

High Value Agricultural Products for Smallholder Markets in Sub-Saharan Africa: Trends, Opportunities and Research Priorities

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1. Introduction

High value crops refer to non-traditional food crops such as vegetables, fruits, flowers, houseplants and foliage, condiments and spices². High value livestock and fishery products include products such as milk, beef, poultry, pork, eggs, and fish that are non-traditional sources of protein for most part of Sub Saharan Africa (SSA). Most High Value Agricultural Products (HVAPs) have higher market values than traditional cereal grains and export crops. The definition of HVAP may include coffee and cocoa but these are traditional cash crops in SSA. A particular feature of HVAPs is that they often do not form part of the customary diet of the local population and are mainly grown for their cash values in domestic and export markets. This review defines HVAP as products with high monetary value with emerging and expanding products markets worldwide. Lack of a standard definition of HVAP and non-traditional export products has made researchers to adopt their own definitions based on their research emphasis. For example, Xinshen, *et. al.* (2003) definition of SSA non-traditional HV agricultural exports includes oilseed, processed foods, beverages (coffee, tea and cocoa)³. In this paper we confine our definition to fruits, vegetables, fish and cut flowers. It is important to note that HVAP considered in this paper, have limited intra-regional trade and are mostly exported outside SSA. Fish, and fruits and vegetables, have only 6.2 and 6.6% intra-regional trade. Xinshen, D. *et. al.* (2003).

This paper is based on a review of literature. Information from various case studies is also used to demonstrate the situation, including those conducted by the authors in 2003 through field visits to Malawi, Tanzania and Uganda where secondary data was collected and structured interviews were conducted to obtain primary information from traders of fruits and vegetables. This paper, therefore, is structured to present the situation and outlook of the 'high value agricultural products' sector in SSA. Special reference, where relevant, is made to the Eastern and Southern Africa (ESA) sub-region.

The paper provides information about domestic and exports trends; it discusses the marketing situation, problems and constraints; and, it outlines failures and successes in linking small-scale farmers to the emerging and dynamic market environment. Finally, it provides a synthesis of the position of SSA farmers in the domestic as well as global market, lessons learnt from case studies and presents proposals for R&D proposals on how farmers can be linked to the High Value Products Chain. The goal is to identify what is required to ensure that small-scale farmers have a position in the emerging market. Traditionally, economies of SSA countries have depended heavily on traditional agricultural export crops (coffee, cocoa, tea, cotton, cashew nuts,

² Fruit crops (citrus, cashew, papaya, mango, pineapple, strawberry, jackfruit, guava, and watermelon), root crops (potatoes), vegetable crops (asparagus, broccoli, cabbage, celery, carrots, cauliflower, radish, tomato), legumes, (snap beans and garden pea), spices and condiments (black pepper, garlic, ginger, and onion), and cut flower and ornamental foliage plants (chrysanthemum, gladiolus, anthuriums, orchids, and roses) are all considered HVAPs.

³ This is however a significant aggregation. For example, there are more than 80 commodities aggregated into 'vegetables and fruits' and over 50 commodity categories under the miscellaneous sub-category

and sisal) and main staple food crops (maize, rice, wheat, sorghum and millet). It is acknowledged that the task of linking small-scale farmers to markets is much more challenging (when one deals with HVAPs) compared to traditional export crops.

2. Small-scale farmers in Sub-Saharan Africa

This section aims at shedding light about the SSA's socio-economic, agro and farming system situation that small-scale farmers engaging in HVP operate in. Table 1 presents a synopsis of basic facts about the SSA, and highlights the role played by agriculture.

Table 1. Highlights of the SSA Economic Indicators

Dev. Indicators	1995	2000
Population, total (million)	579.2	658.9
GDP (current billion US\$)	317.9	322.7
GDP per capita (current US\$)	548.9	489.7
Exports of goods and services (% of GDP)	28.5	31.9
Agriculture, value added (%GDP)	18.0	17.0
Exports from SSA	1994-96	1998-2000
Total exports (billions 2000 ^a \$)	95.5	100.1
Agricultural Exports (billions 2000 ^a \$)	13.2	12.9
Traditional Crops ^b	6.6	6.5
Others	6.5	6.4

^a Nominal values of exports in dollars converted to real 2000 dollars using the US wholesale price index obtained from IMF's IF statistics.

^b Includes: Coffee, cocoa, tea, textiles fibres, and tobacco.

Source: Xinshen, D. et. al. (2003).

One can not overstate the importance of agricultural production, domestic marketing, and export trade in the strategies for eradicating poverty in SSA. .

