 1983) requires that all imported products containing honey must be irradiated to kill certain pests that can enter the country via the honey. There is a similar requirement for garlic. Irradiation is against the principles of organic production and thus organic honey cannot be imported.

#### **4.4.6 Discussion**

There is therefore no legislation that applies exclusively to organic produce. However, the production of organic products is subject to all the laws within South Africa. Other laws can influence organically produced products. For example the Fertilisers, Farm Feeds, Agricultural and Stock Remedies Act (No 36 of 1947) regulates all agricultural inputs. If an organic input producer wants to sell organic fertiliser, pesticides or biocontrol agents then they must be registered with this Act. This has important implications, as it requires significant research, development and testing – particularly in terms of toxicology, efficacy and impact on the environment for the registrar to register the product. One input supplier in

South Africa (Klink, *pers comm.*) argues that some of this testing for organic inputs is irrelevant due to:

- Organic inputs being designed to have limited impact on the environment
- Efficacy of products cannot be tested in isolation as organic production relies on a holistically managed system to control crop pests and diseases.

In theory, all farmers, *including organic farmers*, can only use products that are registered in South Africa for that specific crop. Agro Organics suggest that a separate registration code be developed for organic inputs, in line with development of the South African organic standard. This would allow organic farmers to immediately see if the registered product was approved for use in organic systems.

The South African Organic Standard has been under development for some time. Organic produce as a subset of agricultural produce is subject to the laws of South Africa. In terms of exporting organically produced commodities, the Perishable Products Export Control Board (PPECB) aims to ensure that organic claims are authentic through a clause in the legislation regarding misleading claims. Consequently, the PPECB requires a certificate issued by an organic certifying organisation that is accepted in the country of destination to accompany any organic shipment. The lack of finalisation of the organic standard has been raised by a number of stakeholders as a key constraint to the growth of organic agriculture in South Africa.

## **4.5 Other Regulatory Considerations**

### **4.5.1 Codex Alimentarius and HACCP**

The Codex Alimentarius is a joint FAO/WHO commission that maintains and develops standards for food. Internationally, governments, including South Africa, have collaborated in the development of Codex Alimentarius guidelines for agriculture. Initiated in 1992, the guidelines were adopted in 1999, although the Codex has adopted standards that were developed as far back as 1996 (Appendix C). South Africa is a signatory to the Codex standards.

The Codex General Principles lay a firm foundation for ensuring food safety. The principles follow the food chain from primary production through to final consumption, highlighting the key controls at each stage. The Codex recommends a *Hazard Analysis and Critical Control Point (HACCP)* based approach wherever possible to enhance food safety.

The controls described in the Codex general principles are internationally recognised as essential to ensure the safety and suitability of food for consumption. The General Principles are applicable to governments, industry (including individual primary producers, manufacturers, processors, food service operators and retailers) and consumers alike. While the *Codex describes the principles*, HACCP provides the *framework for the system* of ensuring food safety (PROFOUND, 2005). More detail on this system is provided in Appendix D.

#### **4.5.2 Sanitary and Phytosanitary Measures**

The World Trade Organisation's (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) concerns the application of food safety and animal and plant health standards. It recognises a government's rights to take sanitary and phytosanitary measures but stipulates that they:

- Must be based on science
- Should be applied only to the extent necessary to protect human, animal or plant life or health
- Should not arbitrarily or unjustifiably discriminate between members where identical or similar conditions prevail.

The standards of the Codex Alimentarius Commission are recognised by the WTO as the international norm for food safety standards in the application of its SPS Agreement. Countries that apply food standards that are stricter than those of Codex Alimentarius Commission may be accused of contravening the SPS and Technical Barriers to Trade (TBT) agreements. Those countries that have less stringent regulations may become dumping grounds for low quality or unsafe products.

(Source: [www.nda.agric.za](http://www.nda.agric.za))

#### **4.5.3 Non Tariff Trade Barriers / Technical Barriers to Trade**

Technical barriers to trade refer to technical regulations, minimum standards and certification systems for health, safety and environmental protection and to enhance the availability of information about products, which may result in the erection of technical barriers to trade (TBTs) (WTO Website).

In an effort to overcome TBTs, technical barriers to trade agreements have been established. These are administered by the World Trade Organisation (WTO) and aim to limit difficulties encountered in moving products from one country to another. They are aimed particularly at developing countries exporting to developed countries and seek to ensure that technical regulations and standards, as well as testing and certification procedures do not create unnecessary obstacles to trade. The TBT Agreements are based on three principles:

- Principle of Proportionality
- Principle of Equivalence
- Principle of Priority on International Standardisation.

Member states of TBT agreements must therefore ensure that opportunities for imports are equally favourable for all supplying countries, including the following principles (Schmidt, 2000):

- Technical regulations shall not be more trade restrictive than necessary to fulfil a legitimate objective (proportionality)
- Where international standards exist, members shall use them for granting market access

- Technical regulations shall not be maintained if objectives can be achieved in a less trade restrictive way
- To support harmonisation on as wide a basis as possible, member states will participate in the development of international standards for products for which they have adopted technical regulations
- Technical regulations of other member states will be accepted, even if different, as equivalent provided they adequately fulfil the objectives of their own regulations (This is an important consideration for international trade in organic products because there are so many different national organic standards).

There exist many requirements for exporters in developing countries as well as the trading partners in the EU, when entering EU markets. Such legislation, codes, markings and labels centre around health, environment, labour conditions and business ethics and are becoming increasingly important for international trade (PROFOUND, 2005). South Africa has been a member of the WTO since 1995 and can therefore benefit from TBT agreements.

#### **4.6 Discussion**

The following discussion will attempt to address the question of defining the organic sector in relation to African and especially South African development of an organic production sector. Firstly, the EU regulation 2092/91 has, until now, been the primary legislation affecting the organic, particularly with respect to the export of organically certified agricultural products to the EU by countries with little or no formally developed domestic markets. The EU 2092 definition and standards have dominated the definition of the organic farming sector in these countries.

The result of this legislation is that the organic sector has been able to identify itself to the consumer and ensure that organic products brought to the market have credibility in that they are really and truly organic products. Early market scepticism within the EU had much to do with the lack of a clear market definition of organic produce, as well as the absence of a well organised and accredited inspection system. The establishment of the East African Organic Product Standard has done much to address these primary issues in the East African region although it is too early to say and see whether the organic sector there will achieve the sought after stimulus (See Section 12.2).

It is important to recognise that the definition of the organic sector has come about largely through the EU 2092 as the principle and first such recognition of organic farming systems. The EU market in general – not just the organic sector – is large and sophisticated and the systems that have grown up to support it are commensurably sophisticated. In the organic world there has been much criticism from the developing world viewpoint especially within Africa of the organic standards being designed for the developed world and not necessarily being appropriate to the developing world. There is much truth to this statement, especially perhaps in lack of recognition for the often stated ‘fact’ that due to lack of purchasing power much of African production is de facto organic as the producers are often unable to purchase synthetic inputs including fertilisers and pesticides. However, if the developing world organic sector wants to access the developing world organic markets it has to follow the rules – and

for the EU these are currently encapsulated in EU 2092/91 while for the United States of America they are incorporated within the National Organic Programme requirements.

With the very recent exception of the East African Organic Product Standard initiative, the developing world especially in Africa has taken very little in the way of initiative in defining its own national or regional organic market sectors. The development of a strong national as well as regional organic market sector – both production and consumption led – would place the developing world, especially Africa, in a far stronger negotiating stance with respect to definition of standards and their appropriateness, especially to developing world production. South Africa, with the most sophisticated agricultural system combined with the most sophisticated national markets in Africa, has the potential to lead this initiative – an initiative it has so far failed to take up.

An important issue from the organic producer perspective has been the protection provided to the *certified* organic producer (and processor and trader). Fair competition has been enabled with other producers within the EU as well as outside who are either not using organic farming methods or are only using partial organic methods. The purpose of the EU legislation is to prevent those producers that are not certified as organic from selling their products labelled as organic. In reality, a large proportion of resources are spent on monitoring certified producers rather than trying to police fraudulent claims. Some non-certified producers are farming conventionally and attempt to take advantage of the market premiums available to certified organic producers and processors while not in any way attempting to convert to organic production methods. On the other hand there are numerous organic farmers who, for various reasons (philosophical, cost etc.) are not certified. This is increasingly being recognised as a problem, as they cannot market their produce as organic, in spite of producing according to organic principles.

The investments required of agricultural producers and processors for conversion to organic production can be substantial, in terms of financial resources, human (particularly in training, control systems and establishment of traceability systems), and in terms of time, up to three years being required to convert from conventional to organic production status.

An unregulated sector can lead to a variety of anomalies and labels appearing that result in firstly consumer confusion and ultimately a debasing of consumer faith and acceptance of organic claims. Officially recognised organic labelling should ensure continued consumer confidence and clarity. The EU regulation is especially clear on this aspect. It provides not only for an EU wide inspection system, it provides also explicitly for all EU Member States to take all necessary enforcement measures. This includes measures and actions necessary to prevent the fraudulent use of labelling referring to organic farming. The extent to which these regulations are enforced is questionable, however. While there are rigorous systems in place for ensuring that certified producers are adhering to the given standards, there is not the same vigour when it comes to monitoring the market place for unreliable claims and labelling.

EU 2092/91 has enabled the free distribution of organically certified products within the EU member states. Any certified organic product produced in the EU or imported from a third country that has been produced in accordance with the regulation can circulate freely within

the EU for sale as organically certified produce. This is an aim also of the East African Organic Product Standard. Importantly, no individual EU member state can prevent any product certified as organic under the regulation and coming from another EU member state from circulating in its territory and being placed on sale as certified organic produce. Under the regulation the requirement for dual or multiple certification is avoided as a single certification is provided for instead. In practice however individual private companies or bodies may require (or at least request) one or more certifications for their individual markets and these can be a significant barrier to entry to the EU markets as they require additional costs to be borne by the producer.

Further costs will be incurred by the producers for entry to non-EU markets which are covered by regulations by the importing country. Most notable here is the United States market through the NOP requirements as well as the Japanese markets. Ostensibly for export to the United States, certification inspection requirements can be carried out at the same time as inspection for the EU and by the same certifying inspector. However there are additional requirements under the NOP, which may represent an additional cost.

However, once a producer has been certified under the EU regulations and / or the US NOP requirements, there are still further requirements for export to either of these two markets that indicate that market access is neither simple nor especially easy. The EU for example has issued a requirement for pre-approval of organically certified products prior to arrival in the EU. The onus is on the importer to obtain such approval based on the certificates of the producer but nevertheless this can prove to be something of a bureaucratic performance, especially when consignments are made by air. Furthermore, there is a tendency for some EU accredited certification bodies to require further verification of certification in cases where they consider certification performed by another body as not being to their satisfaction. This can lead to further costs and delays for the producer.

#### **4.6.1 Is Equivalence Suitable for Africa?**

Equivalence at country level would appear to be difficult to achieve in the shorter term – and, notably, of the six countries approved by 2002, none were from the developing world while two were from the to-be-expanded EU Member States. The top down approach of developed world organic production standards implemented at a national level in developing countries makes equivalence difficult. This does not mean however that there is no role for local national organic standards to be established in countries such as South Africa. On the contrary there is every reason to develop such standards especially in enabling the growth of local, national as well as regional markets through greater awareness from consumers as well as producers. This is a primary reason for the establishment of the East African Organic Product Standard. Equivalence is a longer term goal for the East African Standard. The main objective is to establish sustainable organic national and regional markets. The standards initially provided for under the East African Organic Standard are not nearly as complex in their requirements as the EU 2092/91, reflecting perhaps more appropriate requirements for developing world conditions. East African exports to the EU will continue to be verified by an EU recognised inspection body in East Africa on a consignment basis and evidenced by an

EU certificate. As is the case in South Africa, there are a number of such EU recognised inspection bodies operational within East Africa

#### **4.6.2 Possible Approach to Certification in South Africa**

The following approach should be considered for the establishment of regulations in support of developing the organic industry in South Africa:

1. To finalise the standard, ensuring that it is adapted to local conditions
2. To include in the standard that any products imported to South Africa should adhere to the SA standard, IFOAM or Codex Alimentarius for imports
3. To make a voluntary system of certification for producers who want to claim adherence to the standard by allowing PGS systems within this context
4. To introduce a registered public organic mark which can be used by producers that follows this voluntary system, alternatively to support the organic sector, e.g. the OSA, to establish such a mark
5. To back up the mark with proper information and promotion (consumer education).

This means that producers could sell organic products without formal certification, but that there is a legal basis on which to challenge them should there be reason to believe they are not organic. This means that producers who are certified or use an alternative guarantee system, such as PGS have full government endorsement of their claim and are supported via the promotion of the mark.

Alternatively a compulsory registration – but not certification – could be established for all those wanting to make the organic claim. This proposal should be seen as a starting point and can be amended in due course. It is easier to start with a more open and flexible solution and tighten it up as needs arise, rather than to start with a very restrictive and resource demanding regulation. If certification is mandatory, small farmer exemption schemes, such as in USA, should be considered.

## 5 THE AFRICAN CONTEXT

### 5.1 Organic Farming in Africa

Conversion to organic farming involves costs and risks. A farmer deciding to “go organic” must weigh up these risks against the benefits of this new farming system. Certified organic schemes in Africa appear to be driven either by the private sector or by development projects.

Private sector schemes develop out of a financial need to access new markets or as a result of buyers approaching farmers seeking organically produced goods. They tend to be larger and better organised, commercial and may already be export oriented, with a supply chain in place. Often the greatest challenge is the conversion from conventional to organic production.

Development led projects often have different problems and challenges. Firstly, such initiatives usually target poorer and smaller farming households. These farmers are frequently farming organically or in low input systems. This is often by default rather than design. There are therefore usually few difficulties in converting to an organic system of production. Difficulties are encountered on the commercial side. Issues such as establishing viable producer groups, establishing supply chains, quality management and record keeping ensuring traceability are often problematic (Parrott and Elzakker, 2003).

Walaga (2000, cited by Willer & Youssefi, 2002) outlines the following opportunities for organic agriculture in Africa:

- Potential for organic production is high, particularly in countries with liberalised economies
- Most production in Africa is traditional and complies more or less with the principles of organic agriculture laid down in the IFOAM basic standards
- Certification costs can be reduced if local inspectors can be contracted
- Expertise in organic production is building up as the organic market develops.

A number of sources point out the difficulty in establishing the scale of organic production in Africa (Willer & Youssefi, 2004). According to E. Gori and Associates (2004), examples of success and cooperation in organic agriculture in Africa include:

- Sekem Farms in Egypt, which brings together many small scale producers, and has pushed certified organic land in Egypt up to 15,000 ha, much of this producing organic cotton and herbs
- In Uganda, over 28,000 farmers now farm 122,000 ha organically, producing coffee, cotton, pineapples, bananas, sesame, dried fruit and avocados
- Morocco has also rapidly increased certified organic production, with 555 farmers producing mainly dried fruit, vegetables and herbs on about 12,000 ha
- Zambia and Tanzania recently became more organised by developing their certification capacity, and each country now has over 6,000 ha certified organic

- In South Africa, the number of certified producers grew from less than 100 in 1995, to about 250 in 2001, and to about 300 in 2003 (with over 200,000 ha certified organic)<sup>16</sup>.

## **5.2 Organic Farming in South Africa**

### **5.2.1 General Overview of Agriculture**

Parrott and Elzakker (2003) describe South Africa as the most developed economy in Sub-Saharan Africa. The Gross Domestic Product (GDP) per capita is almost \$ 3 000 per annum, but gross inequalities exist in the distribution of wealth.

Agriculturally, South Africa has much highly productive agricultural land. Agriculture contributes 4.7 % to GDP, accounts for 7 % of total exports and employs 13.3 % of the population. South Africa is self sufficient and exports many foodstuffs, although it is a water scarce country which is as a major restraint to production in many parts.

According to the 2002 agricultural census, the number of active commercial farming units in South Africa decreased by 12 162 to 45 818 between 1993 and 2002. Although there are fewer farming units, the gross farming income generated by these units was R53 billion compared with R39 billion in 1993 at 2002 constant prices (Statistics South Africa, 2002). There was therefore an increase in farm income between 1993 and 2002, while the number of farming units decreased by 21%.

The number of paid employees in formal agriculture decreased by 13,9% between 1993 and 2002. Limpopo, the Northern Cape and the Western Cape did show increases in employment. The Western Cape remains the largest employer in the agricultural sector, followed by Free State (13.1% or 123 429 paid employees), Mpumalanga (12,8% or 120 065 paid employees) and KwaZulu-Natal (12,4% or 117 207 paid employees).

The statistics above indicate (1) average number of farming units is decreasing (2) farm employment is decreasing and (3) gross farm income is increasing. This can be ascribed to increasing mechanisation and increasing control of farms by smaller numbers of people or companies.

The census also shows that expenditure on fertilizers and remedies accounted for 16% of expenditure on inputs (excluding labour) and that fuel, electricity and water costs accounted for 8%. Given that organic farming excludes the use of artificial inputs, organic farming practices can reduce current farm expenditure. Further, organic farming is more energy and water efficient than conventional farming can reduce energy and water costs. Finally, with unemployment<sup>17</sup> figures of 25.6% estimated in March 2006, organic farming has the potential to create jobs in the agriculture sector and reduce this figure.

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<sup>16</sup> These and other figures relating to production in South Africa have been questioned.

<sup>17</sup> The unemployed are those people within the economically active population who: (a) did not work during the seven days prior to the survey, (b) want to work and are available to start work within two weeks of the survey, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the survey. This is referred to as the official definition of unemployment.

## 5.2.2 Organic Production

### **Studies on Organic Agriculture in South Africa**

During the literature review process, it was found that the following research initiatives into organic agriculture in South Africa had been undertaken:

- “South African Organic Market Study” (Barrow, 2006) Commissioned by Export Promotion of Organic Products from Africa (EPOPA) and funded through the Swedish International Development Agency (SIDA), this study aimed to achieve the following objectives:
- Get a general understanding of the supply and demand side of the organic market in South Africa
- Get an understanding of the exports and possibilities for re-exports of products from other African countries, particularly Zambia
- To identify potential buyers of products from the EPOPA projects, especially from Zambia
- To identify other characteristics of the South African Market for organic products.

Information for this study was gathered through a survey, submitted to organic producers who were identified from 14 different data sources.

- The KwaZulu-Natal Department of Economic Development (KZNDED) commissioned the following studies:
- Business plan for the development of organic farming in KwaZulu-Natal (E. Gori & Associates, 2004)
- A strategy workshop to develop the KwaZulu-Natal Organics Agri-Processing Sub-sector (Mitchell, Undated).
- An unpublished study was commissioned by the National Department of Environmental Affairs and Tourism, which was compiled by Van Zyl (2000).

### **Status of the Organic Industry in South Africa**

Van Zyl (2000) conducted a number of interviews to determine the extent and value of the organic industry in South Africa. He estimated that at the time (2000), there were between 50 and 60 certified organic and an additional 50 to 60 uncertified organic farmers in South Africa, with 350 to 700 ha and 600 to 1000 ha of land under certified and uncertified organic production respectively. The total turnover was difficult to estimate, but one respondent indicated that it could be of the order of R40 million, with up to 95% of production being exported, mainly to European Countries.

According to Parrott and Elzaker (2003), there was 45 000 ha of certified land, with 250 farms in South Africa in 2003. This represents 0.54% of the total farming units (45 818) identified in the 2002 Agricultural census. Certified produce was comprised initially of mangoes, avocados, herbs, spices, Rooibos tea and vegetables, but has grown consistently to include a range of other products. There is a robust, if underdeveloped, local market for organic produce with limited premiums being paid for organic products. Local retailers

Woolworths and Pick n Pay sell reasonable amounts of organic produce. Exports of South African produce are mostly to European markets.

Mead (Undated) reported that up until 2003, organic sales in South Africa were about R5 million per annum. Significant increases were experienced from 2003 to 2004, while the forecast for 2005 was around R135 million. He indicated that there are approximately 200 certified producers, covering 515 000 hectares, broken down as follows:

- 500 000 ha – pasture
- 11 000 ha – rooibos
- Balance - Fruit (59%); Vegetables (32%); Essential Oils (6%); Wine (4%).

The largest fruit crops in terms of hectares were bananas, avocado pears and mangoes, while the largest vegetable crops were cucurbits, tomatoes, asparagus, brassicas and potatoes.

These sales volumes are confirmed by a report (Patel, 2006) that organic sales that were, until recently negligible, shot up to R155 million in 2005. It was reported that there are approximately 515 000 ha of certified land and over 200 certified operators.

Van Zyl (2000) points out that organic farmers choose this production system for various reasons. Some believe that it provides them with a healthier lifestyle for themselves and the soil, environment (less pesticides and nutrient pollution) and for consumers (less pesticides and nitrates in foods). Others are attracted by the price premium, which can vary, depending on the commodity and the market. Lower input costs are also a driving factor, especially in the context of increasing input prices and static commodity prices.

An assessment of the information on the status of the industry in South Africa from information sources is summarised below:

- 50 to 60 certified and 50 to 60 uncertified organic farmers with 350 to 700 ha and 600 to 1000 respectively. Total turnover difficult to identify, but of the order of R40 million, of which 95% is exports (Van Zyl, 2000)
- 45 000 ha of certified land, with 250 farms (Parrott & Elzakker, 2003)
- Until 2003, organic sales about R5 million per annum. 2005 forecast R135 million, consisting 200 certified producers covering 515 000 ha: 500 000 pasture; 11 000 rooibos; 4 000 other (Mead, Undated; Patel, 2006).

This information demonstrates that there is no precise information regarding the status of the organic industry in South Africa, but a general indication that the industry is growing. Attempts to obtain more accurate information on the organics sector in South Africa from existing literature were unsuccessful.

### **5.2.1 Obstacles to Adoption**

Lack of advice was a major problem identified by Lombard & Niemeyer (2003). Since organic farming is a new sector in South African agriculture, the involvement of advisory and extension services, the national press and official agricultural institutions is still small.

According to the survey results, higher weed infestation is the main technical problem. Higher insect infestation and more diseases were other common technical problems, although they were generally rated as less important than the problem of higher weed infestation.

Financial obstacles during the conversion period were relevant for organic farmers. Relatively high costs of initial certification and the annual inspection (which are dependent on the certification body and also partly on the size of the farm), are also seen as problematic. These costs can often not be recouped, especially during the conversion period, as farmers often lack avenues for marketing their products as organically produced products or achieving premium prices.

Organic farmers experienced hardly any problems with reduction in yields and the increase in workload. Increased workload is a common problem in other countries. This may not be a problem in South Africa as labour is more readily and inexpensively available than in Europe or America, where most farms are managed by families alone with no labour input from outside.

Most of the education in the sector takes place through in-house training offered by informal courses and interaction with knowledgeable individuals in the industry. Many organic farms are family-owned and knowledge is shared openly among the members. Organic farming is very labour intensive, but the wage rates do not differ from the average wage for conventional farm workers. The Department of Labour sets minimum wages for farm workers at R1100 per month for the 2008/2009 financial year.

The organic agriculture sector is still relatively new in South Africa and has shown a dramatic growth rate in organic producers from a small base. The Western Cape is the nucleus of organic agriculture in South Africa and accounts for a large proportion of the country's production. The majority of the Western Cape's organic production is aimed at the export market, including grapes, apples, Rooibos herbal tea and Honeybush tea, wine, plums, as well as culinary and medicinal herbs. A variety of organic vegetables, apricots, peaches and pears are produced, mainly for the domestic market.

The marketing and sale of organic produce is aimed at the high-income market with Woolworths being the main retailer of organic products. There is also increasing interest in this niche market from other South African retailers such as Pick and Pay, Spar and Checkers. Organic line sales indicate that there is a greater demand for organic products in the Western Cape than in any other province in South Africa. This begs the question as to whether this is related to gross income per capita in the province, or the great volume and range of organic produce available.

## **5.2.2 Stakeholders**

A stakeholder database was compiled from a variety of public domain websites and reports as well as information gathered from various sources during the compilation of the literature review (Full database included as Appendix E).

Information Sources include:

- The Go-Organic Website ([www.go-organic.co.za](http://www.go-organic.co.za))
- The 2004 OAASA (OSA) membership list
- Barrow, S. 2006. South African Organic Market Study by EPOPA, Bennekom, The Netherlands
- Participant List from the KwaZulu-Natal Organics Strategy Workshop
- Popular Media
- General Web Searches.

Information on certified producers provided by certification agencies has not been included in the database due to reasons of confidentiality. Based on the information from the database, a number of categories of stakeholders were compiled, which are tabulated below, with definitions. It should be noted that some stakeholders / roleplayers perform functions in more than one category. For the purpose of this database, stakeholders have only been recorded once.

**Table 4: Definitions of Stakeholders**

Producer	A grower or wild harvester of organic produce. Producers include growers of plants, producers of livestock and livestock products etc.
Processor	The primary activity includes any activity that may add value to the product, or where the product is mixed with other products in a manufacturing process. This includes packhouses, drying herbs (such as rooibos tea), manufacture of skin care and other cosmetic products, processed foods, such as pastas and baby foods.
Retailer	Primary activity revolves around the selling of organic produce to the end consumer
Wholesaler	Primary activity revolves around sale of bulk produce to retailers
Exporter	Primary activity is the export of produce from South Africa
Importer	Primary activity is the import of produce into South Africa
Box Schemes	A form of retail where produce is ordered on a regular basis by the end user and this produce is delivered in a "box" to their home, or a central collection point
Catering	Catering service that uses on only organically produced food
Certifier	Organisation that provides organic certification services to organic farmers
Consultants	Organisations or individuals providing professional, and often specialised, services to the industry. This can range from marketing and exports to soil analysis and pest management
Farmers Markets	Outdoor markets that usually take place on a regular day of the week where stallholders can sell agricultural produce to the end user. Some farmers markets are exclusively organic, while others sell a combination of conventional and organic produce
Input Supplier	Primary activity is the provision and sale of farm inputs, such as compost and other soil amendments, disease and pest control products. An input supplier may stock both organic and non organic inputs
Local Government	Identified stakeholders who work in local district and metro municipalities
Provincial Government	Identified Stakeholders who are employed the provincial government, such as the provincial Departments of Agriculture
Media	Internet, Radio, Television, Newspapers and Magazines (e.g. farmers weekly)
National Government / Parastatals	National Government departments, such as the National Department of Agriculture, the dti and Parastatals, such as the Perishable Products Export Control Board (PPECB) and the Industrial Development Corporation (IDC).

Organisation	Association that has been constituted specifically for the support, advancement and development of organic agriculture and is usually a non profit company
Research	Refers to institutions that are involved in research, such as Universities and the Agricultural Research Council (ARC)
Training	Organisations that provide training (whether accredited or not) related to the organics industry
Clothing	Manufactures clothing making use of organically certified fibre.
Online Shop	Sells organic produce through an internet website. Similar to a box scheme.
Unknown	It is not clear what role the individual or organisation plays with regard to the organics industry
Event	Promotional events to publicise organic products

**Table 5: The Number of Stakeholders in each Category**

SUMMARY OF CATEGORIES	
Organisation Purpose	Number
Producers	114
Processors	27
Retailers / Wholesalers	33
Exporters	5
Importers	3
Box Schemes / Farmers Markets / Online Shops / Catering / Clothing	15
Certifiers	12
Consultants	16
Input suppliers	39
Local / Provincial Government & Parastatals	25
Media	3
Organisations	10
Research	7
Training	12
Unknown	135
Event	1
<b>TOTAL</b>	<b>455</b>

### **5.3 Bodies Supporting Organic Agriculture**

There are numerous organisations providing support to organic agricultural initiatives in South Africa. Four main organisations / initiatives have been identified that appear to be key players in terms of coordinating and supporting organic agriculture at a national level. These are outlined briefly below.

#### **5.3.1 Organics South Africa**

Organics South Africa (OSA) was formed in 1994. Originally called the Organic Agricultural Association of South Africa (OAASA), it is a Section 21 Company (not-for-profit). As stated in their mission, “OSA serves to promote and enhance organic agricultural practices, to increase the awareness of sustainable farming methods and to assist in the recognition of the natural relationship between soil, plant, animal and mankind.”

OSA aims to provide networks for members to share information and work together to grow the organic sector and to contribute to the sustainable management of its natural resources.

Members include fresh produce growers, producers, processors, meat producers, wine farmers, the essential oil industry, the Cape tea producers, dairy, eggs and poultry producers, as well as processors.

OSA offers a range of services to its members including (1) advice on management aspects of organic farming, such as soil management, pest and disease management, (2) publication of business opportunities and (3) advice on certification.

(Source: [www.organicsouthafrica.co.za](http://www.organicsouthafrica.co.za)).

### **5.3.2 Organic Freedom Project**

The Organic Freedom Project (OFP) is a Section 21 Company, whose vision is “To free South Africans from chemical dependency and poverty through the promotion of commercially sustainable organic production.” The OFP development model includes emerging farmer development with the goal of identifying and implementing a project of 20 000 ha in extent, divided into geographical zones. Organic farming training will be provided, with ongoing mentorship and skills transfer. Co-sponsors of the project are Pick ‘n Pay and Anglo Coal. The executive management is guided by David Wolstenholme.

The OFP’s aim is to create 100 zones, consisting of farms or collective farming areas, within 7 years, of which almost half have already been researched and identified. All produce will be certified by internationally recognised certification bodies and produced in alignment with Fair Trade principles. OFP will coordinate production in accordance with Pick ‘n Pay’s requirements. OFP will set up information and service centres for organic farmers, and Pick ‘n Pay will provide regional organic storage facilities and utilise their current distribution centres (Source: [www.ofp.co.za](http://www.ofp.co.za)).

### **5.3.3 Biodynamic Agriculture Association of South Africa**

The Biodynamic Agriculture Association of South Africa (BDAASA) is a non-profit voluntary association of Biodynamic Farmers and people interested in Biodynamic Farming. Complementary structures include Biodynamics SA, a funding organisation holding funds in trust to fund projects that further the objectives of BDAASA and Biodynamic and Organic Certification Authority (BDOCA), a Section 21 Company that inspects and certifies organic and biodynamic farms in South Africa. BDAASA is a member of OSA, IFOAM and SACODAS ([www.bdaasa.org.za](http://www.bdaasa.org.za)). Their mission is to “Strengthen, promote and advance the practice of biodynamic agriculture in Southern Africa.”

### **5.3.4 SACODAS**

South African Council for Organic Development and Sustainability (SACODAS) is a series of initiatives that aims to bring about a paradigm shift necessary for people to enjoy a natural and meaningful life. SACODAS’ vision is for “a healthy, just and prosperous society that is a living ubuntu.” and has 5 main objectives to achieve this:

- Advising government on agro-ecology and second Economy
- Design / formulation of enabling legislation

- Contribute to a sustainable development National Strategy
- Develop an agro-ecology business plan
- Gather expertise, experience and wisdom from membership.

SACODAS aims to be the interface between Institutions, Communities and Civil Society Enterprises (ICE) and sees itself as the custodian of the organic Development and Sustainability Movement” (Source: [www.nopilife.org](http://www.nopilife.org)).

### **5.3.5 Discussion**

There appears to be limited coordination and cooperation between the various organisations / initiatives that are representing or supporting organic agriculture in South Africa. This is of concern because a unified sector is key to the development of the sector. Organics South Africa has been in existence for some time, as has BDAASA, while OFP and SACODAS are relatively new initiatives. BDAASA is primarily an information sharing network and OFP’s focus is on delivering organic production to formal markets with the aim of small and emerging farmer development. SACODAS has broader aims than just promoting organic agriculture, as stated on its website, the context of the word organic is not limited to its classical agricultural meaning, but extended to all spheres of people, planet and prosperity (PPP). OSA offers information and advice as well as networking for the growth of the organic movement in South Africa, but is hindered by a lack of funding.

Organic stakeholders must be represented by an inclusive and cooperative body to achieve the objectives of organic growth and to articulate their needs at a national level. Certainly, all of the above organisations / initiatives have a role to play and each has its own strengths, however only one organisation can be the officially recognised coordinating representative body. Whether this should be an existing organisation that is restructured to ensure inclusiveness, or whether a new organisation should be established to serve this purpose, is a decision to be made by stakeholders in consultation with government. It is unlikely that serious development will occur without a unified body supported by constituents that can lobby government effectively and secure sufficient funding to support initiatives that enhance the development of the sector.

## 6 DEMAND, SUPPLY AND DISTRIBUTION: DOMESTIC AND EXPORT

### 6.1 Overview of Current Global Production and Sales

Since the early 1960s there has been growing demand for organic products. The organic market has grown from US \$13 billion in 1998 to US \$25 billion in 2005 (Koekoek, 2006). Although organic agricultural production is increasing in many countries, organic product sales are concentrated in the developed countries of Europe and the United States (Willer & Yussefi, 2004). These regions are responsible for 97% of organic sales to consumers (Schneider *et al.*, 2005). Denmark has the highest market share in the world, followed by Sweden, Austria and Switzerland. The single biggest market is the USA, followed by Germany and Japan (Rundgren & Lustig, 2002) as is illustrated in

Table 6. A study by the International Trade Centre (ITC) indicated that the market share of organic products in most developed countries was not more than 2.5%, although market shares in Austria, Denmark and Switzerland were slightly higher. In several markets however, demand was estimated to be growing at about 15 to 20 % per annum (Vossenaar & Wynen, 2004). According to the FAO (1998), organic agriculture was practised by less than one percent of farmers in most countries prior to 1990. Adoption rates have increased significantly since then, especially in Europe. This increase in Western Europe is attributed to changes in government policy, including support in areas such as conversion, education, research, extension and marketing. In the EU, organic agriculture is supported through its agro-environmental programme that promotes sustainable agricultural practices through fiscal incentives.

**Table 6: Overview of world markets for organic foods and beverages (Source: Vossenaar *et al.*, 2004)**

Markets	Retail Sales Estimate (US\$ million) 2000	Approximate Share of total food sales (%)
Germany	2100 - 2200	2.0 - 2.5
United Kingdom	1100 - 1200	1.8 - 2.3
Italy	1000 - 1050	1.0 - 1.5
France	800 - 850	1.0 - 1.5
Switzerland	450 - 475	2.5 - 3.0
Denmark	350 - 375	2.5 - 3.0
Austria	200 - 225	2.5 - 3.0
Netherlands	275 - 325	1.0 - 1.5
Sweden	175 - 225	1.5 - 2.0
Belgium	100 - 125	1.0 - 1.5
Other Europe*	400 - 600	-
Europe Total	6950 - 7650	-
United States	7500 - 8000	2.0 - 2.5
Canada	500	1.5 - 2.0
Japan	275 - 325	<0.5
Oceania	-	<0.5
<b>Total</b>	<b>15225 - 16475</b>	-

Organic agriculture in most developing countries is focused on the export market, particularly the EU (Rundgren & Lustig, 2002). Domestic markets in Africa are exceptionally limited but are developing in Egypt and South Africa (Willer & Youssefi, 2004). Emerging markets in Asia include China, Malaysia, Philippines, Singapore and Thailand, which are reported to be maintaining growth trends (Youssefi, 2004). Local markets in Latin America are growing however the export market remains the main outlet for the majority of organic products. Major challenges facing the organic sectors of developing countries is that products need to compete in countries where there are stringent quality requirements while simultaneously dealing with production and export constraints (Vossenaar & Wynen, 2004). This is an important factor to be borne in mind for governments and development agencies seeking means for supporting and promoting organic agriculture in developing countries.

The majority of Australian organic products are also exported, mainly to Japan and the United Kingdom (Australian Government Department of Agriculture Fisheries and Forestry, 2004). Recently, Switzerland, USA, Singapore, and Hong Kong have also emerged as promising future export markets for Australian produce (McCoy and Parlevliet, 2001).

Price premiums for organic products, related to supply not currently meeting demand, can be significant. Such premiums provide an important incentive for many farmers to shift to organic production. Increased production may result in a drop in premiums however increased demand should counteract this. Price premiums should compensate for lower net returns to farming due to lower yields and high certification costs. In many developed countries, marketing of organic products is often concentrated in a few companies. This market structure increases the risk of these companies appropriating and retaining a large proportion of price premiums at retail level (Vossenaar & Wynen, 2004).

### **6.1.1 Drivers of Demand: Consumer Perceptions**

Consumers are becoming increasingly aware of health, social and environmental issues surrounding the food they purchase, and a number of factors may influence the purchase of organic foods. Du Toit and Crafford (2003) reviewed international trends and surveyed consumers in Cape Town and found that on the whole, perceptions of Cape Town organic consumers were similar to those internationally.

- Health - more people are focusing on health and well-being and food has become more integrated with health aspects and consumers are more informed about nutrition There appears to be a widespread belief that organically produced crops and animal products have a higher nutritional value and healthier than conventionally produced foods.
- Food Safety - concerns have increased significantly over the past decade, with consumers becoming increasingly aware of the possible health hazards associated with processed food and food produced by intensive farming methods. Consumers also ask more questions and express greater concerns about food quality and safety than in past decades.
- Environmental Concerns - consumers who care about the environment tend to have a greater regard for organic farming Surveys in the United States respondents rated

environmental concerns as being equally important as health reasons for consuming organically produced food and that is. It is also believed that organic foods have higher ethical values and respondents are turning to organically produced food because they are worried about the intensive rearing of animals and to support local farmers.

Vermeulen and Bienabe (2007) found that health was a major motivation of consumers in South Africa and abroad and notes that in Britain, environmental concerns are mentioned as the main justification for purchasing organic food.

**Table 7: Drivers of consumer choice of organic (ACNielsen, 2005 cited by Vermeulen & Bienabe, 2007)**

Purchase reason:	% of respondents in country / region:		
	South Africa	Europe	North America
Healthy for me	53	41	57
Healthy for my children	16	1	19
Better for the environment	17	19	11
Kinder to animals	8	12	2

Source: Compiled from data reported in ACNielsen (2005b)

Consumers are thus becoming more concerned about the food they eat, not only in terms of intrinsic factors (e.g. chemical residues, environmental contamination and nutritional content) that affect health, but also with regard to broader environmental issues such as the impact on the environment (biodiversity and climate change) and the welfare of animals.

### **6.1.2 Availability of Organic Food**

Of importance to the retailer is where and how often consumers purchase organically grown food. Retailers would also take the price premium that consumers are willing to pay and the specific food products that they would like to purchase into account when formulating marketing strategies. Du Toit & Crafford (2003) cited studies which showed that while a high percentage of the respondents indicated that they had a preference for organically produced food, the proportion of consumers who purchase organically produced food on a regular basis is low. Store choice was also found to be a critical variable in explaining purchasing of organically grown food in the United States. In the 1990s there was a move of organically produced food products from speciality outlets into mainstream retail venues, but most organically grown food products remained available in speciality stores and markets. This has changed in recent years and the the main purchasing criteria affecting organically grown food is availability; if consumers have to spend extra time and effort locating organically produced food, the sales volume can decrease, having a negative effect on price.

### **6.1.3 Price Difference**

The major impediment to the continued growth in demand for organically produced food is the existing price difference. Du Toit & Crafford (2003) cite a number of studies (Magnusson *et al.*, 2001; Hack, 2003; Wandel & Bugge, 1997; Huang, 1996; Wier and Calverly, 2002 &

Ott, 1990) that find that many consumers believe they are paying too much for organically produced food. Also, people were more likely to purchase organic food if it was readily available and cost the same as non-organic food. Consumption increases sharply when price premiums are below 20% and consumer resistance tends to increase as premiums for organically produced food increase. Nevertheless, habitual buyers of organically produced food are willing to pay higher premiums than consumers who buy less frequently. Studies of willingness to pay showed that while consumers indicated in surveys that they were willing to pay more, in reality, this does not translate into actual payment behaviour.

The most common purchases of organically produced food were fruit and vegetables, followed by poultry and dairy products. Even though fruits and vegetables already represent a major part of the market, it was found that there is still the possibility for further growth, especially for fruit, prepared vegetables and salads. Finally, it was noted that the greatest potential for future growth in the European market is expected to be for convenience food and frozen products, followed by sweets and snacks as well as meat products.

#### **6.1.4 Income and Purchases of Organic Produce**

Thompson (2000) concluded that the income-purchase relationship was not a simple positive correlation as both low and high income groups purchase organically produced food while middle income consumers seemed less likely to do so. However, a primary factor in purchase of organic food is the (largely female) consumers' level of personal disposable income. No relationship could be found between income and any of the other variables.

Hay (1989), reporting on a Canadian study, indicated that a premium of no greater than 25% was generally the most consumers were willing to pay. In summarising the results from various studies, Magnusson *et al.* (2001) stated that consumers seemed willing to pay about 5% - 10% more for organically produced food. When cross-tabulating the price premium respondents are willing to pay with age groups, home language and frequency of purchase, a significant difference on the 1% level was found. In the age group 21 to 35 years 84% of the respondents were prepared to pay 10% - 30% more for organically produced food. However, in the age groups 36 to 45, 46 to 55 and 56 to 65 years, the majority of respondents were only prepared to pay between 10% - 20% more for organically produced food.

With regard to organically produced food product ranges, most respondents would (depending on availability) purchase fruit and vegetables, then dairy products, grains and grain products, and finally poultry and meat.

#### **6.1.5 Age, Education and Organic Purchases**

The typical profile of consumers indicating an interest in organic foods in Cape Town was found to be as follows: older (more than 36 years of age), English speaking<sup>18</sup> and with a

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<sup>18</sup> Home language was included as a variable in this South African study as it traditionally refers to cultural differences, which could indicate differences in eating habits

higher level of education. Findings regarding gender and income were inconclusive in most studies. The majority of consumers believed that organically produced food contained no artificial additives, had fewer pesticide residues, contained more nutrients, were healthier and had more flavour than conventional foods. Consumers also believe that the organically produced food bought from specific retail chains had fewer blemishes when compared to the produce from farm stalls or markets (Du Toit & Crafford, 2003).

On analysing consumer behaviour towards organic products in international countries, Willer and Yussefi (2004) found that a typical consumer of organic products has the following attributes:

- Location – lives in urban areas, usually in a big city
- Buyer Behaviour – discerning towards food and drink purchases, considering factors like quality, provenance and production methods
- Demographics – typically well-educated and belonging to middle-high social classes
- Purchasing Power – in a medium to high-income household with relatively high purchasing power.

Barrow (2006) indicated that organic consumers in South Africa could also be affected by consumer education and awareness and would tend to be of the younger age profile. In addition, he noted that consumers with health conditions and parents of younger children who were more aware of the health risks associated with non-organic and refined foods more actively sought out organic produce. Demand for organic produce can further be motivated by idealistic reasons such as concerns for animal welfare and the environment or because organic consumers consider organic products to be healthier, tastier and of higher quality (van Zyl, 2000). Persuasive messages emphasizing these aspects as well as the empowerment of previously disadvantaged groups through organic entrepreneurial enterprises could be used in the marketing and promotion of organically produced food in South Africa.

## **6.2 Local Markets for Organic Produce**

Willer and Yussefi indicated as far back as 2002 that there were growing local markets in South Africa, indicating that large chains such as Woolworths, Pick 'n Pay, Hyperama and Shoprite Checkers were planning to introduce extensive organic product ranges. Since then, local consumption of certified produce has been well promoted by major retail chain stores. The main centres of consumption are Gauteng, Cape Town and Durban, reinforcing the buyer profile outlined above (Barrow, 2006).



Woolworths supplies an extensive range of organic products, that all carry the Woolworths organic label. These include fruit, vegetables, dried fruit, fruit juices, dairy and specialist products such as coffee, pasta and salad dressings as well as clothing that contains a percentage of organic cotton. Woolworths adhere to International Organic Standards, and buy from organic farmers who are regularly audited and certified by independent bodies 'Organic in conversion' products are also available. Other than organic

products, Woolworths also supplies a range of more sustainable, 'healthier' product lines ([www.woolworths.co.za](http://www.woolworths.co.za)). These include:

- Free range eggs
- No animal by-products and antibiotics for chickens
- More free range choices on the way
- Ayrshire products guaranteed free from added hormones
- Yoghurts free from added preservatives or gelatine
- No unnecessary additives in food
- Putting organic products on our shelves
- Badger friendly honey
- Code of practice to ensure fair treatment of animals
- Fresh produce is not irradiated
- More natural controls and fewer pesticides.

Woolworths aims to support local farmers. However due to a limited local supply of organic produce, a number of products are imported from Zambia, Zimbabwe and Kenya and other parts of the world. Woolworths are also involved in social development and 'EduPlant' is the flagship social investment programme of the Woolworths Trust. This inspiring programme, co-ordinated by Food and Trees For Africa, teaches South African children and educators to produce organically-grown food by creating Permaculture food gardens at schools.

Other local market outlets identified by Barrow included farmers' markets, box schemes and health shops who sell organically grown products that may or may not be certified. In addition to this, there are at least four websites in South Africa where organic produce can be ordered online:

- Best of the Midlands ([www.bestofthemidlands.co.za](http://www.bestofthemidlands.co.za))
- Ethical Coop ([www.ethical.org.za](http://www.ethical.org.za))
- Organics Online ([www.organicsonline.co.za](http://www.organicsonline.co.za))
- Earthmother Organics ([www.earthmother.co.za](http://www.earthmother.co.za)).

Unlike their foreign counterparts, suppliers to local markets do not appear to enjoy high premiums for organic produce in spite of the higher premiums consumers pay at retail outlets. It is this lack of price premiums that is blamed for the failure of the certified meat industry in South Africa.

**Table 8: Calculated price premiums for organic food sold at Woolworths, February 2007 (Vermeulen & Bienabe, 2007)**

<b>Food type</b>	<b>Price premium</b>
Vegetables	18%*
Yoghurt	26%
Greek feta cheese	31%
Mixed processed vegetables	44%
Breakfast cereals / bars	47%
Bananas	72%
Salad dressing / mayonnaise	110%
Tea / coffee	112%

Producers aiming to access local markets should bear the following in mind:

- They should engage in sound marketing strategies for produce and when marketing through agents / middlemen do so with due care, as extending the value chain dilutes or even negates premiums.
- Retail supermarket chains do not necessarily provide organic producers with premiums for organic produce.
- Retail chains require volume and consistency of product. This is achieved through retail chains accessing produce through large producer/packers and independent pack houses to pack the produce that is sold through outlets. Smaller producers may benefit from teaming up or supplying into independent pack houses to access retail markets.
- Farmers markets and box schemes are avenues through which certified or non certified organically produced goods may be directly sold and is a platform for developing trust between producers and consumers through personal relationships.

There is opportunity for growth in areas such as the production of organic meat, herbs and spices, milk and juice, and processed products such as baby food. Organic farmers across the world have identified baby food as their biggest growth area. Often, organic fruit and vegetables that do not meet aesthetic standards are thrown away even though the nutritional content and taste has not been affected. Instead of wasting these fruits and vegetables, they can be used for processing into baby food as well as for juices, yoghurt, and canning.

### **6.2.1 Export Markets for South African Organic Produce**

Most of the organic produce grown in South Africa is exported while local sales by certified producers are estimated at around R250 million per annum (see Section 7.1.12). In the Western Cape, two of the major organic export products are grapes and apples, while organic apricots, peaches and pears are produced only for local consumption. Rooibos and Honeybush tea are also produced organically and are exported to the Far East. Rooibos Limited, a primary producer of Rooibos tea locally and internationally, produces 15% of its tea organically (Wesgro, 2006).

Barrow (2006) indicates that due to well developed channels and infrastructure for the general export of agricultural produce, organic produce has been successfully exported for some time. Most of the organic goods exported from South Africa are destined for the EU – the major export destination. The second largest market is the USA and to a lesser extent Japan and Switzerland. In addition, ad hoc exports are made to Australia and New Zealand. Direct discussions with some producers have indicated that there is a growing market in Dubai for agricultural produce in general, including organically certified.

Industry experts agree that processed organic food will be a key driver for future growth. In Germany, 75% of baby foods on supermarket shelves are organic, and similar figures are recorded in England. Another potential growth area is the production of organic essential oils to be supplied to overseas markets as well as to the local market. South Africa has a growing cosmetic industry, and this factor, coupled with the fact that now, more than ever, there is a strong demand for environmentally friendly products, holds an enormous potential for the essential oils industry to start producing organic products.

Untapped export markets include the Asian markets such as Singapore, China and Taiwan, the South American markets of Brazil and Argentina, and the USA. The latter is a significant market as its consumers are generally environmentally conscious and there has been a drive in recent years to promote healthy eating, due to the high levels of obesity among US citizens. The USA has also embarked on a marketing campaign to increase the profile and awareness of organic products. This has resulted in organic products becoming more visible in mainstream supermarkets.

## **6.3 Supply and Potential Supply of Organic Products**

### **6.3.1 Global Overview**

The global areas under organic production are presented below in Table 9.

**Table 9: Organic land area as per the SOEL-FiBL Survey, 2007**

Continent	Organic land area (hectares)	Share of total agricultural area	Organic farms
Africa	890'504	0.11%	124'805
Asia	2'893'572	0.21%	129'927
Europe	6'920'462	1.38%	187'697
Latin America	5'809'320	0.93%	176'710
North America	2'199'225	0.56%	12'063
Oceania	11'845'100	2.59%	2'689
Total	30'558'183	0.74%	633'891

On a global level, permanent crops account for nine percent of the organic agricultural land for which information was available (1.4 million hectares). Most of this land area is in Europe, followed by Latin America and Africa. The most important crops are olives (almost a quarter of the permanent cropland) followed by coffee, fruits and nuts. On a global level, permanent pastures/grassland (19.8 million hectares) account for almost two thirds of the world's

organic land. More than half of this grassland is in Australia. Furthermore, large areas of permanent pastures are found in Latin America and Europe. (SOEL-FIBL survey 2007).