Notable, however, is that small-scale farmers cultivating .25 to 3 ha, and/or keep a maximum of two animals, and use traditional crop and livestock husbandry methods, co-exist with medium and large commercial modernised farmers in the industry, with variations in the different countries. (See Appendix one for categorisation of farmers in the sub-sector.) Xinshen et al 2003, estimated that, for example in Kenya, almost all types of farmers participate in the HVAP sub-sector: large and small, rich and poor. The report estimates that smallholders produce 60% of the exported vegetables and fruits, resulting in estimated direct benefits of US\$ 46 million. In addition, there are indirect benefits generated by the horticultural sub-sector, particularly the export component: employment generation, marketing efficiency, institutional development, domestic supply chains, and the multiplier effect from export income flow into the rural economy. In Kenya, the following have led to such a development: favourable climatic condition, limited direct government intervention, improved private sector environment, and international investments in the industry. However, Kenya is atypical of much of the SSA in this

sub-sector, and the rosy picture is therefore uncommon. For the rest of the SSA the environments are less conducive and many challenges have to be addressed.

Typical farmers in the SSA region manage very small plots of land (.25 to 3ha), and production is mainly rain fed. Such farmers succumb to various challenges posed by nature including: poor soils, destructive crop pests and diseases, and recurring droughts. Yields are therefore generally very low compared to known potentials. Together with natural calamities, additional reasons that lead to low yields include limited investments in irrigation and lack of affordable technologies that would have improved soil fertility, pest and diseases control, weeds management, and the introduction of drought tolerant crop varieties. Limited technology advancement is partly due to limited research and technology transfer. Market Failures for example due to interventions in the periods of command economies, and lack of capital are additional strong challenges. Farmers have had limited access to capital and market infrastructure (roads, physical market structures, market information and contacts). Failures to develop capital markets and lack of appropriate public infrastructure such as roads, railways, airports and seaports, is basically due to poverty, this in turn leads to high costs of transportation and credit delivery. As a result, most small-scale farmers are trapped within subsistence agriculture, with minimal orientation towards the market. See also Heidhues et al (2004), Rosegrant et. al. (2005) and IAC (2004) for investments and development efforts that are needed to develop the SSA agriculture sector.

3. East and Southern Africa Region

Countries in SSA vary considerably in terms of characteristics described in the previous section. Here we present characteristics of selected countries in East and Southern Africa (ESA) (Ethiopia, Kenya, Malawi, Mozambique, Tanzania and Uganda) to establish a background and context for interpreting case studies used. In the 1990s, agricultural sectors of the ESA (authors own case study countries - Tanzania, Malawi and Uganda) accounted for an estimated 41% of their GDPs. This region differs in some ways from overall average statistics for SSA. It represents countries that have relatively high dependence in agriculture in SSA. Eighty two percent of the population in the ESA region resides in the rural areas (World Bank, 2003) and depend on agriculture for their livelihood.

Contribution of agriculture to east and southern Africa is more than double the average contribution of agriculture in sub-Saharan Africa, and East Asia and Pacific regions, of which their agricultural sectors contribute only 18 and 16 percent respectively – see also Table 3. Returns to traditional export commodities have been declining over the years due to a fall in world prices, and as a result, domestic production has declined. Meanwhile, the HAVP sub-sector is becoming an important source of income for rural dwellers (farm labourers, small-scale farmers, and traders) in the region. However, there is a need to overcome several new barriers for small-farmers to be integrated in the sub-sector and benefits from the emerging market.

Nonetheless, people in the region continue to depend on agricultural production for their livelihoods, albeit by producing of agricultural raw materials, or intermediate products with limited value added. Limited added value in the agribusiness chain, in turn, results in low returns to the agricultural sector. This has serious implications for the development of the region. A concern that needs to be addressed. For example, it is clear that the contribution of agriculture to GDP in ESA has remained relatively high, more than double the average for SSA as a whole (Table 2 and 3). The disquieting fact is that the GDP per capita is consistently lower in countries that are much more dependent on agriculture compared to those that are less dependent on it, for example, Ethiopia (51%: \$106), Uganda (49%: \$300), and Tanzania (46%: \$186) have lower GDP per-capita than Kenya (27%, \$342).

Table 2 Eastern and Southern Africa: Contribution of Agricultural to GDP

Countries	1980	1990	2000	80-85	90-00
Ethiopia	-	49	52	53	51
Kenya	33	29	20	33	27
Malawi	44	45	42	43	39
Mozambique	37	37	24	42	33
Tanzania	-	46	45	-	46
Uganda	72	57	42	62	49
Average ESA	46	44	38	46	41
Sub-Saharan Africa	18	18	17	18	18
East Asia & Pacific	24	20	13	23	16

Data used is from the World Development Indicators Database

Source: World Bank 2003

Table 3 GDP Per Capita (Constant at 1995 US\$)

Countries/Regions	1980	1990	2000	1990 to 2000	% of Asia's
Ethiopia		100.3	115.9	106.1	10.7
Kenya	337.4	358.0	328.2	341.7	34.4
Malawi	160.5	145.0	168.6	156.3	15.7
Mozambique	160.2	139.0	191.1	158.7	16.0
Tanzania		188.8	190.5	185.5	18.7
Uganda		251.2	348.0	299.5	30.2
Average ESA	219.4	197.0	223.7	208.0	21.0
Sub-Saharan Africa	658.4	587.4	564.4	566.9	57.1
East Asia and Pacific	396.4	705.4	1252.3	992.7	100.0

Data used is from the World Development Indicators Database

Source: World Bank 2003

The region is also lagging technologically in agricultural production as well as in agribusiness development. Crop yields are lower than in other regions of the world. For example, cereals, of which the authors believe its trend reflects broader characteristics of Africa's agricultural productivity, yields in ESA countries are 50% lower than the average yields in Asia (Table 4). The low yields are due to limited use of improved planting material and breeds, poor farming

practices and constraints in input and capital markets – as explained earlier. This is an indication that small-scale farmers in Africa are unable to deploy technology opportunities for increasing yields. The problem of low yields makes the region a high ‘per unit cost’ producer. Many development economists misinterpret this predicament, especially when they consider family labour as being a low cost - intensive production option. Economists inclined to the above interpretation, often argue that the opportunity cost of family labour in Africa is minimal, characteristically doing so without considering the potentials of employing such labour in commercial farms.

Table 4. Comparison of Cereal Yield (kg per hectare)

Countries/Regions	1980	1985	1990	1995	2000	1990 to 2000	% of Asia
Ethiopia	1032	1150	1091	40
Kenya	1243	1641	1487	1864	1278	1543	57
Malawi	1187	1169	991	1292	1621	1301	48
Mozambique	595	531	473	652	948	691	25
Tanzania	1020	1366	1462	1422	1261	1381	51
Uganda	1491	1469	1497	1571	1364	1477	54
Average ESA	1107	1235	1182	1306	1270	1253	46
Sub-Saharan Africa	927	1084	991	1072	1130	1064	39
East Asia and Pacific	2190	2525	2395	2648	3040	2694	100

Source: Computed from World Bank Database on World Development Indicators (2003)

3.1 Smallholder Agriculture Development Trends in SSA

Immediately after independence, countries in the region paid considerable attention to the production of staple crops for food security, and to a few traditional export crops (coffee, cotton, cashew nuts, tea and sisal), as their means for economic growth and development. As a result investment to research was also geared towards the same crops. Government intervention was intense, resulting into parastatals or government controlled agricultural cooperatives and boards. The involvement of the government in agricultural marketing undermined the development of the private sector in the region. The engagement of government in cereals and export crop markets changed with the implementation of structural adjustment programs of, especially through markets liberalisation and divestiture of parastatals. Poor management, large overheads and losses incurred by such parastatals contributed to market failures and hence justification for their divestiture – see Temu and Due (2000).

Government intervention was least in domestic HVAPs markets. Traditional local traders managed the whole of domestic fruits, vegetables, fish and spices trade. Such market chains supplied all the produce in daily urban and weekly up-country food produce markets. Non-traditional crops are gaining even greater importance as sources of income, as positive contributors to better rural livelihoods and to the growth of the economy in the region. However, such progress is still slow and patchy, and research and development is still not adequately geared towards the emerging HVAPs.

Increasing global consumption of micronutrient-rich meats, fish, fruits, and vegetables – all of which are HVAPs have led to new market(s) opportunities for producers and distributors of high agricultural value products. Consequently, efforts to encourage the production of high value food products in SSA may be a strategic move to alleviating poverty in the region. An increasing importance of exported non-traditional agricultural produce reflects SSA farmers and traders meeting global demands. The contribution of fruits and vegetables in the total value of agricultural export, for example, increased from an average of 7% in early 1980's to 16% in 2001. This trend suggests that fruits and vegetables (HVAPs) could become an even more important sub-sector in the SSA economies.

The concern is whether traditional small-scale, low resource endowed farmers, are in a position to benefit from the opportunities arising from the emergence of the HAVP market chains. Given the few economic opportunities open to small-scale farmers in SSA, and dwindling world markets for traditional export crops, an understanding of the capability and potential of such poor farmers in the emerging market is crucial.

In the following section, we first explore the drivers of HVAPs. Next, the challenges faced by small-scale farmers are addressed.

3.2 Export Markets: Intra-regional and International⁴

Fruits and vegetables

Countries comprising SSA contribute different amounts of HVAP. Vegetables and fruits rank highest as non-traditional exports category from SSA – See Table 1, and 6th if the Southern Africa Customs Union (SACU) is excluded. Over 60 percent of the regional vegetables and fruits exports are from SACU [South Africa, Namibia, Botswana, Swaziland and Lesotho], mainly South Africa.