**As shown in**

Table 9, the percentage of total agricultural land which is currently under organic production is very small, viz a total of 0.74%. From the point of view of available land for conversion, organic production could be dramatically increased.

The producing and importing countries of a range of organic product groups are illustrated in Table 10 below.

**Table 10: Producing and importing countries of a range of product groups<sup>19</sup>**

Product Group	Countries producing	Countries importing
Fresh vegetables	Costa Rica, Philippines, Egypt, Kenya, Madagascar, Malawi, Morocco, <b>South Africa</b> , Tunisia, Uganda, Zambia, United States, Canada, Austria, Netherlands, Argentina, Spain, France, Italy, Germany, New Zealand, Switzerland, United Kingdom, United States, Australia	Japan, Taiwan, Belgium, Denmark, France, Germany, Italy, Sweden, Switzerland, United Kingdom, United States
Processed Vegetables (Pickles, gherkins)	India	Japan
Bananas	Costa Rica, Cameroon, Ghana, Senegal, Ecuador, Peru, Columbia	Belgium, Denmark, France, Germany, Italy, Japan, Sweden, Switzerland
Citrus Fruits, Grapes	Egypt, Morocco, South Africa, Brazil, Spain, Italy, Israel; France, Argentina, Chile	Japan, Taiwan, Belgium, Denmark, France, Germany, Italy, Sweden, Switzerland, United States
Tropical fruit (fresh)	Costa Rica, Cameroon, Egypt, Ghana, Madagascar, Senegal, <b>South Africa</b> , Tanzania, Uganda; Mexico	Canada, United States, Germany, Japan, Netherlands
Deciduous fruit (apples,	Netherlands, Argentina, New Zealand, France, Italy, USA, Argentina, Switzerland	Sweden, Austria, Belgium, Denmark, France, Germany, Italy, Netherlands,

<sup>19</sup> Information used in the compilation of this table was obtained from the following sources:

Trading opportunities for organic food products from developing countries  
Yussefi 2004

Production and export of organic fruit and vegetables in Asia

Organic Trade Association [http://www.ota.com/organic/mt/export\\_chapter4.html](http://www.ota.com/organic/mt/export_chapter4.html)

Department of Trade and Industry – Philippines <http://www.dti.gov.ph/contentment/9/16/25/136.jsp#4-1>

Anon, 2001 - Opportunities for Developing Countries in the Production and Export of Organic Horticultural Products  
<http://www.fao.org/DOCREP/004/Y1669E/Y1669E00.HTM>

Demand for Organic Products from East Africa

Market Developments for Organic Meat and Dairy Products: Implications for Developing Countries  
[http://www.fao.org/DOCREP/MEETING/004/Y6976E.HTM#P62\\_20356](http://www.fao.org/DOCREP/MEETING/004/Y6976E.HTM#P62_20356)

Product Group	Countries producing	Countries importing
pears)		Switzerland, United States
Dried & Processed fruits	Algeria, Burkina Faso, Egypt, Madagascar, Morocco, Tanzania, Tunisia, Uganda, India, Philippines	Japan, Italy, United States
Soya beans	Brazil, Philippines	Germany, Japan
Coffee	Costa Rica, India, Cameroon, Ethiopia, Kenya, Madagascar, Tanzania, Uganda, Sri Lanka, Brazil, Columbia, Vietnam, Germany, Guatemala, Indonesia, Peru, Honduras and Mexico	United States, Germany, Japan, Italy, Belgium, France, Spain, Netherlands
Tea	India, Tanzania, Uganda, China, Sri Lanka, Kenya, Malawi, Indonesia	UK, United States, Russia, Pakistan, Japan, Germany, France, Canada, Morocco, Australia, Egypt, Netherlands
Cocoa	Costa Rica, Cameroon, Ghana, Madagascar, Tanzania, Sri Lanka, Uganda, Belize, Bolivia, the Dominican Republic, Mexico, Nicaragua, Panama, Peru, Fiji, and Vanuatu	Germany, Netherlands, Switzerland, France, Italy, Spain, United Kingdom, Belgium
Sugar	Costa Rica, Cuba, Brazil, Philippines, Madagascar, Mauritius, Australia	Europe, United States, Japan
Cotton	Benin, Egypt, Senegal, Tanzania, Uganda, India, United States, Uzbekistan, Australia, Greece, Mali, Cote d'Ivoire, Benin, Burkino Faso, Cameroon	China, Indonesia, Mexico, Thailand, Korea
Rice	India, Philippines, Korea	
Coconut Oil	Mozambique, India	
Palm oil	Ghana, Madagascar, Tanzania	
Olive oil	Tunisia	Europe, Japan, Taiwan
Ground Nuts (Peanuts)	Zambia	Italy, United States, Germany, UK, France and the Netherlands
Tree Nuts (Cashews)	Kenya, Malawi, Morocco, Tanzania, India, France, Vietnam, Brazil, Nigeria, Cote d'Ivoire, Guinea-Bissau and Mozambique	Italy, United States, Germany, UK, France and the Netherlands
Sesame	Burkina Faso, Uganda, Zambia, Zimbabwe	
Herbs (culinary)	Philippines, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Morocco, Mozambique, South Africa, Tunisia, Zambia, Zimbabwe, India, Bulgaria, Bolivia, Brazil, Paraguay, Vietnam, Nicaragua, Argentina	
Spices	Costa Rica, India, Philippines, Cameroon, Egypt, Ethiopia, Madagascar, Malawi, Mozambique, <b>South</b>	United States, Germany, United Kingdom, France, the

Product Group	Countries producing	Countries importing
(culinary)	<b>Africa</b> , Tanzania, Uganda, Zimbabwe, India, Argentina, Sri Lanka, Paraguay, Mexico, Vietnam, Cambodia, Laos, Chile, Guatemala, Hungary	Netherlands Japan and Canada
Medicinal /Therapeutic Herbs and Spices	Egypt, Morocco, Namibia, Tunisia, Zambia, Germany; Bosnia, Brazil, India, Chile	United States, Germany, United Kingdom, France, the Netherlands Japan and Canada
Medicinal plants	Costa Rica	

Some additional interesting information on some of the countries in the above table is presented below.

In **Chile**, organic farm land in 2004 amounted to 22 000 hectares which represents less than half a percent of total farm land. Main crops are grapes for winemaking and fruits, olives and berries. Exports started in the nineties and reached 12 million USD in 2004 with the USA as the main export market followed by the European Union. The domestic market is not well developed and is concentrated to the capital, Santiago. Organic products are sold in specialised shops, in supermarkets and by direct sales.

Probably the developing country with the highest proportion of organic farming with 2.4 percent land area certified, **Costa Rica** has a well developed organic sector. As in most other countries, small farmers and NGOs were the first to become involved in organic agriculture. Local certification bodies and academics have also supported the development. In 2004 there were 3 500 farmers cultivating 10 800 hectares organically. Most certified organic production is destined for the export market, which is estimated to be worth 10 million USD. Main export crops include coffee, banana, cocoa, orange juice, blackberries, pineapple, cane sugar, aloe and other medicinal plants. On the domestic market there is now a supply of most products (certified or non-certified). Domestic sales are estimated to be approximately 1.5 USD.

In **Denmark** organic farming dates back more than 50 years. During the 1990s producer levels increased from 500 farmers to 3000 farmers cultivating 150 000 hectares (almost 6% of farmland). The last five years there has shown slower development so that in 2004, 3166 farmer cultivated 160 000 hectares. The Danish organic market is perhaps the most developed in the world with a market share of 5 percent. The domestic market has been most important, but exports reached 246 million DKR in 2003. Sales in supermarkets started in 1982 and they are now the main outlet for organic products. There are also substantial sales in a single, large box-scheme.

Organic farming in **Egypt** started in 1976 on the SEKEM farm to produce organic herbs and essential oils for exports. In the late eighties interest grew considerably. Today there are 25 000 hectares of organic farm land in Egypt, representing 0.8 percent of total farm land. Most

organic products are exported, in total more than 15 000 Mt in 2004/2005. Approximately 40 percent is sold on the local market.

Organic farming in **Malaysia** has been promoted by NGOs since mid 1990. The first domestic production was sold through a subscription scheme that reached more than 500 families. Today sales channels include specialised shops and supermarket chains. The turnover of organic products is estimated to be RM 50 million in 2004 and the production area is just 900 hectares, mainly in fruit and vegetables. A large proportion of organic produce is imported, and there is limited export from Singapore. The market is trust-based and most domestic producers are not certified.

In **Thailand** organic farming has its roots in traditional farming. There are almost 14 000 hectares under organic management representing less than 0,1% of the total agricultural land and 2 500 farms are certified. Rice is the dominating crop followed by fruits and vegetables. Most of the organic produce (especially rice) is exported, mainly to Europe. Most of the vegetables are sold locally. In 2004 many organic brands were available in small shops and in mainstream supermarkets, particularly in Bangkok. A number of products are imported. The domestic market for certified organic products is estimated to be just below US \$ 1 million, whereas the non-certified and health food market is estimated to be US \$ 75 million.

The organic industry in **Asia** has evolved at varying rates and is currently at different stages of development. Japan has a mature, well-organised industry, followed by Korea which is still maturing. China is also viewed as approaching maturity while India and Thailand are seen as emerging. The Philippines, Sri Lanka and Malaysia are still at an infant stage with the movement led largely by civil society and the private sector which draws some support from government (Briones, Undated).

Organic agriculture and associated industries began in earnest in **China** in 1990 when Zhejiang Provincial Tea Import & Export Corporation developed an organic green tea for export to Europe. This was followed four years later by the founding of the Organic Food Development Centre (OFDC) of the State Environmental Protection Administration (SEPA). OFDC was tasked with national certification and labelling of organic products, the provision of training and advice to farmers and applied research and promotion of organic products in China. Currently, 17 OFDC branches have been approved in various provinces and municipalities within the country (Biao & Xiaorong, 2003). In 1999, OFDC separated into two branches. The OFDC continues to provide certification and inspection services, while a new organisation, the Nanjing Global Organic Food Research and Consulting Centre (OFRC) was established to provide technology, research, consulting and information services. OFRC is China's first formal and registered centre for organic consulting and extension work. Since then, much organic farming research has been undertaken, and consultation institutions have established as the need arose. This has all contributed significantly to organic farming development in China (Biao & Xiaorong, 2003).

Through mergers and acquisitions and equity sharing, the major conventional food companies are driving a process of consolidation in the organic market. Heinz for example, which ranked 17<sup>th</sup> in terms of global food sales in 2002 has a well established organic brand.

Others include Pepsi (ranked 4th), Tyson, Unilever (ranked 5th), General Mills, Phillip Morris/Kraft (ranked 2nd), Kellogg's, Campbell's Soups Co. and others.

### **6.3.2 Organic Production in Africa**

In Africa, almost 900 000 hectares are now managed and certified organic. With a few exceptions (notably Egypt and South Africa), the African market for organic produce is very small. This is due both to low-income levels and to an undeveloped infrastructure for inspection and certification. Most certified organic production in Africa is geared towards export markets, with the large majority being exported to the EU, Africa's largest market for agricultural produce.

There is a strong NGO interest in organic farming, because it is about making farming more sustainable and improving food security. There is also commercial interest in organics as it represents an interesting niche market, with a significant earning potential. The interest from governments, however, lags behind. At present Tunisia is the only African country with its own organic (EU compatible) standards, certification and inspection system. Egypt and South Africa have both made significant progress in this direction, and Kenya, Uganda and Tanzania are soon to follow. Those countries are well on the way to developing standards, and private certification organisations have been established there. Morocco, Ghana and Zambia have made some progress in developing their own standards (Willer & Yussefi, 2006). Africa is more dependent on agriculture than any other continent. Parrott and Elzakker (2003) found in a study of 21 African countries (in South-East, West and North Africa) that in most cases, 75% or more of the population were reliant on subsistence farming.

In terms of area under production, Africa accounts for 1% of the total certified organic land. It is interesting to note that in terms of numbers of certified farms, Africa accounts for 10% of all certified farms which indicates that farm sizes in Africa are generally smaller than in other parts of the world. The majority of certified organic land occurs in the South and East, with more than 50 % occurring in Uganda and 20% in South Africa. Most certified land in Africa is geared towards export markets, specifically EU markets. South Africa and Egypt do have some domestic interest in organic produce (Parrott and Elzakker, 2003). Willer and Yussefi (2004) found that, apart from Egypt and South Africa, who are developing local markets, certified production, is geared towards export markets. Statistics indicate that certified organic farming is underdeveloped, even compared with other "low income" continents. They also pointed out that there is a large agro ecological movement which, while not certified is increasingly adopting organic techniques. Generally such initiatives are aimed at:

- Maintaining and enhancing soil fertility
- Combating desertification
- Promoting tree planting and agro forestry
- Develop low and no input means of combating pests
- Promoting the use of local seed varieties
- Maintaining biodiversity

- Supporting the most vulnerable social groups (particularly women)
- Combating global warming.

In 2002, the annual study of trends and statistics (Willer & Yussefi, 2002; Willer & Yussefi, 2003) provided the following reasons for a growing interest in organic agriculture in Africa:

- Disappointment with “green revolution” technologies, including the resource degradation it causes
- Organic farming can build on indigenous knowledge
- The growing environmental movement has raised awareness of Africa and organic farming is practiced to combat desertification
- The export market for organic products with premium prices is an opportunity of farmers to increase their incomes.

Parrott and Elzakker (2003) found the following major constraints to agricultural production in Africa:

- Low levels of agricultural inputs (the average application rate of fertiliser use was found to be 10/kg ha)
- Many of the countries are water scarce (less than 1 000 cubic metres per person per year) or water stressed (up to 1 699 cubic metres per person per year)
- Low agricultural productivity, in many cases not sufficient to guarantee all round food security.

Parrott and Elzakker further suggest that there is a tendency to promote the use of Genetically Modified crops in Africa, and offered four main reasons for organic production systems being marginalised:

- Mindset of most agronomists and agricultural economists: These tend to remain focussed on production and maximising yields of single crops without taking into account ecological sustainability and social appropriateness. Further, this way of thinking does not consider the political economic context in developed countries where dominant industrial mono-cultural approaches are highly subsidised. This is compounded by the general failure of the organic movement to provide documented and peer reviewed evidence of the achievements (economic, social, and environmental) of organic agriculture. Although the mindset of agronomists and economists may be slow to change, there is an increasing body of credible evidence that there are a range of benefits associated with organic agricultural practices.
- The social and economic contexts in which organic farming has advanced in the developed countries: Organic farming has relied on premium markets and, importantly, government subsidies that support more environmentally friendly and healthier production systems. There is also the perception that the cost to farmers of changing to organic systems is a loss in income due to lower yields. This misconception is carried further by assuming that lower yields would apply in different circumstances (such as in Africa) where yields are already considered marginal in many cases. It then follows from this assumption that, with neither the available subsidies nor universal access to

premium markets, that sacrificing yields to promote sustainability is “morally abhorrent”, whereas it is likely that the low yields experienced could be a direct result of the failure of conventional agricultural systems.

- Organic farming is widely perceived as simply “farming without chemicals”, resulting in misrepresentation: Organic farming systems involve more than just rejecting the use of chemical inputs – it requires a complete change in the production system. For example, traditional slash and burn may be considered organic in that no chemicals are used, but is socially, environmentally and economically unsustainable and thus does not meet the criteria for organic farming. These systems are commonly misrepresented in research promoting industrial cropping systems as examples of the failure of organic farming.
- The global trading environment and the demand for organic produce in the North: This has led entrepreneurs and development agencies to identify organic production in the South as an opportunity to supply lucrative niche markets. Many national governments see organic farming primarily as a mechanism for generating foreign exchange. This has resulted in an excessive focus on the role of formal certified organic production supplying the needs of the wealthy North – a form of “green colonialism” and raises the question of whether the purpose of organic farming is to “supply the global trading regime” or to improve food security. Examples of countries such as Tanzania, Kenya and Zimbabwe are cited where substantial organic export industries (often with foreign owned or managed holdings) exist adjacent to high levels of poverty and malnutrition.

In addition to this, Parrott and Elzakker (2003) found that one of the most notable features of the organic sector in Africa was the lack of contact between practitioners (commercial farmers, NGOs and donor programmes) and the research community (national agricultural research institutes, universities and others). This lack of contact presents a number of constraints to the development of organic agriculture in Africa:

- It limits opportunities for independent trials and research for organics in Africa
- It limits dissemination of credible information (information is instead shared through direct communication or through so-called “grey” reports, compiled by NGOs and other development organisations)
- It limits the profile of organic research in research institutions.

For Africa (almost 900 000 hectares under organic production), information covering about half of the organic agricultural land was available. Most of this land is used for permanent crops. The main permanent crops are cash crops like olives (North Africa), followed by (tropical) fruits, nuts and coffee.

### **South Africa as a supplier of organic produce**

South Africa has limited highly productive agricultural land. According to Statistics South Africa (2002), agriculture contributes 4.7 % to GDP, accounts for 7 % of total exports and employs 13.3 % of the population. South Africa is self sufficient and exports many foodstuffs, although it is a water scarce country. The formal agricultural sector generated a gross farming income of approximately R53 billion. 40.1% of this figure can be attributed to the commercial farming in animals and animal products. Field crops and horticultural products

were the second and third largest sources of income in the sector, with contributions of 31, 1% and 26,8% respectively. Water scarcity is a major constraint to production in many parts.

According to Grolink (2002), South Africa has, contrary to other Sub-Saharan countries, a substantial domestic market for organic products. This indicates that the potential for organic farming in South Africa is not only based on access to export markets in Europe and the USA, but also on local demand.

Production volumes of certain fruit crops grown in the Western Cape for domestic and export markets are presented in Table 11 and Table 12 respectively.

**Table 11: Production volumes of selected fruit species for local consumption in South Africa (Wesgro, 2006)**

Organic produce	Production for local consumption (tons)
Apricots	70 - 80
Peaches	20 - 30
Pears	40 - 50
Grapes	200 - 250
Apples	600 - 700

**Table 12: Production volumes of certain fruit species for export (Wesgro, 2006)**

Organic produce	Production for exports (tons)
Grapes	4400 - 4500
Apples	300 - 400

These indicate that a range of organic fruit is produced for local markets. From the table above, fruit production for export appears to focus on apples and grapes, this is not in fact the case as avocados and citrus are also produced. They are in fact exported in large volumes than apples and grapes however no information could be obtained on the actual export volumes. South Africa is already a player on the world organics market. Besides the organic fruit mentioned above, South African exports also include fresh vegetables, culinary herbs and spices. In addition, South Africa exports organic Rooibos and Honeybush tea.

### **6.3.3 Organic Commodities Currently Produced in South Africa**

Barrow (2006) found that the following were the major organic agricultural commodities in South Africa.

#### **Plant Products**

- Vegetables were considered to be the most common organic commodity, with a range of leafy vegetables, legumes, brassicas, squashes and root crops. Most western vegetables were produced locally, as well as vegetables from the east. High value vegetables were typically exported to Europe.
- Herbs, including culinary medicinal and aromatic are grown organically in South Africa. The range of plants grown is considered to be very wide. Indigenous cultivated plants are included in this category.
- Grain and oil Seeds were found to be less common, but included maize, soya, wheat, sunflowers, triticale and oats. These were for human consumption or as feed for organic livestock.
- Deciduous fruit consisted mainly of apples which are exported to Europe.
- Citrus included oranges, lemons and clementines, the bulk of which are exported and represent a significant organic export market.
- Berries included strawberries for local markets and blueberries for export markets.
- Grapes are primarily used to produce organic wine for local and export markets, while table grapes are sold locally.
- Vine fruit – passion fruit is available on the local market.
- Sub-tropical fruit consist primarily of avocados and constitute a significant export market. Guavas are grown for pulping and export and bananas have recently become available on the domestic market.
- Stone fruit – one group of farmers has received certification for olives.
- Wild harvested crops consist mainly of the Rooibos industry (although some Rooibos is cultivated). Honeybush, Buchu and rosehips (harvested mainly in Lesotho) are the three other major wild harvested crops, with some medicinal herbs being certified.
- Cultivated Pastures and fodder are usually grown by dairy and poultry farmers to feed their own certified stock.

#### **Livestock Products**

Limited livestock derived organic products are produced, but include:

- Beef and Mutton – there were a number of certified farmers from 2002-2004, however due to various difficulties, this industry no longer appears to exist
- Poultry - there do not appear to be any certified poultry meat producers in South Africa
- Goats - there do not appear to be any certified goat meat producers in South Africa
- Pork - there do not appear to be any certified pork meat producers in South Africa

- Dairy Products – Some dairy products are available
- Eggs – one certified egg producer was identified.

### **Processed Products**

A range of processed organic products are available in South Africa, namely:

- Herbs are sold for processing or packaging and the final product may or may not be certified depending on the processor (Medicinal herbs are usually not processed into certified products due to low volumes or their combination with non certified ingredients)
- Deciduous fruit in the form of organic apple juice is available in the domestic market
- Subtropical fruit – one guava puree producer identified
- Stone fruit – olives are pickled or processed into a number of different products
- Grapes – red and white wine
- Wild harvested crops such as Honeybush and Rooibos are fermented, dried and packed as teas
- Other crops are cultivated, such as indigenous pelargonium, Rooibos and Buchu.

### **Permissible agricultural inputs**

The variety of certified or accepted organic inputs available to farmers has increased dramatically. The main inputs available are<sup>20</sup>:

- Composted manures
- Bone meal fertilisers
- Microbial products
- Plant oil based plant protection products
- Products derived from the ocean, such as kelp extracts
- Traditionally conventional inputs that are permissible in organic agriculture, such as mined minerals, sulphur and copper products.

## ***6.4 Distribution Channels for Organic Produce***

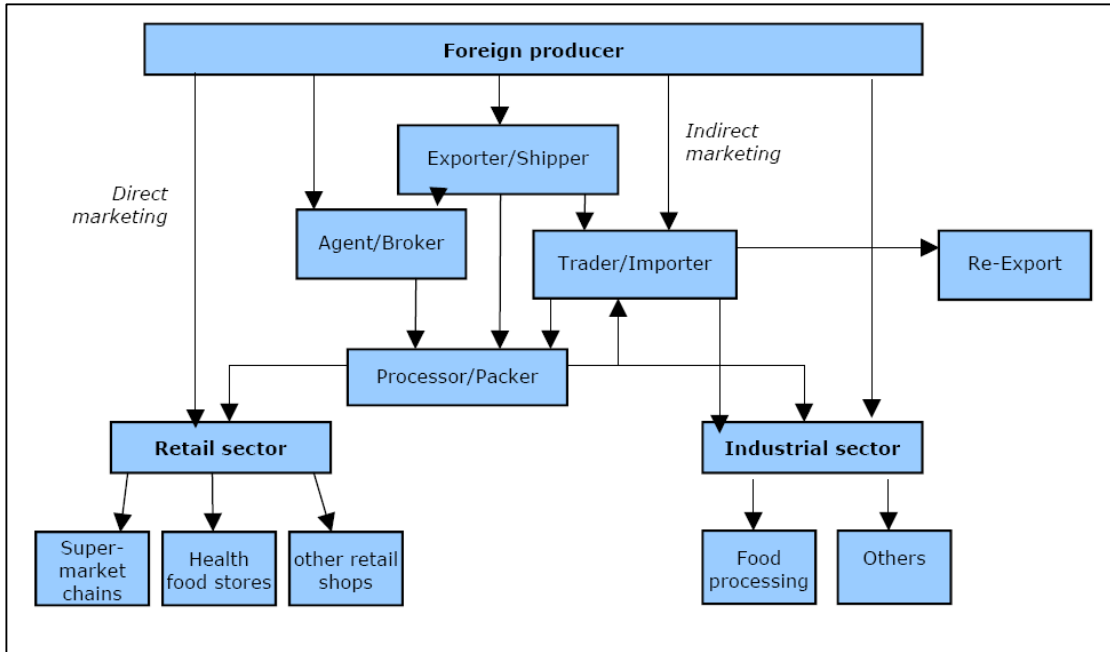
Distribution channels are generally short (in terms of the value chain – not distance) and only take a few handlers to get the product from the source to the outlet (Anon, 2001). Organic products may be produced locally or imported and are then either moved through a wholesaler or sold directly to a retail outlet or exported.

A number of distribution channels exist (See Figure 5 and Table 13). A survey of organic marketing initiatives in Europe identified the following market channels and their associated

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<sup>20</sup>These products must be certified as organic or be approved by the certifying agency to be used as an organic input.

contribution to the overall domestic market for organic products in Europe (Beckie *et al.*, 2002).



**Figure 5: Distribution Channels for Exported Organic Produce (Source: ProFound, 2005).**

**Table 13: Market distribution channels in Europe**

Market Channel	Number	Percentage
Direct sales	106	30%
Supermarket	88	21%
Processing	69	13%
Catering	29	2%
Internet	32	3%
Wholesale	83	18%
Other	72	14%
Total	479	100%

### 6.4.1 Supermarkets

Traditionally, in most European countries and the US, farm stalls and the natural food store dominated the market channel for organic products. However, more recently, awareness of most consumers to the availability of organic fruit and vegetables increased when various supermarket chains included these products in their range (Anon, 2001). Today retail chains

have become a popular outlet for organic products and include both conventional and organic supermarket chains.

**Table 14 Examples of conventional supermarket chains which carry organic ranges**

Country	Retail Chain
Germany	Tegut, Metro, Rewe
Austria	Billa, Spar
Denmark	FDB, Dansk Supermarket
Italy	Esselunga, CO-OP Italia, Finiper
France	Carrefour, Auchan
England	Waitrose, Sainsbury, Tesco

**Table 15 Examples of dedicated organic supermarket chains**

Country	Retail Chain
England	Planet Organic
France	Satoriz
Germany	Alnatura
United States	Wild Oats, Whole Foods

An international study on marketing strategies of retail chains identified three basic strategies for marketing organic products. The *maximum strategy* involves expanding the range of organic products to more than 400 articles, the *basic strategy* entails settling on a range of approximately 20 – 200 organic articles and the *minimum strategy*, employed by most supermarkets, includes less than 50 items in the range. Generally there is a trend to expand the organic range and many large retail outlets now carry their own organic label (Richter, 2000).

Developing countries, particularly those in Latin America have only recently begun to use supermarkets to sell organic products. However, the range of products is often limited due to the difficulties of obtaining large enough quantities of organic products for processing (Vossenaar & Wynen, 2004).

#### **6.4.2 On-Farm Shops, Market Stalls and Box Schemes**

Many consumers like to buy directly from the producer. Organic producers often run market stalls at local markets and some have initiated box schemes. Box schemes entail the delivery of a box of assorted organic products to a consumer's home based on regular orders (Anon, 2001). Various threats to the development of box schemes have been identified. The Soil Association (2001), states that the biggest threat to the growth of box schemes is from schemes that do not offer a good service. This in turn leads to disillusioned customers, thus hurting the potential market for boxes in general. Furthermore, many farmers are unsure about the value of their products, service and benefits for the customers and often sell their produce cheaper than the retailer. This is particularly prevalent in the UK and the Netherlands whereas in Germany they gain higher prices because of their service efforts (Haldy, 2004). Other trade channels include:

- Catering: Although not very common, fresh fruit and vegetables are sometimes sold directly to catering companies. Specialised processing companies wash, cut and package fresh fruit and vegetables before selling.
- Internet: Some companies have started to trade organic produce via the internet. Fresh products may be ordered and delivered to the consumer's home (Anon, 2001). Examples of such companies include United Nature X ([www.unitednaturex.com](http://www.unitednaturex.com)) in Germany and Best of the Midlands ([www.bestofthemidlands.co.za](http://www.bestofthemidlands.co.za)) in South Africa.

#### **6.4.3 The Export Market for South African Produce**

The South African government is in the process of negotiating the lowering of import duties to Europe. The agreement between South Africa and Europe states that the import duties will be gradually lowered over the next five years; however, the South African government is aiming for this to take place within a shorter period. Exports are facilitated through two major modes:

- Established export companies in South Africa, such as Katope and Eurafruit. The exporter takes ownership of the produce and markets it under their own name. In this case the exporter will require certification. Alternatively, the exporter can simply act as an export agent, where the produce is marketed under the producer's name or the name of a retail chain in the destination country.
- Foreign importers who access organic produce from South Africa. These include organic marketing organisations abroad, foreign retail supermarket chains, and foreign offices of locally represented exporters and manufacturers of medicinal herbal products.

Successful export strategies for local producers in South Africa include:

- Membership of associations that represent organic agriculture (e.g. OSA)
- Supplying contact details in public and company owned databases (e.g. go-organic website or Natural and Organic Products Exhibition (NOPE))
- Establish commercial relationships with marketing organisations seeking organic produce (e.g. Eosta, Organic Farm Foods)

- Establish direct commercial relationships with foreign supermarket chains and processors
- Pool produce through cooperative ventures to ensure sufficient volumes for markets.

Van Zyl (2000) suggested as far back as 2000 that there should be potential for expanding the following products in the export market:

- Conventional Grains (e.g. wheat, barley, rye) - of which there is hardly any organic production in SA
- Traditional Grains (for the health market, such as sorghum, sesame, millet)
- Nuts
- Legumes (e.g. beans, lentils, chickpeas)
- Soya
- Fibres (e.g. hemp, cotton)
- Meat (conventional and wild meat products).

## **6.5 Imports**

South Africa imports a range of organic produce and inputs. Known countries of origin include the EU, USA, Australia and New Zealand. Labelling for imported products usually identifies the country of origin and the producer. Alternatively, imported products have generic supermarket wording (Barrow, 2006).

### **6.5.1 Additional Trade Information**

South Africa has entered into a number of agreements relating to the movement of fresh produce. Key agreements relating to trade include:

- Africa Growth and Opportunity Act – relates to accessing the market in the USA (see [www.agoa.gov.za](http://www.agoa.gov.za))
- European Union / South Africa Free Trade Agreement – a trade cooperation agreement between SA and the EU
- South African Customs Union – an agreement between South Africa, Namibia, Botswana, Lesotho and Swaziland to abolish tariff barriers between member countries
- Additional information on trade agreements and protocols may be found on the South African Chamber of Business website ([www.sacob.co.za](http://www.sacob.co.za)).

## 7 RESULTS OF PRIMARY RESEARCH

This section reviews the results of primary research undertaken as part of the study as well as case studies of two organic producer groups. A SWOT analysis of organic production in South Africa is also provided. The full details of the survey of certified organic producers are provided in Appendix F.

### ***7.1 Summary of the Survey of Organic Producers***

A survey was conducted of certified organic producers to contribute towards the knowledge base required to develop a strategy for the organics industry in South Africa. The aim of the survey was to obtain information on the current production (supply) of organic produce in South Africa is, as well as volumes of sales and their markets.

Initially, a range of potential sources of information on organic production and sales were investigated. Commodity / producer organisations do not differentiate between organic and conventional production and sales and could therefore not be used, The Harmonised Standards (HS) Codes, used in identifying commodities that are exported did also not differentiate between exports of organic and conventionally produced goods. Consequently, certifying bodies were identified as the best source of information on organic production and sales in South Africa. Certifying bodies were reluctant to share their own records on production and sales due to concerns around confidentiality and industry sensitive information, although two certifiers did allow the research team to access some of their records. As a result, survey was considered the most appropriate way to get information from producers.

#### **7.1.1 Obtaining Contact Details of Producers**

Organisations providing certification services in South Africa were approached and requested to provide contact details of their certified producers<sup>21</sup>. The results of the requests to the certifying organisations are provided below.

Based on the information provided by certifiers, there are at least 279 certified producers in South Africa. This excludes the producers certified by SGS and by the Organic Food Federation (OFF), who did not submit details on number of producers they provide certification services to.

Lacon and BCS provided approximate numbers, but did not provide any contact details. Therefore, of the 279 certified producers accounted for by certifiers, contact details of 165 were obtained to which questionnaires were distributed.

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<sup>21</sup> A certified producer refers to a single certificate. This certificate may be for primary production, packhouses, processing or any process related to the organic value chain. In cases of group certification, the certified producers are certified under a single certificate. The number of producers therefore does not include individual farmers operating under a group certification scheme.

**Table 16: Information Provided by Certification Organisations.**

Organisation	Location of Offices	Information Provided	
		Number of Certified Producers	Contact Details
SGS	South Africa	No	No
Ecocert / Afrisco	South Africa	Yes	Yes
BDOCA / Debio	South Africa	Yes	Yes
SKAL / Controlunion	South Africa	Yes	Yes
BCS	South Africa	Yes	No
Soil Association	European Union	Yes	Yes
Institut fur Marktologie IMO (Swiss)	European Union	Yes	No
Organic Food Federation (OFF)	European Union	No	No
Lacon	European Union	Yes	No

### **Structure of the Questionnaires**

The purpose of the questionnaire was to get a broad understanding of what is taking place in the South African organic industry. The first questionnaire was designed to capture detailed information under the following themes.

- Primary production
  - Commodity groups grown
  - Hectares under production
  - Volume of production
  - Inputs used
  - Pest problems
  - Employment trends
  - Water use
- Markets and trends in growth of demand
- Strengths / Weaknesses / Challenges related to organic agriculture.

Initially, the survey was sent out by email. Thirty-two responses were received from the 165 emails sent out, even after a number of follow ups were made. This gave a response rate of 19%. A response rate greater than 12% for such a survey is generally considered good and a group of 30 or more responses is considered sufficient information from which to identify trends with some confidence. However, given the diversity of production and producers positions in the value chain, it was felt that this information was not sufficient. It was

therefore decided to follow up telephonically with the balance of stakeholders who had not responded.

A more simplified version of the questionnaire was used for the telephonic survey. The modified questionnaire focussed on quantitative questions from the original survey rather than the qualitative. An additional 69 responses were obtained, giving a total of 101 responses to the survey, or 61%. Sections 2 to 7 below capture information from all 101 respondents. Section 8 captures some of the qualitative information provided by the 32 respondents to the original questionnaire. The responses to the questionnaires are captured according to the respondents role in organic agriculture, namely primary producer, input supplier, processor / packhouse and agent / exporter.

It was found in a number of cases that respondents were performing multiple roles within these categories, for example some primary producers were also processors such as in the wine industry. Also, many packhouses exported the produce that they packed out.

**Table 17: Respondents Grouped by their Role in the Industry**

<b>Total Respondents</b>	<b>101</b>
No of Primary Producer	60
No of Input Suppliers	13
No of Pack-houses / Processors	27
No of Agents / Exporters	19
Total of All Categories	119

### **7.1.2 Geographic Distribution of Respondents**

The majority of respondents were from the Western Cape (41.3%), followed by the Eastern Cape (12%) and KwaZulu-Natal and Gauteng each with 10%. This indicates that a large proportion of organic producers are located in the Western Cape, but may be a result of geographic focus of certification agencies (i.e. those who didn't provide contacts many certify more people in eastern part of the country compared to those certifiers who did provide information). This is also not a representation of hectares of organic farms. It is likely that Mpumalanga and Limpopo are under-represented in this graph, as a number of producers in the area were identified, but did not respond to the survey.

In terms of Municipalities, Boland District Municipality in the Western Cape had the highest number of respondents (19). This is the centre of the Cape wine producing area and the majority of these respondents were grape farmers and / or wine producers. Second was Cacadu District in the Eastern Cape (9). This is a well known citrus producing area. A large proportion of South Africa's organic citrus is produced and packed in this district. Third was West Coast District (9), which is a grape and field crop producing area. Additional municipalities that had more than one respondent are Waterberg (Limpopo), Mopani

(Limpopo), Ehlanzeni (Mpumalanga), Gert Sibande (Mpumalanga), Namakwa (Northern Cape), City of Johannesburg and Ekurhuleni (Gauteng), Ethekwini (KZN) and Mgungundlovu (KwaZulu-Natal).

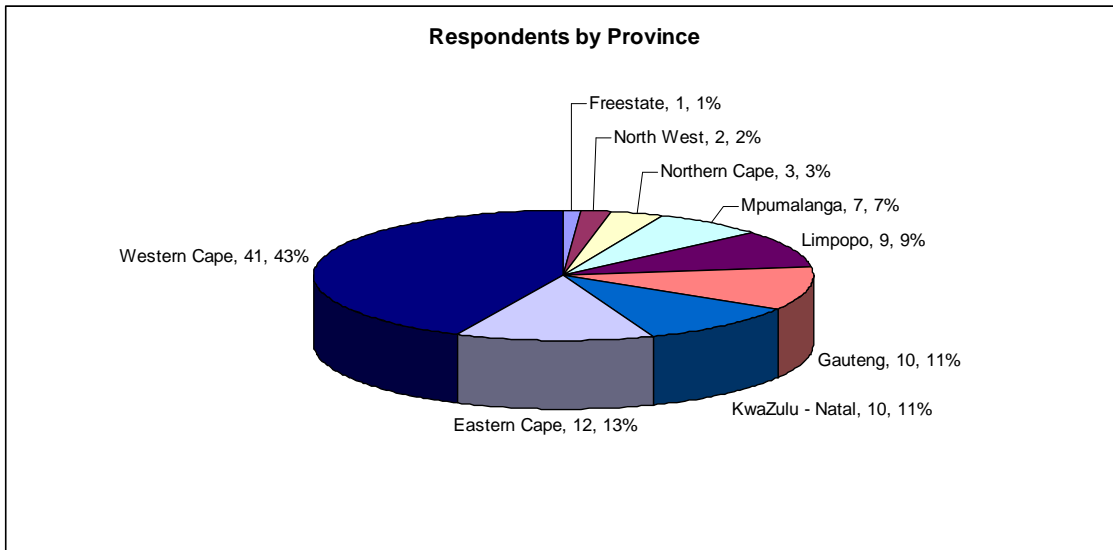


Figure 6: Distribution of Respondents by Province

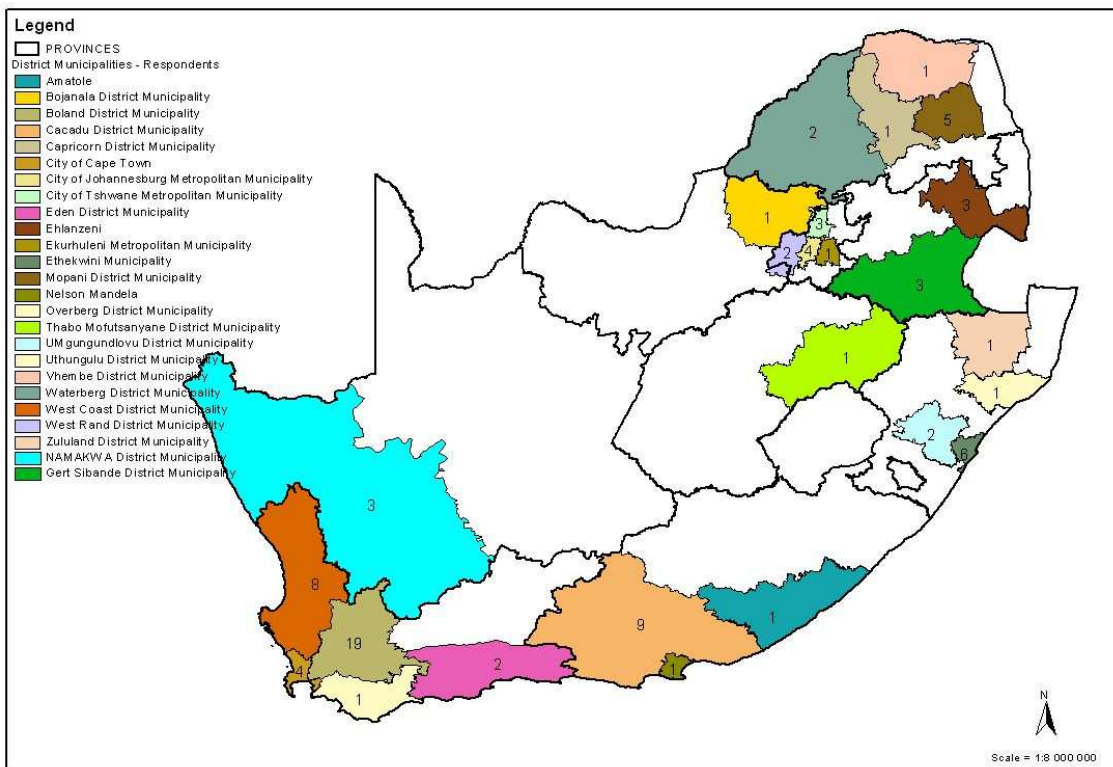


Figure 7: Distribution of respondents by District Municipality

### 7.1.3 Primary Producers

Respondents who indicated that they were primary producers were asked to provide information on area under crops, the yields, and price received as well as an indication of the percentage split between local sales and export sales.

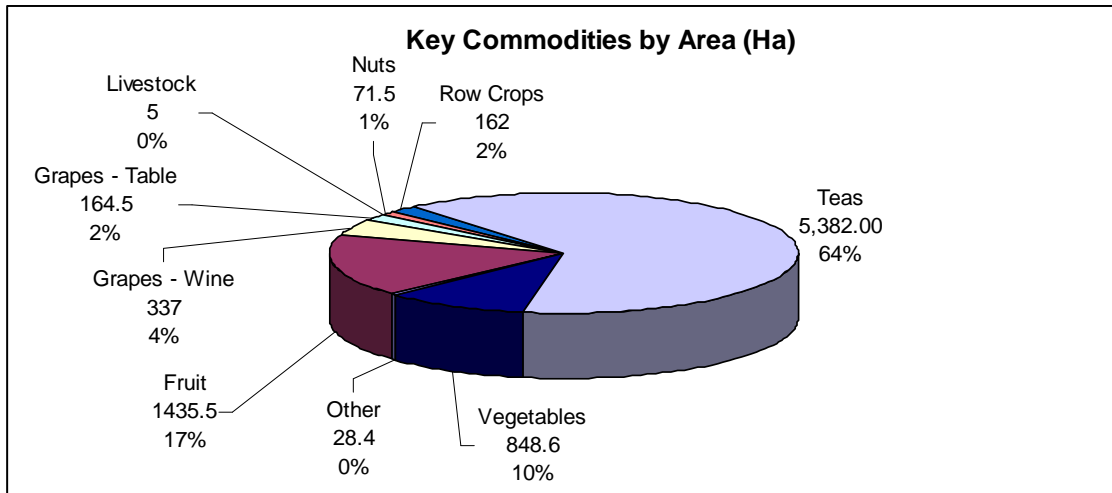
In cases where prices or yields were not provided by some respondents, the lowest values from other respondents in the same commodity category were used. For example, if a respondent indicated that they produced 5 hectares of table grapes, but did not provide an indication of yield or price received, the lowest yield and the lowest price received from all other table grape producers were used. Where no yields or prices received were recorded for a given commodity group, values could not be ascribed and these were not included in figures in Table 18 below. The values of exports and local sales are as a result likely to be underestimates of the actual value of production by respondents who indicated that they are primary producers.

Of the 60 respondents who indicated that they were primary producers, the hectares under organic production are 8 437. The value of local and export sales are estimated at R84 million and R75 million respectively, giving a total value of sales R160 million from all respondents.

Vegetable production commands the highest value of both local and export sales, followed closely by fruit sales, which comprise primarily citrus and avocado. A more detailed breakdown of commodity groups is provided in Appendix F and in the tables below.

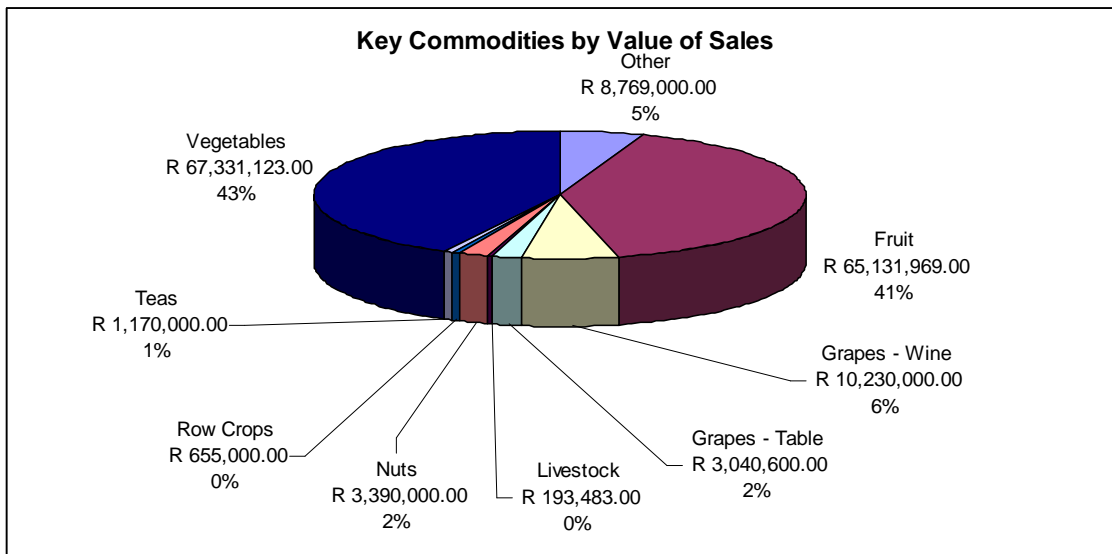
**Table 18: Crops / Commodities Being Grown by Primary Producers**

<b>Commodity</b>	<b>No Of Times Recorded</b>	<b>Ha</b>	<b>Value Local Sales</b>	<b>Value Export Sales</b>
Compost	2	5.0	8,500,000	0
Fallow	1	0.0	0	0
Fodder	1	5.0	0	0
Fruit	52	1,435.5	34,777,252	30,354,717
Grapes - wine	9	337.0	1,155,750	9,074,250
Grapes - table	6	164.5	396,910	2,643,690
Herbs / Spices	25	18.1	138,000	32,000
Livestock	8	5.0	193,483	0
Nursery	2	0.3	99,000	0
Nuts	4	71.5	2,676,000	714,000
Row crops	6	162.0	175,000	480,000
Teas	3	5,382.0	120,000	1,050,000
Vegetables	71	848.6	36,136,466	31,194,657
	<b>190</b>	<b>8,434.47</b>	<b>R84,367,860</b>	<b>R75,543,314</b>



**Figure 8: Key Commodities by Area.**

An analysis of areas under commodities being produced by respondents shows Teas to be the highest area under production at 64%. The teas comprise mainly Rooibos and Honeybush teas, some of which are harvested from the wild over large expanses, accounting for the large area. Fruit production accounts for the second largest by area under crops, accounting for 17%, followed by vegetables accounting for 10% and being the most intensively produced commodity.



**Figure 9: Key Commodities by Value of Sales**

In terms of value of sales, fruit and vegetables stand out as the major earners, accounting for 84% of all sales reported by respondents. Grapes in the form of table grapes and wine account for 8% of sales, while other and Nuts also contribute. The value of sales and hectares of production of vegetable crops are provided in Table 19 below. The information in

this table indicates that the commodities grown in large volumes with high value of sales are grown by a few producers. Most of these producers are supplying to retailers or processors on specific supply contracts. In many cases the vegetables are produced on more than one farm. The highest value of crops produced are, in descending order, Broccoli, Asparagus, Green Beans, Cauliflower and Pumpkin. The total local sales for these products are R30 million, while export sales are indicated as R31 million, indicating that 51% of the value of the sales of these items are derived from exports. The sale of these commodities accounts for approximately 37.5% of total sales of organic produce indicated by respondents to the survey. These sales (37.5%) are in the hands of seven producers. It is likely that there are more large and medium scale producers who have not been captured in this survey.

In contrast, crops grown by the highest number of producers are in descending order Lettuce, Onions, Butternut, Spinach, Beetroot and Garlic. The total local sales for these products are R2 million, while export sales are indicated as R200 000, indicating that only 10% of this produce (by value) is exported. There is also a tendency for the smaller farms to produce more for local markets and the larger farms focussing mainly on export markets. In addition smaller vegetable farms tend to produce a larger variety of crops, in line with organic principles of diversity and crop rotation, while the larger farms are producing on a conventional monoculture basis, using input substitution to achieve certification.