SSA, excluding SACU, exports vegetables and fruits of only about US \$980 million per year on average – 4 percent of the regional exports. However, expectations are that this percentage may increase. A major reason being the labour intensive nature of vegetables and fruits industry, of which other SSA countries are better endowed than South Africa. Countries that have shown growth in exports of vegetables and fruits exports include Kenya where it has risen from US \$ 2-3 million at independence when it was 3% of her total exports, to US\$ 150 million in 1999 constituting 17% of exports.

Cut Flowers

Traditionally most cut-flowers within the EU, the major world market, originated from Europe. However, the developing countries share is growing. SSA exports to Europe have increased dramatically during the 1990s, from US\$ 146 million (1.3 percent of total SSA agricultural exports) in 1994, to US\$ 248 million (2.2 percent of SSA agricultural exports) in 2000 - (Table 6).

⁴ This section draws heavily from Xinshen, D. et.al. 2003.

Kenya is the leading SSA exporter of cut flowers to Europe (57 percent of the value of SSA exports in 2000), followed by Zimbabwe (24.6 percent), Zambia (6.5 percent) and Uganda (4 percent). Kenya, the leader, produces over 30 different types of flowers, typically of several varieties each. Profitability of the sector, however, depends on a fewer number of varieties: roses, statice, and alstroenema. Xinshen, D. et. al. (2003).

Fish

Fish exports account for about 13 percent of the total SSA agricultural exports, ranking second after vegetables and fruits, or after cocoa if excluding SACU, in the total SSA agricultural exports. The EU is the largest importer of SSA fish and fishery products, accounting for 75 to 85 percent by volume. Intra-regional trade is currently at less than 10 percent of total fish exports.

Overall, however, fisheries trade has grown steadily. Xinshen, D. et. al. (2003) report that the volume and average real value of SSA countries' exports of fish and fishery products by major categories during 1982-2000 in terms of volume, fish exports from SSA more than doubled from 1981-83 to 1998-2000. During the same period, the average real value of fish exports from SSA also increased by almost the same magnitude.

Main exports from the region are marine fisheries, followed by freshwater fish (Table 7). By commodity groups, the main export items are crustaceans (mostly shrimp), molluscs and cephalopods, followed by fresh, chilled frozen and canned fish (mostly tuna). Only limited amounts of smoked fish and fishmeal are exported from SSA.

With the above overview background of domestic markets and patterns of growth of exports, the following section attempts to explain drivers of growth of HVP products in the region.

4. Market Drivers and Trends

4.1 Introduction

Market drivers for the expansion of domestic HVAPs markets include: urbanization; a change in dietary preferences; increased awareness about the health benefits of HVAPs; and, general income growth in some countries. For the export market, key drivers seem to be the increase in Foreign Direct Investments FDI following market liberalization, and increased competitive pressure and escalating production costs in the industrial countries. In addition, there are signs of a "quiet consumer revolution"; i.e. the tendency for consumers to continuously demand more from suppliers e.g. demands for continuous supply of fresh HVAPs throughout the year-forcing supermarket chains to source from multiple producing countries. In doing so, such market agents exploit opportunities provided by differences in the climate and growing seasons around the world. Stiff competition between few large supermarket chains in the developed world due to small margins, have also forced the chains to look for cheaper sources of products elsewhere (Dolan, Humphrey and Harris-Pascal, 1999).

4.2 Domestic Markets: Rural-Urban population growth and the HVP market

Urbanization is one amongst strong drivers of the development process of HVP chains in SSA. The growth of urban population is coupled with an increase in cash income and higher dependence on the market as a source for food rather than subsistence. In addition, urban people happen to be more informed, have more access to information, and are better educated than rural dwellers. Accesses to information and education have raised awareness about health benefits of HVAPs, leading to a change in dietary preferences. This increase in the number of better-informed consumers in the market has generated enough pressure for a change in production of HVAPs in the SSA region. For example, for the 1980 to 2000 period, all ESA countries showed contrasting population growth trends between rural and urban areas: a decline in rural areas and a rise in the urban. This observation is explained, not only by high rural-urban migration but also by differences in fertility and mortality patterns. For the developing countries, the differences in fertility and mortality rates in urban versus rural areas could be due to improved health and medical services available. Urban areas may also be experiencing comparatively lower mortality rates due to relatively higher education and better information. references?

While urban migration occurs in all of SSA, it has a special significance in ESA countries. The ESA urban population grew at 3% faster than its rural population. Comparable figures for sub-Saharan Africa as a whole and for the Asia and Pacific region are 2.7% and 2.2% respectively (Table 8). Whilst for the Asia and Pacific region increased opportunities in the urban areas may have fueled rural-urban migration, in the ESA region, the stagnation in agricultural productivity could be the major driver. This trend has led to particularly challenging development problems in African cities.

Table 5. Annual Population Growth Rates

	1980	1990	2000	1980/00
Ethiopia	2.6	3.3	1.9	2.6
Kenya	3.5	1.9	0.9	2.1
Malawi	3.0	2.8	1.7	2.4
Mozambique	1.7	-1.2	0.1	0.2
Tanzania	2.1	2.3	1.3	2.1
Uganda	2.2	3.3	2.3	2.5
Average ESA	2.5	2.1	1.4	2.0
Sub-Saharan Africa	2.5	2.2	1.4	2.0
East Asia & Pacific	0.8	1.3	0.0	0.8
	1980	1990	2000	1980/00
Ethiopia	4.7	6.2	4.9	5.6
Kenya	8.2	6.7	5.0	5.8
Malawi	6.4	5.5	4.6	4.7
Mozambique	9.9	6.3	5.5	6.2
Tanzania	9.7	6.2	4.9	5.6
Uganda	3.4	5.8	5.1	5.4
Average ESA	7.1	6.1	5.0	5.6
Sub-Saharan Africa	5.1	4.9	4.3	4.7
East Asia & Pacific	4.3	2.4	2.8	3.0

Data is from the World Development Indicators Database

Source: World Bank (2003).

4.3 Exports Drivers

a. Agro-ecological and Agricultural Labour Costs Differences

Differences in climate patterns, agro-ecologies and an agricultural labour market have acted as drivers of HVP exports, especially vegetables and fruits from SSA to Europe. African countries have taken the opportunity presented by the differing agro-ecologies between that in their countries and Europe, to supply the latter with HVAPs. Most developed countries including Europe are in the temperate climate zone, where the cropping season is limited to summer. The SSA region is principally tropical in climate. In this respect, out-of-season fresh fruits and vegetables provided Africa with a market niche. In addition, such off-season demand helps to ensure that the prices are lucrative. One should note that high altitudes of regions such as Ethiopia, Kenya, and Uganda have suitable climates for crops requiring low temperatures. Apparently, the off-season market is not the only driver of the direction of exports from SSA to Europe; differences in labour costs have also rendered produce from the SSA cheaper. Singh (2002) is of the view that greenhouse heating and labour costs, coupled with pricing pressure in an increasingly global economy have made tropical countries a favoured alternative for producing greenhouse crops. In addition, some tropical fruits and vegetables also show substantial export promise as consumers desire variety, and as they become more aware of health benefits of such crop species.

b. Social Capital and Market Links

SSA countries export vegetables to various countries in Europe. Existing market linkages between Europe and SSA countries, including those of traditional export crops, have facilitated as entry points for HVP exporters into Europe. The pattern of trade of HVP from ESA to Europe, for example, depicts this – Table 9. Exports from SSA into Europe are mainly from Kenya and South Africa. In 2003, Kenya and South Africa accounted for 60% of vegetable exports to Europe. In 2002, Kenya accounted for 62% of European cut flowers imports from SSA, followed by Zimbabwe (20%), Zambia (7%), Uganda (4%), South Africa (3%) and the rest including Tanzania and Ivory Coast (4%).

SSA Vegetables Exports to the EU, 2003

Country	Volume (tons)	Share of total (%)
Kenya	48,183	41.8
South Africa	22,112	19.2
Senegal	8,551	7.4
Zimbabwe	7,810	6.8
Ghana	7,719	6.7
Zambia	7,132	6.2
Uganda	3,189	2.8
Ethiopia	2,840	2.5
Burkina Faso	1,375	1.2
Madagascar	1,179	1.0
Gambia	1,074	0.9
Ivory Cost	1,014	0.9
Tanzania	842	0.7
Others	2,146	1.9
Total	115,166	100

Source: IFT (2005).

These statistics reflect the importance of long-term market linkages between exporters and importers, for non-traditional crops, as exemplified by large shares of Kenyan and South African exports. In some niche markets, exporters and importers work closely to ensure quality and reliable production. Trade partners from importing countries are necessary for supplying resources; for example, it is known that cut flower producers for the European market receive supplies of planting material and root? stocks from importers. Reference?

Within SSA , there is limited formal trade on vegetables, fruits, livestock and fishery products. However, there is informal unrecorded cross-border trade between neighbouring countries. For example, in 2004 customs recorded 7,000 tons of onions, tomatoes, potatoes and oranges worth US\$ 424,000 exports from Tanzania to Kenya (IFT, 2005). This is believed to be an under estimate of the actual trade. Records on “within-the-region” export values of HVP are highly limited and mostly depend on conservative estimates of consultants or government officials.

c. Policy Changes and Growth in European Market

Changes in international trade, and in some countries policies, have also played a role in the growth of exports from SSA to Europe. The Lome trade agreements, AGOA, and others of the like, provide preferential treatment to African exports to the North. SSA countries have also enjoyed new technology because of international co-operations forged by international corporations between African countries and collaborating countries in the north; or, through regional co-operations such as EAC, Southern Africa Development Community SADC etc. As long as consumers continue seeking for better quality products such as fresh appearance, nutritional and eating quality, environmental friendliness, and positive health effect, there is room for Africa's produce to continue winning markets in the North.