**Table 19: Vegetables Recorded as being produced by respondents.**

Vegetables	No Times Recorded	Ha	Value Local Sales	Value Export Sales	Totals
Broccoli	2	175.5	20,944,000	20,825,000	41,769,000
Asparagus	2	323	4,500,000	4,500,000	9,000,000
Green Beans	2	160.3	3,029,100	3,005,100	6,034,200
Cauliflower	1	25	1,312,500	1,312,500	2,625,000
Pumpkin	1	2	315,000	1,260,000	1,575,000
Mixed Vegetables	1	7.8	927,075	0	927,075
Green Peppers	2	6.8	847,590	46,353	893,943
Lettuce	7	17.8	768,900	0	768,900
Beetroot	4	4.5	652,500	0	652,500
Tomatoes	2	5	569,100	0	569,100
Garlic	4	11.5	452,250	42,000	494,250
Brinjals	2	3.5	377,000	0	377,000
Onions	6	9	143,979	179,150	323,129
Baby Marrow	2	4.5	244,336	11,544	255,880
Sweet Potatoes	2	6	236,000	4,000	240,000
Gem Squash	1	5	201,696	0	201,696
Mixed Vegetables	1	55	200,000	0	200,000
Beans	2	2.5	106,390	4,810	111,200
Leeks	2	2	76,000	4,000	80,000
Butternut	5	8.2	53,750	0	53,750

Vegetables	No Times Recorded	Ha	Value Local Sales	Value Export Sales	Totals
Chilli	2	3.3	50,000	0	50,000
Radish	1	2	50,000	0	50,000
Peas	2	0.6	42,500	0	42,500
Carrots	2	0.7	25,200	0	25,200
Sweet Corn	2	0.5	7,000	0	7,000
Spinach	4	1.8	4,600	200	4,800
Cabbage	2		0	0	0
Patty Pans	1	5	0	0	0

Table 20 below shows a contrasting picture in terms of fruit production. The largest value of production also has the largest number of producers. Citrus and Tropical Fruit are major exports from South Africa, and this is reflected in the value of organic trade as well.

**Table 20: Fruit Recorded as Being Produced by Respondents**

Fruit	No Times Recorded	Ha	Value Local Sales	Value Export Sales	Totals
Citrus	17	349.5	20,654,625	17,545,875	38,200,500
Avocado	5	429.5	7,667,044	7,525,026	15,192,070
Mango	2	263.3	3,631,000	319,000	3,950,000
Mixed	1	240	0	3,600,000	3,600,000
Bananas	1	26	1,116,128	279,032	1,395,160
Peaches	3	12.7	619,125	206,375	825,500
Apples	2	6.7	227,469	428,033	655,502
Guavas	3	78	185,010	385,349	570,359
Olives	1	10	300,000	0	300,000
Apricots	3	2.7	121,500	40,500	162,000
Strawberries	1	1	150,000	0	150,000
Plums	3	2.7	42,120	14,040	56,160
Pears	1	0.7	34,461	11,487	45,948
Kiwi Fruit	1	0.5	28,770	0	28,770

According to the National Department of Agriculture (2006), wine (R3 564 million), citrus fruit (R2 979 million), sugar (R2 347million), grapes (R2 103 million) and maize (corn) (R1 996 million) were the most important agricultural export products. To put organic produce in perspective, and acknowledging that the value and volume of sales provided in the tables and graphs above is probably less than 50% of certified organic sales, Table 21below gives an indication of the relative value of exports. The value of organic sales of these commodities represents a very small proportion of the value of national exports. The figures

do indicate that there are significant opportunities for growth, given the growing demand for organic produce locally and internationally.

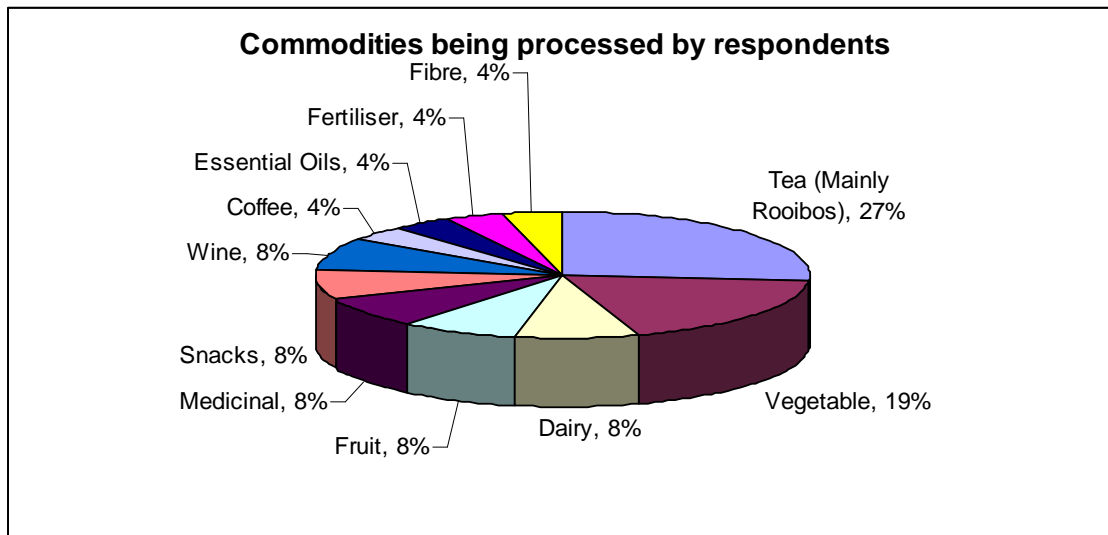
**Table 21: Comparison of National Export and Organic Export Sales**

Commodity	National Sales (DoA)	Organic Sales (Survey)	Organic Sales as a Percentage
Citrus	2,979,000,000	17,545,875	0.59%
Wine	3,564,000,000	9,074,250	0.25%
Grapes	2,103,000,000	2,643,690	0.13%

### 7.1.4 Packhouses and Processors

Twenty-six packhouses and / or processors responded to the survey. Of these, seven were also primary producers and 11 were also exporters. Most (23) of the exporters exported product themselves and on behalf of other producers. Four indicated that they processed and exported only their own product.

The following products were recorded as being processed and / or packed out by respondents (Figure 10 and Table 22):



**Figure 10: Commodities being processed / packed out by respondents.**

The results from the processing respondents paint a different picture in terms of what the main organic commodities are. The highest number of respondents (7) indicated that they were processing / packaging tea, which comprises primarily of Rooibos tea and to a lesser extent, Honeybush. Vegetable packaging / processing came in second with 5 respondents indicating that they were processing / packaging vegetables. Dairy products, fruit, medicinal

products, snacks and wine each had two respondents who indicated that they were processing. When asked as to where processors obtained their raw materials, the largest proportion (13) indicated that their raw materials were obtained solely from external farmers. Eight respondents were producer – cum – processors, six of whom used only raw materials from their farms and two who used a combination of on farm raw materials and produce from other farmers. Six respondents indicated that they imported their raw materials for processing, two examples being textiles (cotton) and coffee.

**Table 22: Commodities being processed and / or packed out by respondents**

<b>Commodity</b>	<b>Number of times recorded</b>	<b>Percentage of total times recorded</b>
Tea (Mainly Rooibos)	7	27%
Vegetable	5	19%
Dairy	2	8%
Fruit	2	8%
Medicinal	2	8%
Snacks	2	8%
Wine	2	8%
Coffee	1	4%
Essential Oils	1	4%
Fertiliser	1	4%
Fibre	1	4%
TOTAL <sup>22</sup>	26	100%
Not Stated <sup>23</sup>	0	
No of Respondents.		26/26 (100%)

**Table 23: Source of raw materials by respondents**

<b>Source of Products</b>	<b>Number of times recorded</b>	<b>Percentage</b>
External suppliers	13	48%
Imported	6	22%
On Farm	6	22%
On farm and local farms	2	7%
TOTAL	27	100%
Not Stated	0	
No of Respondents.		26/26 (100%)

<sup>22</sup> “TOTAL” refers to the total number of respondents to this particular question.

<sup>23</sup> “Not stated” refers to respondents who answered the question with information that could not be used or was not relevant to that particular question. The number reflects the number of people who, in responding to this particular question, provided an answer that could not be used in the data. The percentage in this row shows that, *of the individuals who responded to this particular question*, how many provided a response that could be used.

## 7.1.5 Markets for Packhouses / Processors

### Local Markets

Woolworths was identified by the most respondents as their key local market (8). Five respondents did not provide specifics and stated that they sold to local markets or retailers. In most cases, processors and packhouses were not prepared to give detailed information on turnover or other financial information related to their operations or markets. It should be noted that smaller markets such as farmers markets, box schemes were not accounted for by respondents to surveys.

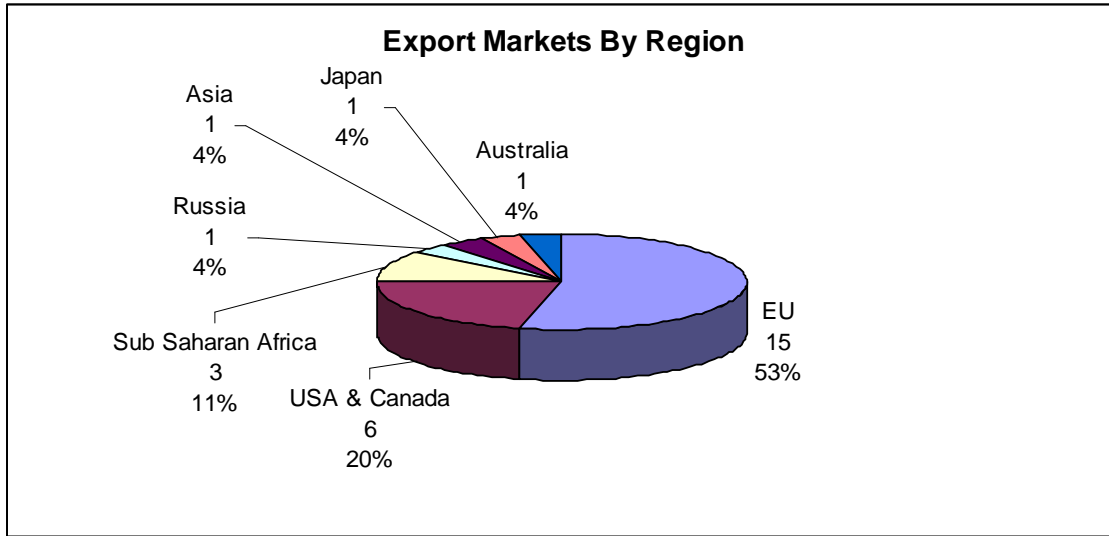
**Table 24: Breakdown of local markets**

<b>Market / Outlet</b>	<b>No of times recorded</b>	<b>Percentage</b>
Woolworths	8	30%
Local markets / retailers	5	19%
Pick n Pay	3	11%
Checkers	2	7%
Constellation Now Ltd	1	4%
Makro	1	4%
McCains	1	4%
Natures Source	1	4%
Nestle	1	4%
Rooibos Limited	1	4%
Spar	1	4%
Vital health Foods	1	4%
TOTAL	27	100%
Not Stated	1	
No of Respondents.		26/27 (96%)

### Export Markets

Figure 11 and Table 25 show the countries that packhouses and processors export to. These figures are by number of responses and not linked to value or volumes. The EU represents the largest export region followed by North America. To a lesser extent, exports are made to other African countries, Russia, Asia, Japan and Australia.

In terms of specific countries (Table 24), Europe was named by the most respondents as their major export market. These respondents were reluctant to provide country-specific information. The two countries accounting for the majority of exports, then, are the United Kingdom and the United States of America.



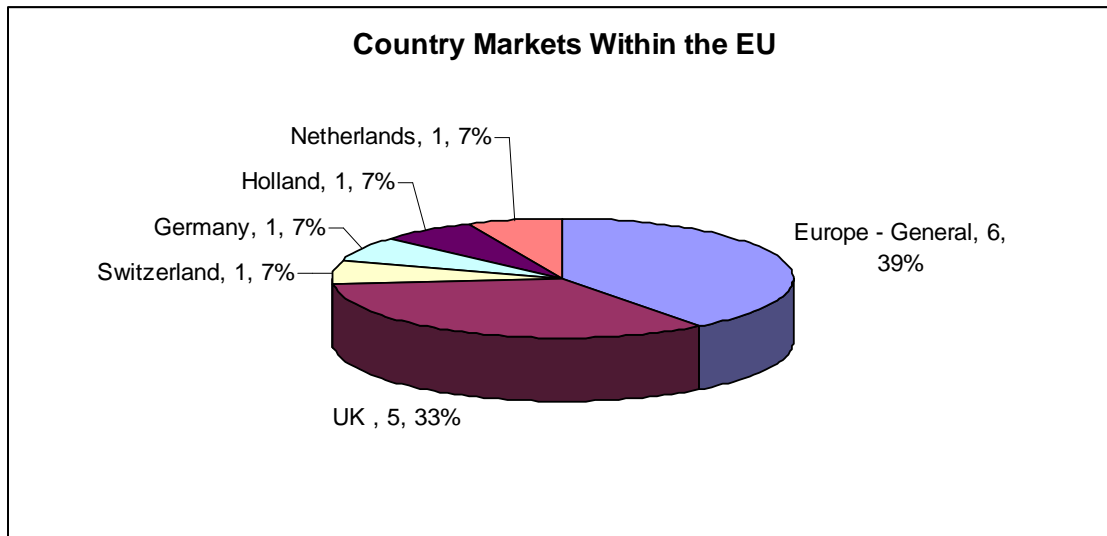
**Figure 11: Export Markets by Region.**

**Table 25: Export markets by country**

Country / Region	No of times recorded	Percentage
Europe (country not specified)	6	21%
UK	5	18%
USA	5	18%
Asia	1	4%
Australia	1	4%
Canada	1	4%
Germany	1	4%
Holland	1	4%
Japan	1	4%
Kenya	1	4%
Netherlands	1	4%
Russia	1	4%
Sub Saharan Africa	1	4%
Switzerland	1	4%
Tanzania	1	4%
TOTAL	28	100%
Not Stated	1	
No of Respondents.		25/26 (96%)

When viewing European markets alone (Figure 12: Country Markets within the EU. Figure 12) it becomes clear that the UK is a significant consumer of organic produce from South Africa, accounting for 33% of the total exports to European markets. This appears to reflect the same trend in overall agricultural exports. During 2005/06, the United Kingdom, the Netherlands, Zimbabwe, United States and Japan were the five largest trading partners of

South Africa in terms of export destinations for agricultural products, with export values of R2 943 million, R2 560 million, R1 383 million, R1 291 million and R1 154 million, respectively. Notably, About 22,6 % of total agricultural exports for the period July 2005 to June 2006 went to the United Kingdom and the Netherlands (Department of Agriculture, 2006).



**Figure 12: Country Markets within the EU.**

### **Business Growth**

To get an idea of trends in business growth, respondents were asked to comment on the growth of their enterprise, which are presented in

Table 26 below (full table in Appendix F).

**Table 26: Comments on business growth**

<b>Comment on Business Growth</b>	<b>No of times recorded</b>	<b>Percentage</b>
Volume and turnover decreasing	1	5%
Fledging enterprise - No trends noticed	3	14%
Volume and turnover stable	2	10%
Volume and turnover stable - limited by production capacity	1	5%
Increased	3	14%
0-10% increase in volume and turnover	5	24%
10 - 40% increase in volume and turnover	5	24%
100% increase in volume and turnover	1	5%
<b>TOTAL</b>	<b>21</b>	<b>100%</b>
Not Stated	5	
No of Respondents.		21/26 (81%)

The majority of respondents indicated that business was increasing, reflecting a growing demand for and production of organic agricultural produce. Key findings are:

- Two respondents who produced citrus for export reported excellent growth in sales (40 and 100%)
- Two dairy producers supplying to local markets indicated “stable” and 5% growth
- A garlic supplier to a local retailer reported 40% growth
- Of the five tea producers, one indicated a downward trend in sales, while four indicated stable growth of 3 – 6 %. This is not necessarily a bad sign, but may be an indicator of a stable / mature industry.

Generally, the feelings of producers were that sales are increasing and that this is a positive outlook for the industry as a whole.

### 7.1.6 Input Suppliers

Ten certified input suppliers responded to the surveys. Eight of the respondents supplied fertilisers and other soil amendments, while only two indicated that they were supplying pest control products. Importantly, no input suppliers selling commercial organic seed were identified in the survey.

**Table 27: Types of Inputs Sold by Input Suppliers Responding to the Survey.**

Product Type	Ingredients
<b>Fertilisers</b>	
Organic Growth Product	Plant Extracts
Organic Fertiliser	Poultry Manure
Organic Fertiliser	Poultry Manure
Organic Fertiliser	Poultry Manure
<b>Soil Amendment / Conditioning</b>	
Compost	Organic matter
Diatomite	Diatomite
Biological Soil Remediation	Humic and Sulfic Acids
Soil Inoculants	Bacteria and Fungi
<b>Fungicides</b>	
Certified fungicide	Copper / Sulphur
Fungicide	Canola, Soya, Garlic
<b>Insecticides</b>	
Biological Pesticides	Bacteria
<b>Other</b>	
Wetting Agents	Organic extracts and water

Table 28 indicates firstly that a large proportion of sales are to commercial ventures which include farmers, horticulturalists and government. Household use makes up a small proportion of total sales, according to the input suppliers who responded to the questionnaire. Of the commercial sales, the majority of sales of the organic inputs appear to be to conventional farmers, with comparatively small purchases of these products by organic farmers. Input suppliers provide the following reasons for this:

- The small number of certified organic farmers in South Africa
- The use of on farm inputs and recycling by organic farmers
- Increasing awareness by conventional farmers of the benefits of improved soil condition, biological activity and synergistic effects of organic fertilisers and soil amendments.

Most input suppliers indicated that business was at the least stable, or has shown significant growth over the recent past. This information therefore reflects an increase in demand for certified organic inputs, but these inputs are not necessarily being sold to organic farmers, reflecting a growing recognition of greener farming systems and the benefits thereof.

**Table 28: Distribution of Sales by Input Suppliers**

	Use		Status of customers		Comments on Growth of Business
	Household	Commercial	Conventional	Organic	
1		100%	Unknown	Unknown	100% per year for last 4 years
2	30%	70%	99%	1%	R2.5 million growth per year
3	0%	100%	95%	5%	Stable over last 3 years
4	20%	80%	87%	13%	Growth limited by availability of raw materials
5	30%	70%	50%	50%	Stable
6		100%	90%	10%	Volumes have increased by 20 000 litres per annum
7	Unknown	Unknown	Unknown	Unknown	Growth has increased by 20 - 50% per annum
8	Unknown	Unknown	Unknown	Unknown	Unknown
9	0%	100%	Unknown	Unknown	Unknown
10	0%	100%	0%	100%	Unknown

### 7.1.8 Agents, Importers and Exporters

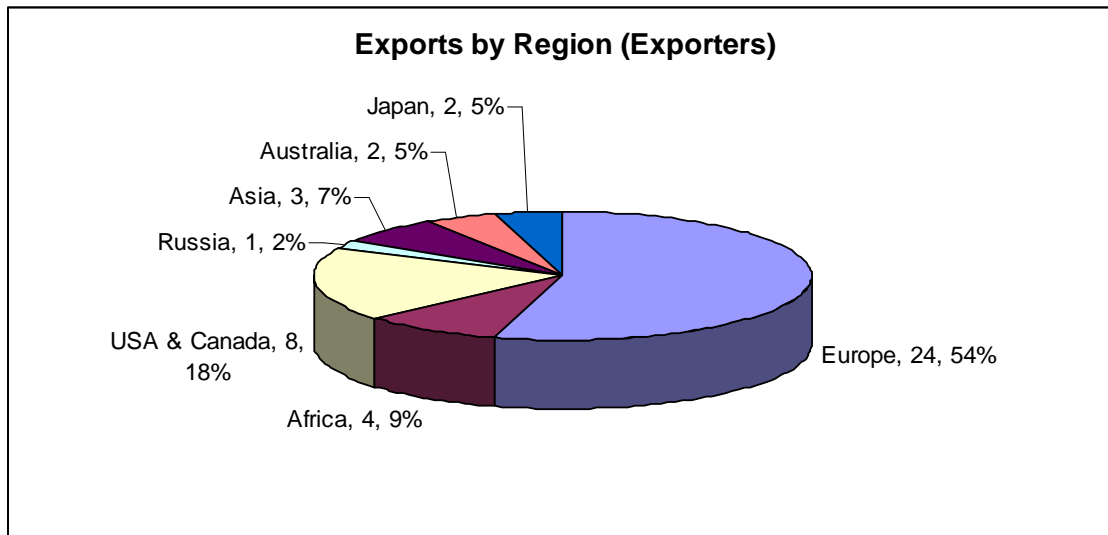
Eighteen respondents indicated that they were agents, importers and / or exporters. Of these, 4 indicated that they were also primary producers and 11 indicated that they were also packhouses / processors. Of the 18, two indicated that they were importers while the remaining 16 were exporters.

Teas, wine, citrus and grapes were recorded as the commodities that are exported the most. This reflects trends captured under the producers and processors section.

**Table 29: Export commodities**

Commodity Types Exported	No of times recorded	Percentage
Tea - Rooibos, Honeybush, Ceylon Tea	5	26%
Wine	3	16%
Citrus	2	11%
Grapes	2	11%
Avocado	1	5%
Broccoli	1	5%
Cauliflower	1	5%
Certified Organic Fungicide	1	5%
Eucalyptus Oil	1	5%
Organic Fertiliser	1	5%
Stone Fruit	1	5%
TOTAL	19	100%
Not Stated	0	
No of Respondents.		18/18 (100%)

Again, the EU showed itself to be the major market for exports of South African organic produce and the UK stands out again as South Africa’s major organic export market within the EU.



**Figure 13: Exports by Region.**

**Table 30: Export Destination by Country from Exporters**

<b>Export Destination by Country / Region</b>	<b>No of times recorded</b>	<b>Percentage</b>
UK	10	23%
USA	6	14%
Europe - General	5	11%
Canada	2	5%
Germany	2	5%
Holland	2	5%
Japan	2	5%
Asia	1	2%
Australia	1	2%
Australia	1	2%
Belgium	1	2%
France	1	2%
Italy	1	2%
Kenya	1	2%
Namibia	1	2%
Netherlands	1	2%
Russia	1	2%
SADC	1	2%
Sri Lanka	1	2%
Sub Saharan Africa	1	2%
Switzerland	1	2%
Thailand	1	2%
TOTAL	44	100%
Not Stated	0	
No of Respondents.		18/18 (100%)

The only importer who provided information on products being imported was a coffee exporter who imported coffee from the following countries:

- Honduras
- Peru
- Kenya
- Ethiopia.

### **7.1.9 Commodities by Destination**

The respective destinations by commodity were assessed to determine if there are any specific trends that could be identified. In terms of destinations, the European Union, and to a lesser extent, the USA features strongly. The most popular exports (citrus, Rooibos, wine) are exported to a number of foreign destinations in addition to the above countries, such as

Canada, Asia, Sri Lanka, and Russia. Beyond this no significant trends for commodities by country could be identified.

**Table 31: Commodities by Destination Country**

Commodity	Destination Countries	Number	Percent
Aloe Products	USA, UK	2	4%
Asparagus (2 producers)	UK	1	2%
Avocado	UK, Belgium, France	3	5%
Broccoli (2 producers)	USA	1	2%
Cauliflower (2 producers)	USA	1	2%
Citrus	EU - General (2), UK, Canada, Asia (3), Holland (3)	9	16%
Eucalyptus	EU - General	1	2%
Fungicide	Australia, Thailand, Italy, SADC	4	7%
Grapes	USA, EU General, UK, Holland	4	7%
Medicinal Herbs	USA	1	2%
Organic Fertiliser	Namibia, Kenya	2	4%
Stone Fruit	EU – General, UK, USA	3	5%
Tea - Rooibos / Honeybush	USA, EU General (6), UK (6), Germany, Japan (3), Netherlands, Sri Lanka, Sub Saharan Africa	15	26%
Wine	USA, EU General (2), UK (3), Switzerland, Germany, Russia, Canada, Holland	10	18%
TOTAL		57	100%
Not Stated		0	
No of Respondents.			34/34 (100%)

#### 7.1.10 Qualitative Information Provided by Respondents

The information provided below is derived primarily from the 32 respondents from the email survey the information is not necessarily absolute but can provide an indication of farmers' perceptions and attitudes.

The numbers at the top of the table indicate valid responses to the question against the total number of responses. For example, "18/18 or 100%" means that there were 18 valid responses to the question out of the 18 responses, or "55/58 or 95%" means that of the 58 responses to the question, 55 or 95% were valid responses. In the case where there are more than 32 responses to a question, it means that respondents provided more than one answer to the question.

The qualitative information is summarised in the tables below. Full detailed responses are provided in Appendix F.

**Table 32: Do you anticipate expanding organic production? Please give reasons. (28/28 or 100%)**

<b>Do you anticipate expanding organic production?</b>	
<b>YES</b>	<b>Percentage</b>
Increasing demand for organic produce	25
To improve economies of scale/cash flow	18
Belief in organic philosophy (environmental/social)	18
Have learnt lessons and developed systems to make expansion easier.	11
Have additional land available	4
<b>Total</b>	<b>76%</b>
<b>NO</b>	<b>Percentage</b>
Insufficient irrigation	7
Insufficient capital / cashflow / capacity	4
Higher income does not warrant higher production cost	4
No reason provided	7
<b>Total</b>	<b>22%</b>

The primary reasons for expanding production are centred on response to increasing demand and to improve profitability. Also relevant was belief in the philosophy of organic farming, but certainly the primary reason seemed to be economic.

**Table 33: How long did it take for your cash flow to become positive? (15/17 or 88%)**

<b>How long did it take for cash flow to become positive (All responses)</b>	<b>No of times stated</b>	<b>Percentage</b>
3 years	6	40
Cant say	3	20
Did not become negative	2	13
1-2 years	1	7
4 years	1	7
5 years	1	7
7 years	1	7

It is often stated that crop losses and reduced yields arise from changing to an organic system of production. This question aimed to get an understanding of whether this was the case and if so, how long the impact of the change lasted. The majority of respondents indicated that it took 3 years for cash flow to become positive. Two indicated that cash flow had not become negative, while one indicated that it was still negative after 7 years.

**Table 34: Have the skills levels of your employees improved? Please explain. (28/28 or 100%)**

Skills have improved	Percentage
Investment in training	19
Learnt composting and other organic skills	23
Increased observation and awareness	15
Increased communication and sharing has created an understanding of the value of organic farming	11
Increased awareness of hygiene and quality	4
Have developed skills in computers and public speaking, some represent us abroad	4
Greater understanding of the harm of agrochemicals and how we need to save our soils	4
Packing and processing has introduced new skills and new levels of responsibility	4
Increased understanding of green issues and global warming and the role they can play in saving the environment	4
Total	84%
Skills have not improved / unknown	Percentage
No – more training is required	4
Greater understanding of pest and disease biology needed	4
Don't know	4
No new skills established	4
Total	16%

Respondents were asked to describe whether the skills levels of staff had improved as a result of changing to organic farming. The majority of respondents observed an improvement in skills in staff members. This reflects to a certain extent the belief of farmers in organic principles who have invested time and resources in developing the skills of their employees.

**Table 35: Please list your three greatest challenges (95/97 or 98%)**

Category	Percentage
Technical / Production (e.g. Pest, disease, weed management; compost production; post harvest storage)	43
Advice / Support (e.g. Research and development; training; information sharing; lack of local support to organic farmers)	12
Fraud (e.g. Fraudulent organic claims undercutting market; misleading information from product suppliers)	10

Cost / financial issues (e.g. cash flow; economies of scale; access to finance and capital)	9
Organic standards / certification (e.g. Quality assurance, lack of local standards; foreign standards incompatible to local conditions)	7
Labour productivity and management (e.g. labour costs; productivity; managing staff)	4
Inputs (e.g. obtaining organic seeds)	3
Access to Inputs (e.g obtaining inputs, cost of inputs)	2
Climate / weather issues (e.g. Drought; heat)	1
Mindset of farmers	1
Marketing	1
Theft	1

Fifty-two different responses were received for the question above, indicating the range of challenges that organic farmers face. These have been consolidated into different categories and provided in the Table 35 above. A full list of challenges may be found in Appendix F. The category considered the greatest challenge is in the area of technical and production challenges, which made up almost half of the responses. Closely linked to this is the identified need for advice and support in terms of organic production. Ten percent of the responses considered fraud as a concern, with 9% of responses highlighting financial issues as a concern. Only 7% of the responses raised organic standards and certification as a challenge, referring to compliance to export standards and their appropriateness (or lack thereof) to local farming conditions.

While there was great diversity in the challenges described by respondents, the majority identified the following as key support areas that would assist organic farmers:

- Government Support and recognition
- Technical information and support
- Training and extension.

**Table 36: What support do you need to address these challenges? (55/58 or 95%)**

<b>What support do you need to address these challenges (Top 6)</b>	<b>Percentage</b>
Financial support/subsidies/government recognition	27
Research and development	11
Technical support/information	9
Training / extension support / extension services	8
International acceptance of local certification for our environment	4

### 7.1.11 SWOT Analysis

A SWOT analysis based on information from the research and literature review is presented below.

**Table 37: SWOT Analysis for the Organic Sector in South Africa.**

<b>Strengths</b>	<b>Weaknesses</b>
Market demand for organic produce.	No organic standards or legislation.
Good transport and logistics infrastructure.	Lack of clear government policy regarding organic agriculture.
Already geared towards the export of agricultural products.	Cost of certification.
Existing agricultural product quality assurance mechanisms.	Shortage of local certification capacity.
Established trade relations with other countries.	Lack of documented local research on organic farming systems.
Inverted production season - can produce summer crops to supply the North during winter.	Market information and support limited (from crops to grow to distribution channels, to financing possibilities).
Production Season slightly different to competing countries in the Southern Hemisphere (Australia, Brazil).	Skills needed for production are limited, such as extension and training.
Close to and similar time zone with Europe, reducing delivery costs, eases contact with buyers and general administration.	Accessing finance difficult for small farmers.
Organic agriculture is closely aligned with existing rural farming practices.	Farmers tend to work as individuals, when cooperation would be better for volume, consistency and marketing.
Encourages and supports local knowledge systems.	Lack of infrastructure in rural areas.
Reduced reliance on (and credit for) for external inputs.	Illiteracy a barrier to entry, due to record keeping requirements.
Water use efficiency	Perception of reduced yields impacting on food security.
	Lack of knowledge, access to information.
	Additional labour cost and costs associated with conversion.

Opportunity	Threats
Numerous trading partners and foreign consumers with "social conscience", possibly more likely to support organic produce from SA rather than countries like Australia.	Decision to promote GMOs.
Traditional cultivation methods aligned with organic production making conversion relatively easy.	Competing producers in developing countries rapidly scaling up production.
Uncultivated and marginal land easier to convert to organic production than conventional.	Organic agriculture a threat (perceived or not) to existing business interests.
New trade linkages (e.g. Dube Trade Port and Dubai).	Mindset of farmers, scientists and policymakers.
Donor Agencies are disposed towards Organic Agriculture Projects.	National Policy direction for agriculture.
Opportunities for marginalised groups, particularly women.	Perception that organic farming is "backwards".
Growing demand for organic produce.	"Peer Pressure" from farmers seeing organic as a "fringe" activity.
SA ships a large proportion of produce by sea - minimal carbon footprint compared to air freight.	"Food Miles" - the carbon / energy cost of moving food from source to destination.
Increased and more stable employment opportunities for farm workers.	
Premiums for certified products.	
Increased social benefits associated with organic agriculture.	
Enhanced food security.	

### 7.1.12 Summary

The information provided by certifiers' shows that there are at least 279 organic producers in South Africa. This includes primary producers, processors, packhouses and input suppliers. It is likely that the numbers of certifications are greater than 350 given that some certifiers did not provide information regarding the number of certifications that they have issued.

A total of 101 certified producers responded to either the email survey or the subsequent telephonic survey. Of these, 60 indicated that they were primary producers of some sort. These 60 accounted for 8 434 hectares of organically certified land. From this area of land producers indicated that the value of production was R84 million for domestic markets and R75 million for export markets. Given that only one third of the estimated number of

producers responded, it is likely that these numbers can safely be doubled to represent the minimum area and value of production.

### Extrapolation

Assuming that approximately one third of certified organic producers responded to the survey, one can roughly estimate the following values and areas of production by multiplying these figures by three. Obviously the figures below represent an estimate the addition of a number of large operators could easily double some of these figures.

Figure	Survey	Estimated Total
Hectares under production	8,434	25,300
Value Local Sales	84,000,000	252,000,000
Value Export Sales	75,000,000	225,000,000
Vegetable sales	67,000,000	201,000,000
Fruit sales	65,000,000	195,000,000
Grapes sales (excludes wines)	10,000,000	30,000,000
Tea sales (Likely under reported in survey)	1,000,000	3,000,000

In terms of key commodities by area, teas accounted for the largest area given by respondents at 5 300 hectares. This consists primarily of Rooibos and to a lesser extent Honeybush, which are both produced under extensive conditions. The next largest commodity by area is fruit (1 400 ha) consisting mainly of citrus. Third is vegetables, accounting for 848 hectares and the fourth largest commodity by area is grapes at 300 ha.

The key commodities by value of sales (domestic and export) are as follows:

- Vegetables - R67 million (201,000,000 extrapolated)
- Fruit – R65 million (195,000,000 extrapolated)
- Grapes – R10 million (30,000,000 extrapolated)
- Tea – R1.1 million. (3,000,000 extrapolated).

Within the two major commodities (fruit and vegetables), the value of the top four commodities are as follows (these have not been extrapolated due to the small number of producers identified):

- Vegetables
  - Broccoli – R41 million (2 producers)
  - Asparagus – R9 million (2 producers)
  - Green Beans – R6 million (2 producers)
  - Cauliflower – R2.6 million (1 producer).

The top four commodities are all vegetables. A large proportion of the value of these sales reported by respondents (R 56 million) is accounted for by only 7 producers. Of the total sales reported, two thirds (broccoli) is accounted for by only two producers. Notwithstanding unreported sales from organic farmers who did not respond to the survey, or who were not

afforded the opportunity by their certifiers, this is significant. These producers are supplying dedicated markets, mainly in the EU and the USA and are producing on a significant scale. This indicates that these producers have identified and accessed markets for their produce and that significant opportunities exist to supply foreign markets on a large scale.

- Fruit
  - Citrus – R38 million (17 producers)
  - Avocado – R15 million (5 producers)
  - Mango – R3.9 million (2 producers)
  - Mixed Fruit – R3.6 million (1 producer).

The EU is the largest export market for South African organic produce, with the UK accounting for the largest proportion of these exports (at least 33%).

When compared against the value of major agricultural exports from South Africa the value of organic produce provided by respondent is approximately 0.5% (or 1.5% extrapolated). This further indicates that there are significant opportunities for growth.

The majority of respondents indicated that their enterprises were at least stable and that the majority were expanding production in response to increased demand. It can be concluded that there is an undersupply of organic produce in South Africa. This can be extrapolated to the international market where numerous studies have pointed out that demand is outstripping supply and that this scenario will continue for some time to come.

Since this survey was conducted (April to September 2007), certifiers have noted a significant increase in the number of certifications. One certifier noted that 64,000 hectares of land is certified through their organisation alone in South Africa, accounting for 360,000 tons of produce exported. The sector is growing rapidly. The difficulty of obtaining accurate information on organic production and exports in South Africa is an issue that needs to be addressed.

## ***7.2 Local Production Case Studies***

Two case studies related to organic production were undertaken, to provide insight into methods of production. A large commercial operation and a group of farmers using group certification were selected for the cases and are summarised below.

### **7.2.1 Bioswiss Industries (Pty) Ltd**

#### **Overview of Farming Operation**

Bioswiss is a large producer of organically certified vegetables and is internationally recognised, with the mother company based in Switzerland. Bioswiss is certified by BCS in South Africa and has numerous farms around the world. In KwaZulu-Natal, farms are located in Louwsburg, Swart uMfolozi and Paulpietersburg. These farms specialise in producing broccoli and green beans, and have facilities that can process and freeze up to 40 tons of vegetables per day.

The Louwsburg operation has been producing organically for 4 years and has a plant established for the same period of time to package and distribute all products. Previously, farming was done conventionally until yields started to decrease dramatically, according to Jurie Menz, the farm owner. Maize production dropped from 10 tons/ha to 6 tons/ha and potatoes from 35 tons/ha to 30 tons/ha. These drops were considered to be primarily due to the use of the pesticide Temic (used mainly for nematode control) which killed everything in the soil. At this point the farm owners were approached by Bioswiss and were offered the chance to convert to organic production. Menz decided to convert to organic farming and managed to undergo a conversion process in just one year through the application of organic micro-organisms to recondition the soil, which is a surprising achievement.

The Paulpietersburg operation can produce up to 30 000 heads of broccoli/ha, with each head weighing 350 – 400g, giving a yield of 10 – 12 tons/ha. “Extra Fine” green beans are also produced. This variety is resistant to rust and yield between 10 and 12 tons per hectare. This farm noticed no drop in yields when converting from conventional to organic production.

### **Processing**

Most of the BioSwiss farms follow a similar procedure for packing and processing broccoli. This can be summarised as follows:

- Grow produce in compliance with organic standards (USDA NOP)
- Produce is harvested and transported to the processing plant
- An initial cleaning of produce is done in a pre cleaning facility prior to going in the factory
- Produce is again cleaned in the factory
- All produce steamed (parboiled) to remove pathogens
- All produce frozen at -45°C
- All produce packed and put into storage at -27°C
- Produce is distributed.

The processing system is compliant with the necessary health and food safety regulations.

### **Markets**

Currently in South Africa there is no premium for organically produced products, according to Menz, McCain’s and Nature’s Choice will pay R7.50/kg for green beans and broccoli, which is the same as for conventional products, while the same produce can be sold for R14.75/kg in the USA. Bioswiss is looking at supplying fresh produce for South African retailers, and are currently negotiating with a national retailer. These negotiations are dependent on what produce would be required and what the associated pricing structure for that produce would be, which had not been finalised at the time of the interview. While the farms are currently only producing beans and broccoli, they are seeking to expand the range of crops to improve their crop rotation practices and have indicated this to the retailer that if the need for other crops arises, such as a specification from retailers, they would be more than willing to accommodate this. According to Klingenberg, a minimum of 4 vegetables are required for

crop rotation purposes. Until such time as this occurs, however, farms will continue to export internationally as the current organic market in South Africa is too small, despite the fact that it is growing. As Klingenberg has indicated, the potential market in South Africa is enormous although it is difficult to say if it is more suited to frozen or fresh produce, as there is currently limited frozen produce put onto the market. Once production details have been finalised with the retailer, market opportunities and observations will be more conclusive.

Bioswiss farms try to export as much produce as possible, as the financial benefits are considerable. Currently the USA is the only export market and accommodates approximately 80% of all their produce. Any additional produce is sent to other South African companies such as McCain's or Nature's Choice, and is usually of a lesser quality than the exported produce.

### **Land**

As with all Bioswiss operations, local landowners own the land and Bioswiss rents the farms from them for production. According to Andries Joubert, Bioswiss is continually looking for more land and enters into joint ventures with local farm owners. Many farmers are interested in farming organically but when it comes to the farm re-conditioning and conversion process, many farmers withdraw and do not complete the process. This mainly because farmers feel that the short term costs are too risky and may be sceptical of long term viability.

Recently there has been a labour tenant claim on the Louwsberg farm, but negotiations are taking place to accommodate farm workers, who have seen the benefits from converting to organic production. In the Swart uMfolozi, the land is owned by the local community while Bioswiss rents the farm land and has installed the irrigation and equipment necessary to keep the farm running. The intention of Bioswiss is for them to hand over the whole operation in approximately 5 years time to the local community, and encourage the producers to supply the pack-house and to continue production for international markets, with the USA representing the top market.

### **7.2.2 Ezemvelo Farmers Organisation (EFO)**

Ezemvelo Farmers Organisation (EFO) in KwaZulu-Natal was selected to form part of the case study research on organic production. The aim of the investigation was to identify challenges and opportunities facing small-scale producers of organic products.

Primary data was collected through meetings with the Executive Committee of EFO as well as direct interviews with some of its members. Existing literature, based on previous research on EFO, provided valuable information that could not be obtained during the time of conducting interviews.

The case study shows that organic production for rural farmers can build upon existing traditional knowledge of agriculture. Organic farming provides an opportunity for local farmers to organise themselves into a formal farming entity that can engage formal markets. Supported by health consciousness, the growing market of organic products presents an opportunity for organic production by emerging farmers. Rural farmers may improve their

lives through organic farming, however this farming approach is quite complex, and without adequate technical and financial support, entry to this market by rural farmers is quite restricted.

### **Background**

EFO is located in Embo, southwest of Durban, and is predominantly rural with subsistence agriculture playing an important role in local livelihoods. Established in 2001, Ezemvelo Farmers Organisation (EFO) was the first group of African smallholder farmers in South Africa to become certified organic farmers with assistance from Dr. Albert Modi of the University of KwaZulu-Natal. The motivation for organic farming was based on building on existing knowledge of traditional production to produce crops organically in order to supply niche markets. Organic production required EFO to be certified as organic producers. Dr. Raymond Auerbach and Dr James Hartzell assisted EFO to become certified organic farmers and assisted with the marketing of produce to Pick 'n Pay (Farmers Support Group, 2003).

Before the establishment of EFO, individual farmers were producing vegetables and crops based on traditional methods. Production was mainly for subsistence purposes, with surplus being sold to the local hawkers, who in turn sold the fresh produce in various informal markets such as Isiphingo. According to the farmers, traditional methods involved production of traditional crops without the use of chemicals.

Traditional production of crops was taking place in fields around the homesteads, where rotational cropping was also practiced (Fischer, 2005). However, in communal vegetable gardens, farmers were using chemicals. The Executive Committee admitted to have used chemicals in the past because farmers believed that this method was effective (personal communication, 26 July 2007). According to the Executive Committee, farmers stopped using chemicals in vegetable gardens after they were informed by Dr. Modi of the negative impacts of chemicals on the environment and human health. EFO farmers adopted organic production methods with a view to access formal markets.

### **Institutional Arrangements**

EFO is representative of six Tribal Authority Wards and has an Executive Committee of eight members (three women and five men). This committee presides on all affairs of the organisation. In addition to this committee, there are internal inspectors. Their role is to visit all the farmers to ensure compliance with the principles and practices of organic farming.

- **Membership**

EFO does not have a guideline regarding how many new members can join the organisation. Therefore membership is open ended. The Executive Committee made this decision, thinking that demand for their produce in formal markets would increase. For instance in 2006, farmers produced 25 tons, which they were told to triple by 2007. The committee felt that volumes of production could only be increased if new members join. The farmer's experience in 2007 proved to the contrary, as the packhouse started to order less produce than was the case in 2006. Farmers did not understand the reason for this.

Internal inspectors visit the fields of new members, take soil sample and inform the farmers about organic practices, such as not using chemicals. Most of the new farmers would not have used chemicals in their fields. However, there are cases where farmers were using chemicals in the past. According to Dumisani Mabhida, internal inspector, once farmers have converted to organic farming, they don't go back to the use of chemicals (personal communication, 26 July 2007).

### **Training**

EFO has received support and training from various organisations since they started farming, including Dr Albert Modi, Farmers Support Group, Assegay Organics and Rainman Landcare Foundation. The Department of Agriculture and Environmental Affairs have also provided technical support through extension officers. Meetings, workshops and in some cases structured training sessions have helped the organisation to build its capacity.

### **Certification**

EFO obtained certification through the group certification scheme as a requirement to be recognised as organic producers. The process of certification involved inspection of the fields and testing of soil to ensure that the fields were free of chemicals. This process takes between one and two years. New members joining EFO have to go through the similar process before their fields are accepted as part of the organic farming system. There are a range conditions for organic farming. Cited by Darroch & Mushayanyama (2006), Modi, 2004 states the following conditions with which farmers have to comply:

'(a) the land on which organic foods are grown must be free of prohibited substances, such as commercial fertilisers, for a given period (usually three years before certification); (b) farmers and processors must keep detailed records of the methods and materials used in the growing or processing of organic produce; and (c) all methods and materials must be annually inspected'.

Certification is a costly undertaking. Dumisani Mabhida indicated that EFO had to pay R25,000 for this process. In addition, for small-scale producers, complying with the conditions of organic farming is a prolonged process. During the assessment of EFO in 2007, it appeared that the organisation was complying with most conditions; but still had to improve on others. The table below shows how EFO was complying with the regulations during the annual assessment in July 2007. In response, EFO indicated that even in areas where the report indicated the organisation was not complying with regulations, processes to ensure compliance had been put in place in place (personal communication, 27 July 2007). Nevertheless, the compliance assessment indicates that there are administrative and institutional shortfalls, while the actual production practices comply with requirements.

**Table 38: Tabling showing details of compliance (Adapted from Skal International, 2005)**

Category	Complies to Regulation	
	Yes	No
General	X	
Separation, stores	X	
Manuring (soil conditioning and fertilisation)	X	
Pest, Disease and weed control	X	
Starting material	X	
Labelling, transport		X
Administration		X
Internal Control System		X

### **Crop Production**

Organic agriculture is understood to the farmers only as traditional farming. Farmers qualify this as farming practice based on traditional knowledge and without the use of chemicals. The incentive for organic farming, according to farmers, lies in the fact that they are able to access a niche organic and health conscious market. With the exception to certification, which at present has not been a direct cost to farmers, organic farming is relatively low input (Fischer 2005). Low input costs results from the fact that farmers produce their own seedlings and fertilisers with their own kraal manure. Mrs. Babhekile Mkhize indicated that farmers produce their own seedlings by keeping some amadumbe in the ground until the next planting season (personal communication, 26 July 2007).

Farmers access land through traditional system, which allocates user rights to households. The Executive Committee was not certain of the total size of land under organic production, nor did they have idea of the average size of land per individual member. Fischer (2005) suggests the size of land per farmers ranges from 0.5ha to about 5ha. According to Skal International (2005), collectively, EFO farmers have 150ha under production.

Crops produced by EFO include the following:

- Amadumbe (*Colocasia Esculenta*)
- Sweet potato (*Ipomea batatas*)
- Pumpkins (*Cucurbita spp.*)
- African melon (*Citrullus lanatus*)
- Potatoes(*Solonum tuberosum*)
- Maize (*Zea mays*)
- Green beans (*Phaseolus vulgaris*)
- Green pepper (*Capsicume anum*).

Of these crops only Amadumbe and sweet potatoes are marketable. The rest of the crops are produced for subsistence. The crops rely on rain (Modi *et al.*, 2006).

Land preparation requires the services of a tractor. Hiring a tractor is not always easy as there are a limited number of tractors in the area and a larger number of farmers needing this service. For this reasons, farmers are not always able to prepare land and plant on time. Some fields are located on steep slopes, making it difficult to use a tractor, even in cases where it was available (Fischer, 2005). Most farmers are female (Modi *et al.*, 2006). Farming relies on the use of family labour. On average an individual farmer may employ up to two casual workers to assist with planting, weed, or harvesting and cleaning produce.

EFO's production is affected more by livestock and bush pigs than by pests and diseases. Pigs dig out root crops while livestock such as cattle and goats eat the leaves of plants and trample the plants. Moles, centipedes and insects were reported to be affecting amadumbe and some vegetables. The Executive Committee reported that farmers had received training in the preparation of organic insecticides. In contrast, most respondents reported that they did not have means to control pests and insects. Mr. Wanda, one of the farmers interviewed, reported that he managed to chase moles from his field by cutting out a plastic water bottle into a fan that turns in the wind and makes a noise which then chases the moles away. Pests such as stalkborer were affecting maize. Amadumbe were affected by cracks and black spots, which the farmers did not know the causes of.

### **Marketing of Products**

Before EFO was established, individual farmers were primarily producing for subsistence purposes. Surplus was sold locally, particularly to local hawkers. When EFO was established the first formal market that the farmers supplied was Pick 'n Pay. Respondents understand that this market was facilitated with assistance of Dr James Hartzell. EFO now supplies Woolworth through Farmwise Packhouse.

Coordination and arrangements for individual farmers to supply the packhouse takes place during monthly meetings. The EFO farmers are grouped on the basis of the six Traditional Council Wards. Each of the wards supplies the packhouse in turn. Within each Ward, farmers need to coordinate among themselves to achieve the target volumes required by the packhouse. This level of coordination must ensure that the target is not exceeded and that the target is distributed equitably among the farmers in a Ward.

Each member in a Ward is allocated a maximum volume to supply. Exceeding allocated volumes implies that other farmers may not be able to supply. To deal with this possibility, EFO has a ruling that farmers may not supply more than their allocation and members who have exceeded the limit must take the surplus home.

### **Production Volume and Income**

An attempt was made to establish the quantity of produce grown by farmers. This was done in order to establish the degree to which produce is consumed by the market and to understand the level of earnings by the farmers. Respondents indicated that in previous harvests, the market has been able accommodate the entire harvest. In 2007, however, the packhouse has not been placing orders as much as it has in previous years. This was the

case despite the fact that in 2006 when the farmers had achieved 25 tons of Amadumbe production, the packhouse had encouraged the farmers to triple this figure. Woolworth officials have undertaken to assist the farmers in investigating this matter and give feedback. Due to poor record keeping the figures obtained from farmers regarding the volumes and sales may not be absolutely accurate. Table 39 below shows information on volumes and prices for 2006 for Amadumbe and sweet potatoes. In terms of this table, on average, a farmer produced 182kg of Amadumbe and earned R1 092.00. Another way to work out earnings may be based on the total production of Amadumbe by EFO in 2006. The interpretation of this information shows that in 2006 EFO earned R150 000.00 from 25 tons of Amadumbe (based on R84.00 per unit of 14kg), but on average a farmer earned R750.00. This income excludes earnings from other crops such as sweet potatoes.