With regard to cut flowers, the growth (in some measures a rapid one) from SSA countries to Europe is attributed to the supermarket controlled supply chain – see for example ILO (1999). A key driver being the decision by supermarkets to concentrate on their core retailing activities and to look for alternative ways to reduce costs by distributing the risks of procurement, processing, and quality to other actors in the chain. Much of such responsibilities plus storage, distribution, transport etc have all been pushed up the chain- meaning what?. Following such changes, SSA has had to relate with European importers and substantial investments in value added activities. Being capable of producing large volumes and willing to sell directly at an agreed price, African producers are more attractive to many European supermarkets. Other features of the growth of the sub-sector include private sector initiatives, role of governments, e.g. that of Kenya, providing a conducive policy environment On the part of fish and fishery products, the fact that SSA exports to EU is less than 8 percent of EU imports suggests that this sector has tremendous potential for growth. As we discuss further below, the challenge is once again on policysuch as those posed by the EU related to health, sanitary and environmental conditions. Growth in the intra-regional fish and fishery trade depends of the growth of overall regional income.

d. Foreign Direct Investments and HVP markets in SSA

Following economic liberalisation processes that began in the early 1990s, SSA countries opened their markets and have been encouraging foreign investment in a broad range of sectors including agriculture. Liberalisation of SSA economies has also provided a private sector environment conducive to spur investment in HVAPs. Policy environments in SSA no longer exclusively favour parastatals ; laws governing business are less restrictive; taxation regimes have been reformed; and tax rates rationalised with reductions in export taxes. In response, foreign investors have selectively invested in specific promising niches. In the ESA region, for example, such investments are in tourism, mining, food retailing and in HVAPs agricultural production. In Tanzania, for instance, most of the FDI has gone to mining of precious stones (gold, diamonds and tanzanite) and in tourism in the way of new hotels. In agriculture, FDIs have benefited mainly flower production, fish processing and to some extent marketing of traditional cash crops: coffee, cotton, tea and tobacco. Weatherspoon and Reardon (2003) observed that FDIs fuelled the spread of supermarkets, with significant trade component of HVAPs in Latin America, Asia and Africa. Currently, investor countries are using supermarkets in destination countries as outlets for their food and other consumption goods. Although FDIs seem to be less of a driver of domestic agricultural economies, they have placed considerable

pressure on the local participants in the HVP market chains in the region. Concerns exist regarding how poor farmers and traders can effectively participate in the retail chains, especially since such investors are introducing new modes of operation. This presents a particular challenge to rural development.

e. Spin offs from and Inter-linkages with Other Developing Sectors

Minot and Ngigi (2004) provide an example of how developments in one sector could yield developmental spill over effects to another. In this case, the relationship is drawn between the development of the tourism industry in Africa and growth of horticultural produce in Kenya. First, tourism increased the access of and reduced the airfreight to Europe. By 1980, Kenya was receiving 372,000 international tourists per year, more than any other African country after South Africa. Because fresh produce generally depends on airfreight, and because low volumes would not justify hiring a charter for agricultural produce, a lucrative alternative was to use cargo capacity of passenger jets. Later as volumes rose, more use was made of cargo freight. In a different dimension, tourism increased local demand for high quality fruits and vegetables by hotels and restaurants giving Kenyan farmers more experience in production of horticultural produce that meets export standards.

5. Opportunities for Small-Scale Farmers' Participation in HVAPs Markets

(a) Fewer links in the Market Chains: Producers and Traders of HVAPs

Changes in market chains in the countries that import from the SSA have had impacts on the developments in SSA HVAPs sector and the position of small-scale farmers. The supply chains of HVAPS, particularly horticultural products (fruits, vegetables, and cut-flower) have been evolving with the purchasing forces of supermarkets and large retailers. Hallam, D. et. al. (2004) note that in UK, sales of fresh fruits and vegetables, for example, are concentrated in the hands of a small number of retail chains. The seven largest food-retailing chains in UK now account for 76 percent of fresh fruits and vegetables sales. Large retailers now control 70 percent to 90 percent of fresh produce imports from Africa. Such changes have played a decisive role in defining how international trade in fresh fruits and vegetables is structured (Humphrey and Oteoro, 2000 – cited by Hallam). At the production level, such changes have led to a replacement of former smallholder producers by larger commercial units; exporters have invested up-stream in production. For example, Hallam et. al. 2004⁵, report that half of the produce exported by nine leading fresh vegetable exporters in Kenya and Zimbabwe was produced on their own farms. The number of wholesalers at the destination countries has also fallen, and supermarkets are buying from importers. The result is a shorter chain, greater degree of vertical integration, and fewer active players of which the traditional small-scale producers play lesser role. For example, the supermarket chain is the channel for 70% of Kenyan horticultural exports to the UK, a proportion that has been increasing as supermarkets progressively dominate more of fresh food retailing in Europe (Dolan and Humphrey, 2000). A

⁵ Citing Dolan, Humphrey and Harris-Paschal, 1999.

World Bank study⁶ found that, in Zimbabwe, for an exporter to break even, prices offers to small scale producers must be discounted by at least 30%, as compared to the price received by commercial producers. Exporters face higher trading and management costs when dealing with ss producers. Attributes to higher trading costs include supervision, coordination and monitoring. These costs are due to intrinsic characteristics of small-scale agriculture in the country (including low education, limited capital, and lack of irrigation facilities).

There are a few success stories of small-scale farmers' participation in HVAPs production-marketing chains. One success story in the ESA region, once again, is in Kenya. Kenyan exports of high value horticultural produce have grown steadily since independence. In 1996, Kenya exported 84,824 tones of fresh horticultural produce, a recorded rise of 58% in five years (Barrett, et. al., 1997). By the year 2000, Kenya exported 100,000 tones of fruit, vegetable and cut flowers. After liberalization, the 10 largest producers in cut flowers and pre-packaged vegetables sectors, made huge private investment in the industry. This has often been in response to changes in demand in Europe, but more specifically to attract and keep lucrative contracts with large British supermarket companies (Dollan and Humphrey, 2000). Large-scale farms in the supermarket chain use high technology, most of which is imported in order to achieve high yields of a produce that is also of uniform quality and as demanded by the supermarkets. Seed stocks, agrochemicals, irrigation technology and flood lighting are used to ensure an intensive production system that results into such quality output. This signifies a possible/probable direction of change in the structure of the agriculture industry, from a predominantly traditional small-scale farmer base to commercial farmers. Nonetheless, a somehow reassuring pattern is that the emerging systems involve a limited number of small-scale producers in different ways. What can be concluded is that various forms of contracts, having appropriate institutional arrangements, for specific commodity and a market chain, are required to bring on board the small-scale farmers in the emerging market chains – see Annex 2 for a contract farming example in Tanzania.

(b) Farmer-Level Constraints to Expansion of HVAPS in Domestic Markets

Current and emerging domestic market arrangements for HVAPs have implications for different participants in the chain; including access challenges on the part of traditional small scale producers. This in turn affects the role they play and degrees of participation. It is therefore crucial to also address HVAPs domestic market arrangements in designing and influencing development plans for the sector in SSA. While the supermarket market chain is growing in SSA and ESA, the arrangements in this domestic chain excludes small-scale and low-resource endowed farmers and traders. Studies on vegetables and fruits marketing in Zimbabwe, Zambia and Kenya reveal integrated and highly concentrated oligopolistic tendencies. In such situations, small-scale producers end-up trading in the lower price segments of the domestic market. Alternatively, they may be integrated in the market chain with other small producers (horizontal integration) or with large-scale producers and in both cases they do so at substantial costs. In the worst scenario, Dolan and Humphrey (2000); Barrett et al. (1997) and Vangstrup (1997) report complete exclusion of small-scale producers from the market due to high transaction costs. In

⁶ NRI, <http://wbln0018.worldbank.org/essd/essd.nsf/agroentreprise>).

the case of horizontal and vertical integration, small producers may incur considerable costs for coordination, and sometimes, end-up receiving low prices as the buyers discount product prices to cover the increased cost of inspections and coordination.

In a 2003 case study that covered Tanzania, Malawi and Uganda (Temu A.A., 2003), traditional domestic market traders operated side by side with the supermarket chains, and still maintained a larger share of the market by taking advantage of their low prices. They managed to maintain low costs because of cheaper linkages to improving traditional small-scale farmers, and an established high social capital with consumers. With the entry of supermarkets, traditional market traders proved to be adjusting as they learnt. For traders, learning from the modus operandi of supermarket chains was a strategy to remain competitive. Traditional traders have had additional advantages. They are closer to the consumers. This enables them to manage frequent but small supplies, convenient for low income urban dwellers. This means traditional market traders have remained dominant players in the domestic urban segment of the market. They are also well linked with small-scale farmers of HVAPs. Besides paying attention to how smallholder farmers will benefit from the emerging supermarket marketing chain. Traditional domestic market traders have the potential to keep small-scale farmers competitive by providing marketing options; otherwise, the supermarket chains, both domestic and exports, could marginalize them.

(c) Value Adding and Repercussions on the Small-scale Producer

Another potential barrier to entry for the traditional small-scale producers is the emerging trend for the demand for value added products. Fast, pre-prepared vegetables and salads, or stir-fry mixes that are transferred from farm to cool-shelves in supermarkets in less than 48 hours, plus labelling and bar coding, is something that traditional, low resource endowed smallholder producers cannot manage. When supermarkets off-shoulder these value-adding responsibilities, they push them back to the producing country. This in turn has negative repercussions on the traditional smallholder. Such a process requires considerable investment by the producer/exporter at the origin, not only in technology but also in terms of management systems.