**Table 39: Table showing volumes, sales and income**

Production volumes, sales and income for the year 2006						
Farmers	Crops	Unit	Total Units	Volume (kg)	Price / unit	Income
Dumisani Mabhida	Amadumbe	14kg	28	392	R 84.00	R 2,352.00
	Sweet potatoes	14kg	7	98	R 54.00	R 378.00
	<b>Total Income</b>					<b>R 2,730.00</b>
Constance Mkhize	Amadumbe	14kg	2	28	R 84.00	R 168.00
	Sweet potatoes	?			R 54.00	R 0.00
	<b>Total Income</b>					<b>R 168.00</b>
B. Mkhize	Amadumbe	14kg	9	126	R 84.00	R 756.00
	Sweet potatoes	14kg	6	84	R 54.00	R 324.00
	<b>Total Income</b>					<b>R 1,080.00</b>

Although income per farmer seems very low, the farmers themselves think that this income made an improvement in their lives. Dumisani Mabhida started to notice improvements in 2003. According to farmers, before EFO was established there was no formal trading of crops. Although some farmers were already supplying the local market, this was not reliable both in terms of demands and recouping payments. The current marketing arrangement is regarded as being more reliable.

### **Opportunities and Challenges**

Discussions with the Executive Committee, farmers and research documents revealed the following opportunities and challenges:

- Opportunities
  - Increasing demand for healthier food produced in a chemical free environment provides a good market for small-scale producers like EFO.
  - Access to formal markets (supply chain: suppliers – packhouse – retail market) as opposed to home consumption and informal markets - Formal markets are reliable (both in terms of demands as well as in the facilitation of speedy payments); Demands in the informal market are not certain; facilitation of payments may not be speedily resolved.

- Niche market - organic food market is believed to be a niche market with greater potential for premium prices (Whether this is true or not, it is a matter of another discussion – The fact of the matter is that the health food market is a niche market).
- Challenges
  - Drought is regarded as the most important challenge - drought affects yields as farmers mainly practice rain-fed farming.
  - Land preparation relies on tractors that are limited in availability - delays in land preparation have an implication for production.
  - Due to limited resources, development of necessary infrastructure such as fencing the fields becomes difficult - unfenced fields are damaged by bush pigs and livestock.
  - Farmers have limited access to technical information such as organic insecticides.
  - Limitations with regards to access to the market - at present, farmers have a market for amadumbe and sweet potatoes with Woolworths (There are fears that should something goes wrong with market, they will not have an alternative market. This became a serious concern this year, as the packhouse was not buying all the products).
  - Internal Inspectors are at present working on voluntary basis. Reliance on voluntary commitment for such an important function is a limiting factor. A limited number of trained Internal Inspectors left the area to look for work in neighbouring towns. This created a gap and put pressure on the remaining Internal Inspectors.
  - Coordination among EFO members who are scattered over such a vast area limits the ability of the organisation to respond to issues promptly. Coordination and communication relies on monthly meetings. When, as it has happened several times in the past, EFO has to respond to special orders from the packhouse, EFO struggles to respond with immediate effect.
  - The capacity to comply with certain aspects of the certification such as record keeping - individual EFO farmers appear to struggle because of high levels of illiteracy.

### **Suggestions by Farmers**

The Executive Committee and respondents to this case study felt that the following suggestions could improve organic farming and its benefits.

- Access to more land
- Support with regard to the development of infrastructure, in particular fencing
- A dedicated tractor or tractors to EFO could ensure that farmers are able to plough and plant effectively

- Farmers identified the need to explore other markets, so that EFO does not rely on a single market
- Irrigation could help with the production of vegetables, but also in the case of drought
- Dedicated transport mechanisms to EFO could ensure that the organisation is able to control the vehicle, comply more effectively and respond to the packhouse speedily
- Farmers identified training as a need to improve their knowledge of organic farming, especially in the area of controlling pests
- Some respondents felt that production and marketing of a range of crops would mean that EFO does not mainly rely on amadumbe and sweet potatoes to generate income.

### **7.2.3 Discussion of the Case Studies**

BioSwiss farms represent a large scale commercial operation that targets export markets. The motivation for organic production at the Louwsberg operation was driven by declining yields attributed to the use of pesticides that reduced the soil's ability to support crops by destroying soil life. The achievement of certification after one year by adding micro-organisms to the soil is impressive, considering that the use of pesticides in the production system. The use of only a few main crops (broccoli, beans) does make it difficult to have a good rotational system, which the company is seeking to address through finding additional crops that are in demand for local markets (retailers). The use of external inputs appears to be necessary, and it is likely that this "input substitution" system will need to continue for some time. The large packaging and processing plant opens up opportunities for both export and local markets, although premiums for local sales are limited and export markets are more lucrative.

Organic production on the BioSwiss farms is also driven by foreign interests who rent the land for use in organic production. Their long term aim is to hand land over to producers who themselves can continue to supply the export markets. They are playing a key role in bringing land reform land into production at the Swart Umfolozi site, while at the Louwsburg site Bioswiss is having to enter into negotiations with the farm workers who have lodged a land claim.

EFO can also be considered to be externally driven, but with a completely different approach to BioSwiss. Here, a bottom up approach is supported, whereby farmers are capacitated to produce organically and access local markets for organic produce. EFO has been operating for seven years and is still learning, which highlights the long term view and commitment that is necessary in supporting this kind of approach. The farmers use little, if any, external inputs and include animals as part of the production system which are more aligned with organic principles and build more sustainability into the system. Farmers also highlight the lack of access to technical information for production (such as organic pest control) as a problem. The high cost of certification was also highlighted, although this cost has not yet been passed on to the farmers.

The internal control system required for group certification is working to a certain extent, but the addition of new members, shortage of internal inspectors and the geographical spread of

farmers does cause logistical difficulties, such as limiting the ability of farmers to respond rapidly to request for produce from the market. Keeping records of production and inputs is also difficult, although measures have been put in place to address this. Demand for produce was expected to increase in 2007, but did not, which is a concern for farmers. Diversification in production and markets should reduce the risk of changes in market demand. The farmers' overall perspective is, however, positive. Organic production is aligned with traditional systems of production which farmers appreciate. Farmers have also noticed an improvement in the area due to sales of organic produce and consider the formal markets to be more reliable than informal markets.

## **8 TRENDS IMPACTING ON THE ORGANICS INDUSTRY**

There are many trends that impact agriculture and it is not possible to give total overview of all those trends. Some of the trends that are considered particularly important are discussed below.

### ***8.1 Impact of WTO Negotiations on Organic Agriculture***

The efforts within the World Trade Organisation (WTO) to gradually reduce tariffs, quotas, unfair government support to sectors and barriers to trade impact on agricultural policies and aim to put pressure on governments to change their support to the agriculture sector. Under the WTO regime, support for environmental measures (green box) is permissible. This has opened up an opportunity for a wide range of environmental support programmes, particularly in the EU and organic production fits well into this context. In addition it is assumed that by giving local produce an organic profile it will be able to resist imports, not based on prices but on other qualities. Therefore one can expect that a further liberalisation of trade in agriculture products may lead to increased support for organic production in many countries. Organic subsidies, as long as they are not directly coupled to production, are likely to continue to be permissible under the WTO agreements. The impact can of course still be that in the organic market place it is easier for producers that get organic subsidies to sell their product for a lower price than for producers that do not get such subsidies.

The reduction of tariffs and quotas will only have indirect effects on organic production and it is hard to make any general statements on this matter. It is likely to be “positive” for organic (in the sense that organic becomes more attractive than conventional) in countries where the current prices levels and support from government is very high, e.g. Norway and Japan, as lower prices give farmers less incentives to boost production by massive use of inputs. On the other hand, more liberalised trade in farm produce points at gradually increasing world market prices.

### ***8.2 Resistance to Globalisation***

Linked to the WTO agreements, the climate change and peak oil is the resistance to globalisation. While the underlying economic trend for globalisation is strong, there is also quite some resistance to it. Apart from economic and social arguments against globalisation, the energy use in transportation is a weak point in the global trading system. Global terrorism is also seen as part of globalisation and measures against terrorism includes more restrictions at border both for products and goods. It is outside the scope of this report to assess if the peak of globalisation has been reached and whether we can expect increasing nationalism and protectionism. Nevertheless, the anti-globalisation sentiments support local food production and may give internationally-traded products, such as organic exports from South Africa, a less appealing image.

### ***8.3 Climate Change and Food Miles***

The complexity of interrelated environmental and economic issues linked to peak-oil and climate change has a clear bearing on organic farming. Organic farming has proven to be

more energy efficient than conventional farming, mainly through the non-use of nitrogen fertilisers, the production of which is very energy-demanding.

Agriculture itself has contributed and continues to contribute to a substantial increase in green-house gases through processes of de-nitrification, de-forestation, methane emissions from cattle and paddy fields and, most importantly, the loss of soil organic matter (resulting in emission of carbon dioxide). Organic agriculture has a great potential for the reduction of emissions of carbon dioxide and probably also emission of nitrous oxide. Organic agriculture also has a potential to sequester carbon through increased soil organic matter. Even if agriculture is outside the Kyoto protocol's Clean Development Mechanism there are voluntary programmes and existing market schemes that already pay farmers for carbon sequestration. Together with no-till farming, organic production is the most promising option for this. It is worth noting that sequestration of carbon, i.e. through an increase in soil organic matter, is also leading to more fertile soils, higher water retention capacity and reduced nutrient leakage (Kotchi, 2004).

In addition, there are market reactions to climate change and the pollution associated with the use of fossil fuels. These reactions include resistance to global transports. Already one organic certification scheme (BioSuisse in Switzerland) prohibits air-freight of organic produce, while Soil Association in the UK is considering a similar standard. KRAV in Sweden is introducing a voluntary "climate" labelling scheme. Again, organic exports from South Africa may be harmed by this attention.

#### ***8.4 Slow Food and Local Food***

The slow food movement is a reaction to the fast food culture and promotes artisan and local foods. Other groups promote local foods based on a mix of reasons:

- To reduce pollution caused by transports
- To support local farm communities
- To support direct links between farmers and consumers to increase understanding between the parties

#### ***8.5 Bio-fuels***

The recent interest in bio-fuels impacts considerably on the agriculture sector. Already, cereal, oil and sugar prices are strongly linked to the oil price as they are all possible raw materials for bio-fuel. The overall impact of bio-fuels on farming and food prices and the associated discussion about food versus fuel is outside of the scope of this report. In the short term, the interest for bio-fuels is probably not supporting organic agriculture as it puts a lot of emphasis on the production of huge quantities of biomass. In the longer term, however, organic systems that are more energy-efficient are likely to also be suitable for the production of bio-fuel. Conventional bio-fuel production based on corn and wheat for ethanol has a very low energy-efficiency as almost as much energy is put into the system as what is going out. Biogas from fermented manure or green manures is seen as an interesting option in organic production systems (this fits better within organic crop rotations than expanded

areas of corn and wheat). There is currently no distinct market established for organic bio-fuels, even though there are a few initiatives that do use organic (certified) bio-fuels. Such markets might first develop with institutional buyers, such as municipal transportation systems, rather than as consumer markets, considering the infrastructure (dedicated pumps) needed for a consumer-oriented market scheme.

## ***8.6 Changes in Agricultural Production Systems***

Apart from the markets and possible government programmes in support of organic production, there are other supportive mechanisms at play. The engagement of the farmers in the development of the local communities, in environmental protection, in water catchment programmes, concern for their own health as well as the health of their workers, etc. are resulting in increased interest in organic production. The possible reduction in input costs also makes farmers interested in organic systems.

Most farm innovations are farmer driven and this is even more so when it comes to organic production. The array of management practices developed by farmers is impressive and includes things such as thermal weed control, allelopathic weed control, biological controls and sophisticated poly-cultures. This means that organic farming methods are constantly developing, and what we see as typical for organic production today may be quite different in fifty years time.

While public statistics can show overall trends of productivity in the (largely conventional) farm sector, there are no similar statistics that can show the longer-term trends associated with organic production systems. Anecdotal evidence indicates that the productivity increases on organic farms in the last thirty years have been dramatic, while in many countries the increase of yields in conventional systems has slowed down or stagnated, in some cases yields are even on the decrease. If this is true, then the yield “gap” between conventional and organic production is likely to decline over time.

## ***8.7 Research Trends***

For sixty years agricultural research has been one-sidedly oriented toward conventional farming and very little research has been conducted that has been relevant to organic systems. Currently substantial research funds are allocated to the development of GMOs. Research is also increasingly funded by private companies and investment by government is decreasing in most countries. This has a built-in bias against low external input farming methods, such as organic production, as most of the research is funded by companies that supply inputs. Nevertheless, there is increasing interest in organic research, in the area of biological control especially.

## ***8.8 Corporate Responsibility and Fair Trade***

Quite obviously, the increasing emphasis on environmental and social responsibility in the corporate sector supports organic agriculture. There are many examples of companies in the food sector that support various efforts for increased sustainability in farming, including

organic production. Nike, for example, has for a long time bought huge quantities of organic cotton and blended it with the conventional cotton to support organic production.

Fair trade does not imply organic (and vice-versa), however there are strong linkages between these two concepts. Companies and consumers that promote fair trade are also likely to be supportive of organic products.

## **8.9 Environmental Concerns**

### **8.9.1 Waste Management**

Increasingly, waste management systems are under stress. As a result of the theory that “*what comes in never goes out,*” waste is tackled with the combined strategy of (1) limiting what is brought into circulation (e.g. by banning certain products or chemicals) and (2) recycling materials efficiently so that waste becomes a resource for something else.

All the waste of the food system (including human waste) should ideally be brought back to the fields it came from so that it does not create environmental problems, in waterways particularly. This model is obviously something that works in favour of organic production even though there are obstacles. For example, many organic waste materials (such as municipal waste) are contaminated by toxic compounds. Also, most organic standards do not allow for the use of human waste (some do allow for it).

Increased emphasis on recycling and closed cycles for nutrients may again be an argument against large-scale global transportation of food as this leads to a depletion of nutrient stocks in one place and an accumulation of nutrients in importing countries. From this perspective, global trade of food should focus either on high value crops (which are just shipped in smaller quantities) or on energy-rich, nutrient-low products such as cotton, oils, ethanol, sugar, etc.

### **8.9.2 Bio-diversity Conservation**

It is well established that organic farms support greater biodiversity, both on the farms and in their surroundings. This has prompted governments and development agencies to support organic farming. Against this is the argument that as organic farming is likely to need somewhat bigger areas than conventional production in order to produce the same quantities of food, large-scale adoption of organic principles will lead to increased pressure on land not yet exploited for agriculture, e.g. swamps, as well as natural or primary forests.

### **8.9.3 Water Resources under Pressure**

Organic production is relevant on two accounts when it comes to water. Firstly, organic practices lead to less pollution of surface and ground water, and secondly the improved soil condition that results from real organic farming leads to more efficient water usage and reduced water-stress in plants.

## **8.10 Health Awareness**

Organic production has some distinct advantages for human health, for both the individual and the greater society. Individuals seek organic products, while authorities may support promotional campaigns for organic or public procurement. Countries like Italy, Sweden and Denmark have large programmes for public procurement of organic and Sweden has an official target that 25 percent of all publicly procured food should be organic by 2010.

## **8.11 Organic Agriculture in Public Policies**

Organic agriculture is increasingly endorsed by local and national governments as well as international organisations. There are a number of reasons for this, including the niche market opportunities it offers, as well as its role for bio-diversity and environmental conservation.

### **8.11.1 International Policy Decisions**

- The Commission on Sustainable Development as well as the Rio and Johannesburg summits made statements in favour of organic farming
- UNCTAD has engaged itself in the trade aspects and the problems of limits to market access for producers in developing countries.
- FAO has a special office for organic agriculture and has published a number of books and brochures on organic agriculture
- IFOAM, FAO and UNCTAD are together convening the International Task Force on Harmonisation and Equivalence in organic farming
- OECD has published a number of studies on organic agriculture
- IFAD has made evaluations of organic farming projects in Latin America and Asia, and is currently implementing organic projects together with IFOAM in the Pacific
- UNEP and UNCTAD, in partnership with IFOAM, have devoted considerable resources for organic in East Africa and has published recommendations for best practices for organic policy for developing countries
- The International Trade Centre, a joint UNCTAD / WTO body has made a series of surveys of the organic market for main tropical crops and has also published overviews of the organic markets.

### **8.11.2 Agriculture Policy in Europe**

In Europe the agriculture policies are increasingly based on the concept of multi-functionality, which recognises that agriculture, apart from producing food and fibre, has a role to play in maintaining both the environment and culture. This is a main rationale for the transformation of the common agriculture policy from being production-oriented to provision of support for environment, landscape, traditional foods, etc. Organic agriculture plays a central role for many European governments in re-shaping agriculture policy in this direction.

National or regional action plans for organic food and farming have been developed in most EU member states (e.g. Austria, the Czech Republic, Denmark, Finland, France, Germany, the Netherlands, Norway, Sweden, Switzerland and regions of Ireland, Italy, Spain (Andalusia) and the United Kingdom), with plans also under development in Slovenia and for the whole of Spain. These action plans normally include targets for adoption and a combination of specific measures, including direct income support through the agro-environment / rural development programmes; marketing and processing support; certification support; producer information initiatives (research, training and advice); consumer education and infrastructure support. The more detailed plans contain evaluations of the current situation and problems faced by the sector and specific recommendations to address the issues identified, including measures to ameliorate potential conflicts between different policy measures (Lampkin *et al.*, 2004). Sweden decided in 1995 that by the year 2000, 10 percent of its farm land should be organic and when this target was accomplished, they set a new target of 20 percent for 2005, which was almost accomplished. Germany has set the official target that 20 percent of its land shall be organic by 2010. The European Union adopted an EU-wide action plan for organic farming 2005 (Rundgren, 2007).

### **8.11.3 Agriculture Policy in Developing Countries and Africa**

Increasingly developing countries have recognised the relevance of organic agriculture. In few countries has there been any systematic adaptation of the overall agriculture policies to cater to the development of the organic sectors. On the contrary, most countries appear to go on with their general policies in ways not supportive of organic production. Several countries have general policies that address issues of relevance for organic, i.e. reduction of pesticides (Egypt), protection of soil and biodiversity, developing small-scale farms (Costa Rica, South Africa), and decreasing dependency on imported fertilizers (Thailand). When organic is clearly linked to such general goals, it appears to be easier to get direct policy support. The state of Sikkim in India has set a target that 100 per cent of its agriculture should be organic, and several other Indian states have declared themselves “organic states” (Rundgren 2007).

Costa Rica has a well-developed organic sector. Various government programmes and institutions support most aspects of the sector, including domestic and export market development, food processing, credit and extension services. The National Organic Agriculture Programme was established in 1999 and, together with the sector, the agency developed a national strategy for organic production based on participatory consultations. Since 2001, there has been a mandatory organic regulation in place and Costa Rica is the only developing country, other than Argentina and India, which has acquired recognition for exports of organic products to the European Union. There is a governmental seal available to all certified producers, however it is not yet widely recognised (Rundgren, 2007).

In Africa, Tunisia is the country with the most comprehensive programme to support organic farming, including extension service, investment support and support for certification (Twarog, 2006). The government of Egypt has established a central institution with the following tasks:

- To promote organic farming among extension workers, farmers, processors, exporters and to raise public awareness
- To establish a database of organic farming
- To coordinate the work of the certification bodies working in Egypt
- To control organic products sold in the local market, not as a certification body but as an authority to control the market itself
- To carry out research to solve problems of organic agriculture (Rundgren 2007).

#### **8.11.4 Support from African institutions**

While NEPAD's Comprehensive Africa Agriculture Development Programme (CAADP) does not identify organic production as a strategic intervention per se, representatives of NEPAD have expressed that: "*Organic Farming is an agriculture success that requires up/out scaling on the basis of comparative advantage and that it contributes to increased income and reduction of food insecurity and poverty*" (Mwape 2007).

COMESA (Common Market for Eastern and Southern Africa) embarks on programmes to support organic production, which include:

- Promotion of exports of organics
- Implementing a fertilizer initiative that promotes the use of organic fertilizers
- Developing a regional programme on promoting organic agriculture, Biodiversity, agro forestry, forestry enterprise development (Honey, Carbon trading) (Miti 2007).

### **8.12 Discussion**

This section has sought to identify a range of trends that are already impacting on, or have the potential to impact on the organic sector. It is essential that any strategies / programmes that aim to strengthen the sector take cognisance of these trends.

## 9 COST / BENEFIT ANALYSIS OF ORGANIC PRODUCTION

### 9.1 *The Concept of Sustainability*

The concept of sustainable agriculture has become a common term. Sustainability is embodied by the Brundtland Commission definition as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). Organic agriculture has benefited from this drive for sustainability through having many common aims and principles of production. Gold (1999) observes that questions of sustainability in agriculture have arisen from concerns around the following areas:

- Ecological concerns
  - Declining soil productivity
  - Pollution – agriculture is the largest non-point source of water pollutants
  - Water scarcity and overuse of surface and groundwater resources
  - Other environmental problems, such as pesticide resistance, loss of habitats, loss of biodiversity in general and loss of crop and livestock genetic diversity in particular
  - Agriculture’s role in climate change – due to loss of native vegetation, release of carbon from soils, discharge of methane from livestock
- Economic and social Concerns
  - Sustainable and equitable food supply
  - Widening disparity in farmers’ incomes
  - “Corporatisation” of agriculture – agribusiness is becoming concentrated in fewer and fewer hands and this is associated with the loss of the small family farm and subsequent disintegration of rural communities
- Human health concerns
  - Traces of pesticides, antibiotics and hormones in produce
  - Health of farm workers applying pesticides
- Philosophical concerns
  - The agrarian roots of many communities are being lost;
  - The implication of sustainability to conventional farmers is a criticism that they have been “doing it wrong” all this time.

There are a range of sustainable agricultural practices and technologies that are now available to the farmer. Organic farming is a part of this, but combines a range of sustainable agricultural practices and technologies.

Financial figures are often the first thing to be considered when the costs and benefits of a specific enterprise are analysed. The question of what constitutes a cost and what a benefit

is, however, a far greater issue than this. When the principle is expanded on it quite often becomes clear that a specific input such as labour for instance may constitute a financial cost to an enterprise, while job creation is a social benefit, which may on the whole be of greater importance. This is often the case when it comes to “earth friendly” operating systems such as organic farming, since they are in principle not merely based on financial return. In such cases it becomes necessary to delve deeper into the possible outcomes of almost all actions or inputs that are performed bearing in mind the specific objectives of the farming operation.

In order to gather a holistic view of the possible costs and benefits of a system such as organic farming it is therefore necessary to consider, not only from a financial point of view, but also in terms of the social and environmental costs and benefits. When considering these it important to consider the key principles of organic agriculture, which are health, ecology, fairness and care.

## **9.2 Financial Costs and Benefits**

Lengthy discussions with industry role-players such as producers, value-adding concerns and retail supermarket chains has revealed that there is a severe shortage of accurate data when it comes to the organics industry as a whole.

Many producers that have at some point grown organic produce have reverted to conventional methods of production or simply not maintained their certification. In addition, much of the information regarding organic production is still very new and being pioneered. It was evident from this study that many producers simply did not keep the necessary records and did not perform sufficiently accurate analyses of their respective farm situations, with regard to financial inputs and returns, to be able to supply the necessary figures for accurate financial cost / benefit comparisons in many cases.

Financial cost benefit data have however been obtained for Apple and Valencia oranges. These analyses are summarised in Table 40. Detailed gross margins are provided in Appendix G.

### **9.2.1 Enterprise Gross Margins**

The building blocks of a financial model are the gross margins for the main enterprises. Gross margins represent income from the sale of the produce, less all direct costs that can be allocated to the production of the specific crop. Generalised production programmes have been compiled for each of the proposed enterprises and indicative gross margins from the main enterprises have been calculated. The gross margins for each enterprise are based on the following assumptions:

- The gross margins are based on an average farmer in the area and attempt to be representative of a typical farming operation in the region however, in reality there is a wide range of expertise and experience in farming which results in a wide variation in actual income and costs of enterprises.

- Gross income is based on representative yields and long / medium-term prices for the enterprise. Where the gross margin applies over a number of years (e.g. citrus) the values are given in constant 2007 Rand terms.
- Costs are calculated on an input substitution basis.

The gross margin costs include:

- Input costs such as seed, chemicals and fertiliser
- Mechanical operations such as ploughing and spraying
- Water charges and pumping costs (an average pumping head of 15 metres is assumed in estimating the energy costs for irrigation)
- All directly allocated labour costs (overhead labour costs such as the farm manager's salary are not included in the gross margin)
- Packaging and transport costs to the market
- A contingency amount of 5% of total costs to allow for miscellaneous expenses.

**Table 40: Comparison of Conventional vs. Organic Gross Margins**

Type	Apples Conventional	Apples Organic	Valencias Conventional	Valencias Organic
tons/ha	53.00	25.50	80.00	40.00
R/t	966.00	1,872.00	1,030.92	1,665.00
Gross income/ha	51,198.00	47,736.00	82,474.00	66,600.00
Produc costs/ha	15,928.42	20,229.00	24,179.00	30,603.00
Gross margin/ha	35,269.58	27,507.00	58,295.00	35,997.00

What is immediately evident from the comparison of gross margins is the fact that conventional production is seemingly the more profitable system of the two. Indeed this is not unexpected because on a pure “cost of inputs” basis, organic production requires the added costs associated with certification and has greater labour requirements, while on the other hand, disease and pest control is made difficult due to the limited use of only certified sprays and the external quality of the produce can be blemished. This means that farmers do not receive the premiums required to justify these additional input costs. It should be noted that the longer-term financial benefits, such as improved soil condition and biological activity (responsible for increased nutrient recycling), which result in declining input requirements over time, are not captured in the gross margin analyses. The improved soil structure also allows for easier field operations such as planting and harvesting. Pest management requirements can also be expected to decline over time as the system stabilises and natural agents become established.

When the organic producers were asked why they remain in organic as opposed to conventional production despite the seemingly lower gross margins, they gave the following reasons:

- They have a personal preference for wanting to farm in a more environmentally friendly manner and have observed a restoration of some ecological balance within their production areas.
- They concede that on paper the gross margins seem far better for conventional production, but are of the opinion that this is a short term view. They maintain that over the longer term the benefits of farming organically are of a far greater “value” to the enterprise than the apparent loss in gross margin when compared to conventional farming.
- In many cases they have established good fixed markets for their produce and feel that due to the lack of organic producers in the market they have a better chance of marketing their produce at a better price and with greater certainty if it is organic. They also feel that due to this lack of supply situation they are secure in “keeping hold of” established markets that have established a somewhat even demand trend.
- They see much of their increased short-term cost through producing organically as a long-term “capital” investment in their farms and the future of their business. This is not easily quantified on an annual basis since these benefits are often only realised over long periods of time (10-15 years) and take a long period of “investing” before they become beneficial.

### **9.3 Analysis of Broader Costs and Benefits**

The financial costs and benefits of enterprises are often the easiest to quantify. When the environmental and social aspects are added to the picture it often becomes more difficult to interpret. It is possible, however, to place a value on these aspects and so analyse them critically as economic costs / benefits. It is generally accepted that there are indeed benefits for the environment, and certainly for humans consuming the healthier organic produce.

#### **9.3.1 Costs**

In organic farming there are often a great many short-term operating costs that are seemingly excessive in nature, particularly during the conversion period, where crop yields can be significantly reduced as a result of changes in farm ecology. Some of the costs for farmers engaging in organic production include:

- **Certification:** In order to be regarded an organic producer, particularly for export markets, a grower has to undergo a certification process, with annual audits of compliance. Both the process of actually converting from conventional to organic production and the actual certification are an expensive exercise. The annual audits and expenses incurred here and the additional management and administrative burden are costs to the system.
- **Technical Support and Information:** There appears to be a lack of market information and technical assistance for organic farming, particularly in South Africa. This means that farmers must spend time on accessing market information and developing appropriate technologies for themselves. In some cases, farmers are unaware of appropriate pricing and so “lose” money on the income side.

- **Consumer and Retailer Preference:** In addition, organic produce is sometimes “less attractive” aesthetically in terms of having blemishes and visible damage present such as in the case of the fruit and vegetable industry. Such products cannot be sold at a premium above conventionally produced items.
- **Labour:** Organic farming systems tend to be more labour intensive and so result in higher labour costs than large-scale mechanised agricultural systems (this is not to say that organic farms are not also largely mechanised) as a result of practices such as hand weeding, composting and strip farming. Indirect labour costs may also be incurred in improving the living and working conditions of farm workers, in line with the requirements for certification. As a result of these additional costs, labour productivity and efficiency becomes an important consideration. Pickering, cited in van Zyl (2000) indicated that on large agronomic production units, labour would increase by only 2-3%, while on smaller mixed farming units, it could increase by as much as 20%.The high cost of labour is therefore seen as a deterrent to converting to organic systems.
- **Risk associated with a Change in the Production System:** Introducing a new method of production into an agricultural system results in change which also brings about uncertainty. When converting to organic agriculture, significant changes occur, particularly changes in the type of farm inputs (from synthetic to organic), crop rotations and crop diversity. Equally important are the management techniques and requirement as well as the social changes. Such organic inputs can either be purchased or produced on the farm (or a combination of both). Management practices will also need to be adapted to the new farming methods and so timing of planting, crop rotations, different seed / animals etc. will all have to be adapted to local conditions.
- **Inclusion of “unproductive” rotational crops:** Crop rotation systems are the cornerstone of organic production. Effective rotational systems may not necessarily allow farmers to grow the most profitable (or marketable) combination of crops, While the potential loss of income may be compensated for by reduced input costs, it is still important for the farmer to find markets or uses for all crops in the rotation, which is an additional management input cost.
- **Food miles:** If organic produce is being transported from its country of origin to distant consumers, this is likely to have significant impacts on carbon emissions, which is the basis of the “food miles” debate. It is reported that certain certification bodies in the UK are interrogating the “food miles” travelled by products, prompted by the fact that the harm caused to the environment by emissions from the aircraft or ships transporting the produce outweighs the benefit to the humans consuming the food.

### 9.3.2 Benefits

Social and environmental benefits associated with organic production include:

#### Direct benefits to the farmer

- **Income and Price Premiums:** The premium associated with organic farming is one mechanism to directly measure the economic benefits of organic farming. This premium can be as much as 20% above that of conventionally farmed produce. This premium

however often relies heavily on the promotion of the organic produce in question by the retailer. Since it is the retailer that incurs the promotional expenses, it is often also here that the premium is capitalised on. The result is often a very small premium recovered by the producer, but greater access to markets with less competition for supply. In addition, enhanced foreign exchange earnings from market premiums paid for organic exports can be achieved as well as increased farm gate income in rural areas, which can provide better income opportunities and may stem rural migration to urban slums.

- **Market demand:** Growing consumer demand for organic produce means that there is a ready market for organic produce. Producers do, however need to provide vegetables and fruit that are both aesthetically pleasing and of good quality.
- **Change in the Production System:** When moving from conventional to organic production, farmers have opportunities to learn new skills and to make use of local knowledge and successful traditional practices to improve production. Rotational cropping has a number of benefits such as reduced weed load in the long-term and reduced disease and harmful nematode counts on the lands.
- **Long-term soil-related benefits:** What is not easily quantifiable is the long-term benefit of some of the production operations. Using mulches and organic manures can for example result in changes in soil structure and organic matter content, which can impact positively on other inputs, such as improved water use efficiency, thus reducing irrigation costs, or optimising use of rainfall under dry land conditions. Nutrients are also often held better in the soil colloids and do not simply percolate through the profile and become “lost” to the crop, resulting in lower fertiliser inputs.
- **Reduced risks:** Rotational cropping systems reduce the risk of entire crop failures and stabilise income throughout the year.
- **Reduced input Costs:** Organic farming seeks to substitute external inputs with locally available inputs, which can reduce costs and therefore increase margins. Less external inputs limits the need to go into debt, especially when interest rates are high, thereby reducing financial risk.

### **Broader benefits**

- **Job creation:** Where labour cost and efficiency is not a constraint, organic farming can provide employment opportunities whilst at the same time increasing the economic viability of the enterprise. Furthermore, with diverse crops and cropping systems, associated with organic systems, times of intensive labour requirements (e.g. at harvesting) may be further spread through the year, stabilising employment opportunities for seasonal workers. Given the variety of crops, and the progressive social attitudes associated with organic agriculture, there are also additional opportunities for women.
- **Food security:** Organic farming techniques are widely recognised to improve food security, particularly on rainfed crops (Parrott and Elzakker, 2003). While there is a general perception that organic production systems give lower yields than conventional systems, Lampkin and Padel (1994; cited in FAO, 1998), who gathered a number of studies on the economics of organic agriculture in developed countries; found that organic farm yields were within an “acceptable range”. These yields are ascribed, in part,

to improved plant varieties and better management of biological processes arising from improved understanding of biological systems (FAO, 1998).

- **Social Considerations:** Improved living and working conditions for farm-workers, as a prerequisite to becoming organically certified, may result in social benefits such as a more contented labour force which could be far more productive. Organic farming will also build on the knowledge of local farmers, as many African farmers prefer not to use chemicals. Engaging in organic farming may also allow new social groups, women in particular, to engage in cash crop production. The historic male dominance in Africa has limited many women's access to inputs and credit.
- **Cooperation and Sharing:** Greater cooperation between producers is often a consequence of converting to an organic farming system. Willer and Yussefi (2003) note that in countries such as Egypt and Uganda, many and in some cases, thousands of farmers are working together to achieve sufficient volumes for export.
- **Environmental Considerations:** The broader environmental benefits have been well documented earlier in this report. Organic production systems are significantly less harmful to the environment, particularly in terms of biodiversity, reduced carbon emissions, pollution and water use.
- **Extension, capacitation & grower group organisation:** Organisational capacitation of farmers and democratic participatory processes can enhance institutional structures and services in rural areas. This can increase the self-reliance and status of rural areas and populations, arrest social and cultural degradation, revitalise existing traditional values or create new value systems.

### 9.3.3 Discussion

One complication in analysing costs and benefits associated with organic agriculture is that organic standards say one thing, and organic principles and ideology say something else. The actual practice of organic farms often contains components that are not specifically required in the standards, e.g. income diversification or extra attention to the surrounding environment. In the table below (Table 41), there is an indication whether a practice is required in the standard **(R)** or if it is generally used by organic farmers and provides a solution to a broader issue **(S)**.

To determine costs and benefits, targets must be identified and should be related to applicable organic measures. Analysis must first verify that the applicable organic measures are indeed implemented and then quantify the cost or benefit through comparison against projected expenditures of corrective actions (e.g. decontamination of water ways); expense savings (e.g. input costs, health care); income and employment in comparison with conventional operations in the area, community or country in question. Costing of environmental and social externalities and indirect income (e.g. ecotourism) is complicated and often not available for cost / benefit comparisons.

For an enterprise analysis, a key indicator is a comparison between organic and non-organic operations of similar size in a similar community / area on the basis of net income. Should organic and non-organic operations enjoy similar net incomes, one can surmise that the

external and indirect benefits (environmental and social) accrued to organic measures should favour organic production systems. Where organic operations are disadvantaged by institutional measures supporting conventional agriculture, e.g. input subsidies, adjustments should be made accordingly to the cost / benefit comparison between organic and non-organic operations.

From the summary of costs and benefits above, it is clear that costs associated with organic production are often specific to the farm or farmer, whereas the benefits of the system, such as increased biodiversity, reduced pollution and carbon emissions, are often enjoyed by the broader community. Organic farmers should perhaps be compensated for the environmental goods and services that their production systems provide.

**Table 41: Broader Benefits Associated with Organic Agriculture (Adapted from Rundgren & Wai, undated)**

Issues	Requirement in organic standards (R) / Practice that is a solution to a problem (S)	Relevance of organic agriculture	Example of Indicators
<b>Human Health</b>			
Health problems caused by pesticides	No use of chemical pesticides (S,R)	High relevance	Farmer and farm worker health status. Reduction in cases of pesticide poisoning
Antibiotics, hormones, etc. in animal husbandry causing health problems and resistance to antibiotics and environmental problems (e.g. malformations in water living organisms)	Improved animal systems (S,R) Integrating animals and crops (S) Meeting needs of animals (S,R) Use of alternative disease treatments (S)	High relevance	Reduction of resistance to antibiotics Decrease of pollution
Malnutrition		High relevance: organic food nutrient rich. Allows for a diverse diet. Demand for organic linked mainly to nutrition / health.	
<b>Environment</b>			
Environmental problems caused by pesticides and agrochemicals	No use of agrochemicals (S,R)	High relevance	Increased bio-diversity Decreased pollution
Decreasing bio-diversity in surrounding environment	No use of agrochemicals (S,R) No GMO crops (S,R) Diversified production (S)	High relevance	Development of bio-diversity with organic vs. conventional
Decreasing bio-diversity within agricultural production	Diversity and greater number of crop and animal species, including local varieties (S)	High relevance	Development of bio-diversity with organic vs. conventional
	No use of agrochemicals (S,R)	High relevance	Development of bio-diversity with organic vs. conventional
	More varieties, no GMO crops (S,R)	High relevance	Development of bio-diversity with organic vs. conventional

Issues	Requirement in organic standards (R) / Practice that is a solution to a problem (S)	Relevance of organic agriculture	Example of Indicators
	Integration of animals & crops (S)	High relevance	Development of bio-diversity with organic vs. conventional
	Tree-planting for multiple use (fuel, N-fix, fodder, mulching, fruit) (S)	Some relevance	
Limited water resources	Less water pollution (especially chemical) (S,R)	High Relevance	Actual pollution rate
	Improve the water-holding capacity of soils (S) Soil protection measures (S,R) Erosion control (S) Afforestation, agro-forestry, mulching and cover crops (S)	High Relevance	Soil retention capacity
	Improved irrigation technologies and practices (S)	Some relevance	
<b>Farming system</b>			
Soil degradation leading to reduced yields	Erosion control measures (S,R)	High relevance: Erosion control is inherent in organic concepts, however not always clearly addressed in standard	Loss of soil
	Increase of soil organic matter (S) Diversification of production systems (S), tree-planting(S), agro forestry (S)	High relevance	Increase of SOM Number of species grown Percentage under permanent crops
Falling productivity in intensive, Green revolution agriculture (more pests, resistance etc.)	Better management, soil building, prevention, diversification, varieties, biological control (S)	Relevant	
<b>Farm Economy</b>			
Low profit for farmers	Reduced external inputs (S) Diversified, more market-oriented production (S)	Relevant in situations with high input prices and comparatively low labour costs If the market is available, high prices can be obtained	Actual profit levels
Low cost efficiency in inputs	Improved management and technology (S) Efficient use of local (or on-farm) production resources (S)	High Relevance, however also some organic inputs are costly and little efficient	
Marginalised small farmers	Low external input production (S)	Will increase productivity if their current system is	

Issues	Requirement in organic standards (R) / Practice that is a solution to a problem (S)	Relevance of organic agriculture	Example of Indicators
		not optimal Will result in reduced production costs in situations with high input prices and comparatively low labour costs Will provide a competitive advantage	
Social and cultural degradation	Vitalising old values or creating new values (S) Increase self-reliance and status of rural areas and populations (S)	Organic agriculture can build on Indigenous and Traditional Knowledge (ITK)	
Threatened food security (including food safety)	Low external input and improved management (S)	Relevant: Long term higher production, short time perhaps lower, depending on conditions More stable production if pests controlled	
	Soil improvement (S,R)	Relevant: more resilience	
	Decrease input dependency (S)	Relevant	
	Increase diversity (S,R)	Relevant: Lowers risk	
	Optimal use of local resources (S)	Relevant	
	Limit risk of chemical pollution (SR)	High Relevance	
<b>Climate Change</b>			
Climate change (mitigation)	Increase soil organic matter (S)	High Relevance	Development of OM in soil
	Reduce emissions (S)	Fairly relevant: organic agriculture uses less fossil fuel as it does not use nitrogen fertilisers	Actual emissions
Climate change (adaptation to)	Diverse production system (S)	Relevant: organic agriculture improves soil. Diversification leads to less vulnerability Production system are also more resilient	

## **10 CONTRIBUTION OF ORGANICS TO SOCIO-ECONOMIC THEMES**

### **10.1 Introduction**

This component deals with the socio-economic environment within which organic agriculture products and processes take place. A number of organic agriculture researchers and practitioners highlight that organic agriculture may have a significant impact on the socio-economic problems of South Africa. This report explores the influence that organic agriculture may have on some of these socio-economic issues and it considers the impact and contribution that policy and culture orientation could have on organic agriculture.

The purpose of this section is thus:

- To investigate the linkages between the organic agriculture value chain with the principles of the African Renaissance, NEPAD, and the concept of Ubuntu
- To investigate the relevant socio-economic aspects of the organic agriculture value chain with regard to broad-based Black economic empowerment, job creation, SMME development, skills transfer
- To investigate the role of agricultural biotechnology and waste management in organic agriculture
- To evaluate potential health benefits related to organic production
- To identify strategies that can lead to organic agriculture having greater impact and linkages with the broader socio-economic environment in which it takes place.

#### **10.1.1 Approach and Methodology**

The approach adopted in this research is that organic agriculture offers a range of social and economic benefits to the South African people. Through resource improvements or value-added activities, organic agriculture can potentially generate a numbers of job opportunities that boost local economy and help to reduce other socio-economic threats such as poverty, rural-to-urban migration, nutrition and health. This component therefore sets out to identify and analyse the broader socio-economic linkages and impacts and suggests strategies by which the positive impacts could be maximized.

#### **10.1.2 Definitions and Concepts**

Keeping in mind that this report will not go into the detailed analysis of the exact signification of organic agriculture, since that is addressed by in other parts of the report, it is helpful to provide a context for the sections below.

There are numerous definitions of organic farming or agriculture, but for the purpose of this report the term organic agriculture refers to a process that uses methods respectful of the environment from the production stages through handling and processing. Organic production is not merely concerned with a product, but also with the whole system used to produce and deliver the product to the ultimate consumer. In this study organic agriculture

refers to agriculture that meets organic production standards and is subject to organic inspection, certification and labelling. Organic agriculture is based on minimising the use of external inputs and avoiding the use of synthetic fertilizers and pesticides. It should be pointed out that organic agriculture practices cannot ensure that products are completely free of residues, due to general environmental pollution. However, methods are used to minimise pollution of air, soil and water. Organic food handlers, processors and retailers adhere to standards to maintain the integrity of organic agriculture products.

To qualify as organic agriculture practice, a number of high level guiding principles apply. These include health, ecology, fairness and care, which are detailed in section 2.4.1. It is against this context that the convergence of organic agriculture and the above philosophies and policies will be assessed.

The importance of organic agriculture is not only to provide food, work opportunities, as well as raw materials for manufacturing industries like textiles, it covers also many socio-economic aspects that could be sometimes overlooked if the concept was not well elucidated. This justifies the presence of the above high level principles in this research paper.

## **10.2 *Philosophies for Development***

The sections below build an understanding of the African Renaissance, NEPAD and Ubuntu. These sections also explore how organic agriculture aligns with their principles and objectives.

### **10.2.1 African Renaissance**

#### **Background**

The African Renaissance is a concept recently popularised by South African President Thabo Mbeki, which calls upon African people and nations to solve the many problems troubling the African continent. It reached its height in the late 1990s but continues to be a key part of the post-apartheid intellectual agenda. Other individuals seen as being the "new generation of African leaders" that would accomplish the goals of the African Renaissance were President Yoweri Museveni of Uganda and President Paul Kagame of Rwanda (Kuchi Holdings, 1999).

#### **Objectives, Principles and Priorities**

Among other things the African Renaissance is a philosophical and political movement that seeks to end the violence, elitism, corruption and poverty that seem to plague the African continent, and replace them with a more just and equitable order.

The above objectives will be met by, among other things, encouraging education and the reversal of the "brain drain" of African intellectuals (Africans have to take pride in their heritage and take charge of their lives). Some of the priorities of the African Renaissance include:

- The recovery of the African continent as a whole
- The establishment of political democracy on the continent

- The need to break neo-colonial relations between Africa and the world's economic power
- The mobilisation of the people of Africa to take their destiny into their hands thus preventing the continent from being seen as a place for the attainment of the geo-political and strategic interests of the world's most powerful countries; and
- The need for fast development of people-driven and *people-centred* economic growth and development aimed at meeting the basic needs of the people.

### **Convergence between African Renaissance and Organic Agriculture**

The African Renaissance and organic agriculture both seek to alleviate poverty and promote development. The linkages between African Renaissance and organic agriculture are based on complementarity, whereby achievement of the ideals of organic agriculture will assist in achieving the goals of the African Renaissance. Key programmes of the African Renaissance are discussed below:

- **Poverty alleviation**

The African renaissance philosophy considers eradicating poverty through the fight against violence, and elitism, which is significantly important since many evidences have shown how violence has undermined the growth of many African countries. Organic agriculture can alleviate poverty through enhancing food security and supporting vulnerable social groups (women for instance).

- **Autonomy**

The African Renaissance has mobilised the people of Africa to take their destiny into their hands and to take charge of their lives. Organic agriculture can be used by the African people as a prototype to achieve the above objective through the involvement of the African people in the entire organic agriculture value chain. Organic agriculture aims to reduce external inputs and enhance local recycling, which can enhance local economies and improve autonomy (i.e. less reliance on outside supplies).

- **Overcoming corruption**

The link between poverty and corruption is one of these vital relationships. Corruption can be petty or large scale. Petty corruption involves relatively minor amounts of money or gifts changing hands where one of the parties is a minor official in the organisation or system within which the transaction takes place. For example: paying a policeman to ignore the fact that your car's licence has expired. Large scale corruption most often involves businessmen and government officials of senior rank and the figures involved are significant. Examples of these are kickbacks paid to officials on government public works contracts. Corruption contributes to poverty by promoting unfair distribution of income and inefficient use of resources.

The traceability, chain of custody and standards for production of organic produce has to be maintained to ensure the integrity of the organic claim. This provides a guarantee to the consumer and assists the industry to remain competitive in the global market. These measures can be likened to establishing systems that remove, or at least limit, corruption. Nevertheless, such corruption (or fraud) does occur and non-organic produce does get onto

the market as organic produce (certified or non-certified). This results in the reputation of the genuine organic produce being decreased, leading to the loss of global market share that will also affect the entire value chain. In addition, the fundamental principles of organic agriculture and the philosophical approach of many organic producers are opposed to systems that are unsustainable, unfair and fraudulent. There is a growing body of evidence to suggest that organic produce has superior nutritional benefits (see Section 10.7) and has significantly less harmful chemicals, which can improve general health and disease resistance. A parallel may also be drawn for the organic farmer receiving a premium or a market advantage as a result of “being honest” with the land as opposed to “corrupting” it with chemical inputs.

- **To support education**

Walters (2002) points out that the process of education is one of the keys to social, cultural and political participation, personal and community economic empowerment, and national development; because the output of education is human capital, which constitutes the nation’s primary wealth and potential for growth. Therefore low levels of education and literacy should be considered a threat to personal, community as well as national development. The African Renaissance therefore encourages education and capacity building. Organic agriculture has been shown to enhance food security and improve income in other African countries (see 0). This means that more disposable income is available to educate children and build their own self confidence. In addition, there is a recognition that organic farm workers tend to have greater skills and capacity than their non-organic counterparts (see section 10.4)

Note with reference to the table below that African Renaissance is a philosophical and political movement that fits into the broad vision of the new partnership for Africa’s development (NEPAD). Therefore most of its priorities and the convergences will be dealt with in more detail in the NEPAD section.

**Table 42: African Renaissance and Organic Agriculture Convergence**

AFRICAN RENAISSANCE	KEY CONTRIBUTION OF ORGANIC AGRICULTURE (DIRECT AND INDIRECT)
Relevant Goals and Priorities	
The recovery of the African continent as a whole.	Increased yields (productivity increase) in low input systems, higher incomes (premium prices), diverse and nutritious diets from organic products, improved food security, reduced malnutrition.
The establishment of political democracy on the continent.	Organic agriculture creates jobs and income generating opportunities. Autonomy and independence is enhanced in organic systems through reduced reliance on external inputs.
To break neo-colonial relations between Africa and the world’s economic	Independence from GMOs, external chemical inputs. Improved access to international markets can reduce donor dependency, but

AFRICAN RENAISSANCE	KEY CONTRIBUTION OF ORGANIC AGRICULTURE (DIRECT AND INDIRECT)
power.	does not relieve dependence on international markets.
The people-driven and people-centred economic growth and development.	Organic agriculture is a labour intensive sector – income generating opportunities empower. Skills development is important for successful organic agriculture.
Relevant Objectives	
.End of violence, elitism, corruption.	Principles, philosophies and standards opposed to corruption, focused on healing the land, people.
High Level Principles	
To encourage education and the reversal of the "brain drain"	Increased skills requirements of organic farmers and workers, improved income generation, learning-by-doing processes, farmer-to-farmer knowledge exchange are outcomes of organic agricultural practices. Limited direct impact of organic agriculture on "brain drain" issues.

## 10.2.2 New Partnership for Africa's Development (NEPAD)

### **Background and Structure**

The New Partnership for Africa's Development (NEPAD) is a vision and strategic framework for Africa's renewal. Its strategic framework document arises from a mandate given to the five initiating Heads of State (Algeria, Egypt, Nigeria, Senegal, and South Africa) by the then Organisation of African Unity (OAU) to develop an integrated socio-economic development framework for Africa. Issues such as the escalating poverty levels, underdevelopment and the continued marginalisation of Africa from the globalisation process and the social exclusion of the vast majority of its peoples constitute a serious threat to global stability. NEPAD therefore calls for the reversal of this current abnormal situation.

NEPAD is a programme of the African Union designed to meet its development objectives. The highest authority of the NEPAD implementation process is the Heads of State and Government Implementation Committee (HSIC). The HSIC reports to the AU Summit on an annual basis. The Steering Committee of NEPAD comprises the Personal Representatives of the NEPAD Heads of State and Government. This Committee oversees projects and programme development. The NEPAD Secretariat coordinates implementation of projects and programmes approved by the HSIC (NEPAD, 2001).

### **Goals, Objectives and Principles**

The goals of NEPAD are:

- To achieve and sustain an average gross domestic product (GDP) growth rate of over 7 per cent per annum for the next 15 years.

- To ensure that the continent achieves the agreed International Development Goals (IDGs), which are:
  - To reduce the proportion of people living in extreme poverty by half between 1990 and 2015
  - To enrol all children of school age in primary schools by 2015
  - To make progress towards gender equality and empowering women by eliminating gender disparities in the enrolment in primary and secondary education by 2005
  - To reduce infant and child mortality ratios by two-thirds between 1990 and 2015
  - To reduce maternal mortality ratios by three-quarters between 1990 and 2015
  - To provide access for all who need reproductive health services by 2015
  - To implement national strategies for sustainable development by 2005, so as to reverse the loss of environmental resources by 2015.

As an African developmental means, NEPAD has a number of high order objectives to achieve Africa's renewal. These include:

- To eradicate poverty
- To place African countries, both individually and collectively, on a path of sustainable growth and development
- To halt the marginalisation of Africa in the globalisation process and enhance its full and beneficial integration into the global economy
- To accelerate the empowerment of women.

To realise the above objectives, NEPAD has the following high level principles:

- Good governance as a basic requirement for peace, security and sustainable political and socio-economic development
- African ownership and leadership, as well as broad and deep participation by all sectors of society
- Anchoring the development of Africa on its resources and resourcefulness of its people
- Partnership between and amongst African peoples
- Acceleration of regional and continental integration
- Building the competitiveness of African countries and the continent
- Forging a new international partnership that changes the unequal relationship between Africa and the developed world
- Ensuring that all partnerships with NEPAD are linked to the Millennium Development Goals and other agreed development goals and targets.

Immediate priorities include:

- Establishing the Conditions for Sustainable Development by ensuring:
  - Peace and security
  - Democracy and good, political, economic and corporate governance
  - Regional co-operation and integration
  - Capacity building
- Ensuring policy reforms and increased investment in the following priority sectors:
  - *Agriculture*
  - *Human development with a focus on health, education, science and technology and skills development*
  - Building and improving infrastructure, including Information and Communication Technology (ICT), Energy, Transport, Water and Sanitation
  - *Promoting diversification of production and exports, particularly with respect to agro-industries, manufacturing, mining, mineral beneficiation and tourism*
  - *Accelerating intra-African trade and improving access to markets of developed countries*
  - *The environment.*

For each sector, however, the objective is to bridge existing gaps between Africa and the developed countries so as to improve the continent's international competitiveness and enable it to participate in the globalisation process.

- Mobilising Resources by:
  - Increasing domestic savings and investments
  - Improving management of public revenue and expenditure
  - Improving Africa's share in global trade
  - Attracting foreign direct investment
  - Increasing capital flows through further debt reduction and increase overseas development assistance (ODA) flows.

### **Convergence Between NEPAD and Organic Agriculture**

Both NEPAD and organic agriculture seek to address poverty alleviation and the support principles of sustainable development, as their outcomes can enhance the growth and independence of the African continent. Sustainable development means a development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. In other words, the current generation should not use the resources to such extent that it may affect the future use of resources for generations to come, although it is impossible to estimate what their needs will be. This concept is enshrined in the principles

and practices of organic agriculture. NEPAD does refer the environment, but the main focus is around the development of people (“*people centred development*”).

- **Poverty alleviation**

There are numerous definitions of poverty. According to Lok-Dessallien (2002):

“Poverty can be viewed in absolute and relative terms. Absolute poverty refers to subsistence below minimum, socially acceptable living conditions, usually established based on nutritional requirements and other essential goods. Relative poverty compares the lowest segments of a population with upper segments, usually measured in income quintiles or deciles.’ Absolute and relative poverty trends may move in opposite directions. For example, relative poverty may decline while absolute poverty increases if the gap between upper and lower strata of a population is reduced by a decline in well being of the former at the same time that additional household’s fall beneath the absolute poverty line. Even within so-called absolute poverty, countries often distinguish between indigence, or primary poverty and secondary poverty (sometimes referred to as extreme and overall poverty). Indigence usually refers to those who do not have access to the basic necessities for human survival, while other forms of poverty refer to degrees of deprivation above that threshold”.

A good working definition is provided by South African Non Government Organisation Coalition (SANGOCO, 2007), which provides a recent and relevant definition of poverty for South Africa:

- Pronounced deprivation in well being
- Lack of income to meet basic needs (the US\$1/day is the usual benchmark)
- Vulnerability to exposure to risks (ill health, economic shocks, natural disasters)
- Absence of opportunities to influence public institutions (voicelessness and powerlessness)
- Lack of and unequal access to basic necessities and environmental resources.

The broad poverty alleviation agenda of NEPAD includes many objectives that in part can be achieved by organic agriculture. These include eradication of the extreme poverty and hunger, achieving universal education, promoting gender equality and empowering women, reducing child mortality, and improving maternal health. Food security and income generation can be enhanced through practicing organic agriculture, particularly in low input / rural production systems.

Both directly and indirectly organic agriculture is linked to education. Directly: organic farmers acquire knowledge on the key issues that are relevant to organic agriculture (e.g. Ecosystem, human health, soil-plant interaction, and pest management). Moreover organic farmers actively transfer knowledge to other farmers. Thus organic agriculture constitutes a learning-by-doing process, and allows farmer-to-farmer knowledge exchange. Indirectly: when farmers practicing organic agriculture sell their products, they can get improved yields and incomes which is often used to school children.

Organic agriculture promotes gender equality and women empowerment. An ancient African proverb ("without women, we all go hungry") emphasises the role of women in agriculture. In fact women supply much of the labour in agricultural production and produce more than half the food in some African countries, South Asia, and Latin America (Heyzer, 2003 and FAO 1997, cited in Jiminez, 2006). More women around the world are taking a leading role in the development of organic agriculture, which has a great impact on their empowerment.

Organic agriculture can improve maternal health. Women are more vulnerable to malnutrition during pregnancy, and they require a higher intake of proteins and vitamins. Organic agriculture has the potential to reduce maternal mortality by promoting consumption of better quality and more diversified food. Further, organic agriculture can reduce child mortality. Through organic agriculture, children have access to more diversified diets, providing them with more nutrients and elements necessary for their growth. Finally, the avoidance of pesticides or herbicides reduces the risk of health-related problems that might affect the survival of children, particularly during pregnancy and their earlier years.

- **Sustainable development**

NEPAD has a sustainable plan that encompasses environmental sustainability and the development of a Global Partnership both nationally and internationally.

Organic agriculture recognises that environmental protection and improvement is the cornerstone of sustainable agricultural development. Organic agriculture is based on protection of biodiversity and improvement of ecosystem services. Organic agriculture enhances a number of ecological functions and ecosystem services (e.g. nutrient cycling, organic matter dynamics, and maintenance of soil structures, thus reducing soil erosion problems). Organic agriculture also contributes to ensuring biodiversity as it favours the development of a diverse and active community of organisms above and below ground. Organic farming recognises crop weeds and pests as part of the system, but also enhances the presence of beneficial "weeds", insects and other small and micro organisms.

While economic growth rates are important, they are not by themselves sufficient to enable African countries to develop. The challenge for Africa, therefore, is to develop the capacity to sustain growth at levels required to achieve poverty reduction and sustainable development. This, in turn, depends on many factors, including global partnerships for development. In this respect fostering collaboration between government and organic agencies and other institutions is critical. This has significant potential to enhance the growth of organic production, resulting in improved employment opportunities, reduced poverty and sustained and sustainable economic growth. NEPAD is centred around partnerships and people centred development and significant opportunities exist for Organic Agriculture to support growth through partnerships.

**Table 43: NEPAD and Organic Agriculture Convergence**

NEW PARTNERSHIP FOR AFRICA'S DEVELOPMENT (NEPAD)	KEY CONTRIBUTION OF ORGANIC AGRICULTURE (DIRECT AND INDIRECT)
Relevant Goals and Priorities	
To achieve and sustain an average gross domestic product (GDP) growth rate of over 7 % per annum for the next 15 years	Opportunities for increased market shares through exports; increased output of small farms
To reduce the proportion of people living in extreme poverty by half between 1990 and 2015.	Organic agriculture is a labour intensive sector potentially providing more job opportunities and can also. Can improve food security at a household level.
To enroll all children of school age in primary schools by 2015.	Examples in East Africa show that some farmers use improved disposable income to school their children.
To promote gender equality and women empowerment.	Women play a major role in agricultural production. Opportunities for skilling around organic production and participation further along the value chain exist.
To reduce infant and child mortality ratios by two-thirds between 1990 and 2015.	Possibility of improved nutrition, avoidance of pesticides can limit mortality.
Strategies to reverse the loss of environmental resources by 2015.	Organic agriculture consciously aims to improve ecosystem services and protects biodiversity.
To improve regional co-operation and integration.	Opportunities for collaboration on production and export of organic goods (Such as the East African organic standard that can be replicated in SADC).
To increase investment in agriculture and in human development.	Investment in knowledge, capacity building, extension and research can significantly enhance the role of organic agriculture in human development.
To promote diversification of production and exports.	Large international demand for a variety of organic products.
To build and improve infrastructure (ICT, Energy, Transport, Water and Sanitation)	Infrastructure is necessary for improved production and market access.
Mobilizing resources by Increasing domestic savings and investments.	Organic agriculture reduces dependence on external inputs and costs.
Relevant Objectives	
To eradicate poverty.	Increased yields (productivity increase) in low input systems, higher incomes (premium prices), diverse and nutritious diets from organic products, reduced food insecurity.

NEW PARTNERSHIP FOR AFRICA'S DEVELOPMENT (NEPAD)	KEY CONTRIBUTION OF ORGANIC AGRICULTURE (DIRECT AND INDIRECT)
To halt the marginalisation of Africa in the globalisation process.	Opportunities for collaboration on production and export of organic goods (Such as the East African organic standard that can be replicated in SADC).
To accelerate the empowerment of women.	Women play a major role in agricultural production. Opportunities for skilling around organic production and participation further along the value chain exist.
High Level Principles	
To promote good governance in Africa.	Organic agriculture seeks accountability and responsibility for the land and biodiversity; adherence to standards to maintain certification. Governments are accountable to the land and its people; adherence to principles of democracy maintains credibility and investment.
Anchoring the development of Africa on its resources and resourcefulness of its people.	Organic agriculture focuses on local inputs and recycling, is labour intensive and gives priority to local people.
Partnership between and amongst African peoples.	Organic production and marketing can be enhanced through local and intra African partnerships
Acceleration of regional and continental integration.	Opportunities for collaboration on production and export of organic goods (Such as the East African organic standard that can be replicated in SADC).
Building the competitiveness of African countries and the continent.	There is a huge international market for organic products. Other developing countries are taking advantage of this (South America, India, China)
Forging a new international partnership that changes the unequal relationship between Africa and the developed world.	Opportunities exist to enhance organic productions through partnerships such as the India – Brazil – South Africa (IBSA) initiative.
Ensuring that all Partnerships with NEPAD are linked to the Millennium Development Goals and other agreed development goals and targets	Principles and practices of organic agriculture are aligned with the MDGs

### 10.2.3 The Concept of Ubuntu

#### **Background and the Understanding of Ubuntu**

Since 1994 political leaders and the people of South Africa believed that the new South Africa that is being born will be a good, a moral, a humane and a caring South Africa which, as it matures, will progressively guarantee the happiness of all its citizens by infusing the values of *Ubuntu* in their very being as one people. Humanness or “Ubuntu” has become a key word in the political and social language of South Africa's democracy. This African

humanism is drawn from African peoples' own religion, ethical views, political systems and philosophy before the advent of the period of colonisation.

In fact this is not a new concept, it is well known to many people even though little research has taken place in this regards in some African cultures. Ubuntu is a difficult concept to pin down as different communities attach different meanings to the concept emphasising the strengths of some aspects they regard fundamental. Moreover, Ubuntu is referred to differently in diverse African Bantu languages. For instance, it is bumuntu in Tshiluba ( D.R. Congo), umunthu in Chewa (Zambia), umundu in Yawo (Togo), vumunhu in Tsonga (SA), unhu in Shona (Zimbabwe), batho in Sotho or Tswana (Lesotho and Botswana), ubuntu in Zulu (SA), vhutu in Venda (SA), and ubuntu in Xhosa and Ndebele (SA and Zimbabwe). Nussbaum (2003) conceptualises it as the "capacity in African culture to express companion, reciprocity, dignity, harmony and humanity in the interest of building and maintaining community with justice and mutual caring". However, the concept of Ubuntu is seen as one of the founding principles of the new South Africa. It is a traditional Sub-Saharan African ethic or philosophy focusing on peoples' allegiances, common bond, and social interactions. The word has its origin in the Bantu languages of the Southern Africa and it is explained by the Zulu maxim "*umuntu ngumuntu ngabantu*" which roughly translated in English could be "humanity towards others" or "I am because we are" or "A person 'becomes human' through other persons," or also, "a person is a person because of other persons". Another translation could be the belief in a universal bond of sharing that connects all humanity.

A longer definition has been attempted by the South Africa Nobel Laureate Archbishop Desmond Tutu who argues that Ubuntu is the essence of being human. It speaks of the fact that my humanity is caught up and is inextricably bound up in yours. I am human because I belong. It speaks about wholeness and compassion. A person with Ubuntu is welcoming, hospitable, warm and generous, willing to share. Such people are open and available to others, willing to be vulnerable, affirming of others, do not feel threatened that others are able and good, for they have a proper self-assurance that comes from knowing that they belong in a greater whole. They know that they are diminished when others are humiliated, diminished when others are oppressed, diminished when others are treated as if they were less than who they are. The quality of Ubuntu gives people resilience, enabling them to survive and emerge still human despite all efforts to dehumanise them (Tutu, 2005). Ubuntu promotes the welfare of African societies and supports democracy, partnership, equity, and inter-sectoral collaboration.

### **Principles and Policy**

To achieve the well-being in African societies the concept of Ubuntu applies a number of principles. These include care and sensitivity to the need of others, respect, sympathy, unity, patience and kindness. The policy of Ubuntu is explained in the White Paper, published in August 1997, in Point 24 of Chapter 2. National Developmental Social Welfare Strategy - "The principle of caring for each other's well-being will be promoted, and a spirit of mutual support fostered. Each individual's humanity is ideally expressed through his or her relationship with others and theirs in turn through recognition of the individual's humanity. Ubuntu means that people are people through other people. It also acknowledges both the

rights and the responsibilities of every citizen in promoting individual and societal well-being."

### **Social Aspect of Ubuntu**

Given the vast racial, cultural, religious, educational, and socio-economic differences apparent not just in South-African society but the worldwide, the philosophy of Ubuntu is highly relevant. Many people fall into the trap of judging different people by their own standards or by maintaining certain *established stereotypical notions*. If one instead regards someone as a fellow human being, all individual quirks and differences taken into account, there is perhaps a greater chance of achieving understanding. And, achieving understanding is important and necessary, all people *interconnected*. What hurts you could one day come around and hurt me. What *benefits me*, if I'm not too selfish about it, *could make a crucial difference in your life*? And knowing you could bring a world of meaning and interest in mine.

### **Convergence between Ubuntu and Organic Agriculture**

The parallels between Ubuntu and organic agriculture are significant. Only in the last decade has organic agriculture received recognition as formal commercial agricultural system. Prior to that, it consisted of a small group of committed farmers who challenged *stereotypical notions* and were considered fringe elements as a result. Importantly, too, organic agriculture recognises the *interconnectedness* of human and natural systems and seeks to generate *mutual benefit* for humanity and the environment through a more sustainable and caring production system. Both organic agriculture and Ubuntu seek to promote well-being for people. In the case of Ubuntu, it is more direct. Organic agriculture views people as an integral part of the environment with a responsibility towards the land that sustains us. More directly, the principles of fairness and care capture the ideology of organic agriculture in terms of supporting human development, such as "...ensure fairness with regard to the common environment and life opportunities" and "...systems of production, distribution and trade that are open and equitable and account for the real environmental and social costs". The concept of Ubuntu uses equity, mutual respect, mutual support, and sympathy as key components of human interaction.

Organic agriculture includes productive agricultural systems that use sustainable, natural processes, rather than external inputs, to enhance agricultural productivity. As the process of the certification of organic agriculture is still inelastic and rigid, this limits the majority of third countries to access the organic markets. For example, many African countries practice organic agriculture without knowing that it is a beneficial form of agriculture. Others have very successful organic agricultural programmes. South Africa is considered today as leading African country in terms of its economy and political stability and might use Ubuntu's principles such as sympathy, willingness to share and partnership to expand the scale of this gainful farming model in South Africa by learning and sharing with other African countries who have well developed organic sectors. While there is currently limited support for and application of organic agriculture in South Africa, it can become a leading country in organic agriculture, given the high level of infrastructure and market channels available. This, in turn, can raise the profile of organic agriculture in Africa through partnerships and regional programmes.

Further, Ubuntu's meanings such as "I am because we are" or "A person 'becomes human' through other persons," or also, "a person is a person because of other persons", can be efficiently applied in the entire organic agriculture value chain to avoid unscrupulous or unethical doings. For example, I am an organic producer because of organic harvester, organic processor, organic marketer, organic handler, and organic buyer. This, Ubuntu's principle of consciousness, has to lead me as an organic producer to present to my buyer only the real and genuine organic produce or product, keeping into my mind that "I am producing because he is buying; and I cannot sell to him produce using artificial chemicals that might cause him social, physical or economic hardship simply because I care for him".

### **10.3 Organic Agriculture and Broad Based Black Economic Empowerment (BBBEE)**

South Africa's policy of Broad-Based Black Economic Empowerment (BBBEE) is not simply a moral initiative to redress the wrongs of the past. It is a pragmatic growth strategy that aims to realise the country's full economic potential. Black economic empowerment is not affirmative action, although employment equity forms part of it. Nor does it aim to merely take wealth from white people and give it to blacks. It is simply a growth strategy, targeting the South African economy's weakest point: inequality. "No economy can grow by excluding any part of its people, and an economy that is not growing cannot integrate all of its citizens in a meaningful way". (South Africa's Economic Transformation, 2003)

Accordingly, government defines BBBEE as an integrated and coherent socio-economic process that directly contributes to the economic transformation of South Africa and brings about significant increases in the numbers of black people that participate, manage, own and control the country's economy. It also aims to bring about significant changes in income imbalances and other social inequalities. Thus BBBEE processes include elements of human resource development, employment equity, enterprise development, preferential procurement, as well as investment, ownership and control of enterprises and economic assets. Societies that are characterised by racial or ethnically defined wealth disparities are not likely to be socially and politically stable. The process of BBBEE seeks to accelerate the deracialisation of the South African economy and fast track the re-entry of historically marginalised communities into the mainstream of the economy. A more equitable economy will benefit all South Africans, individuals and enterprises. The process of BBBEE is an inclusive one, and all enterprises operating within South Africa can, and indeed should, participate in this process. This strategy has been implemented throughout all sectors of the economy and is not limited only to those enterprises that derive income from government procurement or those where the sector is regulated by government.

#### **10.3.1 AgriBEE**

In terms of agriculture, the AgriBEE Charter defines and guides Black Economic Empowerment in the Agricultural Sector (AgriBEE Steering Committee, 2005). The scope of AgriBEE covers the entire value chain in the South African agricultural sector, and all agricultural economic activities, such as the provision of agricultural inputs, services,

farming, processing, distribution, logistics and allied activities that add value to agricultural products.

The objectives of AgriBEE are to facilitate broad-based black economic empowerment in the agricultural sector by implementing initiatives to include Black South Africans at all levels of agricultural activity and enterprises by:

- Promoting equitable access and participation of Black people in the entire agricultural value chain
- De-racialising land and enterprise ownership, control, skilled occupations and management of existing and new agricultural enterprise
- Unlocking the full entrepreneurial skills and potential of Black people in the sector
- Facilitating structural changes in agricultural support systems and development initiatives to assist Black South Africans in owning, establishing, participating in and running agricultural enterprises
- Socially uplifting and restoring the dignity of Black South Africans within the sector
- Increasing the extent to which communities, workers, co-operatives and other collective enterprises own and manage existing and new agricultural enterprises, increasing their access to economic activities, infrastructure and skills training
- Increasing the extent to which Black women, people living with disabilities and youth own and manage existing and new agricultural enterprises, increasing their access to economic activities, infrastructure and skills training
- Empowering rural and local communities to have access to agricultural economic activities, land, agricultural infrastructure, ownership and skills.

The main targets of AgriBEE are as follows:

- That 30% of commercial agricultural land should be owned by Black South Africans by 2014
- To achieve 50% representivity of Black people in senior management positions in all enterprises by 2008
- To reduce illiteracy by 75% in farm communities by 2008
- To achieve 35% Black ownership of existing and new agricultural enterprises by 2008
- To have 50% of the total value of all procurement from BEE companies by 2010.

The indicators of empowerment are structured according to the seven key elements of Broad Based Black Economic Empowerment, as stipulated in the Codes of Good Practice:

1. Ownership
2. Management control

3. Employment equity
4. Skills development
5. Preferential procurement
6. Enterprise development
7. Corporate Social Investment.

These elements are further defined into undertakings that Agri-industry and Government should apply to achieve the AgriBEE objectives. For each of these elements, the AgriBEE charter defines goals that the industry and government should strive to achieve. These goals / targets are listed below for each of the seven elements.

### **Indicators of Empowerment**

- **Ownership**

The AgriBEE framework makes a distinction between land and enterprise ownership as outlined in the main targets of AgriBEE above. Furthermore, AgriBEE activities and processes should ultimately lead to the creation of viable and sustainable enterprises in the agricultural sector. To achieve this, it is necessary for stakeholders in the sector to will work towards the development and implementation of a diversity of enterprise ownership models in support of AgriBEE and all sector stakeholders should endeavour to ensure the establishment of viable and sustainable enterprises.

Agri-Industry is encouraged to increase Black participation through equity interest and joint ventures, sell assets to Black entrepreneurs that will result in sustainable business ventures as well as transfer specialised skills and productive capacity. To support and encourage this, Government has undertaken to implement all legislative and other measures available to it to facilitate ownership.

In terms of land ownership, improved access to land and security of tenure is seen as critical to economic empowerment. To achieve this, Government has set a target of 30% ownership of commercial agricultural land by 2014 (i.e. redistribution; this figure excludes restitution and tenure reform). The AgriBEE charter requires that *“productive and sustainable agricultural use of agricultural land must be ensured in accordance with the relevant agricultural policies and Acts”* and that the necessary scientific studies for the development of land should be undertaken.

Established farming enterprises should endeavour to achieve the following key elements of AgriBEE:

- *Ownership*: sell agricultural land to Black entrepreneurs in market based transactions on a voluntary basis
- *Enterprise development*: lease agricultural land to Black entrepreneurs that will result in the creation of sustainable business opportunities and specialised skills and/or productive capacity
- *Corporate Social Investment*: Make agricultural land available to farm workers, in addition to the sale and lease of agricultural land.

Government has undertaken to support this through existing programmes and by acquiring land proactively (e.g. Proactive Land Acquisition Strategy – PLAS), offering foreclosed land to Black farmers for long term leases and *promote sustainable management and use of natural resources*.

- **Management Control**

Effective participation in management in Agribusiness is to be achieved by promoting participation by black people (especially women) in board positions, executive management and non-executive board positions to qualify for points in terms of management control.

- **Employment Equity**

Employment equity aims to promote the proactive inclusion of Black people (including women, youth and disabled) in managerial positions.

- **Skills Development**

Skilling of human capital through investing in people is necessary to ensure the commercial viability of agricultural enterprises, support high levels of entrepreneurship and sustain primary production. Skills development specifically targets groups such as youth, women and disabled.

In terms of skills, the role of government is to provide quality training at primary, secondary and tertiary levels and the development of a formal agricultural training system to equip future farmers in agricultural careers. Skills development should also focus on promoting agriculture as a career in collaboration with educational institutions, organised agriculture and the agricultural private sector, in particular reviewing existing curricula to enhance technical, entrepreneurial and management skills for black entrants to the sector. Skills development should also ensure the inclusion of Black persons as partners with government in overseas trade missions, technical assistance, study visits and training. Employment and mentorship programmes (SETA accredited) should be established for unemployed and underemployed graduates in agricultural disciplines.

At the agricultural enterprise level, functional literacy should be promoted and encouraged and training programmes for farm and enterprise workers in appropriate technical and management skills should be provided through the AgriSETA and training service providers.

Agri-Industry should support Government by identifying training needs in collaboration with educational institutions and provide for experiential training, internships and training infrastructure for prospective agribusiness entrepreneurs.

- **Preferential Procurement**

Procurement is seen as an effective tool to support AgriBEE and the agricultural sector should proactively implement targeted procurement strategies and policies to realise AgriBEE objectives; progressively provide Black people and SMMEs preferred supplier status including the supply of services and goods and report annually on all BBEE procurement spent.

Similarly, Government has undertaken to align their procurement practices with AgriBEE and provide Black people and SMMEs preferred supplier status. In addition, Government will identify, prioritise and target Black entrepreneurs and companies in awarding tenders and contracts as well as utilise legislative and other measures available to influence the attainment of BBBEE objectives.

- **Enterprise Development**

Support services such as access to finance, infrastructure, information and knowledge systems, are seen as fundamental to sustainable enterprise development. In achieving these, Agribusiness is expected to:

- Strengthen and accelerate the development of operational and financial capacity of black enterprises
- Provide mentoring, access to inputs, credit, infrastructure, markets, technology and extension services
- Report on cumulative quantified contributions to enterprise development
- Lease agricultural land to Black entrepreneurs in qualifying transactions.

Government's role in this is to create an enabling environment through legislation and support programmes, such as the Comprehensive Agricultural Support Programme (CASP) and establish Public Private Partnerships (PPPs) to improve service delivery.

- **Corporate Social Investment (CSI)**

Farming Enterprises are required to support the social development of employees through providing access to quality housing, clean water, sanitation and electricity. Enterprises should also provide access to other social services, such as recreational facilities, healthcare facilities, transport and schools. It is expected that established agribusiness enterprises should support similar development but at a local community level as opposed to a farm level, such as bursaries and scholarships, community training programmes and community conservation initiatives.

### **Reporting on Indicators**

Stakeholders are expected to report on an annual basis on their progress towards achieving these commitments. Score cards are used for this purpose and are audited by accredited rating agencies. The score card has the following core components against which an enterprise is scored:

- Direct empowerment – equity ownership, management / control
- Human resource development – employment equity, skills development
- Indirect empowerment – access to markets, finance, resources & opportunities, support, facilitation & BEE enterprise development, preferential procurement
- Residual – corporate social investment.

### 10.3.2 The Role of Organic Agriculture in Supporting AgriBEE

While there are criteria and mechanisms for addressing transformation (outlined above), many farmers (conventional and organic) are not meeting transformation targets. This is not necessarily due only to a lack of will on the part of farmers – many are engaging actively in transformation. Support of BEE implementation, particularly at a farm and farm worker level requires assistance and collaboration with government and cannot be achieved with limited staff supporting such initiatives at the farm level.

There are also structural deficiencies, such as the efficiency with which funding can be provided to beneficiaries of land reform (e.g. the CASP process requires land transfer before an application can be submitted; it can take anything from 6 to 18 months after application for the funding to be provided – the farmer has no access to operating capital during this time). Further, AgriBEE and land reform beneficiaries require training and mentorship / extension; the extent to which this is currently occurring is not sufficient to achieve real transformation. This section does not provide a critique on AgriBEE and Land Reform in South Africa: there are a range of factors that impact on the effective implementation of AgriBEE and are beyond the scope of this study. This section looks specifically at how organic systems of production can enhance Black participation and how AgriBEE can support the development of organic agriculture in South Africa.

As an emerging agricultural sector in South Africa, opportunities exist to establish equitable participation in organic agriculture. Discussions with sector stakeholders indicate that there is a recognition that it is necessary for the organic sector to transform. Indeed, many organic farmers who embrace the principles of organic agriculture recognise this necessity in spite of any formal requirements such as the AgriBEE charter and are undertaking their own initiatives to support black farmers. As an emerging agricultural sector, it is possible to establish meaningful BEE participation while the industry is in its infancy (i.e. “at the ground floor”). In order for this to be achieved, *the sector has to be formally recognised and supported as an agricultural subsector at a national level.*

In terms of how organic systems can contribute to AgriBEE objectives, the following may be considered as opportunities:

- **Ownership**

The ownership model currently used in land reform, where land is owned by a number people through a legal entity, such as a community property association does not differentiate between individuals who want to farm commercially, subsist or simply settle. This model is also not conducive to effective management and decision making as conflicting interests can develop under such communal management arrangements. Small “family sized” farms can be more productive and will allow family groups or individuals to farm and make farming decisions independently. Indeed, making subdivision easier is one of the measures the Department of Land Affairs and the Department of Agriculture have been considering for some time to improve the pace and quality of land reform. While land reform grants allow for infrastructure upgrades, there is usually limited funding available for operating capital to purchase inputs and beneficiaries do not have the money to buy these themselves. Consequently, production decreases on the farm. Should sufficient support be

provided in developing organic systems of production, it is possible to reduce the use of external inputs and still maintain production. This also means that there will be a reduced need for financing from government programmes such as CASP. *Savings can be used to provide support where it is most needed: training and extension.*

In terms of upstream and downstream agri-enterprises, input supply, particularly the supply of organic seed, represents a significant opportunity for new enterprises to be established. Supply of local certified organic seed is extremely limited. In terms of processing and packaging retailers should be encouraged to make use of black owned enterprises for supply of organic produce.

- **Management control and employment equity**

Management control and equity considers mainly large farming enterprises and Agri-industries as opposed to individually owned and managed farms. Farmers are engaging in joint ventures with farm workers or including them as shareholders in the enterprise, but these are not specifically organic farms. However, organic farmers have observed that the skill levels of employees tend to be greater on organic farms due to greater competence and understanding required in observing crops and understanding why and how organic systems of production work. Greater responsibility is also placed on the farm worker due to higher management requirements of organic farms. These requirements result in increased participation in farm management, which has the potential, given the correct incentives, to evolve into formal equity arrangements.

- **Skills development (in addition to Section 10.4 below)**

Many organic farmers in South Africa hold great amounts of knowledge and skills in their particular field of organic agriculture. This knowledge has been gained through experience and understanding developed from on farm experimentation at great risk to their own enterprises. Many are prepared to share this knowledge. This body of knowledge should be recognised, collected, and used to build skills in organic agricultural practices. In addition, the organic sector in South Africa has many ideas on the necessary skills, education and training that can and should be developed to support emerging farmers. Given a platform at a national level, the sector will willingly work with Government and educational institutions to provide *experiential training, internships and training infrastructure for prospective agribusiness entrepreneurs*. There is also a strong need for guidance related to the development relevant and practical training modules for organic agriculture. Again, this should be guided by the sector.

- **Preferential procurement:**

While organic primary production uses limited external inputs, procurement opportunities exist in the processing and retail sector. The value chain requires consistency in both quality and supply of produce. This may be considered “non-discretionary” expenditure<sup>24</sup>. The necessary skills need to be developed in Black farmers to produce organically on a large

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<sup>24</sup> Non Discretionary Expenditure refers to expenditure where the company does not have the option to determine where a product or service can be procured from.

scale for such preferential procurement to be achieved. Some retailers who sell organic produce are using the BEE scorecard to encourage their suppliers to engage in preferential procurement using the procurement definitions provided by the AgriBEE charter and the Department of Trade and Industry.

Government should also set targets for public procurement of organically produced foods for state institutions, such as hospitals and schools from black organic farmers (e.g. 25% of publicly procured food should be organic by 2012). This procurement should support localised production through nearby processing and packaging facilities.

The state also has a role to play, particularly in:

- Unlocking the full entrepreneurial skills and potential of Black people in organic agriculture
- Facilitating structural changes in organic agricultural support systems and development initiatives to assist Black South Africans owning, establishing, participating in and running agricultural enterprises
- Increasing the extent to which communities, workers, co-operatives and collective enterprises own, and manage existing and new organic agricultural enterprises, increasing their access to economic activities, infrastructure and skills development.

The application of the preceding initiatives into the organic agricultural value chain can decrease the South African level of inequality and enhance participation of all South Africans in the economy. For instance, the unlocking of entrepreneurial skills of the previously disadvantaged and marginalised individuals through agricultural training and extension may increase the number of emerging business in organic agriculture.

#### **10.4 Organic Agriculture and Skills Development**

Organic agriculture is not simply limited to the production of organic goods, but includes the whole system used to produce and deliver the product to the ultimate consumer. Organic agriculture is more management and knowledge intensive, and hence requires building the learning and cooperative capacity of individuals and groups. This constitutes one of the difficulties faced by farmers changing to organic and sustainable farming systems. The skills required in the agricultural value chain include, among others: observation skills (related to production), new technological skills (dealing with development), management skills (dealing with globalisation), and social skills (related to society). Lack of the above skills among the government bureaucrats, influential actors in educational and research institutions, and other organic agricultural stakeholders, leads to poor outputs throughout the entire value chain.

In South Africa, there does not appear to be any formal recognition of organic agriculture, nor any education, training or research focus on organic agriculture at a national level. Some level of training in organic agriculture is provided at some agricultural colleges and Further Education and Training Colleges (FETs). Most of the training and support for organic agriculture is NGO driven and focused on food security and community level projects.

A number of NGOs and institutions that provide training and support in organic agricultural practices were identified during the study and are listed below:

- Abalimi bezekhaya
- Agribusiness in Sustainable Natural African Plant Products (ASNAPP)
- Food Gardens Foundation (FGF)
- Lindros Whole Earth Consultants
- Newlands Mashu Permaculture Learning Centre (NMPLC)
- Organic farms Group (OFG)
- Rainman Landcare Foundation
- Sivananda FET College (Mpumalanga College)
- Soil for Life
- The Valley Trust
- Sustainability Institute
- Biodynamic Agriculture Association of South Africa (BDAASA)
- Boland FET College
- West Coast College.

There are many more such organisations that include sustainable / organic agricultural practices in their support programmes as part of their development approach, but this is not necessarily a core function of the organisation.

Some Provincial departments of agriculture are providing some training in organic and sustainable agricultural practices. Most extension and agricultural support staff received training in the conventional agriculture paradigm and are implementing organic support programmes with limited training in organic practices. Generally, there is limited support from the provincial or national departments for these initiatives and there is currently no policy developed or coherent research being undertaken to support extensionists or organic producers. Tertiary institutions have some programmes and research in organic agriculture, but it is still not recognised as a mainstream agricultural science. *Extensive capacity and skills development in support institutions, both government and private, is critical for the promotion and growth of organic production in South Africa.*

Kenya faced a similar challenge and in response founded in 1984 an organic agricultural training centre, Manor House Agricultural centre in Kitale (Hine *et al.*, 2006). The Centre's training and research complex includes demonstration gardens and livestock facilities that provide a working model of bio-intensive agricultural systems for trainees, visitors and members of local communities. The centre provides practical training to young people, farmers and staff of government agencies and NGOs, and also conducts adaptive research. Given sufficient will and funding, similar initiatives could be established in South Africa.

Training and research is key to the growth of the organic sector in South Africa and programmes to support this are urgently required. This has to be addressed at the highest level and should include:

- Research
  - Agricultural research institutions, such as the Agricultural Research Council should be engaging in research that supports organic agriculture.
  - Research partnerships should be established with other countries that have well developed organic programmes. Australia, for example, has similar climatic conditions, diseases and pests to South Africa; Indian, Brazilian governments have well developed systems for supporting small farmers in organic production; East Africa has well developed privatised value chains that procure organic products from small farmers. Lessons need to be learnt from these countries and applied in South Africa: farmers, researchers and extensionists can learn a lot from this.
  - Research farms used by colleges and universities should be used for organic research and training purposes.
  - Tertiary institutions, such as agricultural colleges (this is where many extensionists are trained) and universities must develop research and training programmes on organic agriculture. These institutions can also act as forums in which meaningful debate can take place regarding the role of organic agriculture in the context of broader issues, such as global warming and globalisation. Such research can inform decision making at a national level.
- Education and training.
  - Schools: agricultural sciences should have a strong focus on sustainable agricultural systems and organic farming. Schools have an important role to play as they influence thinking during the formative years. Life skills are also very important here, for example, child headed households can be taught to create organic food gardens to improve nutrition.
  - Tertiary institutions: organic production methodologies should be included as coursework options in colleges and universities. Postgraduate programmes are also necessary.
  - Short courses: many agricultural colleges and other tertiary institutions provide short courses on a variety of agricultural management aspects; organic and sustainable systems need to be included here.
  - Skills development programmes: AgriSETA, for example can assist in developing skills in through service providers. A few accredited organic training programmes (e.g. Rainman Landcare Foundation and some FET colleges) have been developed through AgriSETA, but more are necessary to provide the range of skills required.
- Other support
  - Extension training: focused support should be provided to extension workers, particularly those supporting land reform beneficiaries. This should start with a core team of extensionists and specific farms selected, whereby extensionists

can learn not only the theory, but the practice of organic production on a real farm (as opposed to a “research farm”).

- Land Reform: training programmes targeting beneficiaries are necessary to build the necessary skills; it is often the case that farmers have land, infrastructure and even inputs, but are not sufficiently capacitated and consequently fail. This can be closely linked with the extension training support mentioned above.
- Farmers as trainers / mentors: many organic farmers are willing to share their experience and knowledge with other farmers. In fact, this has been the main way through which many farmers have learnt organic skills in South Africa. This body of knowledge and experience must not be ignored – regional centres / platforms / information portals should be established where farmers can get information.
- Internships / apprenticeships: The role and value of apprenticeships cannot be understated – many technical and professional sectors still require (mechanics, doctors, lawyers, accountants) some form of apprenticeship, although the use of apprenticeships has declined in many sectors in recent years. A programme to put promising young farmers (conventional and organic) through apprenticeships will enhance the capacity of the farmer and can grow the industry.

## ***10.5 Organic Agriculture and Job Creation, SMME Creation and Development***

This section examines the contribution organic agriculture can make to job creation and SMME development.

### **10.5.1 Job Creation**

Providing job opportunity is among the crucial factors in dealing with poverty alleviation. Its opposite side (unemployment) is one of the major indices of poverty and has many complementary effects besides the loss of income. Unemployment leads for instance to psychological harm, loss of work motivation, skills and self-confidence, an increase in ailments and morbidity (and even mortality rates), disruption of family relations and social life, hardening of social exclusion and accentuation of racial tensions and gender asymmetries (Sen, 2001).

Organic agriculture is generally recognised as labour intensive. In addition, 60-80 % of labour force (including self employed) in Africa for instance is found in agriculture, and the majority of these farmers (many of whom are women) are smallholders with farms of less than 2 hectares (Heyzer, 2003; FAO 1997, cited in IFOAM, 2006).

Although job creation is not the primary objective of organic agriculture, experience from various countries confirms that engaging in organic agriculture and the requirement of improving the environmental management of the land requires additional labour.

There are two broad avenues for job creation using organic agricultural practices:

1. Encouraging commercial farmers to convert to more labour-intensive organic production.

2. Encouraging organic practices in resource-poor areas with low levels of economic activity.

Developing the concept of recognising environmental goods and services provided by organic farmers can assist in developing organic agriculture and thereby create new job opportunities. This is particularly important in the context of declining employment in the agricultural sector.

Rural small-scale and subsistence farmers, particularly those who are resource poor can improve on-farm production for household purposes by engaging in organic production and can potentially benefit by producing organic commodities for sale. Due to the nature of rural areas (poor transport and communication infrastructure), production of non-perishables should be supported based on similar models to those of East Africa, India and South America. In urban situations, market gardens producing organic produce can provide income-generating opportunities.

Provided that organic agriculture is a source of employment, it will be of importance to promote the expansion of this farming model by improving the entire value chain. This might be done through various mechanisms which include ensuring the credibility of production and opening up consumption channels in order to move from being a niche market to capturing a substantial market share.

### **10.5.2 SMME Creation and Development**

Small businesses have a major role to play in the South African economy in terms of employment creation, income generation and output growth. They are also often the vehicle by which the lowest-income people in our society gain access to economic opportunities. These objectives are firmly recognised in the main development and macroeconomic strategies adopted by the government, the Reconstruction and Development Programme (RDP) and Growth, Employment and Redistribution (GEAR). Also, AgriBEE recognises that SMMEs should participate in AgriBEE in line with the BBBEE Act 53 of 2003, National Small Business Act 102 of 1996 and Codes of Good Practice. Due to obstacles of the past, the small, medium and micro enterprises (SMMEs) sector still is under-developed and it is imperative that significant investment is made in this sector.

#### **Segmentation**

The National Small Business Act No 102 of 1996 classifies SMMEs according to five size categories, ranging from Survivalist to Medium-Sized.

- Survivalist enterprises are those with no paid employees and minimal asset valued. The enterprises generate income below the minimum income standard or the poverty line, and their main aim is to provide minimal subsistence means for the unemployed and their families. Most entrepreneurs in this category are involved in hawking, vending, or subsistence farming. This category has great potential for absorption of unskilled labour, as has been confirmed by the correlation between the unemployment rate and the amount of self-employed in unregistered, mainly survivalist, enterprises that prevails in informal settlements and rural areas.

- Micro-enterprises have a turnover below the VAT registration limit (presently R150 000 per annum) and have less than 5 paid employees. These enterprises tend to lack formality in terms of registration for tax purposes, labour legislation, business premises and accounting procedures. Examples of micro enterprises are spaza shops, minibus taxis, and household industries.
- Very small enterprises employ fewer than 10 paid employees – but in the mining, electricity and manufacturing and construction sectors, fewer than 20. They operate on the formal market and usually have access to modern technology.
- Small enterprises have fewer than 50 paid employees and are more established, with more complex business practices. Usually, the owner does not manage the enterprise directly, and a secondary coordinating mechanism has been put in place.
- Medium enterprises are enterprises with up to 100 paid employees – although in the mining, electricity and manufacturing sectors, up to 200. Although usually controlled by an owner/manager, the ownership and management structure is more complex. A more complete separation of ownership and management is often the natural barrier between medium and large enterprises.

Opportunities exist for SMME development based on engaging in organic agriculture. The South African organic agricultural value chain has a number of existing SMMEs, but this network / chain faces a number of specific difficulties that need to be resolved by specific measures. Access to capital is among the key constraints to the development of SMMEs in many economic sectors and this is the same for organic agriculture. Indeed, because organic agriculture is a new and developing sector, this may make access to credit even more difficult for this kind of farming. (Due to the lack of financial resources, many farmers are poor and even unable to start the transition to organic agriculture). To address this, the Department of Trade and Industry has put in place a set of incentives designed to leverage greater government and non-governmental sector investment in SMMEs. Notably, two institutions, Khula Enterprise Finance Limited and Ntsika Enterprise Promotion Agency, were established in 1996 to create increased delivery capacity to SMMEs. These have recently been combined to form the Small Enterprise Development Agency (SEDA). They provide support infrastructure and absorb a portion of the risk and cost to private investment in SMMEs.

Support from organisations such as SEDA is recognised, but special attention needs to be paid to the role of the government to create an enabling environment in which organic SMMEs might evolve (the issue of safety and security as well as land ownership require a particular governmental attention). Furthermore, in order to facilitate the spread of organic agriculture there is a need to establish Public- Private Partnerships that works from local to national and international levels and encourages links between government, NGOs and the private sector (partnerships between farmers, farmer groups, NGOs and CSOs, organic movement organisations, Governments and certifying bodies at all levels will contribute to successful certified and non-certified organic agriculture).

Organic agriculture can enhance SMME development, as there are lower overheads associated with organic production (fewer inputs), a captive market for organic produce and

opportunities in price premiums for produce. The credibility of production would need to be ensured through organic certification, which can represent a major cost and administrative burden to the small farmer. This can be addressed through the development of government programmes to support small farmers in terms of certification costs and administration. In addition, the implementation of alternative certification mechanisms, such as the Participatory Guarantee System (PGS) has great potential to assist farmers to enter the organic market without the burden of third party certification requirements.

## **10.6 Organic Agriculture and Food Security**

While there are numerous definitions of food security, all tend to have a similar conceptual basis. The Food and Agriculture Organisation (FAO, 2003) provides the following working definition of food security: *“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern.”*

Rundgren (2002) provides a balanced analysis of organic farming and its potential contribution to food security. The key points from this analysis are outlined below.

While there are many complex drivers affecting food security, they can be distilled into three fundamental causes: social, political and economic. Some of the more prominent factors impacting negatively on food security include:

- Poverty, inequality and discrimination (lack of money to purchase food or resources to grow food; inequality / discrimination in access to land, water, inputs and credit)
- War or civil unrest
- Policies that discourage food production
- Global trade relations and structures
- Unsustainable production methods
- Loss of farm biodiversity
- Inefficient use of production resources
- Natural disasters.

Conventional agricultural systems, through the use of chemical inputs try to be independent of natural systems, are capital intensive and reduce biodiversity. In developing countries, it is often the case that conventional systems are not appropriate due to factors which negatively impact on food security, namely:

- Long term effects on fertility and soil erosion – decreased productivity
- Reduced food safety and negative health effects
- Decreased nutritional value and deterioration of diets
- Loss of biodiversity and environmental degradation.

Of three options for increased food production (Increased area under production; Increased productivity in industrialised countries and export of surpluses; or Increased productivity in developing countries), Rundgren considers it is most appropriate to increase productivity in developing countries as these countries are the most food insecure, and stand to benefit the most from improving food production, particularly if this can be achieved with low cost, locally available technologies and inputs. He finds that organic agriculture can contribute to food security in the following ways:

- Increased productivity, particularly in areas prone to food shortages<sup>25</sup>
- Safe food that supports a varied diet
- Increased income or return on labour
- Reduced costs of production
- Risk reduction through diversification
- Increased awareness of the need for sustainable production and consumption and the need to protect the environment
- Supports innovation and recognises and integrates of traditional and indigenous knowledge
- Long term sustainability.

To substantiate this, Rundgren summarises a number of case studies from credible sources that point out the potential of organic production to improve productivity and / or food security, presented in

Table 44 below.

**Table 44 Some Organic / Ecological Interventions that have improved food production in developing countries (Rundgren, 2002)**

Country	Practice / Crop	Result
Madagascar	Rice Intensification	Increased rice yields from 2 t/ha to 5-10 t / ha, without the use of purchased fertilisers or pesticides. System estimated to be adopted by over 20 000 Madagascar farmers
Peru	Vitalising Indigenous	Use of traditional raised beds and canals increased productivity e.g. potatoes 8-14 t/ha compared with

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<sup>25</sup> Rundgren points out that converting from intensive conventional systems, a yield drop of 5-20% can be expected, while on irrigated land, yield tends to stay the same. Importantly, however in “traditional” rainfed systems, it is often the case that yields are increased after conversion to organic farming systems.

	Knowledge	regional average of 1-4 t/ha.
Honduras	Green Manure Intercropping	Improved weed control in traditional maize and sorghum based farming systems
Senegal	Agro-ecological Soil Improvement	Significantly increased groundnut and millet yields, less year on year yield variation.
Cuba	National Policy for Sustainable Agriculture	After collapse of soviet bloc, on which Cuba relied heavily for food and inputs, focus on local sustainable food production. Significant increase in local food production as a result.
India	Maikaal Organic Cotton Project	Average cotton yields 20% higher than their conventional counterparts in the region. Wheat, soy and chilli grown in rotation with cotton up to 20% higher. Productions costs 30-40% of that of conventional, which includes a reduced labour cost, reduced water use and improved soil structure.
Mexico	ISMAM Fair Trade Coffee	Improved productivity by smallholder growers, reduced soil degradation, premium for organic, ultimately resulting in the establishment of a processing facility and direct exports to US, Japan and Europe.
Kenya	Push - Pull Pest management	Success in controlling stemborer infestations in cereal crops.

For a long time the ruling perspective was that food security is mainly about the production of high quantities of food. As the simplest way to increase yields is to add chemical fertilisers, this was seen as a silver bullet. However, after a long period of massive global oversupply of food, food insecurity is still very prevalent, especially in Africa. Also, in countries that export substantial quantities of food people are starving. More and more policy-makers understand that food security is mainly about poverty reduction, access to resources and distribution, both globally, nationally and locally. Organic agriculture has proven to be an accessible and appropriate production method for marginal farmers that are most likely to be food insecure. Therefore, gradually, the resistance to organic farming is waning, even if we are far from a situation where organic is generally recommended. The FAO conference on organic farming and food security in May 2007 concluded that:

- Organic agriculture can contribute to food security, but its potential to do so depends greatly on political will.
- New challenges such as climate change can be mitigated by organic agriculture through such measures as enhanced soil carbon sequestration. Organic agriculture also offers practical climate adaptation options.

- Water security is enhanced by organic agriculture, in terms of drinking water quality, decreased irrigation needs in organic soils and better yields in water-stressed climate variability.
- Agro biodiversity is protected and sustainably used by organic agriculture.
- Nutritional adequacy is enhanced by the more diverse and micronutrient rich organic foods.
- Rural development is achieved by organic agriculture through generating income and employment in areas where people have no alternative other than using their labour, local resources and indigenous knowledge.
- An international network for organic research and proper extension is crucial for the further development of organic agriculture and more public resources should be devoted to agro-ecological science.
- Food security is tightly linked to agricultural policies that determine export and import choice. Organic agriculture reconciles economic objectives with environmental and social objectives but its further development requires securing a level playing field through appropriate policy interventions.
- Food security is not only a concern of developing countries as fossil fuel crisis, climate change and other vulnerabilities in the food chain may threaten also food secure areas.

(FAO, 2007- full report is available at <ftp://ftp.fao.org/docrep/fao/meeting/012/J9918E.pdf>)

Broadly, the benefits of organic agriculture in enhancing food security are as follows:

- Increasing and stabilising yields
- Improving resistance to pests and disease
- Reducing debt and increasing returns on labour
- Maintaining crop genetic diversity
- Maintaining and improving environmental services
- Building on local skills and resources assist farmers to be food self sufficient and to combat poverty.

#### **10.6.1 Studies Demonstrating the Potential Contribution of Organic Agriculture to Food Security**

Two specific examples of studies are used below to demonstrate the potential of organic agriculture in improving food security.

##### **Organic Agriculture and the Global Food Supply**

This study (Badgley *et al.*, 2006) investigates the questions regarding population increases contextualised within increasing meat consumption and decreasing grain harvests. Some factions advocate more intensified conventional production to meet these demands. Others point out that this production system has already incurred significant environmental costs

such as increased soil erosion, loss of biodiversity, groundwater contamination and release of significant amounts of soil carbon into the atmosphere.

A key question of the study is whether or not alternative forms of agriculture, such as organic agriculture, are capable of producing as much food as intensive conventional methods. There is also an argument that organic agriculture requires more land to produce the equivalent amount of food, thus offsetting any environmental benefits of organic production. There is also the question of an insufficient availability of organic sources of soil fertility (inputs and leguminous cropping for nitrogen) to ensure sufficient organic production.

The study estimates the global food supply based on published literature from the FAO. It then establishes comparative yields between organic and non-organic production methods. Using these ratios, an estimate is made of the global food supply that can be grown by organic methods as well as the amount of nitrogen that could be made available through the use of leguminous cover crops as green manures.

In terms of estimating global food production, summary data from the FAO study of 2001 on the global food supply for 2001 was used. This estimate takes into account that conventional methods are used in most developed countries, and low input methods in the developed world.

Deriving yield ratios was undertaken by comparing organic<sup>26</sup> yields against non-organic yields. It was found that there were many yield comparisons, mainly for plants / horticultural crops and few for animal products. A total of 293 comparisons were used in the study. If, for example, a given organic crop was found to yield 96% of the yield of a conventional crop, the yield ratio would be 0.96. Conversely, if an organic crop yielded more than a conventional crop, the yield ratio would be greater than one. Of the 293 comparisons, 160 compared conventional methods with organics (i.e. developed world) and 133 cases compared low input methods with organic (i.e. developing world).

Two models were constructed to estimate the global food production. The first model applied the yield ratio from studies derived from research in developed countries to the entire agricultural land base. This model effectively assumes that, if converted to organic production, the low intensity agriculture present in much of the developing world would have the same or a slight reduction in yields that has been reported for the developed world, where green-revolution methods now dominate (i.e. a conservative estimate).

The second model applied the yield ratios derived from developed countries in the developed countries and those derived from the developing countries in the developing countries, with the sum of these estimates providing the global estimate.

The second model was considered more realistic because it uses average yield ratios specific to each region in the world. *Of significance is that the average yield ratio for the 133 examples from the developing world was found to be 1.80 (*

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<sup>26</sup> This included “semi-organic” production – a full description of the methodology is available in the source document.

Table 45). Similar findings were identified in other studies: food production increased in developing countries and decreased in developed countries (Rosegrant *et al.*, Undated; Rundgren, 2002). The tabulated results of the research are summarised below. Full tables are provided in Appendix H

**Table 45: Average yield ratio (organic: non-organic) and standard error (S.E.) for selected individual food categories recognised by the FAO (After Badgley *et al.*, 2006)**

Food Category	(A) World			(B) Developed countries			(C) Developing countries		
	N	Av.	S.E.	N	Av.	S.E.	N	Av.	S.E.
Grain products	171	1.312	0.06	69	0.928	0.02	102	1.573	0.09
Starchy roots	25	1.686	0.27	14	0.891	0.04	11	2.697	0.46
Sugars and sweeteners	2	1.005	0.02	2	1.005	0.02			
Legumes (pulses)	9	1.522	0.55	7	0.816	0.07	2	3.995	1.68
Oil crops and veg. oils	15	1.078	0.07	13	0.991	0.05	2	1.645	0
Vegetables	37	1.064	0.1	31	0.876	0.03	6	2.038	0.44
Fruits, excl. wine	7	2.08	0.43	2	0.955	0.04	5	2.53	0.46
All plant foods	266	1.325	0.05	138	0.914	0.02	128	1.736	0.09

Table 45 above indicates that the conversion of developed countries from conventional to organic production would result in a slight reduction in yield, with an average yield ratio of 0.914 for all plant foods. Importantly, in developing countries, it was found that conversation to organic agriculture would result in a increase in yield, with an average for all plant foods giving a yield increase of 1.726 over conventionally produced food.

**Table 46: Actual (2001) food supply and estimates for Model 1 (After Badgley *et al.*, 2006)**

(A) Food category	(B) Actual world food production	(C) Actual food supply after losses	(D) Supply as proportion of production (C / B)	(E) Average yield ratio (From Table 45 above)	(F) Estimated organic food production (B x E)	(G) Estimated organic food supply after losses (D x F)
Units	1000Mg	1000Mg			1000Mg	1000Mg
Average for all foods	6,041,697	2,727,519	0.584	0.914	5,705,776	2,508,952

Table 46 above extrapolates the yield ratio from developed countries only, to worldwide production which results in a net decrease in food production from 2,727,519 (column C) to 2,508,952 (column G) million kilograms.

Table 47 extrapolates yields by separating developed and developing country and using separate yield ratios for these regions. These indicate that the estimated food supply could actually increase if developing countries (where a large number of people grow food on a small scale and a large proportion of food production occurs) converted to organic agricultural production.

**Table 47: Actual (2001) food supply and estimates for Model 2 (Badgley et al., 2006)**

Food Category	Actual World Food Production	Actual World Food Supply After Losses	Estimated World Organic Food Supply after Losses
All food groups	1000Mg	1000Mg	1000Mg
Developed Countries	1,868,620	620,683	573,222
Developing Countries	4,173,073	2,106,836	4,247,602
World	6,041,693	2,727,519	4,820,825

The authors conclude that the models demonstrate that organic agriculture can contribute substantially to a more sustainable system of food production. They suggest not only that organic agriculture, properly intensified, could produce much of the world's food, but also that developing countries could increase their food security with organic agriculture. The results are not, however, intended as forecasts of instantaneous local or global production after conversion to organic methods, nor that yields by organic methods are routinely higher than yields from green-revolution methods. *The research is intended to show that there is potential for alternatives to conventional agriculture as the dominant mode of food production to be seriously considered.*

The report finally recognises that there are numerous challenges to the widespread application of organic agriculture, including agronomic, economic and educational. It also recognises that the practice of agriculture on a wide scale requires support from research institutions, a strong extension system and a committed public. Nevertheless, it is concluded that *"it is time to put to rest the debate about whether or not organic agriculture can make a substantial contribution to the food supply. It can, both locally and globally"* and suggests that the debate should now focus on how to allocate resources for research, enhance incentives for farmers and consumers to engage in a more sustainable production system.

### **Organic Agriculture and Food Security in East Africa**

Bolwig and Odeke (2007) undertook an analysis of the effects of organic production on household food security in East Africa. The survey included organic and conventional farmers growing coffee and pineapples for export markets in Europe. Production was organised on a "contract farming" basis, within schemes operated by companies exporting the organic product and holding the organic certification (group certification). While coffee and pineapples were commercial crops, farmers also produced other crops for their own consumption.

- **Pineapples**

The study found that after conversion, organic pineapple farmers had had expanded their farms and improved management through the group certification system due to the high market demand for organic pineapples. Farmers were also found to have high levels of food self-sufficiency and conversion did not appear to reduce food production. In effect, the farmers had expanded their land and hired labour instead of diverting household resources away from food production. Hence many of the farmers could satisfy their food needs through their own production *and* purchase of higher value foods such as meat, fish, sugar, tea, and rice. This effect was reflected in the fact that food purchases ranked fifth in household expenditure, which indicates that there is a high degree of food self-sufficiency as well as a high cash income.

- **Coffee**

The case for coffee is somewhat different. The trend was a reduction in local food production due to the expansion of coffee on land previously cultivated with food crops. This was due to small farm size and limited capacity to purchase more land (unavailable and / or expensive), meaning that the expansion of coffee occurred at the expense of land planted with maize and sweet potatoes in particular.

Adaptation strategies to mitigate the impact of the loss of food production land included intercropping between the coffee plants and utilising income from coffee sales to invest in renting land in outlying areas where land is more abundant for food production. It was also found that a generally declining per capita food output in the area was occurring that was unrelated to organic conversion and due to a range of factors, including increased population pressure, declining soil fertility, and plant health problems.

Conversion to organic coffee production also changed the utilisation of family labour, but without seriously impacting food production. Farmers increased their labour efforts in coffee farming and processing, due in part to higher and more stable coffee prices as well as the stricter quality requirements of the organic exporter. This extra labour was sourced mainly from women, who were responsible for food production. However, because land was the dominant production constraint, this change in labour use did not significantly reduce efforts in food production. Instead, the women adapted by working longer hours and by reducing the time spent in off-farm activities.

- **General findings**

Few organic coffee farmers were found to be self-sufficient in calories and proteins, hence food purchases ranked high in household budgets. It was surmised that this was the same situation before organic conversion because then, as now, land was the major production constraint. The study found that despite reduced food production after conversion, the interviewees observed that *food security had not worsened but rather improved*. This was because the increased income from organic coffee more than compensated for the loss in food production by improving the capacity for accessing food through the market.

The organic coffee and pineapple farmers applied their improved farming practices arising from conversion on their food crops and there was some reinvestment of organic revenues

into food crop farming. Organic certification was associated with moderate increases in production costs, but the higher organic crop revenues far outweighed the extra costs, resulting in significant income increases, especially in the case of pineapple.

Overall, the study indicated that conversion to organic export production did reduce food production in some cases, but did not reduce food security. Rather conversion improved food security by raising cash incomes and enabling households to increase the amount and quality of food purchased in the market. In general, where local food markets are functioning and organic conversion does not involve major risks on the part of farmers, the integration of smallholders into international value chains for organic products should not constitute a threat to food security.

### **10.6.2 Implications for South Africa**

In South Africa, a situation exists where both large-scale commercial conventional agriculture and low input rural agricultural production occurs. The global analysis indicates that while there are decreases in production when moving from conventional production methods to organic production, these may not be severe and therefore should not impact negatively on national food security (Rundgren (2002), Rosegrant *et al.*, Undated; Scialabba, N. 2007)

In situations where low-input agriculture is practiced, studies indicate that it is likely that food production will actually increase as a result of organic management practices (Halberg *et al.*, 2006; Jiménez, 2007). It should, however be recognised that this increased production is achieved through improved understanding and management of the production system. It therefore requires education, capacity building and an effective extension support system that supports organic practices. Current extension services are geared towards conventional production methods and this is likely to remain the case for some time, although there are some exceptions. Therefore at a livelihoods / household food security level, adoption of organic practices are likely to be driven mainly by NGOs and donor agencies as opposed to through government extension services. This situation is gradually changing, as demonstrated by the Limpopo Department of Agriculture where individuals in the Department are actually supporting and encouraging organic production among small scale and emerging farmer groups.

In the case of East Africa, sale of certified organic produce has resulted in a number of benefits, including:

- Improved knowledge and capacity in organic production being applied not only in the commercial crops (coffee / pineapple), but also in the food crops that are grown
- Increased income generated from organic produce being used to purchase more land for production, or to purchase food instead of growing it.

It appears, however, that in the case of coffee, the workload of the women increased at the expense of food production, despite a general consensus that food security had not worsened, but rather improved. Also, growers were supplying an established market that

provided technical and logistical support to them, highlighting the benefits of market driven development.

In terms of food security at a national level, adoption of organic practices by conventional commercial farmers may result in decreased food production for local consumption in the short term. One can draw comparisons between household food security in East Africa and national food security in that at least some of the large scale organic production would be destined for foreign markets, thus generating revenue that in turn could be used to purchase food if necessary.

Adoption of organic practices at a household level has significant potential to enhance food security, but requires dedicated extension support focussed on organic production.

Market-driven organic production by small scale and emerging farmers has potential to both improve food production and also generate income. This model for organic development probably holds the greatest potential for enhancing food security.

## **10.7 Organic Agriculture, Nutrition and Health**

### **10.7.1 Nutritional Benefits**

Since organic products have grown in popularity amongst consumers, numerous studies have been undertaken on the nutrient content and health benefits of organic food compared to conventional food. A large proportion of these show significant differences in favour of organic food. At the same time there is an ongoing debate regarding whether these results are telling the truth, such as whether research design was correct, studies were well-conducted, etc. There are very few studies that are considered by all to be scientifically sound. One reason for this may be because those studies devoted to organic agriculture often prefer to use a systems perspective and methods looking at many parameters simultaneously, while most of the scientific community prefers experiments that investigate one parameter at a time. All parties seem to agree on one thing, though: that more studies are needed, with methods stringent enough to allow the trends and tendencies to be scientifically verified or rejected (FAO, 2007; Brandt and Molgaard, 2006; Magkos *et al.*, 2003; Soil Association, 2002). The absence of clear evidence may simply be due to lack of relevant data.

Still, certain nutritional benefits are today undisputable. For example, there is, in general, higher levels of ascorbic acid (vitamin C) in organic leafy vegetables and potatoes; lower concentration, but higher quality protein in organically grown vegetables and crops; and indications of improved animal health and reproductive performance when animals are organically fed (Magkos *et al.*, 2003). There are also tendencies for higher mineral content, lower levels of nitrate and an increased range and volume of beneficial secondary plant metabolites in organic produce (Soil Association, 2002).

While reviewing 99 papers comparing organically and non-organically grown crops, Soil Association (2002) states that “the evidence in this large amount of studies supports the hypothesis that organic produce are significantly different in nutritional content and nutritional value compared to those produced by non-organic farming”. Then again, the importance of

these differences is disputed. Other researchers take a more modest stance and argue that the differences are not of such a magnitude that a well-balanced diet of conventional origin would not improve health equally well (Brandt, 2006; Magkos *et al.*, 2003).

Brandt (2006) undertook a thorough review of recent research on food quality with respect to organic agriculture, and takes the point of departure that there is ample evidence that the *methods* used for food production do make a difference to food composition and that these differences are large enough to make a real difference on human health, and that such methods many times are common practice in organic agriculture. Brandt substantiates this with the fact that the slow release of plant nutrients common in organic agriculture affects the composition of plants in several ways, amongst them the above mentioned differences like lower levels of nitrate and nitrogen but higher levels of essential amino acids in the protein; higher levels of ascorbic acid (vitamin C); and also lower levels of beta-carotene and higher levels of plant secondary metabolites. Similarly, food products from animals fed large proportions of roughage, which is common in organic agriculture, have higher levels of beta-carotene and other carotenoids; higher proportions of conjugated linoleic acids and polyunsaturated acids in the fat; and higher levels of vitamin E (Brandt, 2006).

Some of the secondary plant metabolites, which are part of plant defence mechanisms, are thought to possibly play important roles in human health and immune system. There are indications that organic produce may contain relatively larger amounts of these substances, such as resveratrol in wine, phenolic compounds in apples and glucoraphanin in broccoli. This is still a rather new area of research and only a few of these compounds are yet well-documented (Brandt, 2006).

Finally, the International Conference on Organic Agriculture and Food Security, held in Rome in May 2007 highlighted, among other things, that organic agriculture contributes to micronutrient intake and healthier diets through diversification of production and reintroduction of underutilised crops and varieties. Through this diversification and increased ecosystem stability, organic farming can be helpful also in food emergency situations (FAO, 2007).

### **10.7.2 Other Health Related Aspects**

Apart from these nutritional considerations of organic produce, there are several other health benefits of organic agriculture affecting people, directly or indirectly, through carrying out the farming practices associated with organic agriculture.

The hazard of handling pesticides and chemical fertilisers on-farm, represents a health risk especially in less literate communities, does not exist for organic farmers. WHO has estimated that 3,000,000 persons are exposed to single and short term pesticide poisoning resulting in 220,000 deaths per year. Another 735,000 persons suffer from chronic effects of long-term exposure. In addition an unknown number of ordinary people are affected by long-term, low-level exposure through foods and 'background' pollution (WHO, 1992).

Poisoning due to pesticides is a notifiable condition in South Africa. Between 2001 and 2005, a total of 1462 cases and 72 deaths were notified to the South African National Department of Health. The Department does acknowledge, however, that these figures are a

substantial underestimation of the true rates, as many of these cases go unreported (Department of Health, 2005).

Organic food is found to contain substantially lower levels of pesticide residues than conventional food (Brandt *et al.*, 2006; Magkos *et al.*; 2003; Baker *et al.*, 2002). According to a study of 94,000 food samples in United States, the incidences of residue contamination in organically grown fruits and vegetables were less than a third compared with the conventionally grown ones, and of these incidences, around half originated from environmental contamination of long-banned chlorinated insecticides such as DDT, dieldrin and chlordane (Baker *et al.*, 2002). With increased organic farming, the problems of chemical fertilizers and pesticides polluting drinking water and environment would be reduced (Jiménez, 2006).

Organic animal production aims at reducing the need for antibiotics, and they are never used as a preventive or a growth promoter. Several studies show that the restricted use of antibiotics in organic agriculture reduces the widespread problem of antibiotic resistance (Brandt *et al.*, 2006). The organic principle of not feeding animals with animal residues of the same species has effectively protected the organic farmers against Bovine Spongiform Encephalitis (BSE) (Brandt, 2006).

#### **Text Box 1: Pesticide poisoning - country examples**

- Malaysia and Sri Lanka: some 7 to 50 per cent of all farmers reported that they experienced poisoning at least once in their lives.
- Costa Rica: 1500 workers at banana plantation became sterile after repeated contact with adibromochloropropane.
- Thailand: a survey of 250 government hospitals and health centres revealed that some 5500 people were admitted for pesticide poisoning in 1985 alone, of who 384 died.
- Latin America: between 10-30 per cent of agricultural workers tested show inhibition of the blood enzyme, cholinesterase, which is a sign of organophosphate poisoning (WHO, 1990).
- Venezuela: there were 10,300 cases of poisoning with 576 deaths between 1980 and 1990.
- In Paraguay, 75 per cent of farmers around Asunción experienced symptoms after spraying.
- Brazil: 28 per cent of farmers in Santa Catarina say they have been poisoned at least once; and in Parana, some 7800 people were poisoned between 1982 and 1992.
- China: a recent statement from the Agricultural Ministry in China suggested that more than 10,000 Chinese farmers died in 1993 from poisoning by pesticides (Quinn, 1994). Many were said to be victims of home made cocktails marketed illegally and some 30 per cent of products were unlicensed by authorities. Since 1975, the value of pesticide imports into China has grown from US\$76 million to \$293 million.

*Source: Pretty, Regenerating Agriculture, 1995 & World Resources 1994-95*

## **10.8 Organic Agriculture and HIV / AIDS**

Food insecurity, malnutrition, infection and HIV/AIDS are closely interlinked issues. Food production and access to sufficient nutritious food often becomes the first priority for people affected by HIV/AIDS. This is both as a mean of continued existence for family members surviving their ill-fated relatives, and – maybe more important – as a means of slowing the course of HIV and ensuring resilience while the AIDS disease runs its course.

An ample number of studies have examined the effects of micronutrients on HIV/AIDS in various stages. Micronutrients have proven helpful, prolonging life of people infected by HIV and having AIDS (Gillespie & Kadiyala, 2005), but while micronutrient supplementation does play an important role, food is also a crucial element. Loevinsohn & Gillespie (2003) outline the courses of the HIV/AIDS epidemics and emphasizes that the contributions of food security and nutritional status to prolong the life.

When HIV develops into AIDS, the nutritional requirements of the body may increase by 50% or more, causing a vicious cycle of malnutrition, immune suppression, and increased susceptibility to secondary infection. At the same time, a good nutritional status is a prerequisite for successful treatment with antiretroviral drugs. To improve the situation, food and preferably a diverse diet are necessary. As Gillespie & Kadiyala (2005) state, *“Promotion of simple but important food security, nutrition and public health interventions alongside, and as part of, HIV/AIDS treatment initiatives is critical to an effective HIV/AIDS response”*.

One of the cornerstones to organic agriculture is diversification, as a means to improve the ecological balance within the system and improve the various crops' resistance to pests and diseases. This diversification will also increase the health benefits of the consumer as a varied diet and also providing greater possibility to improve micronutrient status.

The communities most vulnerable to HIV/AIDS are more often than not resource-poor, and this problem increases as available labour is used for caring of the sick and available cash to buy in drugs and medical care, as well as to pay funeral expenses. Organic agriculture can offer a means to increase agriculture production without dependency on buying external inputs, and to more diverse food production. The effects of HIV/AIDS on society are immense. If anything can be done to decrease the vulnerability of affected people, interventions to support agriculture and food security especially targeting the low-income and small-scale farmers would be a “first choice”. In this scenario, the possible improved nutritional content and the diversified diets resulting from organic agriculture, together with the concept of increasing agriculture production with low external inputs has the potential to reduce the effects of HIV/AIDS.

In South Africa, there has been much debate on the role of poverty and malnutrition on the incidence of HIV/AIDS. A successful HIV/AIDS policy requires, first and foremost, prevention of infection followed by treatment and care of people affected. Good nutrition is not a substitute for proper treatment with anti-retrovirals, but effective antiretroviral treatment requires good nutrition. In the context of an effective and widespread antiretroviral programme, an associated nutrition programme improves the effectiveness of treatments. In

this context, the information provided above demonstrates that organic foods can help to alleviate the impact of HIV/AIDS.

## **10.9 Discussion**

This section analysed the potential impact of organic agriculture on the South African socio-economic environment. Special attention was paid to the African Renaissance NEPAD and Ubuntu; BBBEE, Skills Development, Job creation, SMMEs creation and development, food security and health. Through the analysis, linkages were highlighted between organic agriculture with the above concepts.

The relationships between organic agriculture and the African Renaissance, NEPAD, and the concept of Ubuntu were broadly defined and explained. The African Renaissance is a philosophical and political movement that seeks to end the violence, elitism, corruption and poverty that plague the African continent. The new partnership for Africa's development (NEPAD) was identified as a vision and strategic framework for Africa's renewal to develop an integrated socio-economic development framework for Africa. And Ubuntu was comprehended as the essence of being human meaning I am human because I belong.

The African Renaissance and NEPAD both call for the reversal of the current abnormal situation of Africa characterised by poverty, underdevelopment and the continued marginalisation of Africa from the globalization process. The above threats might be addressed by among other factors, the organic agriculture value chain. The Ubuntu philosophy could be mainly utilised as an efficient method to market and widespread the scale of organic agriculture over the entire continent.

The process of BBBEE seeks to accelerate a more equitable economy which will benefit all South Africans, individuals and enterprises. This South African growth strategy ought to be integrated into the entire organic agricultural value chain for the future sustainable growth and development of South Africa. Accordingly, the organic sector should work towards achieving the seven elements of BBBEE in partnership with Central Government and other agricultural stakeholders to improve the participation of all South Africans in the economy. Agriculture is a strategic economic sector as a producer of food and foreign exchange; organic agriculture has the potential to enhance small farmer development and increase participation in the economy.

Organic agriculture is a management and knowledge intensive sector and requires the development of the learning and cooperative capacity of people. Skills development to support the development of the organic sector is a critical issue that should be addressed. This includes all players in the value chain, from farm workers to government officials. There is limited recognition of organic agriculture at tertiary institutions and few courses are provided for this agricultural competency at the diploma or degree level. This needs to address by supporting FET colleges, Universities and Universities of Technologies to develop courses to support organic agriculture. Research, education and training as well as other forms of support, such as extension mentorship are necessary to achieve broad based skills development for the organic sector.

It is generally recognised that organic agricultural production is more labour intensive than non-organic production and organic agriculture has the potential to create job opportunities. Encouraging organic practices in resource poor areas also presents opportunities for income generation as well as improved food production, reducing the need to purchase food items.

Many opponents of organic agriculture claim that reduced productivity associated with organic farming will reduce food security at a local, national and international scale. Research has shown this to not necessarily be the case and in fact, in resource poor production systems, organic forms of production can increase farm productivity, even in the short term. Diversity of crops, water use efficiency, nutritional adequacy and reduced input costs all contribute to enhancing food security. However, to achieve significant levels of organic production, significant political will to develop organic agriculture is required along with national and regional policies which support organic production. Finally, effective systems of training and capacity building are necessary to achieve increased and sustainable food production by organic means.

Closely linked to food security is nutrition security and health. Organic foods can be more nutrient dense, have a higher concentration of micronutrients and also provide a more diverse diet. Key to good health is nutrition. Varied diets associated with organic foods help to deliver the necessary nutrients for a healthy body. This is particularly important where diseases such as HIV/AIDS are prevalent. A good nutritional status and consumption of micronutrients have been shown to be helpful in prolonging life in people living with HIV/AIDS. While good nutrition is no substitute for an effective anti retroviral programme for people living with HIV / AIDS, an ARV programme is not effective without good nutrition. Organic agriculture has the potential to improved diets and nutritional status and help to maintain good health.

# 11 SUSTAINABILITY STRATEGIES FOR THE ORGANIC SECTOR

## 11.1 Introduction

The previous sections put forward socio-economic benefits that make organic production an attractive enterprise option. But to begin with, an understanding of the two main key factors of organic agriculture need to be kept in mind before suggesting any kind of strategy to develop the industry. On one side there is an increased demand for organic produce worldwide. This is because organic farming is seen to carry a range of considerable benefits. On the other side, the organic agricultural value chains face a number of challenges for their sustainability. This also means that there are issues that need to be addressed. Hence the main purpose of this section is to present strategies that address the challenges faced by organic agriculture. This section brings to light the challenges facing the sector as well as suggested strategies to overcome them.

## 11.2 Challenges of Organic Agriculture

Like other agricultural production systems, organic agriculture faces a number of challenges that limits its widespread use as well as its sustainability. Some of these are general challenges linked to agriculture and small farmer development. Others are specific to organic farming, including:

General challenges facing agricultural development:

- Lack of financial resources – many farmers are poor and lack financial resources to enable them to start the transition to organic agriculture.
- Climate - unfavourable weather conditions such as droughts limit the spread of some the techniques to certain areas.
- Poor health of workforce due to disease, HIV/AIDS, and malnutrition leads to reduced productivity of labour in some areas.
- Difficulties in disseminating information in remote and marginal rural areas.
- Land tenure issues in South Africa (communal ownership of land in land reform and land under communal tenure in traditional authority areas) limits effective decision making on production systems. Also, without individual ownership, there is no individual responsibility for sustainable land management.
- Poor transport and communication infrastructure in rural areas affects access to markets.

Challenges specific to organic production:

- Lack of knowledge and information about organic agriculture among government bureaucrats and other influential actors in educational and research institutions, leads to a poor appreciation of its potential in poverty eradication and food security. Also because

the smallholders are isolated, they often do not receive the technical information needed to enable them to improve their livelihood.

- Difficulties in keeping records, particularly among smallholder farmers in group certification systems.
- Lack of education and knowledge can affect farmer capacity to adapt to change or to cope with food production stresses. It might also in some areas limit farmers' understanding on how the techniques are applied into farm practice.
- Organic agriculture is often labour intensive - farmers are sometimes hesitant to adopt them particularly if they are to be used with crops they consider as low value.
- Lack of markets: to be able to take advantage of the international recognition of the national organic guarantee system, in order to conquer more international markets and, to take advantage of the rapid growth of the national market, in order to promote local marketing of organic products.
- Lack of enabling policies - particularly aimed at fostering growth of the sector in areas of research and development and markets.

### ***11.3 Initial Approaches for Developing the Sector***

Given the crucial importance of organic agriculture, suggested strategies aim to promote sustainable production of the whole value chain. Strategies are grouped into six categories: (1) general policy; (2) standards and regulations; (3) organic markets; (4) production; (5) training, education, and research; and (6) regional and international cooperation.

#### **11.3.1 General Policy**

A country wanting to develop its organic sector needs to perform an in-depth integrated assessment of its general agriculture policies, programs and plans, to understand how they affect the competitiveness and the conditions of the organic sector. In this respect:

- The objectives for government involvement for the development of the organic sector need to be clarified. General and organic agriculture policies should support each other to the greatest extent possible to promote effective policy coherence, especially if organic agriculture is promoted as a mainstream solution.
- An action plan for the organic sector must be developed (through this study) based on analysis of the state of the sector, a needs assessments and proper sequencing. Clear targets for the organic sector will help agencies and stakeholders to focus their efforts.
- The commercial sector, NGOs, researchers and government work in partnership to grow organic production in South Africa.
- All stakeholders should be involved in the policy development and development of plans and programmes. Sufficient time for participation and consensus building should be allocated. To support the private sector and to implement public programs is often a good strategy.

- Government should recognise the diverse interests represented in the organic sector and ensure that all of them are considered properly, including special attention to disadvantaged groups.
- A permanent body should represent the sector with government.
- Governments should actively contribute to raising awareness and supporting organic agriculture on all levels.
- Data regarding organic production and markets needs to be collected over the years, analysed and made available to the sector and policy makers.

### **11.3.2 Standards and Regulations**

- The national standard for organic production should be finalised, with close cooperation between the private sector and government.
- Government should facilitate improved access to certification services by supporting the development of local service providers and developing mechanisms for improved and cheaper access to certification by small scale and emerging farmers.
- Special programmes should be established to support and certify smallholders. Training programs for farmer groups to set up Internal Control Systems should be supported.
- Compulsory requirements for mandatory third party certification should be avoided as it will not enable other alternatives to emerge. Other conformity assessment procedures, such as participatory guarantee systems, should be explored.
- Government departments regulating the sector should develop the regulations in close consultation with the sector and ensure that the regulation is enabling rather than controlling in nature.
- Regulations for local markets should be based on local conditions, and not in the conditions in export markets.
- Producers, especially smallholders shall be supported to comply with standards, certification procedures and regulations.

### **11.3.3 Organic Markets**

- Public procurement of organic products should be encouraged, including featuring organic food in important public events.
- Consumer education and awareness should be actively promoted.
- A common (national, regional or international) label for organic products should be promoted.
- Domestic market development strategies should consider both the supply and demand side, as well as the role of imports.
- The organisation of farmers in regards to marketing, joint distribution and storage should be supported.
- Market information systems should be established.

- Organic exporters should join forces to promote and market their products.
- Export promotion activities should be supported, recognising the special nature of organic markets.
- Alternatives for fumigation should be supported and organic products should be excluded from any mandatory phyto-sanitary treatments that are not permitted for organic products.
- Certification agencies should be supported to become good service providers for the export sector.

#### **11.3.4 Production**

- Direct support measures to producers need to be adapted to small and emerging farmers as well as to commercial operations.
- Organic extension services need to be established and the staff trained.
- Organic extension should be developed and implemented in a participatory manner and have the farm and the farmer in the centre of attention. The focus should be on organic farming systems and record keeping, particularly internal control systems in group certification.
- Traditional knowledge about pest control treatments and other practices should be surveyed and brought into the extension service and disseminated in other ways.
- Recycling of agriculture and food waste should be promoted.
- Commercial seed producers and new entrants should be encouraged to supply seeds in compliance with organic requirements. Alternative seed treatments should be developed and promoted.
- Existing producers and new entrants to commercial seed production and testing should be oriented to organic production<sup>27</sup>.
- GMO policies need to ensure that GMO seeds are not distributed or used in a way that can cause contamination of seed genetic resources.

#### **11.3.5 Training, Education and Research**

- Organic agriculture should be integrated in the curriculum for primary and secondary schools.
- Specialised are institutions that involved in training for organic agriculture should be supported.
- Higher education in organic agriculture should be developed.

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<sup>27</sup> The 3<sup>rd</sup> draft of the South African Organic Standard requires the use of organically certified seed. However, if this is not available, conventional seed may be used with permission from the certifying organization and provided it has not been chemically treated. Most organic regulations use the same approach for seed supply.

- Special research programs should be established for organic research, and the sector should be involved in the priority setting.
- R&D in organic should be participatory, build on and integrate traditional knowledge (where relevant) and be based on the needs of the producers.

#### **11.3.6 Regional and International Cooperation**

- Regional cooperation in marketing, standards, conformity assessment and R&D should be promoted, particularly regional organic standards in SADC.

## 12 APPROACHES USED ELSEWHERE TO DEVELOP THE SECTOR

The case studies and examples below provide an indication of some of the measures that have been used to develop organic sectors in other countries. The common thread, or anchor point around which the industries have developed is the establishment of local organic standards (not necessarily formal third party certification). The aims of these countries are similar, but their approaches are quite different.

### 12.1 Approach Adopted in China

In the case of China, John Paull from the School of Geography and Environmental Studies of the University of Tasmania, Australia provides an overview of what he calls “China’s Organic Revolution” (Paull, 2007).

*“The Government has seen organic farming as an effective way to face the challenges of international trade barriers”* (U. Chen 2006, South China organic food market brief, USDA Foreign Agricultural Service).

The important stimulus for the phenomenal leap in China’s organic production since 2005 came through an exhortation given by Jiang Zemin Communist Party General Secretary wherein he urged for “top priority” be given to “establish quality standards for farm produce, a move to a system for examining and testing farm produce and to develop organic and pollution free food”. Earlier, in 1990, the Government of China had established the Green Food Programme, which has become a very successful innovation in quality food production. It has since become a stepping stone for China’s growth in organic production.

Green Food was established as a Government programme and has remained in and under Government control. Food products are sold under the Green Food label and as at 2003 there were more than 3,000 products sold under the label and the retail market value of these goods was approximately US\$12 billion, roughly equivalent to the retail value of the United States organic market. The aim of the programme is to bring to market *San Pin* or “no-public-harm food”, a direct reaction to the environmental degradation, and farmer and consumer health issues together with international resistance to Chinese grown food that resulted from China’s Green Revolution. Pesticide residues and consumer and farmer deaths as a result especially of heavy pesticide use have been a factor.

Certification and entitlement to utilise the Green Food label is through a government programme utilising product testing, networks of inspectors and testing stations, farm inspection and certification procedures. Tracking and traceability systems are utilised, including electronic identification systems. Farmers pay fees for the service and as a result are entitled to use the Green Food logo, resulting in premium prices being achieved as well as benefiting from a Government sponsored public awareness campaign. Green Food has been marketed as “high quality and pesticide controlled food”. The emphasis under the green food label has been towards the *product*, while, in the case of organic certification, the emphasis is on the *process*.

The establishment of the Green Food label in China has enabled the simultaneous development of the organic sector there, and arguably formed the base for its explosive growth from 2005. At the same time as the Chinese Government set up the Green Food certification programme, it set up in 1994 the Organic Food Development Centre (OFDC). The two main motives for this initiative were “the potential for high quality exports” and “to encourage innovative farming practices that allowed for a more sustainable agriculture”. OFDC right from the start had focussed on compliance with international organic standards. As a result the Green Food programme and the Organic Food Programme were based from the outset on two significantly different philosophies. The Green Food Programme focussed on certifying products to Chinese specifications, allowing the use of GMOs and pesticides. The Organic Food programme on the other hand concentrated on organic certification of the process and harmonisation with international organic standards.

In 2002 OFDC was given full accreditation by IFOAM enabling OFDC certified Chinese organic products to be sold around the world as organic. The important contribution made by the Chinese in enabling sharp growth in the organic production sphere has been the establishment of a local standard – the Green Food standard – *its development out of international sight* and differentiation into Green Food label certification of Grade A and Grade AA. Subsequently development of the local Green AA standard has converged with internationally accredited organic standards. Paull has put forward this success in using the local Green Food AA standard as a stepping stone into an international organic standard certification as a possible model from which other potential significant organic producer countries could benefit. He argues that although the Green Food product specifications and certification are different to Organic certification of the process, they are quite compatible. Building the infrastructure for Green Food standards has enabled the incorporation and migration to organic standards and that the adoption of the two standards has the potential to ensure that Chinese organic products are of the highest individual standards.

The statistics put forward in support of this hypothesis are impressive. Between 2005 and 2006 land under organic management in China increased from 298,890 hectares to 3,466,570 hectares (Willer and Yussefi, 2006). As a result, China in 2006 had the second highest total area of agricultural land under organic management as opposed to 16<sup>th</sup> in 2005, behind only Australia which has a very high percentage of sparsely stocked grazing land certified organic. In 2006 China had 11% of the world’s total land under organic management while Australia had 38%. China’s dramatic increase in organic land management from 2005 has put it at the forefront of the worldwide organic movement.

Paull compares the key differences in the development of organic agriculture between the European Union and China in Table 48 below:

**Table 48: Comparison of Organic Development Drivers in the EU and China**

EU Organic Agriculture	China Organic Agriculture
Local market focus	Export market focus
Bottom up history	Top down history
Ideology driven	Price driven
Individual farm certification	Group certification
Farmer as decision maker	Co-op/enterprise as decision maker
Direct conversion process	Conversion via Green Food
Native idea	Foreign idea
Farm as organism	Farm as economic enterprise

## 12.2 The Approach Adopted in East Africa

The three East African countries Kenya, Tanzania and Uganda have quite well developed organic sectors. Notably the development of the sector has been very much a private sector driven activity, partly by commercial exporters (particularly in Uganda) and partly by NGOs (especially in Kenya). In Kenya there are around 30 NGOs providing training in organic agriculture, some of them, e.g. the Kenya Institute for Organic Farming (KIOF) for twenty years already. Governments have hardly paid any attention to the sector with a few exceptions, e.g. the Uganda Export Promotion Board has identified organic products as strategic products and the Uganda Coffee Development Authority has set a target that ten percent of the Ugandan coffee should be organic.

Local organic certification bodies were established in Uganda and Tanzania in 2003, with support from the Sida<sup>28</sup>-financed Export Promotion of Organic Products from Africa (EPOPA) program ([www.epopa.info](http://www.epopa.info)). In Kenya two local bodies offer organic certification. The local certification bodies in Uganda and Tanzania developed local organic standards, and the Kenya Organic Agriculture Movement (KOAN) did the same in Kenya. In 2005, the Bureaus of standards in Kenya and Tanzania showed interest in this and started to develop their own public standards for organic production, in the case of Kenya they were completed and gazetted in 2006.

Already at a regional meeting in Arusha 2003, the stakeholders agreed that a regional standard would make sense. However it was not until end of 2005 that funds were made available from the EU and Sida and the process could start. Coached by IFOAM, UNEP and UNCTAD the stakeholders developed a regional standard in the period December 2005 to January 2007. The main work was done in a technical working group comprising representatives of national organic movement, certification bodies and bureaus of standards. There were two rounds of consultations on the national levels and two regional meetings as well as field testing of the standards. At the onset the stakeholders agreed that the standards should mainly be for the *local and regional market development rather than being for export purposes*.

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<sup>28</sup> The Swedish International Development Cooperation Agency

The analysis was that it is easier to use the importing countries' standards directly for exports than to seek equivalence, even if the stakeholders obviously in the longer term want the East African standard to be considered as equivalent. The main driver for the standard was the private sector, but ultimately it felt that government involvement in the process would be of value. The East African Community (EAC) develops standards and they were seen as the appropriate "owner" of the standard. In April 2007 the council of the EAC approved the East African Organic Products Standard (EAOPS). At this time Burundi and Rwanda had joined the EAC and the standard therefore applies there. The role of the standard is expressed in the text box above.



The three national organic movements in Kenya, Tanzania and Uganda further developed the East African Organic Mark. The mark is owned by the three movements and will be made available to all producers (for a very low nominal fee) that are either certified by any local or foreign certification bodies or that are part of a recognised PGS system. The basis of recognition of PGS systems still has to be worked out. It can also be used for imports that are produced according to a recognised standard, e.g. the EU regulation, the Indian NPOP and or the draft South African organic standard.

As this system is still new it is too early to evaluate how well it works. It contains interesting components of public-private partnerships.

### ***12.3 The Approach Adopted in Latin America***

Production of organic commodities in Latin America has shown significant growth and the sector continues to grow, foreign and, to a lesser extent, domestic markets. Almost all Latin American countries have an organic sector, although the level of development varies. Argentina has the largest area under production, although a large proportion of this is extensive livestock production (Willer and Yussefi, 2007). Farm sizes are quite small, notably in Mexico and Peru. In the case of other countries, the data is somewhat skewed due to the large proportion of extensive livestock production. Vegetable and coffee production, on the other hand, occurs on relatively small farms that operate cooperatively (

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

The East African organic products standard can be used for self-assessment by producers, declarations of conformity in the marketplace, certification by certification bodies in the region, or other kinds of verification. If the standard is used for the purposes of third-party certification, inspection and certification should be carried out in accordance to international norms, such as ISO Guide 65 or the IFOAM Accreditation Criteria. If adherence to the standard is verified through other mechanisms, those mechanisms shall adhere to the principles of competency, integrity and transparency.

The standard is intended for the development of organic production and trade in the East African region. The standards are a platform for a common label for organic products in East Africa as well as for developing consumer trust. The standard also formulates standpoints which can be used in international negotiations on standards. Further, it can be a basis for equivalence agreements with other countries and regions.

Table 49).

In terms of the domestic market in Latin America, fairs / markets are the most popular form of organic trade. In Brazil, for example, the Coolmeia bi-weekly fair brings together 300 producers and thousands of consumers and in the South of Brazil; there are hundreds of Ecovida Network fairs. There are similar fairs in Peru, Lima, Uruguay, Dominican Republic and Mexico. Supermarkets and specialised stores also sell organic produce for the domestic market and some chains have developed their own organic brands, much like Woolworths in South Africa. Many of the specialised stores provide box scheme delivery services. Cooperative shops have also been developed by the Ecovida Network in Brazil as outlets for organic produce (Biofach, 2006).

**Table 49: Overview of Organic Production in Latin America (After Biofach, 2006)**

Country	Hectares	Farms	Average Ha per farm.	Market Value (USD Million)
Argentina	2 800 000	1 824	1 535	35
Brazil	887 637 (5 700 000 wild collection)	14 000	63.4	200
Uruguay	760 000	500	1 520	3.6
Chile	639 200	450	1 420	12.7
México	400 000	120 000	3	280
Bolivia	364 100	6 500	56	?
Perú	260 000	30 000	9	30

In addition to local sales, a range of products are exported from Latin America (Table 50). Organic production has significant social benefits for farmers in Latin America. In Mexico, for example, organic production produces significant social benefits, with numerous small scale farmers (average of 2.5 ha per family) generating an income of USD 280 Million, accounting for 98% of the total organic producers, 84% of the total organic acreage and 68% of the foreign currency earned in terms of organic sales (Biofach, 2006).

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**Table 50: Major Organic Products Exported from Latin America**

Produce	Country
Fruit and Vegetables	
Vegetables and Fruit	Brazil, Chile, Argentina
Bananas	Mexico, Honduras, Nicaragua, Colombia, Dominican Rep. Costa Rica, Ecuador
Apples	Argentina, Brazil
Kiwi Fruit	Chile
Pears	Argentina
Citrus	Uruguay, Argentina, Brazil
Pineapples and Mangoes	Colombia, Central America
Berries	Chile
Avocados	Chile, Mexico
Grapes	Brazil, Argentina
Grains and Cereals	
Soya	Paraguay, Argentina, Brazil, Mexico
Maize and Wheat	Mexico, Argentina, Brazil
Quinoa and Amaranth	Bolivia, Peru

## ***12.4 Participatory Guarantee Systems as an Organic Development Approach***

In terms of certification in Latin America, Argentina and Costa Rica have Third Country status in the European Union. There are also many foreign certification bodies in the region, mainly EU (e.g. Naturland, BCS, IMO), as well as national certification bodies, such as Argencent and OIA (Argentina); Insitituto Biodinamico (Brazil); Bolicert (Bolivia) who are all IFOAM accredited. In addition there are regional certifiers who operate in several countries, such as Bio Latina and Mayacert. There is a growing networking outlook in terms of the certifiers and notably, Participatory Guarantee Systems (PGS) are spreading in the Latin America.

Worldwide, many existing certification bodies began as farmers associations or similar organisations who, over time and developed concepts to conform to other certification schemes. The IFOAM Organic Guarantee System is based on a similar approach to quality assurance as the ISO norms (such as ISO 65 Guide). Locally, groups of farmers in different countries have developed less formal methods for guaranteeing the ecological (organic) status of their production, especially in the countries of the South looking for systems more adapted to their realities. The reasons for such alternative methods of certification vary, but are often a result of high certification costs, disagreement with the methods for ensuring credibility, or a political ambition to strengthen the farmers. In such cases ISO 65 type certification is seen as unnecessary (IFOAM, 2004).

These alternative systems of certification are usually based on the General Principles or the Standards for organic production that have been developed over time (usually existing national organic, IFOAM or Codex standards). The application, however, differs with some using written standard, some having seals and others providing a guarantee through a company or shop.

These systems often address not only the quality assurance of the product, but are linked to alternative marketing approaches. Box schemes, home deliveries, community supported agriculture groups, farmers markets, popular fairs and other direct and indirect sales arrangements help to educate consumers about products grown or processed by organic methods, which build trust and confidence in organic agriculture without formal certification. It is in this context that IFOAM and MAELA (Latin American Agro-ecology Movement) held a workshop on alternative certification for practitioners to explore common points and challenges in guaranteeing the credibility of the organic product and in providing legitimacy to these methods.

There was a recognised need to look for alternatives adapted to the different economic, social and cultural realities of small farmers all over the world. Experiences like Community Supported Agriculture (CSA) in USA, the Ecovida Agroecology Network in the South of Brazil and the Organic Farm in New Zealand, demonstrated the importance of the involvement of farmers and consumers in the generation of credibility for the organic product. A common perception of the participants of the workshop was that the participation of the key parties interested in the production and consumption of organic products was very efficient in guaranteeing the organic quality of the products mainly through building trust and that such alternative certification systems were adequate for local markets, although it was recognised that mechanisms should be found to get recognition of this form of certification in markets that move beyond the local sphere.

Recent Brazilian Organic Legislation *does not require certification for trading that is based on a direct relationship between producers and consumers* and recognises Participatory Certification as a valid methodology for the certification process.

#### **12.4.1 PGS in Brazil**

The Ecovida Agroecology Network in Brazil originated from organisations, established as far back as 1978, that were developing alternatives to “green revolution” agriculture. It was formally created in 1998 and the current model for the Ecovida Participatory Certification was catalysed by the Normative Instruction (NI 07/99 – *the organic standard*) of the Brazilian Ministry of Agriculture in 1999 which had high certification costs and methods that were *“inadequate to the reality of the peasant and small holder agriculture and did not in a satisfactory way enhance Agroecology.”*

Ecovida now includes 180 municipalities and approximately 2,400 families of farmers (around 12,000 persons) organised into 270 groups, associations and cooperatives as well as 30 NGOs, 10 ecological consumers’ cooperatives and several professional partnerships and supporting organisations. It supports a range of agricultural products for local and foreign markets and sales in 2003 amounted to USD 14 Million.

In 1994 the Ministry of Agriculture in Brazil initiated discussions with stakeholders to develop specific legislation to regulate this sector. Disagreements regarding certain points prevented consensus being achieved and was left until 1997 when discussions were resurrected. Within two years and after several meetings, Normative Instruction (NI 07/99) was issued which defined the organic production system and requiring that an organic product must be certified in order to be commercialised.

One of the main points of disagreement among the stakeholders in the Brazilian organic agriculture movement was certification, the obligation itself as well as the mandatory method of certification. While the importance and necessity of legislation to support and promote organic agriculture in Brazil was widely accepted, some stakeholders considered 3<sup>rd</sup> party certification to be unnecessary, or that it should at least occur on a voluntary basis. Others argued that there were different ways to guarantee quality, mainly through direct relationships between producers and consumers to develop credibility through trust.

The organic standard did allow for adaptation to regional characteristics that were more methodologically appropriate. Item 9.2 of the NI 07 (*accreditation criteria for certifiers*) read: "The certification companies will adopt schemes more adequate to the regions where they perform their work". This allowed for the development of two certification routes i.e. (1) third party certification through audits and (2) a system based on developing credibility. The legislation also determined the creation of National and State Committees of Organic Production represented by equal numbers of government and civil society. The committee's purpose is to implement the regulation through accreditation of certifying companies, control and monitoring and the promotion of organic agriculture. In 2002, the accreditation criteria for certification bodies were established through the committees, which again triggered disagreement as the criteria were so complex and bureaucratic that very few of the existing certifying bodies would be able to comply with the criteria.

At a National meeting of organic agriculture in 2002, several organisations criticised the process of organic regulation in Brazil, stating that it had been conducted incorrectly and without consensus and if implemented would be particularly onerous on small organisations and producers, effectively excluding them from the process.

Consequently, the Organic Agriculture Group (OAG) was established to construct a legal basis for organic agriculture through bringing back the principle of consensus and support to small initiatives of production, organisation or certification.

Considering the impact the legislation would have on the daily life of organisations and households, OAG focused on the construction of a law that reflected reality and was appropriate to Brazilian organic agriculture. In the meantime, big and more specialised certification agencies were proposing a mandatory certification system while smaller organisations, such as Ecovida were proposing a voluntary certification scheme. Observations of organic agriculture, particularly in developing countries led OAG to believe that there were significant differences, or even conflict, between smallholder agriculture and large scale organic agriculture. This argument may be compared to South Africa with the discourse around the "first" and "second" economies.

Brazilian law is different from most other organic legislation in two main areas:

- It does not demand certification in cases of direct trade carried out by organised small farmers and under social control
- It allows the development of different certification systems seeking to guarantee the organic quality of products.

Although certification remains mandatory, the law includes almost all organic agriculture actors in Brazil. It allows for the development of better systems in the future, and does not prevent the development of the organic agriculture sector in Brazil. This experience has been the base for other countries in the construction of their legal references, *especially when it refers to strengthening the internal market of organic products.*

In 2001, Brazil had 275 000 certified organic hectares. In 2007, there are 842 000 hectares, of which 170 000 is used for cropping and the remainder are in pasture. Willer & Youssefi (2007), note that there is a huge quantity of informally certified organic production and that there is an intense movement around local marketing and participatory certification with hundreds of weekly fairs. The Brazilian Ministry of Agrarian Development is actively involved in promoting ecological (organic) agriculture as an alternative for the millions of small farmers. The Ministry of Agriculture has six activities related to the promotion of organic farming and has allocated USD 1 million for this programme. Organic agriculture in Brazil is estimated to be growing at 30 – 50 % annually.

#### **12.4.2 PGS Systems in India**

Khosla (2006) points out that, as is often stated in the case of South Africa, “much of Indian agriculture is carried out under ‘default organic’ management which simply means that the farmers have no access to chemical fertilisers, pesticides or other organically prohibited amendments for financial and other reasons.”. While the importance of third party certification is recognised for international trade in organic products, it is often prohibitive to small farmers and limits the development of local organic producers and markets and hence limits the growth of the organic movement as a whole.

To establish an effective organic guarantee system for India, the issue of educating farmers as to what it means to be truly organic must be addressed in order for them to choose whether or not to farm organically. Such a guarantee should be *affordable, easily accessible* and as *inclusive as possible*, allowing farmers to make educated and informed choices regarding their agricultural production system. Kholsa argues that the PGS offers a parallel and complementary system of organic guarantee that grows the domestic market through educating producers and consumers and considers it likely that such a system will end up facilitating the growth of third party certified farms and increase India’s place as an organic exporter.

### 12.4.3 PGS Systems in New Zealand

In New Zealand the development of a certification system for smallholders or small scale farmers has been under way for some time. Initially, attempts were made by established certifiers for group schemes, but the systems remained inflexible, difficult to modify and remained costly for smallholders. In 2000, approximately 1,500 farmers in New Zealand claimed to be producing organic products but did not have certification. While retailers were selling these products based on trust, verified through farm visits, consumers were placing pressure on retailers to confirm the organic integrity of the product with some sort of certification.

Discussions around the issue of uncertified farmers ensued and a concept document was prepared based on developing local market certification to meet the specific needs and capacity of the many farmers who deemed the existing, export focused certification system too expensive.

The document scoped the idea that organic certification could:

- Be regionally controlled and community focused
- Be cheaper to attain
- Be nationally accepted
- Have high level of organic integrity.

After some strong political lobbying by the Green Party on behalf of the organic sector, the NZ Ministry of Agriculture released funding to support what was called the 'Small-scale producers organic program'. Out of this research, a people-centred certification model evolved, focussed on peer assessment and corroborated by a paper trail and supporting documents. This model was trialled with producers and tested through consumer surveys and was found to have merit. In 2003, Organic Farm New Zealand (OFNZ) was established; it now has over 185 certified smallholder farms and continues to grow. The table below provides additional information on characteristics of PGS in different countries.

**Table 51: Characteristics of PGS Systems in Different Countries (IFOAM, 2005a)**

<p><b>Ecovida Agroecology Network (Brazil)</b></p> <p><b><i>Developing credibility</i></b></p> <p>Horizontal network including farmers, NGOs, consumers' co-operatives and other organisations.</p> <p>Process of guarantee developed by participatory mechanisms involving producers, technicians and consumers.</p> <p>Periodic internal and external control by individuals or organizations not directly involved in the production. No third party inspection.</p> <p>Marketing of produce through open-air markets, institutional markets, organisation stores and others.</p>	<p><b>Keystone (India)</b></p> <p><b><i>Building a local guarantee for indigenous produce</i></b></p> <p>Mainly wild produce harvested from the forests by the indigenous community as well as from small homestead farms. Produce sold in two shops owned by Keystone and a network of like-minded organisations and shops.</p> <p>Holistic perspective including issues like access to land, health of the forest, livelihood diversification and others.</p> <p>Indigenous knowledge is often related to organic agriculture approaches. Hence the traditional practices and beliefs are documented.</p> <p>Inspection system includes: informal peer vigil through traditional labour-sharing systems and discussions, inspection and forms review by Keystone staff.</p>
<p><b>Organic Farm New Zealand (New Zealand)</b></p> <p><b><i>Farmer's peer assessment</i></b></p> <p>OFNZ is registered as a non-profit organisation and farmers are the OFNZ members.</p> <p>Organised by groups of 4-8 farmers with each member of the group present during each of the peers' 'inspections'. Peer assessment also allows exchange of ideas through informal meetings.</p> <p>Membership fees are set by each regional group, and depend on the amount of volunteer work that is on offer.</p> <p>Farmers supply to the local, regional and national markets.</p>	<p><b>Certified Naturally Grown (USA)</b></p> <p><b><i>PGS on the www</i></b></p> <p>Administered almost entirely via the internet.</p> <p>Open to small family farms that sell their products locally and directly to consumers in their own community.</p> <p>Inspections handled by grower-peers, extension agents, produce managers or customers.</p> <p>No registration fee, no paid staff.</p> <p>Uses the USDA Organic Program standards. This saves maintenance and update costs.</p>

#### **12.4.4 Some Features and Benefits of PGS Systems**

Fonseca (2004) identified a number of key features of PGS systems.

##### **Principles, values and ideology**

PGS systems support the principles food sovereignty, food security and food safety. They are also appropriate to small farmers' realities and small agricultural enterprises and the flexibility of the system emphasises a learning process in a transparent and trust building system. PGS also gives priority to local markets and long term relationships.

Empowerment and capacity building are also key features of PGS, as there is shared responsibility for the organic guarantee and decentralised decision making.

##### **Participation and Co-responsibility of the Guarantee Systems Programme**

In terms of participation, grassroots participation is promoted and not just outside information from "qualified" technicians. PGS systems not only have production standards and norms aligned with market requirements, but can also easily be adapted to consider social justice and other relevant needs specific to the communities which are certified under it. Consequently, the principles and standards of PGS are built together, put in practice and verified through the involvement of all participants (farmers, partner organisations, distributors, consumers, technicians) in the network and can be revised on a regular basis (e.g. every 2-3 years). This is further facilitated by frequent meetings, visits and social interactions between participants within the network.

Inspection reports are evaluated by committees in the network. Approval, sanctions and deregistration are decided collectively. Conflict of interest is managed through prohibiting farmers or stakeholders from taking part in the evaluation related to their property, and encouraging the active participation of conscientious consumers and an emphasis is placed on training and empowering participants in the process.

##### **Documentation and transparency**

Minimal and simple paperwork and registration procedures are a feature of PGS. Transparency and open access to information is the general norm for all schemes. Some are mainly based on oral accounts, most function with minimal paper work. This makes the system easily accessible to rural farmers.

##### **Funding and resources**

Schemes do not require a lot of funding as they rely a lot on voluntary work. Direct costs are covered by membership dues, donation, consumers' payment in advance and/or percentage of sales. Many indirect costs are covered by development funding from international and/or national government and private agencies.

There are also disadvantages to alternative organic guarantee systems. Many of these are captured in the table below (Table 52).

**Table 52: Advantages and Disadvantages of Alternative Certification (Fonseca, 2004)**

ADVANTAGES	DISADVANTAGES
<p>Stronger communication and relationships between producers and consumers / society</p> <p>Easier access for small producers and agri-enterprises to a quality assurance system</p> <p>Stimulates local development</p> <p>Raises farmers reputation to urban people and technicians</p>	<p>Requires a high degree of dedication from stakeholders</p> <p>Difficult to develop a group where self esteem and confidence is low</p> <p>Long term process – requires time for competency and capacity building to achieve results</p> <p>Lack of formal recognition</p>
<p>Greater ownership and responsibility by users of the guarantee system</p> <p>High transparency within the supply-consumption network</p> <p>Long term relations</p>	<p>Requires many meetings between participants to establish social control.</p>
<p>Decentralised power and decision making (individual and community empowerment and involvement)</p> <p>Local development base adapted to local social cultures</p>	<p>Complex social organisations</p> <p>Group specific – difficult to replicate model to others</p>
<p>Less documentation and bureaucracy</p>	<p>Little accurate data collection and record keeping</p>
<p>Low direct costs to farmers</p>	<p>Requires a lot of voluntary work</p>
<p>Inclusion of support services (extension, support, marketing)</p>	<p>High levels of conflict of interest can develop</p>
<p>Standards and norms adapted to local conditions</p>	<p>Standards and norms not widely recognised.</p>

PGS systems seek to attain the principles of trust between producers and consumers, a feature of organic agriculture in its formative years, before the development of third party certification as a result of the globalisation of the agri-food industry. It can be seen as an “*Ubuntu*” system for guaranteeing organic claims. The features of PGS make it ideally suited to small farmers’ development in South Africa.

## **12.5 Discussion**

### **12.5.1 Experiences from Other Countries**

The discussion considers processes that have been used to support and develop organic sectors in a number of countries, namely:

- **China**

There was international resistance to Chinese food due to food safety concerns, particularly agrochemical use and potential toxicity. A similar perception of food from Africa exists and is “a major concern is that African organic produce ‘is often seen by European and American consumers as *possibly unhygienic, subject to profiteering by middle men, and perhaps unreliable regarding marketing claims*”.

The Chinese model of development is a highly centralised one driven by national government. It focussed initially on Green Food for local markets, which created a “stepping stone” to draw farmers into organic production systems. The focus of organic development was on achieving international organic standards to take advantage of lucrative export markets for high quality food and also to combat local environmental degradation. The Green Food stepping stone was developed out of international sight with the aim of convergence with internationally accepted organic standards, which allowed the rapid growth in organic exports from China.

- **East Africa**

The East African organic sector has had well established export markets linked with commercial pack houses and exporters for some time. This evolved with limited government intervention. Only in 2005 did the Bureaus of Standards in Kenya and Tanzania really show interest in organics and start to develop their own public standards for organic.

The development of the East Africa Organic Standard (EAOS) focused mainly on local and regional market development rather than export and was written and adapted to conditions in East Africa. The development process for the standard recognised that it is easier to use the importing country’s standards than to seek equivalence (although this may be a long term goal). The EAOS is supported by a mark, which provides profiling and marketing opportunities for organic production, particularly in the context of buy in from government. This mark may be used upon certification through a local or foreign company, or through a recognised PGS system.

The process was mainly private sector and donor driven, although a conscious effort was made to engage with government, as it was recognised that their participation and endorsement was important.

- **Brazil**

Brazil’s organic standards were initiated at a national government level, but were opposed by a well established and strong grassroots movement that had been supporting alternative agriculture for many years. The grassroots organisations recognised that legislation favoured larger commercial producers and export markets and were considered inflexible and

inappropriate for smaller producers, of which there are many. Consequently, the legislation recognises both third party certification as well as alternative certification, resulting in thriving local markets and export markets growing at 30-50% per annum.

- **India**

In India, the many *de facto* organic farmers would not be able to cope with certification, even group certification. It was recognised that such farmers need to understand the true requirements of organic and then decide if they wished to pursue this form of agriculture. Participatory guarantee systems would provide an opportunity to grow local markets and allow for inclusivity, education, cooperation and empowerment to grow the organic movement.

- **New Zealand**

In New Zealand, organic production developed with little interference from Government and is well established. Small farmers supplying local markets were disadvantaged in terms of certification and lobbied for alternative certification for local markets and were successful.

## **12.6 Certification Options for South Africa**

It is likely that the promulgation of the South African Organic Standard will remove a number of impediments to the growth of the organic industry in South Africa. However, there are a number of directions the legislation can possibly take. Broadly these are as follows:

- Maintain the standard as it is, in line with the EU standard. This effectively means that the standard is aimed at export markets and supply to major retailers. High standards will maintain international credibility in spite of them not being directly relevant for exports.
- Maintain the standard as it is, but include recognition of PGS systems as a tool to encourage wider participation in organic agriculture through supporting small growers and educating local markets.
- Adapt the standard to local conditions (social, environmental) and make it more inclusive, such as a voluntary system of certification for producers who want to claim adherence to the standard and also allow for PGS systems. Broadly, this means that non-certified producers could sell organic products, but there is legal ground to challenge them if there are reasons to believe they are not organic. The producers who become certified or have PGS systems have full government endorsement for what they claim and are supported via the promotion of a mark.

The standard should also have a mechanism to allow imports into the country. For example, any product produced and sold in South Africa must conform to the SA standard and for imports; products must conform with SA, IFOAM or Codex Alimentarius standards.

A public organic mark should be introduced for organic produce in South Africa. This can be used by producers that follow the voluntary certification as well as to support the organic sector (e.g. the industry association can establish and hold the mark). This mark should be backed up with proper information and promotion.

# 13 STRATEGY FOR GROWING THE ORGANIC SECTOR IN SOUTH AFRICA

## 13.1 Introduction

The strategies provided in this document are based on the outcomes of the research findings and the stakeholder workshops. Multi-stakeholder workshops were conducted in Cape Town (46 participants), Johannesburg (37 participants) and Pietermaritzburg (33 participants) during 2008. Stakeholders at the workshops represented producers, retailers, input suppliers, NGOs and government. The key issues and critical actions identified through the workshops are summarised below, while the full proceedings of the stakeholder workshops are provided in Appendix I.

**Table 53: Key issues identified during the multi-stakeholder workshops**

Key issue	Critical actions
1. The need for government support of industry growth	<ul style="list-style-type: none"> <li>• Development by Government of a comprehensive, visionary Organics Strategy for South Africa including:               <ul style="list-style-type: none"> <li>○ Demystification of the sector</li> <li>○ Clear articulation of the immense, sustainable growth potential of the sector for South Africa</li> <li>○ Examination of current legislation</li> <li>○ Proposals for, and driving of, new legislation</li> <li>○ Grants and incentives for organic production</li> </ul> </li> <li>• Government market visits to leading Organics markets to understand:               <ul style="list-style-type: none"> <li>○ Market potential</li> <li>○ Essential support from governments to drive industry growth</li> </ul> </li> <li>• Active cooperation with the Sector Body (Key Issue #2):               <ul style="list-style-type: none"> <li>○ Championing the industry's driving of delivery of the Government Strategy</li> <li>○ Maintaining on-going dialogue with the Sector Body to keep abreast with industry:                   <ul style="list-style-type: none"> <li>▪ Challenges</li> <li>▪ Opportunities</li> <li>▪ Issues</li> <li>▪ Support required</li> </ul> </li> </ul> </li> </ul>
2. The need for industry coordination	<ul style="list-style-type: none"> <li>• Establishment of a single, centralised Sector Body representing:               <ul style="list-style-type: none"> <li>○ Government: NDA, DTI, DEAT</li> <li>○ Value Chain: Producers, Packers, Input Providers, Retailers</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Exporters</li> <li>○ Institutions</li> <li>○ Consumers</li> <li>○ Certifiers</li> <li>○ Media</li> <li>○ Regions</li> <li>● Centralising: <ul style="list-style-type: none"> <li>○ Profile: Branding, Marketing, Promotions, Media relations</li> <li>○ Reach: Member Coordination</li> <li>○ Knowledge: Information, R&amp;D</li> <li>○ Sector Development: Training, Apprenticeships, etc</li> <li>○ Communication: Internet</li> <li>○ Impact: Lobbying, Government liaison</li> <li>○ Market Opportunities: South Africa, SADC, Global</li> </ul> </li> </ul>
3. The need for regulations	<ul style="list-style-type: none"> <li>● Definition of industry standards: <ul style="list-style-type: none"> <li>○ Based on different levels of conversion to 100% pure 'organic'</li> <li>○ Responding to EU requirements</li> <li>○ Reflective of South African context</li> <li>○ Coded to educate and inform the value chain on levels and benefits</li> </ul> </li> <li>● Establishment of incentives to support organic production, and disincentives for GM / traditional production practices</li> <li>● Certification by certifiers approved and endorsed by Sector Body</li> <li>● <u>Self-governing by Sector Body</u></li> </ul>
4. The need for education	<ul style="list-style-type: none"> <li>● Activation of comprehensive sector research focused on: <ul style="list-style-type: none"> <li>○ International market</li> <li>○ South African market</li> <li>○ Retail trends</li> <li>○ Export opportunities</li> <li>○ Consumer trends</li> <li>○ Best Practice in value chain growth and development</li> <li>○ Leading global markets in organics sector growth</li> <li>○ Definition of core messaging critical to gain understanding of the meaning, impact, processes, and holistic benefits of Organics, tailored to educate and inspire: <ul style="list-style-type: none"> <li>▪ Farmers</li> <li>▪ Consumers</li> <li>▪ Educators</li> <li>▪ Retailers</li> <li>▪ Media</li> </ul> </li> </ul> </li> <li>● Activate a broad-based, on-going, targeted EDUCATION-based</li> </ul>

	<p>marketing campaign, centrally identified with, and implemented by, the Sector Body (Key Issue #2), and aimed at:</p> <ul style="list-style-type: none"> <li>○ Farmers</li> <li>○ Consumers</li> <li>○ Educators</li> <li>○ Retailers</li> <li>○ Media</li> </ul> <ul style="list-style-type: none"> <li>• Activate a focused training programme for Government Officials, with emphasis on: <ul style="list-style-type: none"> <li>○ Extension officers</li> <li>○ Policy makers.</li> </ul> </li> </ul>
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The framework presented below sets out the objectives, activities and expected results of the strategy for the growth and development of organic agriculture in South Africa. The strategy is drafted in a sequential and logical format as a recommended process to follow. It is unlikely that resources or capacity exist to implement all the activities proposed and consequently, prioritisation is required. The timeframes allocated provide an indication of proposed level of priority, with those proposed in the near future being of high priority. The sequential nature of some of the activities also requires enabling conditions to be in place in order for the next step to be able to take place.

### **13.2 Vision for the Organics Sector**

The proposed vision (or higher goal) for the organics sector in South Africa is as follows:

*“A vibrant, cooperative and credible organic community providing valuable services to the environment and society and providing healthy food to local and international markets.”*

### **13.3 Goals**

To contribute to achieving this vision, five broad goals have been identified:

1. The provision by government of the appropriate support and regulatory environment to enhance sector growth
2. Sector body driving the development of organic agriculture in South Africa
3. The support and development of aspirant producers
4. Set clear market objectives for organic agriculture in South Africa
5. To maximise the benefits of organic agriculture to the environment and society.

For each of these goals, a number of objectives have in turn been identified.

**Table 54: Summary of goals and objectives to develop the organic sector**

STRATEGIC GOALS	OBJECTIVES
<p><b>GOAL 1:</b>  <b>THE PROVISION BY GOVERNMENT OF THE APPROPRIATE SUPPORT AND REGULATORY ENVIRONMENT TO ENHANCE SECTOR GROWTH</b></p>	<p><b>Objective 1.1:</b> A legislative environment that is conducive to the growth and development of organic agricultural production.</p> <p><b>Objective 1.2:</b> Create an enabling policy environment for the growth of organic agriculture.</p> <p><b>Objective 1.3:</b> To build the capacity of provincial and national spheres of government spheres of government to support the sector.</p>
<p><b>GOAL 2:</b>  <b>SECTOR BODY DRIVING THE DEVELOPMENT OF ORGANIC AGRICULTURE IN SOUTH AFRICA.</b></p>	<p><b>Objective 2.1</b> Sector body supported and recognised by government and the majority of its constituency.</p> <p><b>Objective 2.2:</b> Key programmes supported by sector body.</p>
<p><b>GOAL 3:</b>  <b>THE SUPPORT AND DEVELOPMENT OF ASPIRANT PRODUCERS</b></p>	<p><b>Objective3.1:</b> To support and develop aspirant organic producers at all levels of production (subsistence to commercial production)</p>
<p><b>GOAL 4:</b>  <b>SET CLEAR MARKET OBJECTIVES FOR ORGANIC AGRICULTURE IN SOUTH AFRICA</b></p>	<p><b>Objective4.1:</b> To brand and promote organic produce.</p>
<p><b>GOAL 5:</b>  <b>TO MAXIMISE THE BENEFITS OF ORGANIC AGRICULTURE TO THE ENVIRONMENT AND SOCIETY</b></p>	<p><b>Objective 5.1:</b> Organic production supporting the achievement of National social objectives.</p> <p><b>Objective 5.2:</b> Organics contributing to a healthy and sustainable environment.</p>

### **13.4 Discussion of the Strategic Goals**

The discussion below outlines the thinking behind the framework and details some of the requirements to ensure the successful implementation of the strategy.

#### **13.4.1 Goal 1: The provision by Government of the appropriate support and regulatory environment to enhance sector growth**

The key government players in supporting the growth of the sector are the Department of Trade and Sector (DTI) and the National Department of Agriculture (DoA). It is envisaged that the Department of Environmental Affairs and Tourism (DEAT) will become increasingly involved after the promulgation of the standards in light of the many environmental benefits associated with organic agriculture. Also, the Provincial Departments of Agriculture (PDAs) will play a key role in providing extension and implementation support to organic development initiatives. When many of the strategies identified in the framework have been implemented, there should be increasing participation from other Departments, such as Health, Social Welfare, Education, Science and Technology and Treasury.

#### **Legislative Environment**

It has been made clear by numerous stakeholders at an individual level and through the stakeholder workshops that the promulgation of national organic standards is necessary and urgently required for a variety of reasons:

- To establish and uphold an international reputation for South African organic produce
- To provide a legal definition of the word “organic”
- To establish a basis from which to address fraud in the sector
- To increase consumer confidence in organic produce
- To facilitate the growth of the sector through formal recognition of the sector by government.

The finalisation of the standards is therefore the highest priority programme under this goal. Some stakeholders have questioned the role of the standards as South Africa’s recognition in European Markets is already quite well developed without any standards having been developed. Furthermore, requirements of importing countries are that production adheres to their standards. Unless South Africa is going to follow the equivalence route to access EU markets, it could be questioned whether the standards would have any benefit to exporters (having to now adhere to a new local standard for local sales) or to aspirant producers (who are forced to be certified to standards that were based on conditions in Europe).

It is recognised that the process of promulgating the standards is well advanced, but the question arises of whether consultation has been as broad as necessary to ensure that the developed standards are appropriate for local development objectives (“people centred development”). The proposed stakeholder workshops may be, to a certain extent, redundant given the advanced state of the standards; however, they are felt to be necessary to (1) ensure proper consultation has occurred and importantly (2) raise the profile of organic agriculture. The planned road-show to be undertaken by government would assist in

achieving other broader objectives of encouraging and profiling organic agriculture in South Africa, specifically:

- Reinforcing in the eyes of existing organic stakeholders the commitment of government to supporting the organic sector.
- Raising the profile of organic agriculture among consumers and conventional farmers.
- Create a platform to initiate discussions around the implementation of the strategy.
- Initiate opportunities for emerging farmers to engage around organic agricultural issues, starting with the standard.

It was clearly identified during the project that there is limited information available on organic production in South Africa. A number of mechanisms can be used to track the movement and production of organic produce, including the use of Harmonised System (HS)<sup>29</sup> codes, information provided through certifiers and other sources of information such as retailers and packhouses. Certifiers, in terms of ISO 65 are required to report on their activities on a regular basis. The promulgation of the standards should provide leverage to encourage certifiers to do so, however, these reporting requirements would need to be included in the standard.

It is envisaged that one of the functions of the sector body is to act as a clearing house for this information and it should use the information to provide services to its stakeholders, including government. In addition, the sector body should also be leading other initiatives related to organic standards. For example, there have been concerns raised by stakeholders regarding the behaviour of some certifiers and organic producers. Establishing a code of conduct for the sector and a control body to monitor the sector should assist to address these concerns. In addition, the control body can advise and support on matters such as small farmer development and certification.

There is also current legislation that can potentially conflict with the aims of organic production, such as Act 36 of 1947, for example, which may limit the use of certain organic inputs due to the “L” registration requirements for farm inputs<sup>30</sup>.

### **Regulatory and Policy Environment**

The regulatory environment is classified as different from the legislative environment in that it is more around policy and support mechanisms for the organic sector.

The regulatory environment focuses on establishing a policy environment that supports the growth and development of organic agriculture and the development of a code of conduct for the sector. The National Department of Agriculture has drafted a policy for Organic Agriculture; however, this document is not yet in the public domain. Again, meaningful consultation around the development of policy can further raise the profile of the organic production similar to the road show / workshops relating to the organic standards.

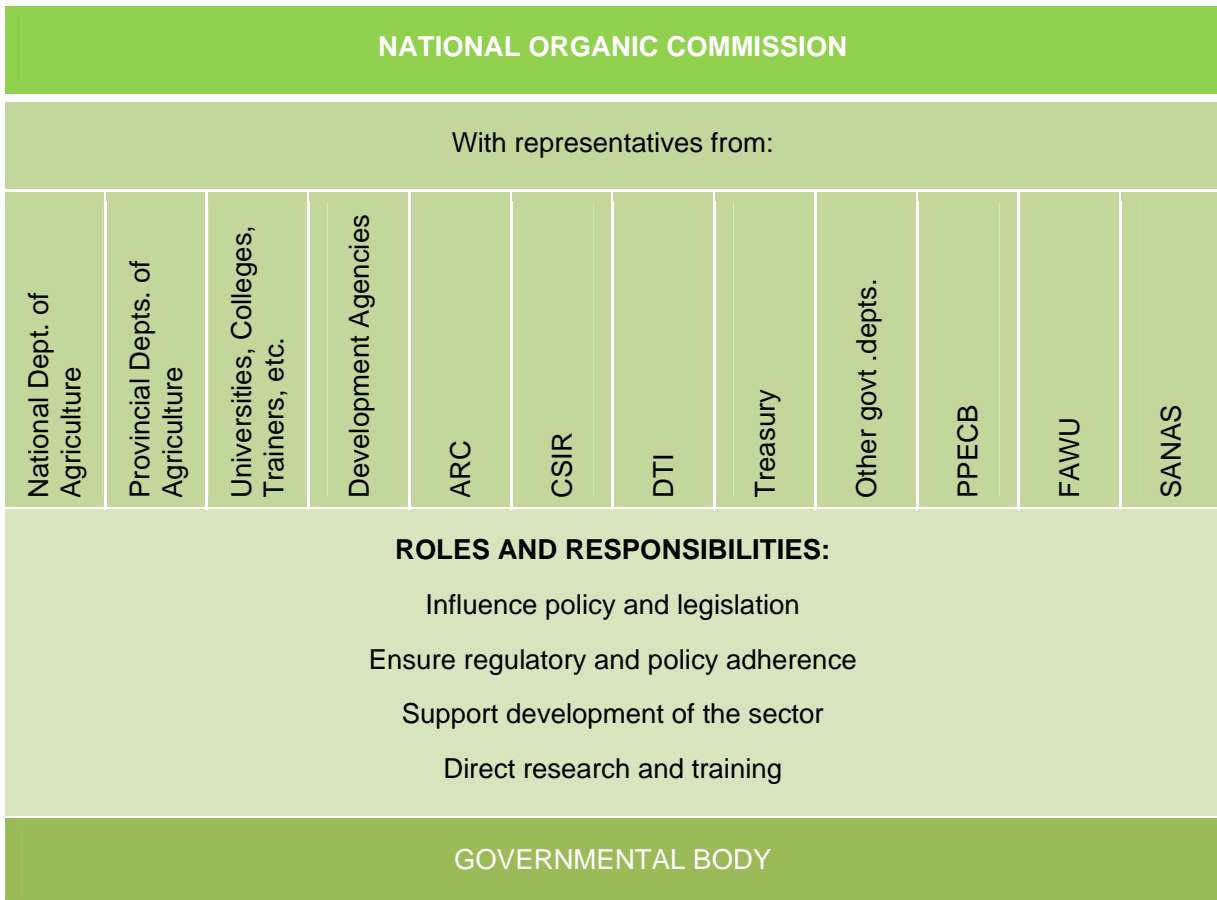
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<sup>29</sup> Harmonised Standard Codes for monitoring the movement of import and export products used by the PPECB.

The purpose of the code of conduct is similar to that of the policy, namely:

- To assist with reducing distrust that occurs within the sector
- To raise the profile of organic products locally
- To setting a benchmark that will assist in:
  - Establishing the integrity of the organic sector
  - Branding South African organic produce on international markets.

This code should be signed by all organic producers and certification agencies operating within South Africa. It is recommended that a National Organic Commission is established that includes stakeholders and government agencies, but unlike the sector body, is a government competency (See Figure 14). This will assist in developing policy and legislative coherence between government departments. The commission will be responsible for monitoring implementation of strategies and associated policies. The commission will also assist in raising awareness of and supporting the broader benefits of organic agriculture to South African society. It can also represent South Africa and articulate development needs in international forums. The commission should also include representation by officials responsible for the Agricultural Products Standards Act and should allocate resources for monitoring and enforcement of standards (the organic “scorpions”).



**Figure 14: Nature of the National Organics Commission.**

Finally, it is imperative that the national and provincial government agencies are made aware of organic agriculture and its potential to enhance LED, food security, environment, etc. Capacity must be built with the relevant officials at all levels to create the enabling environment in which organic development can occur. The policy and regulatory environment should also support the establishment of the sector body, which is discussed in more detail below.

#### **13.4.2 Sector Body Driving the Development of Organic Agriculture**

The sector body has been identified by many stakeholders as key to the coordinated and sustained growth of organic agriculture in South Africa. In this case, it is not the growth of the organic *sector* in its broadest sense, including addressing poverty, food security, and pressing environmental challenges faced by South Africa and the world today.

The sector body must be as inclusive as possible in its representation of *all* organic stakeholders. This is probably not achievable in the short term, given the infancy of the sector in South Africa, the disparate views of various stakeholders (e.g. export focus versus food security focus; profit versus activism etc.) and a legacy of suspicion and distrust that exists among many organic stakeholders. Consequently, it is unlikely, in the short term, that membership based funding will be sufficient for the sector body to operate. In time it is anticipated that the sector body will provide a range of benefits to its members and membership based funding will increase.

It is further not possible to define the nature and structure of the sector body at this stage. The existing body has undergone a number of changes over the last decade, from changes in name, to changes in the constitution of the board and management and many stakeholders are currently not supporting the body. A process of consultation must be initiated to determine what the structure and purpose of the sector body should be and whether the existing body will work for this purpose. The consultation process should aim not only to define the functions of the body, but also to elicit support from stakeholders for the body. Ultimately, it is owned by its members and they must accept and support the structure of the body.

#### **Funding of the Sector Body**

It is anticipated that the Sector Body will fund itself from three main sources:

- Membership based funding
- Grant funding for some of its initiatives, such as research, education and training
- Payments for the provision of services, such as sector information.

None of these funding streams are likely to come on line in the short term and funding support is necessary to establish the Body and cover initial operating costs. Government and sector stakeholder must work with the sector to develop innovative ways of securing funding and these funding streams will most likely come from government to begin with. The sector body will initially be grant dependent, but must develop and implement a plan to ensure that it becomes self sufficient within its first three years of operation.

### **Active Cooperation and Support for the Sector Body**

The question of whether to establish a new sector body or to “reinvent” Organics South Africa is unclear. Specific consultation with organic stakeholders is necessary to decide on which route is preferred as there are valid arguments on both sides. It is recommended that Organics South Africa remain the representative sector body and is restructured according to identified needs and a new mandate to be defined through consultation with the sector.

Once defined, it is imperative that the sector body is recognised at a national level. This is necessary due to the infancy of the sector and the wide spectrum of stakeholders (such as from large export packhouses to environmental, grassroots and social activists; large commercial farmers to small subsistence gardeners) which can, and has in the past, resulted in conflict and fragmentation. It is important that all these sectors are supported through the activities of the sector body and government will have an important role to play in the formative period.

Champions of organic agriculture in government, who can engage with the sector body, must be identified and supported where possible. Study tours to other countries to learn about policies and practices in supporting organic production will bring fresh and new perspectives on how the state can support organic agriculture, particularly with emerging farmers in South Africa.

Based on the structure and purpose of the body, it would need to be resourced with staff and equipment. Initially, a board of directors should be established (or the existing board ratified and supported) who would, based on the articles of association of the company and the purpose of the organisation, establish a mandate for the organisation and recruit a general manager. In turn, the manager would equip the organisation with the necessary staff, equipment and office space.

### **Key Programmes Supported by the Sector Body**

The key programmes to support organic production in South Africa are drawn from stakeholder inputs and consolidated into three key areas.

- **Education and awareness implemented in priority areas.**

The sector body will establish partnerships to promote and market the organic sector through educating various public and private sectors, and should be aiming for the following:

- Farmers
- Consumers
- Educators
- Retailers
- Media
- NGOs
- Government.

- **Undertake and support research around identified themes**

Organic farming has little direct support from research and extension services in South Africa. The sector body should take a leading role in identifying key issues of relevance in research and development for organic production. Research should be holistic and consider the range of different stakeholders in the value chain. Key areas of research include:

- Research into market development and export promotion
  - Local and international market growth and development
  - Retail trends
  - Export opportunities
  - Consumer trends
- Identification and testing of new and potential technologies
  - To enhance global competitiveness
  - Sustainable management of natural resources
  - Best practice in value chain growth and development
  - Best practice for production in South Africa.

Agricultural research institutions, such as the Agricultural Research Council should be engaging in research that supports organic agriculture. Collaboration and research partnerships should be established with other countries that have well developed organic programmes. Australia, for example, has similar climatic conditions, diseases and pests to South Africa; Indian, Brazilian governments have well developed systems for supporting small farmers in organic production; East Africa has well developed privatised value chains that procure organic products from small farmers. Lessons need to be learnt from these countries and applied in South Africa: farmers, researchers and extensionists can learn a lot from this.

Tertiary institutions, such as agricultural colleges (this is where many extensionists are trained) and universities must develop research and training programmes on organic agriculture. These institutions can also act as forums in which meaningful debate can take place regarding the role of organic agriculture in the context of broader issues, such as global warming and globalisation. Such research can inform decision-making at a national level. Also, research farms of colleges and universities should be used for organic research and training purposes.

- **Education, Training and Extension**

Education and training can potentially occur at a number of different levels:

- *Schools*: agricultural sciences should have a strong focus on sustainable agricultural systems and organic farming. Schools have an important role to play as they influence thinking during the formative years. Life skills are also very important here, for example, child headed households can be taught to create organic food gardens to improve nutrition.

- *Tertiary institutions*: organic production methodologies should be included as coursework options in colleges and universities. Postgraduate programmes are also necessary.
- *Short courses*: many agricultural colleges and other tertiary institutions provide short courses on a variety of agricultural management aspects; organic and sustainable systems need to be included here.
- *Skills development programmes*: AgriSETA, for example can assist in developing skills through training service providers. A few accredited organic training programmes (e.g. Rainman Landcare Foundation and some FET colleges) have been developed through AgriSETA, but more are necessary to provide the range of skills required.
- Training to support existing and aspirant organic producers (potential income source for sector body).
- The establishment of dedicated education centres / centres of excellence that can include graduate and post graduate training in organic forms of production (e.g. Sustainability Institute; Centre for Environment, Agriculture and Development; Rainman Landcare Foundation).

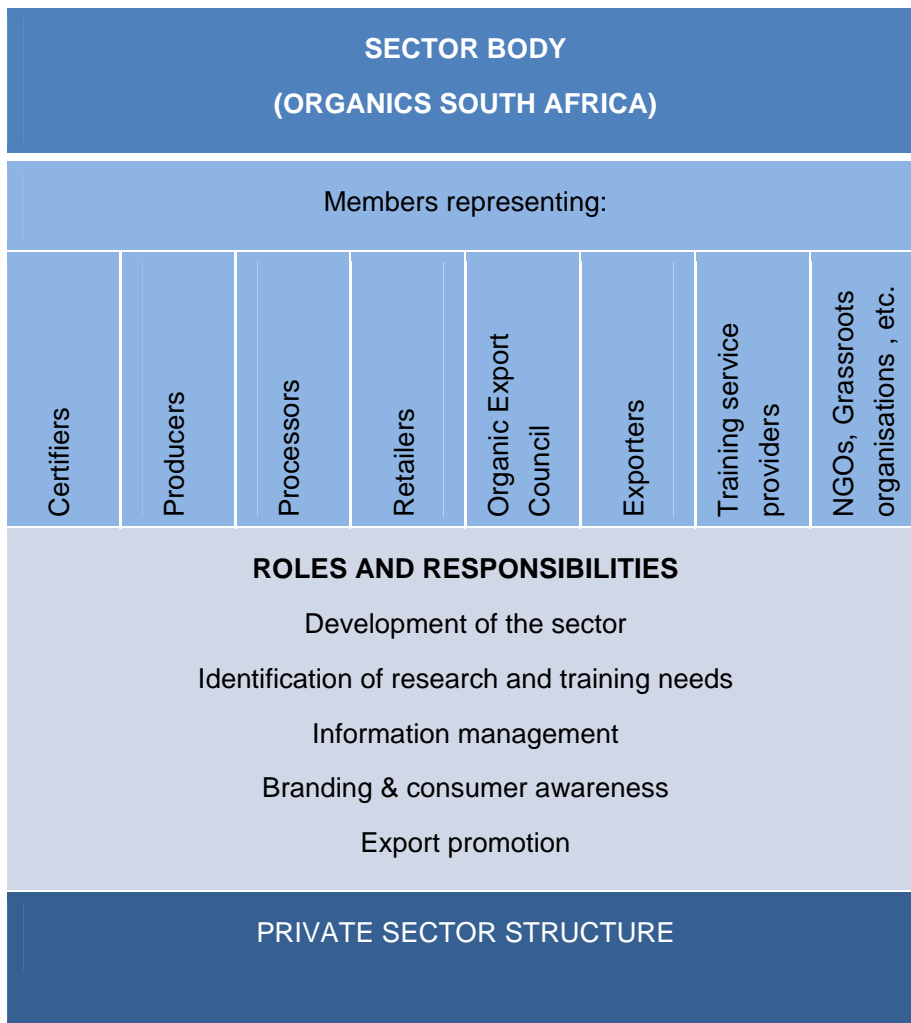
A programme for monitoring the quality of training as well as the impact of training, particularly for small and emerging farmers should be implemented. The aim of this should be to identify areas where training needs to be improved to better build the capacity of the target groups.

- **Other support requirements**

Other recommended support includes:

- *Land Reform*: training programmes targeting beneficiaries are necessary to build the necessary skills; it is often the case that farmers have land, infrastructure and even inputs, but are not sufficiently capacitated and consequently are not successful. This can be closely linked with the extension training support mentioned above.
- *Farmers as trainers / mentors*: many organic farmers are willing to share their experience and knowledge with other farmers. In fact, this has been the main way through which many farmers have learnt organic skills in South Africa. This body of knowledge and experience must not be ignored – regional centres / platforms / information portals, such as web based discussion groups should be established where farmers can share and obtain information.
- *Internships / apprenticeships*: The role and value of apprenticeships should be understated. Many technical and professional sectors still require (mechanics, doctors, lawyers, accountants) some form of apprenticeship, although the use of apprenticeships has declined in many sectors in recent years. A programme to put promising young farmers (conventional and organic) through apprenticeships will enhance their capacity and can grow the industry.

- *Training:* In terms of the public sector, technical training should be focused on capacitating extension services to support organic production. At a management level training courses must be provided to policy and decision makers in provincial and national government to improve understanding of and support for organic production.
- *Extension support:* This is important, for both commercial and emerging farmers. Given the limited number of current organic farmers in South Africa, it makes sense that organic agriculture extension should be specialised service to begin with (point competency; point engagement). It is suggested that dedicated organic support staff from the provincial departments of agriculture are identified, rather than diluted generalist knowledge of organic agriculture in all extension staff. Once this competency has been developed within specific dedicated staff, this knowledge / information can extend to other staff. The nature of the sector body is clarified below (Figure 15).



**Figure 15: Nature of the Sector Body.**

### **13.4.3 The Support and Development of Aspirant Producers**

#### **Identification, Support and Training of Aspirant Producers**

It is necessary to identify aspirant producers who are potential organic farmers and provide them with targeted support, hence the need for a database of aspirant producers. Support has been broken down into five key areas that have been identified as major constraints to farmers:

- Provision of key infrastructure and equipment to support organic production.
- Assistance with access to inputs (particularly seeds) and support (training and extension).
- Access to finance (grant / loan funding).
- Assistance in accessing markets.
- Training.

#### **Alternative Organic Guarantee Systems**

South Africa recognises the existence of dual economy operating in the country, the so-called first and second economies. Economic development seeks to bring second economy players into the first economy, hence the major focus on small enterprise development. Also, there are development practitioners and other stakeholders advocating the use of alternative organic guarantee systems (as discussed earlier), such as the Participatory Guarantee System. There must be recognition of and support for the PGS in South Africa to act as an organic guarantee for local markets, simplify access by emerging farmers to organic markets and to act as a stepping stone for engagement in more formal markets. The PGS is acknowledged in the current draft of the organic standards, but they do not recognise it as a formal certification system. The South African Organic mark should be available to PGS certified producers in South Africa – not only those who are third party certified.

### **13.4.4 Setting Market Objectives for Organic Produce**

The profile of organics should be enhanced locally and production for local markets increased. It is also necessary to increase access to international markets. This can be achieved by setting market objectives.

#### **Brand and promote South African Organic Produce**

The establishment of a South African Organic Mark will brand profile organic produce on local markets. The concept of a brand is important is important for a number of reasons:

- To enhance consumer confidence in organic products and create a platform for consumer education
- Provides a mark around which the sector can rally
- Allows for local and international recognition
- Demonstrates a unified body
- Provides a lobbying opportunity.

A branding exercise for organics should be undertaken with key stakeholders and the public.

### **Marketing and promotion of organic produce**

Mechanisms to increase the production and consumption of organic produce must be developed. This can be achieved through effective policy, promotion (education and awareness), and legislation (the SAOS), which are discussed above. To effectively access local and international markets, a critical mass of organic produce, coupled with increasing demand, must be achieved.

There are a number of initiatives that can enhance market development:

- A national platform from which organic produce can be marketed must be established, possibly as an export council or joint working group.
- The Sector Body and Organic Commission, along with stakeholders should work together to develop both local in international markets.
- The Dti SA National Pavilion and Individual exhibition scheme programmes for export promotion should be accessed and utilised (Export councils carry the most weight in this regard):
  - Export councils. The possibility of establishing an Organic Export Council under the National Agricultural Marketing Council (NAMC) has been identified as an opportunity to be investigated for enhancing export market access. This requires agreement on the part of producers and processors through a consultative process as a fee based on production value is charged for the marketing services provided by the council.
  - Sector associations are a less formal export promotion structure, but can still access export support programmes provided through the dti.
  - Joint Action Groups (JAG) generally consists of a small number of producers who wish to access specific foreign markets.
- South Africa has the infrastructure and economy to act as a regional hub for organic produce from Southern African countries (particularly non-perishables). This can increase volume of production, which can in turn assist with negotiating better markets and prices, having a favourable knock on effect for production. This will also create the opportunity for expanding the South African organic standard into a regional standard to enhance production and profile of organics in Southern Africa.
- The Dti Sector Desk / Customised Sector Programme (CSP) must develop a support programme for organics based on the strategy.
- Profiling of both government support for, and local production of, organics at local and international forums (e.g. Natural and Organic Products Exhibition; Biofach, Trade Missions, etc).

### **13.4.5 To maximise the benefits of organic agriculture to the environment and society**

#### **Organic production supporting the achievement of national social objectives**

Apart from economic opportunities, a range of social and environmental benefits can also be realised through the wider application of organic production in South Africa. Broad Based Black Economic Empowerment as well as farmer and farm worker development objectives can be achieved using organic production as a platform for development.

In the context of rising fuel costs and input prices and the rising cost of purchasing food, locally relevant organic production methodologies are necessary to enhance food security at all levels. This should be supported at a policy level by national government and implemented by the relevant provincial departments.

Organic production methods can assist in achieving South Africa's poverty reduction targets and enhance productivity on land reform farms, given the necessary support from extension services and managers within the National and Provincial Departments of Agriculture and organic stakeholders.

#### **Organics contributing to a healthy and sustainable environment**

Grants and fiscal incentives for organic agricultural systems, particularly in environmentally sensitive areas (e.g. near groundwater resources, high biodiversity areas) have been used successfully to encourage organic agricultural production in a number of countries. This is normally not done as a subsidy but for valid economic reasons. This should be recognised and research undertaken to investigate and quantify the value of environmental and social goods and services that organic agriculture can provide in South Africa. This is particularly important in light of Treasury's recently published draft policy paper on environmental fiscal reform<sup>31</sup>.

Recognition of environmental goods and services of organic agriculture in terms of contributions to biodiversity, soil and water conservation and pollution control is the key objective under this goal. A system of grants and fiscal incentives is proposed to support and recognise the benefits of organic agriculture. To achieve this, it is necessary to first quantify the benefits in real terms and thus research is required prior to application of such incentives. Based on the research, policy and legislation in support of these incentives should be developed. From this, a framework and criteria for providing fiscal incentives to producers as well as grant funding mechanisms for small farmers should be established.

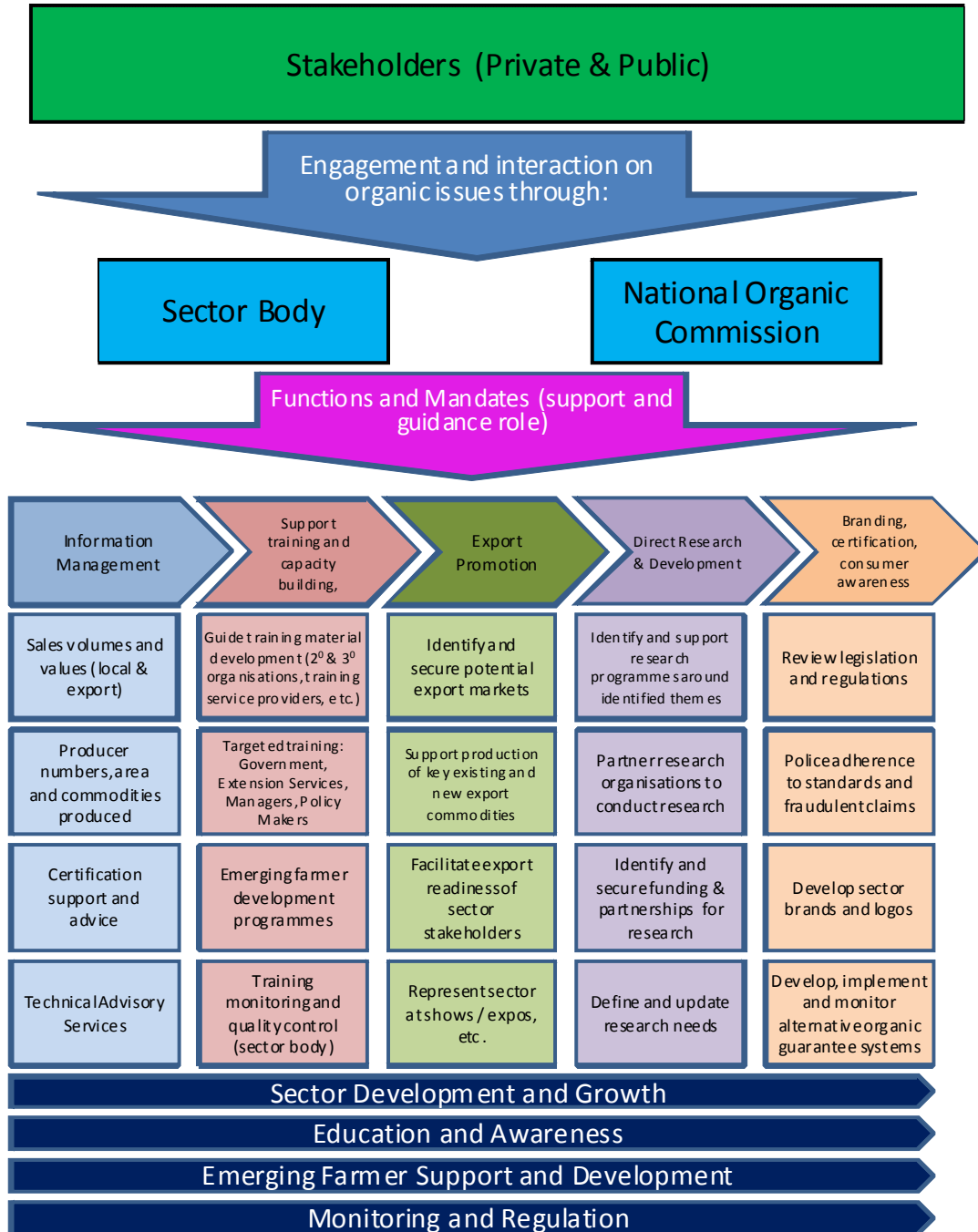
#### **Institutional Arrangements for Delivery**

Figure 16 provides an overview of the proposed interactions between sector stakeholders, the Sector Body and the National Organic Commission. The sector body's purpose is to serve organic stakeholders by articulating their needs to government through the national organic commission. The Sector Body and the commission should secure funding, partnerships, develop policies, etc. to implement the identified activities. The Sector Body and the commission, should also in turn be feeding information back to stakeholders, ensure

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<sup>31</sup> [www.treasury.gov.za](http://www.treasury.gov.za)

that that the necessary training and support is provided, provide market and technical information services and develop networks to support the development of the organic sector in South Africa.



**Figure 16: Proposed functions and relationships between Sector Body, stakeholders and National Organic Commission.**

### **13.5 Objectives and Programmes**

The programmes related to achieving each of the objectives mentioned above are summarised in this section. If these programmes are implemented and the objectives are met, the strategic goals for the sector will be achieved.

#### **GOAL 1: THE PROVISION BY GOVERNMENT OF THE APPROPRIATE SUPPORT AND REGULATORY ENVIRONMENT TO ENHANCE SECTOR GROWTH**

**Objective 1.1:** A legislative environment that is conducive to the growth and development of organic agricultural production.

***Programme 1.1.1:*** Finalise and promulgate organic standards.

***Programme 1.1.2:*** Establish systems to track and record information related to organic production in South Africa.

***Programme 1.1.3:*** Review and update current legislation to reflect the organic standards and to modify legislation to support principles of organic production.

**Objective 1.2:** Create an enabling policy environment for the growth of organic agriculture.

***Programme 1.2.1:*** Develop a policy in support of organic agriculture in South Africa.

***Programme 1.2.2:*** Ensure policy coherence and interagency cooperation through the establishment of a National Organic Commission.

**Objective 1.3:** To build the capacity of provincial and national spheres of government spheres of government to support the sector.

***Programme 1.3.1:*** Build the capacity of government agencies at national and provincial levels.

#### **GOAL 2: SECTOR BODY DRIVING THE DEVELOPMENT OF ORGANIC AGRICULTURE IN SOUTH AFRICA.**

**Objective 2.1** Sector body supported and recognised by government and the majority of its constituency.

***Programme 2.1.1:*** Consultation between stakeholders and government to establish agreement on the way forward for the sector representative body.

***Programme 2.1.2:*** A strategy and plan for the financial sustainability of the sector body compiled and implemented.

***Programme 2.1.3:*** Equip the sector body with the necessary office and human resources.

**Objective 2.2:** Key programmes supported by sector body.

***Programme 2.2.1:*** Guide and support the implementation of education and awareness programme in priority areas.

**Programme 2.2.2:** Guide and support focused training programmes for public and private sector.

**Programme 2.2.3:** Establish partnerships to commission, design and support the development of research in support of organic agriculture.

### **GOAL 3: THE SUPPORT AND DEVELOPMENT OF ASPIRANT PRODUCERS**

**Objective3.1:** To support and develop aspirant organic producers at all levels of production (subsistence to commercial production)

**Programme 3.1.1:** Key constraints to production for entrants and small-scale producers unlocked through the provision of support.

**Programme 3.1.2:** Establish production-based extension and training programmes for new and aspirant producers.

**Programme 3.1.3:** Recognise and implement an alternative organic guarantee mechanism to include aspirant producers in the organic sectors at entry level.

### **GOAL 4: SET CLEAR MARKET OBJECTIVES FOR ORGANIC AGRICULTURE IN SOUTH AFRICA**

**Objective4. 1:** To brand and promote organic produce.

**Programme 4.1.1:** Brand South African Organic produce.

**Programme 4.1.2:** Make concerted marketing drives to enhance the production and consumption of organic produce.

### **GOAL 5: TO MAXIMISE THE BENEFITS OF ORGANIC AGRICULTURE TO THE ENVIRONMENT AND SOCIETY**

**Objective 5.1:** Organic production supporting the achievement of National social objectives.

**Programme 5.1.1:** Support the achievement of BBBEE, land reform and poverty reduction targets.

**Programme 5.1.2:** Enhance food security at all levels (household, regional, national).

**Objective 5.2:** Organics contributing to a healthy and sustainable environment

**Programme 5.2.1:** Ensure recognition of environmental goods and services of organic agriculture.

**Programme 5.2.2:** Establish a system of grants and incentives that recognises the positive contribution of organic agriculture to the environment and social development.

## 13.6 Strategic Framework

The strategic framework provides a more detailed context for the objectives and programmes, in terms of time-frames in which they are to be achieved and indicators to measure success. The section is divided into four subsections, which provide information pertaining to:

- The objectives
- The programmes and related activities
- The budget
- Time-frames for implementation.

### 13.6.1 Summary of Objectives Related to each Goal

Objectives	Indicators	Target and Timeframe
<b><i>Vision: A vibrant, cooperative and credible organic community providing valuable services to the environment and society and providing healthy food to local and international markets</i></b>		
<b>Overall goal:</b> An increase in organic production to enhance food security, meet the rising demand for organic produce and to contribute to improved environmental management.	Number of organic farms and farmers in South Africa. Value of local and export production.	10% (certified or PGS) by 2012. R2,000 million by 2012.
<b><i>Goal 1: The provision by government of the appropriate support and regulatory environment to enhance sector growth.</i></b>		
<b>Objective 1.1</b> A legislative environment that is conducive to the growth and development of organic agricultural production.	Organic standards finalised and promulgated.	December 2009.
	Systems and mechanisms to track organic production and sales are established.	Systems operational by December 2011.
	Existing legislation reviewed and updated to accommodate the organic standards and principles of organic production.	December 2009.
<b>Objective 1.2.</b> A policy environment that is conducive to the growth and development of organic agricultural production.	A policy in support of organic agriculture in South Africa finalised and published through a consultative process.	December 2010.
	A National Organic Commission established to ensure policy coherence and inter-agency cooperation.	December 2009.

Objectives	Indicators	Target and Timeframe
<b>Objective 1.3.</b> To build the capacity of provincial and national spheres of government to support the organic sector.	Extensive training and capacity building provided to relevant officials at all levels of government to understand all the benefits of, and provide support to, the organic sector.	December 2010.
<b>Goal 2: Sector Body Driving the Development of Organic Agriculture in South Africa</b>		
<b>Objective 2.1.</b> Sector body supported and recognised by government and the majority of its constituency.	Consultation between stakeholders and government to establish agreement on the way forward for the sector representative body.	Agreement on way forward by June 2009.
	A strategy and plan for ensuring financial sustainability of sector body compiled and implemented.	Funding agreements / membership fees achieved by December 2009.
	Sector body equipped with the necessary office and human resources.	5 full time employees by June 2010.
<b>Objective 2.2.</b> Key programmes supported by sector body.	Sector body guiding and supporting the implementation of education and awareness programmes in priority areas.	3 programmes established by December 2009; additional programmes ongoing.
	Guide and support provided to focused training programmes for public and private sector.	Five training programmes implemented by December 2009.
	Partnerships established to design and implement sector research programmes	Research funding secured and five research programmes initiated by December 2009.
<b>Goal 3: The Support and Development of Aspirant Producers</b>		
<b>Objective 3.1.</b> Increased participation of emerging farmers in organic agriculture (full value chain) through the support and development of aspirant producers at all levels of production (subsistence to commercial production).	Key constraints to production for new entrants and small-scale producers unlocked through the provision of support.	1000 new farmers benefiting from support per annum.

Objectives	Indicators	Target and Timeframe
	Production-based extension and training programme for new and aspirant producers.	250 extension officers trained per annum, starting January 2009.
	The recognition and implementation of an alternative organic guarantee mechanism to include aspirant producers in the organic sectors at entry level.	PGS policy compiled by December 2010. 20% per annum increase in PGS producers per annum from December 2009. 10% per annum conversion from PGS to third party certification from December 2010.
<b>Goal 4: Set Clear Market Objectives for Organic Agriculture</b>		
<b>Objective 4.1.</b> To brand and promote organic produce.	A South African Organic mark established and promoted.	Mark established. National recognition of "brand organic" by December 2009.
	Concerted marketing drives to enhance production and consumption of organic produce underway.	Marketing strategies for local and international markets designed and implemented by December 2010.
<b>Goal 5: To maximise the benefits of organic agriculture to the environment and society</b>		
<b>Objective 5.1.</b> Organic production supporting the achievement of National social objectives	Organic agricultural sector supporting the achievement of BBBEE, land reform and poverty alleviation targets.	Organic sector contributing to various targets by January 2010.
	Improved food security at all levels (household, regional, and national) achieved by developing and implementing locally relevant organic production methodologies to ensure a constant supply of nutritious organic food.	Five regional initiatives established and implemented by December 2009.
<b>Objective 5.2.</b> Organic agriculture contributing to a healthy and sustainable environment	Recognition of environmental goods and services of organic agriculture.	Environmental goods and services provided by organic agriculture quantified through research by June 2010.
	Fiscal incentives programme for organic agriculture defined and legislated.	Criteria for accessing fiscal incentives defined under environmental fiscal reform legislation by December 2011.

### 13.6.2 Summary of the Programmes and their Associated Activities

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
<b>Goal 1: THE PROVISION BY GOVERNMENT OF THE APPROPRIATE SUPPORT AND REGULATORY ENVIRONMENT TO ENHANCE SECTOR GROWTH</b>					
<b>Objective 1.1: A legislative environment that is conducive to the growth and development of organic production.</b>					
<b>Prog.1.1.1.</b> Finalise and promulgate organic standards.	Conduct provincial and national stakeholder workshops or an "organics standards road show".	Five provincial / regional and one national workshop held by June 2009.	Sector and government collaboration and agreement.	DoA / DTI / Sector Body / Sector Stakeholders	300,000
	Promulgation of organic standards.	Standards gazetted by December 2009.	Sector / government agreement on standards.	DoA / DTI	Internal Cost
<b>Prog 1.1.2.</b> Establish systems to track and record information related to organic production in South Africa.	Include mandatory reporting by agencies providing organic certification in South Africa in the organic standard.	Registration and reporting requirements included in the standard by December 2010.	Non industry sensitive information freely shared and regularly submitted by certifiers.	Certifiers / Sector Body / DoA	250,000 (IB)
	Engage PPECB to review the HS System to include organic produce. Get HS codes operational and capture trade in organic produce.	Export codes for organic produce defined by December 2009. HS Codes operational by December 2010. HS codes used to report trade movement by December 2011.	PPECB consider it necessary and worthwhile to publish organic codes.	DoA / SB / PPECB / SARS	50,000 (SB)

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
	Determine the feasibility of, and sector support for, the establishment of a sector council and implementation of a statutory levy in terms of the National Agricultural Marketing Council Act (e.g. "Organic Export Council").	Feasibility determined and report published for recommendations on this possibility by June 2010.	Functioning sector body engaging meaningfully with sector stakeholders.	Sector Stakeholders; SB; DoA	250,000
<b>Prog 1.1.3.</b> Review and update current legislation to reflect the organic standards and to modify legislation to support principles of organic production.	Review of Fertilisers, Farm Feeds, Agricultural and Stock Remedies Act (No 36 of 1947) to establish an alternative system for the registration of organic inputs.	Alternative registration system for organic inputs established by June 2010.	Registrar of inputs agrees and allows change of legislation.	Government (DoA), Input Suppliers	Internal Cost
	Identify additional legislation that requires modification.	Ongoing amendment of legislation and regulations from January 2010.	Sector Body identifies necessary changes.	DoA / DTI / SB	Internal cost
<b>Objective 1.2: Create an enabling policy environment for the growth of organic agriculture.</b>					
<b>Prog 1.2.1</b> Develop a policy in support of organic agriculture in South Africa	Draft policy circulated to sector (through sector body and commission - see Prog. 1.2.2.) stakeholders for comment and input.	Comment and input finalised by December 2009.	National commitment to support organic agriculture. Sector body capacitated to represent sector stakeholders.	DoA / SB	Internal Cost

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
	Policy finalised and presented to Parliament.	Policy finalised by June 2010.	National commitment to support organic agriculture. Sector body capacitated to represent sector stakeholders.	DoA / SB	Internal Cost
	Establish and implement a code of conduct for the sector ("sector code of practice").	Code of conduct compiled and signed by sector body members by December 2010.	Sector stakeholders supportive of the concept of a code of conduct.	DoA / SB / Sector Stakeholders.	120,000
<b>Prog 1.2.2</b> Ensure policy coherence and inter-agency cooperation through the establishment of a National Organic Commission.	Establish a commission composed of stakeholders and all relevant government agencies.	Commission established by December 2009.	Organic policy is in place and supports the establishment of the commission.	Government (DoA / DEAT / DTI)	Internal Cost
<b>Objective 1.3: To build the capacity of provincial and national spheres of government to support the organic sector.</b>					
<b>Prog 1.3.1.</b> Build the capacity of government agencies at national and provincial levels	Identify officials to be assisted in developing their capacity to provide the necessary support to organics.	Extensive training, capacity building and support provided to relevant officials at all levels to understand all the benefits of, and support organic agriculture by December 2010.	Effective cooperation between spheres of government and between departments.	Government (Particularly DEAT, DTI, NDA and their provincial counterparts).	Internal Cost

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
	To establish mechanisms whereby Government and the sector can engage on a regular basis (e.g. quarterly) to ensure ongoing dialogue, take advantage of opportunities and address challenges (i.e. sector body and National Organic Commission).	Challenges addressed and opportunities taken advantage of to enhance the growth of organic agriculture by December 2010.	Sector body supported and recognised by government.	Government / SB	300,000
	Identify officials in government who can champion organic agriculture and engage at an international level.	Officials identified and actively supporting the organic sector, ongoing from June 2009.  Local (e.g. SADC) and international cooperation around organics achieved by December 2010.	Officials who will support organic agriculture engage in local, regional and international forums.	DoA / DTI	Internal Cost
<b>Goal 2: SECTOR BODY DRIVING THE DEVELOPMENT OF ORGANIC AGRICULTURE IN SOUTH AFRICA</b>					
<b>Objective 2.1: Sector body supported and recognised by government and the majority of its constituency.</b>					
<b>Prog 2.1.1.</b> Consultation between stakeholders and government to establish agreement on the way forward for the sector representative	Define the structure and purpose of the sector body through a series of workshops.	Provincial and national workshops held by June 2009.	Agreement on structure and purpose from stakeholders.  Wide sector support for the body.	Government (DTI, DoA) / SB	300,000

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
	Secure funding to support the revitalisation and operation of the sector body.	Funding commitments received. (Government / Donor Funds) by December 2009.	Government considers funding support to sector body appropriate and necessary.	SB / Donor Agencies / Sector Stakeholders (as members) / Government (DoA, DTI)	1,000,000
<b>Prog 2.1.2.</b> A strategy and plan for the financial sustainability of the sector body compiled and implemented.	Sector body to present a plan for self funding within the first six months of operation.	Sources of funding identified and commitments secured by June 2010.	Sector body has the capacity and support to secure funding.	SB	Determined by body
	Undertake a drive to significantly increase body membership.	1,000 paying members by June 2010, 20% increase per annum.	Stakeholders support industry body; sector body sufficiently resourced (staff and budget).	SB	300,000
<b>Prog 2.1.3.</b> Equip the sector body with the necessary office and human resources.	Identify and employ staff.	Necessary staff identified and employed by June 2010.	Resources available to staff the sector body.	Board of Directors / SB Manager	250,000

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
<b>Objective 2.2: Key Programmes Supported by Sector Body.</b>					
<b>Prog 2.2.1</b> Guide and support the implementation of education and awareness programmes in priority areas.	Identify key priority areas for creating awareness and consumer education.	Three priority areas identified by December 2009.	-	SB / Dept of Education / Organic Commission	50,000
	Implement awareness raising, targeting priority areas.	Three education and awareness programmes implemented by December 2009.	Sector body feels that education and awareness will raise the profile of organic agriculture.	Sector Body / Dept of Education / Organic Commission	2,500,000 (externally funded)
<b>Prog 2.2.2.</b> Guide and support focused training programmes for public and private sector.	Develop and implement five training programmes in partnership with training organisations to build capacity around concepts and practices of organic agriculture.	Training material published by June 2009. Training programme implemented by December 2009.	Training in organic agricultural practices is seen to be necessary and desirable.	Government (NDA / DTI / DOE) / SB / Organic Commission / Tertiary Institutions / NGOs / Sector Stakeholders	5,000,000
<b>Prog 2.2.3</b> Establish partnerships to commission, design and support the development of research in support of organic agriculture.	Support and guide the design and implementation of a sector research programme in partnership with research organisations.	Research thrusts identified for key areas. Funding secured for research programmes by December 2009.	Capacity for research in research institutions and bodies exists. Research funding obtained.	Sector body / research institutions.	12,000,000

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
<b>Goal 3: THE SUPPORT AND DEVELOPMENT OF ASPIRANT PRODUCERS</b>					
<b>Objective 3.1: To support and develop aspirant organic producers at all levels of production (subsistence to commercial production)</b>					
<b>Prog 3.1.1.</b> Key Constraints to production for entrants and small-scale producers unlocked through the provision of support.	Develop a database of aspirant / small-scale producers and their level of production.	Database of aspirant and small scale producers, their location and crops, challenges. etc. compiled by June 2009.	NGOs and other organisation willing share information with SB.	SB / NOC	500,000
	Support the establishment of partnerships between commercial and emerging organic farmers.	Ten formal partnerships established per annum from June 2009.	Central government and provincial counterparts create frameworks and an enabling environment in which partnerships can occur.	Commercial farmers, sector stakeholders, DoA, DTI.	200,000
	Identify and implement key infrastructure support necessary to support new and small-scale producers.	Infrastructure support programmes developed in each province by December 2010.	Necessary funding secured for infrastructure.	Government Departments.	15,000,000
	Assist small-scale producers with access to inputs, support and organic guarantee systems.	100 emerging farmers registered on an organic guarantee system annually (PGS and third party certification).	SB resourced and able to implement projects and programmes. Extension services support organic programmes.	SB / Provincial Departments of Agriculture (PDAs).	5,000,000
	Make financing options available for small-scale producers.	Twenty equity / strategic partnerships with existing	Lending institutions do not consider organic or	SB / Govt / Loan Institutions.	1,000,000 (facilitation)

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
		organic producers achieved by December 2010.  R100 million in loan financing provided to emerging farmers by December 2010.	emerging farmers a risky investment.		
	Assist producers with accessing markets.	Twenty new emerging producers supplying formal markets per year.	Support and training programmes are successful.	SB / Packhouses / Markets	2,000,000
<b>Prog 3.1.2</b> Establish production-based extension and training programme for new and aspirant producers.	Identify and train an “elite” core of extension officers to support organic producers.	Two hundred and fifty extension officers trained per annum starting January 2009.	Provincial Departments provide extension officers for training.	DoA / PDAs / SB	5,000,000
	Ensure that an accredited organic training programme is offered in formal institutions and through accredited training service providers to aspirant organic farmers.	Five courses are provided annually in target areas (20 – 30 learners on each course) from December 2009.	Tertiary institutions and trainers accept the challenge of developing comprehensive training programmes for organic production.	SB / Dept of Education / Secondary and Tertiary Institutions.	10,000,000
<b>Prog 3.1.3.</b> Recognise and implement an alternative organic guarantee mechanism to include aspirant producers in the organic sectors at entry level.	Establish a policy for the implementation of an alternative organic guarantee system (such as PGS).	PGS policy compiled by December 2010.	Alternative certification recognised as a valid system of guaranteeing organic and accepted by sector and informal markets.	SB / NOC	1,000,000

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
	Amend the South African Organic Standard to recognise PGS as a certification system and allow for PGS branding.	Legislation amended by December 2010.	Political will to include PGS as a recognised form of certification exists.	DoA / SB / NOC	Internal Cost
	Promote widely the use of PGS for local sales of organic produce.	Awareness and promotion programmes identified and implemented by January 2011.	Sufficient trust exists for PGS to be recognised as an organic guarantee.	SB / NOC / NGOs / Lobby groups	300,000
<b>Goal 4: SET CLEAR MARKET OBJECTIVES FOR ORGANIC AGRICULTURE IN SOUTH AFRICA</b>					
<b>Objective 4.1: To brand and promote South African Organic Produce</b>					
<b>Prog 4.1.1.</b> Brand South African Organic produce.	Establish a South African organic Mark.	Mark identified, and recognised nationally by December 2009.	Organic standard is promulgated that is relevant to South Africa's development needs.	DTI / Consumer lobby groups / SB	300,000 (national branding exercise)
<b>Prog 4.1.2.</b> Make concerted marketing drives to enhance production and consumption of organic produce.	Develop strategies to promote local and international sales. (e.g. through representation at Biofach, Natural and Organic Products Exhibition)	Marketing strategies for local and international markets implemented by December 2010.	Production of organic produce in South Africa increases; organic commission and sector body established; retailers and markets support marketing initiatives.	DTI / SB / Producers, processors, exporters	2,000,000 (DTI export promotion programmes)
	Develop strategies to enhance local organic production by farmers	Key constraints (education & training, information, technical support, funding) limiting the	Farmers are supported to convert to organic systems of production.	All stakeholders	1,000,000

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
		expansion of organic production addressed by December 2010.			
<b>Goal 5: TO MAXIMISE THE BENEFITS OF ORGANIC AGRICULTURE TO THE ENVIRONMENT AND SOCIETY</b>					
<b>Objective 5.1:</b> Organic production supporting the achievement of National social objectives					
<b>Prog 5.1.1.</b> Support the achievement of BBBEE, land reform and poverty alleviation targets.	Include organic production in agricultural poverty relief and job creation programmes (to halve poverty by 2014).	20% of CASP funding allocated for support of organic production by Dec 2009. 20% of provincial agricultural programme funding and training used for organic production by December 2009.	Technical skills provided to extension staff to support organic production.	DLA / DoA / PDAs	20,000,000
	To establish organic production systems on land reform farms	Organic mentorship programmes established and implemented for land reform beneficiaries by June 2010. 20% of land reform farms producing organically by December 2011.	Extension, technical support and market development provided to land reform beneficiaries.	DLA / DoA / PDAs	20,000,000
	Sector body and commission to establish and implement BBBEE targets and programmes in consultation with stakeholders.	Targets for BBBEE in organic agriculture established and implemented. Targets being achieved by January 2010.	Key organic institutions established and able to provide the necessary support; stakeholders involved in setting targets.	Commission / SB / Government / Sector stakeholders	Internal

Programme	Activities	Indicators, targets & timeframes	Assumptions	Responsibility	Notional Budget
<b>Prog 5.1.2.</b> Enhance food security at all levels (household, regional, national).	Develop and implement locally relevant organic production methodologies.	Provincial initiatives designed and implemented by the relevant provincial departments. Five initiatives established per province by December 2009.	National and provincial departments support and implement initiatives.	Government / NGOs	20,000,000
<b>Objective 5.2: Organics contributing to a healthy and sustainable environment</b>					
<b>Prog 5.2.1.</b> Ensure recognition of environmental goods and services of organic agriculture.	Quantify the environmental goods and services provided by organic agriculture.	Goods and services of organic agriculture determined through research programmes and benefits quantified by June 2010.	ARC / Research Institutions / DEAT / Treasury.	SB / Sector stakeholders / research organisations	5,000,000
<b>Prog 5.2.2.</b> Establish a system of grants and incentives that recognises the positive contribution of organic agriculture to the environment and social development.	Define and legislate fiscal incentives programme for organic agriculture.	Environmental fiscal incentives and support programmes for organic agriculture established and criteria for accessing fiscal incentives defined under environmental fiscal reform legislation by December 2011.	Government recognises benefits of organic agriculture to the national economy and environment.	Government (DEAT / DoA, DTI / Finance)	2,000,000 (research)
	Establish grant funding mechanisms to support small-scale farmers to expand their operations, pay for certification.	Allocation of MTEF budgets for support by December 2012.	A recognition of the social benefits associated with organic agriculture.	DEAT / DoA / DTI / SB	15,000,000

### 13.6.3 Summary of Budget and Descriptions of Activities

Notional budgets related to each of the programmes have been extracted from the strategic framework and summarised in the table below (Table 55).

The actions required are detailed in the programmes and activities framework, with responsible parties for implementation identified. It is unlikely that resources will be available to implement all of the proposed actions in the short term. The National Organic Commission and the Sector Body (OSA), in consultation with stakeholders, should define priority activities, and use available budgets to take them forward to implementation. The establishment of the Commission and the revitalisation of the Sector Body are priorities in terms of guiding implementation and securing funding for identified programmes. A short description of each of the proposed activities is also provided in the table below.

**Table 55: Budget Summary including More Detailed Description of Proposed Activities**

<b>Goal 1: THE PROVISION BY GOVERNMENT OF THE APPROPRIATE SUPPORT AND REGULATORY ENVIRONMENT TO ENHANCE SECTOR GROWTH</b>	
<b>Objective 1.1: A legislative environment that is conducive to the growth and development of organic production.</b>	
<b>Prog.1.1.1. Finalise and promulgate organic standards.</b>	
Undertake a series of national workshops related to the finalisation of the organic standards and to initiate consultation related to the implementation of the organic strategy - five workshops at R60,000 each.	R300,000
Standards gazetted by December 2009.	Internal Cost
<b>Prog 1.1.2. Establish systems to track and record information related to organic production in South Africa</b>	
Modification of organic standards to include reporting on general information on production volumes, commodities, etc. Engagement with certifiers to determine the type of information they are able to share without compromising their competitive ability. Sector body and national organic commission to facilitate.	R250,000
To include organic in HS coding managed by the PPECB. Internal cost for state; budget allocation for Sector body to engage with stakeholders on best practices for reporting on export volumes and categories.	R50,000
Feasibility of establishment of sector council and establishment of a statutory level in terms of the National Agricultural Marketing Council Act. Study commissioned to research this possibility and determine stakeholder support for marketing option.	R250,000
<b>Prog 1.1.3. Review and update current legislation to reflect the organic standards and to modify legislation to support principles of organic production.</b>	

Registrar of inputs and input suppliers to be engaged to develop registrations systems for organic inputs that align with the principles of organic agriculture, but ensure safety and efficacy as part of an holistic system.	Internal Cost
<b>Objective 1.2: Create an enabling policy environment for the growth of organic agriculture.</b>	
<b>Prog 1.2.1 Develop a policy in support of organic agriculture in South Africa</b>	
Circulate draft policy to stakeholders.	Internal Cost
Policy finalised and presented to parliament.	Internal cost
To compile a sector code of conduct to be upheld by organic producers in South Africa, facilitation and stakeholder alignment. To be funded by the sector through membership or grant funding.	R120,000
<b>Prog 1.2.2 Ensure policy coherence and interagency cooperation through the establishment of a National Organic Commission.</b>	
National and provincial departments to engage in the identification of representatives to participate in a national organic commission to work closely with the Sector body and stakeholders to implement the strategy and support the growth of the organic sector.	Internal Cost
<b>Objective 1.3: To build the capacity of provincial and national spheres of government to support the organic sector.</b>	
<b>Prog 1.3.1. Build the capacity of government agencies at national and provincial levels</b>	
Officials who are interested in championing organic development to be identified and supported through training and mentorship - the establishment of organic support and development centres within each provincial department of agriculture to work closely with development practitioners and research institutions.	Internal Cost
To ensure ongoing dialogue, quarterly forums between NOC and SB to monitor strategy implementation, address challenges, etc. (20 meetings over 5 years - R15,000 per meeting for travel, venue hire and other costs).	R300,000
Government officials identified to represent the sector in regional and international forums - profile organic production in South Africa, regional trade cooperation in SADC, market development for organic goods, secure funding for development of strategy.	Internal Cost
<b>TOTAL GOAL 1</b>	<b>R1,270,000</b>
<b>Goal 2: SECTOR BODY DRIVING THE DEVELOPMENT OF ORGANIC AGRICULTURE IN SOUTH AFRICA</b>	
<b>Objective 2.1: Sector body supported and recognised by government and the majority of its constituency.</b>	

<b>Prog 2.1.1. Consultation between stakeholders and government to establish agreement on the way forward for the sector representative body.</b>	
Sector body to develop a new structure for supporting the organic sector, including institutional relationships with the state, research institutions, organic development supporters, etc. Sector body to consult stakeholders through a series of workshops to determine support for this. It is proposed that National Government fund this initiative to initiate the establishment of a representative sector body supported by stakeholders and effectively grow the sector.	R300,000
Secure funding to support the revitalisation of the sector body. Sector body should develop proposals to secure funding for its start up activities. Funding may be secured from national government, however donor funding should be sought by the Sector body to cover operating costs, staffing, the development of a long term funding strategy, etc.	R1,000,000
<b>Prog 2.1.2. A strategy and plan for the financial sustainability of the sector body compiled and implemented.</b>	
Sector body to develop and present a plan for self funding within the first six months of operation. This is an internal cost to the Sector body and will depend on available resources.	Internal Cost (Sector Body)
To undertake a drive to significantly increase membership. It is envisaged that the Sector body will fund itself through membership fees, the provision of services and donor funding for special programmes, such as small farmer development, training development, etc. The costs allocated are for promotional materials, marketing drives, etc.	R300,000
<b>Prog 2.1.3. Equip the sector body with the necessary office and human resources.</b>	
Based on programme 2.1.1 and 2.1.2, the sector body should have identified funding and strategies to employ staff, even if on a part time basis, to perform the mandates of the organisation. It is essential that dedicated staff are allocated to this. The budget allocated is for equipping the office and operating costs for the first year.	R250,000
<b>Objective 2.2: Key Programmes Supported by Sector Body.</b>	
<b>Prog 2.2.1 Guide and support the implementation of education and awareness programme in priority areas.</b>	
From the stakeholder consultation related to the organic standards and consultation by the sector body on its purpose and mandate, three key priority areas for creating awareness and consumer education should be identified. Working with retailers, the organic commission and the Department of Education, and other stakeholders, a plan for implementation education and awareness should be developed.	R50,000

Education and awareness should be implemented in the identified areas. This should be through schools, popular media, leaflets etc. Budget allocated is for promotional materials and activities and is expected to come from both state sources (e.g. for schools) and private / donor funding (e.g. pamphlets, adverts, etc).	R2,500,000
<b>Prog 2.2.2. Guide and support focused training programmes for public and private sector.</b>	
There are existing course materials available for organic training, however, full curriculum development at tertiary institutions, AgriSETA, etc. is required. These institutions should be encouraged to develop curricula for organic specific qualifications. The budgets for these are broken down as follows:	
~ curriculum development at tertiary institutions	R500,000
~ development of NQF level 6 for extension officers and other development practitioners supporting organic development	R500,000
~ training programmes developed and tested for extension services to understand fully the principles and practices of organic agriculture	R2,000,000
~ training programmes developed and tested for extension services to provide training to emerging farmers (train the trainer).	R2,000,000
<b>Prog 2.2.3 Establish partnerships to commission, design and support the development of research in support of organic agriculture.</b>	
Sector research programmes to be developed with guidance from the sector body and stakeholders in the sector. Private and public research institutions should partners with the sector and the commission to undertake research over 4 years (R3,000,000 per year) focused around key thematic areas as follows:	
~ market development and trends (local and international markets, consumer trends and preferences, export opportunities, etc)	R3,000,000
~ value chain research and development	R2,500,000
~ best practices for production and management (organic systems, pest management, soil management, etc.) for key commodity groups (vegetables, fruit initially).	R4,000,000
~ small-scale farmer development and alternative certification	R2,000,000
~ compilation of manuals and popular, accessible research information and dissemination to farmers.	R500,000
<b>TOTAL GOAL 2</b>	<b>R21,400,000</b>

<b>Goal 3: THE SUPPORT AND DEVELOPMENT OF ASPIRANT PRODUCERS</b>	
<b>Objective 3.1: To support and develop aspirant organic producers at all levels of production (subsistence to commercial production)</b>	
<b>Prog 3.1.1. Key Constraints to Production for entrants and small producers unlocked through the provision of support.</b>	
To understand the constraints and opportunities for aspirant producers, it is necessary to engage with emerging farmers, particularly those interested in organic production. A database of farmers is necessary to understand the number of farmers and understand their current situation to define what support is required. This is a service that the Sector body can provide to the state through the established and newly developed networks. A budget of R500,000 has been allocated to this for all nine provinces (approx R55,000 per province) and should be provided by the state.	R500,000
It is important to encourage partnerships between commercial and emerging organic farmers. Central government and their provincial counterparts should work with the Sector body, national commission and commercial farmers to establish an enabling framework in which partnerships can occur.	R200,000
Key infrastructure in support of organic production should be provided, such as local hubs where farmers can bring their produce, receive advice on inputs and organic management, receive market information, etc. Hubs should be developed in conjunction with the nine provincial departments of agriculture and local sector stakeholders.	R15,000,000
To assist emerging producers with support, inputs (seed especially) and alternative organic guarantee systems, a comprehensive programme is required to support farmers, through training, mentorship, record keeping, social and institutional strengthening, etc. Programme to run over 4 years in identified target areas, funded through state support programmes, such as land reform and CASP.	R5,000,000
Successful, bona fide organic farmers should be assisted to access loans and subsidies for production in a process facilitated between the state and the sector body. Criteria for identification and assessment should be established in consultation with lending institutions (public and private), and facilitation provided to secure loan funding.	R1,000,000
<b>Prog 3.1.2 Establish production-based extension and training programme for new and aspirant producers.</b>	
250 extension officers per annum should be trained on the coursework developed through programme 2.2.2, from 2010 over a 4 year period (1000 extension officers at R15,000 per extension officer). These should be extension officers showing significant potential to support organic production.	R5,000,000

Five accredited training programmes should be offered to aspirant producers in targeted areas each year. These should be comprehensive courses addressing the many aspects of organic production. 20 courses over strategy timeframe gives R500,000 per course accommodating 20 to 30 learners (R20,000 - 25,000 per learner).	R10,000,000
<b>Prog 3.1.3. Recognise and implement an alternative organic guarantee mechanism to include aspirant producers in the organic sectors at entry level.</b>	
To develop a policy for the development of an alternative organic guarantee mechanism (PGS), some research, testing and cross visits to countries with successful PGS systems is required. This should developed with the Sector Body and National organic commission.	R1,000,000
The South African Organic standard should be amended to recognise PGS as a valid organic guarantee for local markets.	Internal Cost
To introduce a new system of certification will require some facilitation to raise awareness of the system and how it works. Budget is allocated for promotional and awareness raising of PGS systems.	R300,000
<b>TOTAL GOAL 3</b>	<b>R38,000,000</b>
<b>Goal 4: SET CLEAR MARKET OBJECTIVES FOR ORGANIC AGRICULTURE IN SOUTH AFRICA</b>	
<b>Objective 4.1: To brand and promote South African Organic Produce</b>	
<b>Prog 4.1.1. Brand South African Organic produce</b>	
A South African organic mark will help to profile organic production in South Africa and abroad. This will assist with consumer education, raising awareness and the profile of organic agriculture in South Africa. A branding exercise should be commissioned to identify the core values of the brand organic and its associated mark.	R300,000
<b>Prog 4.1.2. Make concerted marketing drives to enhance production and consumption of organic produce.</b>	
DTI export promotion programmes have funds that can be made available for exporters to develop new markets or expand existing markets. Representation of South Africa at international and local expos should be supported through these programmes.	R2,000,000
Farmers should be supported and encouraged to farm organically. The demand exists and is increasing. Farmers should be made aware of organic technologies available, programmes and research in organic agriculture and success stories through agricultural media, such as the farmers weekly.	R1,000,000

<b>TOTAL GOAL 4</b>	<b>R3,300,000</b>
<b>Goal 5: TO MAXIMISE THE BENEFITS OF ORGANIC AGRICULTURE TO THE ENVIRONMENT AND SOCIETY</b>	
<b>Objective 5.1:</b> Organic production supporting the achievement of National social objectives	
<b>Prog 5.1.1. Support the achievement of BBBEE, land reform and poverty reduction targets</b>	
Land reform and poverty reduction programme budgets should support organic production for sustainable land reform and to generate income. LRAD grants, CASP and other funding mechanisms to support beneficiaries should provide support and inputs for organic production.	R40,000,000
<b>Prog 5.1.2. Enhance food security at all levels (household, regional, national)</b>	
Food security support programmes, particularly those for household food security should support organic production in provinces with high levels of poverty. The state should partner with local NGOs who are supporting food security initiatives.	R20,000,000
<b>Objective 5.2: Organics contributing to a healthy and sustainable environment</b>	
<b>Prog 5.2.1. Recognition of environmental goods and services of organic agriculture</b>	
There are national environmental threats associated particularly with global warming which will have a negative effect on production, particularly water supply. Combating desertification is a national priority, as South Africa is a water scarce country. Organic agriculture also has other benefits such as biodiversity conservation, reduced water pollution and reduced soil erosion. There are also social benefits, such as increased labour requirements which should be recognised. National government should undertake research to determine the goods and services provided from organic agriculture and develop and implement fiscal incentives to support organic production, especially in ecologically sensitive areas.	R5,000,000
<b>Prog 5.2.2. Establish a system of grants and incentives that recognises the positive contribution of organic agriculture to the environment and social development.</b>	
Incentives based on the research should be provided for organic farmers. An initial budget of R17 million is provided for this. Research will clarify if this amount is adequate and in what form these incentives will be provided.	R17,000,000
<b>TOTAL GOAL 5</b>	<b>R82,000,000</b>
<b>GRAND TOTAL</b>	<b>R145,970,000</b>

### 13.6.4 Time-frames for Implementation of the Strategy

Programme	Activities	Year				2009				2010				2011				2012				2013			
		Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>Goal 1: THE PROVISION BY GOVERNMENT OF THE APPROPRIATE SUPPORT AND REGULATORY ENVIRONMENT TO ENHANCE SECTOR GROWTH</b>																									
<b>Objective 1.1: A legislative environment that is conducive to the growth and development of organic production.</b>																									
<b>Prog.1.1.1.</b> Finalise and promulgate organic standards.	Conduct provincial and national stakeholder workshops or an “organics standards road show”																								
	Promulgation of organic standards.																								
<b>Prog 1.1.2.</b> Establish systems to track and record information related to organic production in South Africa	Include mandatory reporting by agencies providing organic certification in South Africa in the organic standard.																								
	Engage PPECB to review the HS System to include organic produce. Get HS codes operational and capture trade in organic produce.																								
	Determine the feasibility and sector support for the establishment of a sector council and implementation of a statutory levy in terms of the National Agricultural Marketing Council Act.(e.g. “Organic Export Council”)																								
<b>Prog 1.1.3.</b> Review and update current legislation to reflect the organic standards and to modify legislation to support principles of organic production.	Review of Fertilisers, Farm Feeds, Agricultural and Stock Remedies Act (No 36 of 1947) to establish an alternative system for the registration of organic inputs.																								
	Identify additional legislation that requires modification																								
<b>Objective 1.2: Create an enabling policy environment for the growth of organic agriculture.</b>																									
<b>Prog 1.2.1</b> Develop a policy in support of organic agriculture in South Africa	Draft policy circulated to sector (through sector body and commission - see Prog. 1.2.2.) stakeholders for comment																								

Programme	Activities	Year	2009				2010				2011				2012				2013			
		Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	and input.																					
	Policy finalised and presented to Parliament.																					
	Establish and implement a code of conduct for the sector ("sector code of practice").																					
<b>Prog 1.2.2</b> Ensure policy coherence and interagency cooperation through the establishment of a National Organic Commission.	Establish a commission composed of stakeholders and all relevant government agencies																					
<b>Objective 1.3: To build the capacity of provincial and national spheres of government to support the organic sector.</b>																						
<b>Prog 1.3.1.</b> Build the capacity of government agencies at national and provincial levels	Identify officials to be assisted in developing their capacity to provide the necessary support to organics.																					
	Establish mechanisms whereby Government and the sector can engage on a regular basis (e.g. quarterly) to ensure ongoing dialogue, take advantage of opportunities and address challenges (i.e. sector body and National Organic Commission).																					
	Identify officials in government who can champion organic agriculture and engage at an international level.																					
<b>Goal 2: SECTOR BODY DRIVING THE DEVELOPMENT OF ORGANIC AGRICULTURE IN SOUTH AFRICA</b>																						
<b>Objective 2.1: Sector body supported and recognised by government and the majority of its constituency.</b>																						
<b>Prog 2.1.1.</b> Consultation between stakeholders and government to establish agreement on the way forward for the sector representative body	Define the structure and purpose of the sector body through a series of workshops.																					
	Secure funding to support the revitalisation and operation of the sector body.																					

Programme	Activities	Year	2009				2010				2011				2012				2013			
		Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Prog 2.1.2.</b> A strategy and plan for the financial sustainability of the sector body compiled and implemented.	Sector body to present a plan for self funding within the first six months of operation.																					
	Undertake a drive to significantly increase body membership.																					
<b>Prog 2.1.3.</b> Equip the sector body with the necessary office and human resources.	Identify and employ staff.																					
<b>Objective 2.2: Key Programmes Supported by Sector Body.</b>																						
<b>Prog 2.2.1</b> Guide and support the implementation of education and awareness programme in priority areas.	Identify key priority areas for creating awareness and consumer education.																					
	Implement awareness raising, targeting priority areas.																					
<b>Prog 2.2.2.</b> Guide and support focussed training programmes for public and private sector.	Develop and implement five training programmes in partnership with training organisations to build capacity around concepts and practices of organic agriculture.																					
<b>Prog 2.2.3</b> Establish partnerships to commission, design and support the development of research in support of organic agriculture.	Support and guide the design and implementation of a sector research programme in partnership with research organisations																					
<b>Goal 3: THE SUPPORT AND DEVELOPMENT OF ASPIRANT PRODUCERS</b>																						
<b>Objective 3.1: To support and develop aspirant organic producers at all levels of production (subsistence to commercial production)</b>																						
<b>Prog 3.1.1.</b> Key Constraints to Production for entrants and small producers unlocked through the provision of support.	Develop a database of aspirant / small-scale producers and their level of production.																					
	Support the establishment of partnerships between commercial and emerging organic farmers.																					

Programme	Activities	Year	2009				2010				2011				2012				2013			
		Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	Identify and implement key infrastructure support necessary to support new and small-scale producers																					
	Assist small-scale producers with access to inputs, support and organic guarantee systems.																					
	Make financing options available for small-scale producers.																					
	Assist producers with accessing markets.																					
<b>Prog 3.1.2</b> Establish production-based extension and training programme for new and aspirant producers.	Identify and train an “elite” core of extension officers to support organic producers.																					
	Ensure that an accredited organic training programme is offered in formal institutions and through accredited training service providers to aspirant producers.																					
<b>Prog 3.1.3.</b> Recognise and implement an alternative organic guarantee mechanism to include aspirant producers in the organic sectors at entry level.	Establish a policy for the implementation of an alternative organic guarantee system (such as PGS).																					
	Amend the South African Organic Standard to recognise PGS as a certification system and allow for PGS branding.																					
	Promote widely the use of PGS for local sales of organic produce.																					
<b>Goal 4: SET CLEAR MARKET OBJECTIVES FOR ORGANIC AGRICULTURE IN SOUTH AFRICA</b>																						
<b>Objective 4.1: To brand and promote South African Organic Produce</b>																						
<b>Prog 4.1.1.</b> To brand South African Organic produce	Establish a South African organic Mark																					
<b>Prog 4.1.2.</b> Make concerted marketing	Develop strategies to promote local and international sales.																					

Programme	Activities	Year		2009				2010				2011				2012				2013				
		Quarter		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
drives to enhance production and consumption of organic produce.	(e.g. Biofach, Natural and Organic Products Exhibition)																							
	Develop strategies to enhance local organic production by farmers																							
<b>Goal 5: TO MAXIMISE THE BENEFITS OF ORGANIC AGRICULTURE TO THE ENVIRONMENT AND SOCIETY</b>																								
<b>Objective 5.1: Organic production supporting the achievement of National social objectives</b>																								
<b>Prog 5.1.1.</b> Support the achievement of BBBEE, land reform and poverty reduction targets.	Include organic production in agricultural poverty relief and job creation programmes (to halve poverty by 2014).																							
	Establish organic production systems on land reform farms																							
	Sector body and commission to establish and implement BBBEE targets and programmes in consultation with stakeholders.																							
<b>Prog 5.1.2.</b> Enhance food security at all levels (household, regional, national)	Develop and implement locally relevant organic production methodologies																							
<b>Objective 5.2: Organics contributing to a healthy and sustainable environment</b>																								
<b>Prog 5.2.1.</b> Ensure recognition of environmental goods and services of organic agriculture	Quantify the environmental goods and services provided by organic agriculture.																							
<b>Prog 5.2.2.</b> Establish a system of grants and incentives that recognises the positive contribution of organic agriculture to the environment and social development.	Define and legislate fiscal incentives programme for organic agriculture.																							
	Establish grant funding mechanisms to support small-scale farmers to expand their operations, pay for certification.																							

## 14 CONCLUSION

Interest in organic agriculture has shown remarkable growth over the last ten to twenty years, internationally as well as at a local level. The reasons for this growth revolve around environmental, health and social concerns which are influencing consumer demand. For producers, factors such as farmers' health and that of farm workers, increased environmental concerns, degradation of resources as a result of conventional farming systems, reduced input costs and price premiums associated with organic production influence their decision to pursue organic farming. There has been much said in this document regarding the environmental damage resulting from conventional farming systems. It should be pointed out here that that these problems arise primarily from flaws in the *production system* and not necessarily with the individual farmer. There are many conventional farmers (and others who practice more sustainable, but not necessarily organic forms of agriculture) who are conscientious and responsible farmers. It should further be pointed out that organic farming is not a cure-all for the environmental impacts of agriculture – any form of agriculture transforms the landscape from its original natural state.

There are also a number of limitations to the adoption of organic farming practices, particularly in developing countries. These limitations include poor infrastructure, lack of government support, lack of technical knowledge required to implement organic farming systems, the cost of certification as well as the record keeping requirements of certification, which are often beyond the ability of small-scale and emerging farmers. Lack of tenure security also limits the adoption of organic practices as there is no incentive for considering long-term benefits. Furthermore, there appears to be a limited recognition by governments in developing countries (and in some cases, developed countries) of the potential for organic agriculture to enhance food security, reduce carbon emissions and enhance biodiversity, in addition to the potential it offers for generating foreign income. Finally, it has been noted that premiums associated with organic production may decrease, or disappear altogether as production rises to meet demand, although the rate of increase in demand continues to exceed the rate of production and it appears that it will continue to do so for some time.

In developed countries, state institutions are increasingly recognising that it may be more cost effective to support organic agriculture than to rectify problems associated with resource degradation resulting from unsustainable agricultural practices. As a result, many governments provide subsidies for organic farmers. An important factor that has contributed to this is public pressure arising from environmental and health concerns, as well as strong and well organised environmental lobbying groups.

The growth of organic agriculture in developing countries appears to arise from two different forces. Firstly, established farmers are attracted by price premiums from lucrative export markets as well as environmental and social benefits. Secondly, development initiatives to address poverty, environmental degradation and other social problems promote more sustainable agricultural practices, including organic agriculture. In some cases, organic production enjoys state support, which has contributed to the growth of the sector in these countries. Governments, therefore, have an important role to play in promoting organic agriculture through the provision of legislation, market and export advice, research and development, extension and training and by addressing the issue of land ownership. Organic

agriculture should therefore be supported by a clear policy framework to address concerns and unlock blockages.

A first step in increasing the availability of knowledge on organic agriculture is to acknowledge that this form of agriculture could be an appealing option for agriculture both in developed and developing countries, and that it has a role to play in improving food security and environmental sustainability, especially in poorly resourced environments. Extensive communication with those who have expertise in the area of organic agriculture is recommended. More active support could be given in the area of implementing projects for the collection of relevant data.

In conclusion, the two key elements of the strategy that are critical and will create the enabling environment from which other recommendations can be rolled out are (1) the establishment of an effective Sector Body and National Organic Commission with broad-based support and (2) the establishment of a clear and inclusive policy and regulatory environment. These elements should be the primary focus in terms of guiding the implementation of the strategy.

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