(d) Compliance to Legal and Commercial Standards

The high value products export market now requires exporters to comply with a range of standards. Two broad categories are: (i) legal requirements e.g. adherence to maximum residue levels of pesticides, phyto-sanitary certificate, (ii) commercial requirements. The latter are increasingly imposed by importers, and include hazard analysis, critical control point, traceability, good agricultural practice (GAP) – principally a range of social, environmental and ethical considerations (see Hallam, D. et. al. 2004; Reardon, Berdegue and Farrington, 2002). Such conditions put forward by importers on exporters have implications for production; the challenge to meet them sidelines smallholder producers to varied degrees. For example, Hallam et al. (2004) report a case study that analysed the possible effects of pesticides and fertiliser in Ethiopia. A conclusion was reached that the effects on trade from the country is minimal because farmers use very little of these inputs. Not only are husbandry practices (low use of inputs) a factor that would favour such small-scale farmers, but also the nature of crops, e.g. beans by nature, requires minimal fertilisation and hence produces ends-up with low levels of residue. Overall, however, compliance and adherence challenges call for major changes in

agricultural practices and, as is currently, may limit the participation of traditional smallholder farmers in HVAPs international markets. The costs are also high: initial investments for compliance, management time to meet standards is high, certification processes, etc are all high costs, favouring large commercial enterprises and barring smallholder traditional producers and traders.

(e) Production Profitability in HVAPs Sub-Sector: Small v/s Medium and Large Scale Entities

From an agronomic point of view, growing most of the HVAPs, especially vegetables, fruits and cut flower, seem not to be scale-dependent operations. Small plots have advantages with respect to management, labor deployment, pests and disease management. However, the legal and commercial compliance requirements render traditional small-scale farmers non-viable in favor of large-scale enterprises. Available successful cases of smallholder producers have had to be innovative: e.g. the out-grower model developed by Hortico in Zimbabwe serving over 300 farmers; homegrown in Kenya operating with 900 farmers; Fresh Produce Exporters Association of Kenya which brings together farmers in groups of 15 to 20 within a radius of 1 km. Others are the ‘pool-marketing system’ in Zimbabwe, Capespan Group in South Africa with its 3,000 producers. An in-depth scrutiny of all these successes, however, points to a fundamental basis i.e. strategic scale enhancement by pooling smallholders for joint marketing. Hence, the scale factor remains significant – ‘the smaller’ the ‘more difficult’ to survive in the emerging market.

The above examples may tempt one to simply recommend that small-scale farmers should form organizations such as cooperatives, or they should engage in contract farming. Nevertheless, several unanswered research questions need to be addressed before such efforts yield results, including: (1) what market organizations are most efficient for low-resource-endowed producers at the varied localities of SSA? (2) What are the costs of establishing and maintaining the desired market organization? (3) What are the strengths, and weaknesses, and sustainability potentials of proposed organizations at different micro-ecological locations?

(f) Other Challenges in the Domestic and Export Markets

USAID (2005) noted that although HVAPs production, specifically horticulture, has risen steadily in most regions of the world over the past few decades, the average annual growth in per capita supply in SSA of horticulture produce was negative between 1971-2000. Factors highlighted as impinging include: inadequate transportation infrastructure. Many producers lack access to even local markets, leave aside export markets. Developments in the areas of cold chains, transportation, and communications infrastructure are very important. One fifth of SSAs population is landlocked such that farmers encounter severe market access challenges, the rail freight is under 2 percent of the world’s total, air freight less than 1 percent, and marine freight capacity is 11 percent. The most undermined market by such low levels of infrastructure development is the intra-regional market; a market that low-resource endowed smallholder farmers may have faced softer and easier legal and commercial entry requirements.

Other challenges include shortage of skilled middle management and supervisors for commercial production, and more important for managing institutional innovations such as smallholder contract and out-grower schemes. Some countries have poor implementation of export facilitation efforts and problems with certification and registration of inputs such as

agrochemicals and planting materials. Besides transport, literature on SSA agriculture, points overwhelmingly to challenges posed by lack of credit, processing facilities, underdeveloped rural markets, inefficient inputs supply systems, lack of market information, sub-optimal policy and institutions frameworks.(references?)

6. Current R&D: Participation of Small-scale Producers in HVAPs Markets

There is paucity of information regarding on-the-ground on-going research or an organised inventory of long-term research on HVAPs programmes in SSA that concentrate on the *impacts of emerging HVP markets and small-scale farmers participation*. The USAID (2005) report, that took stock of developments in the horticulture developments, players and priorities for research, points to the fact that limited capacity and funding, say on horticulture research, and equally for other crops, constrains the development of the sector. Whereas National Agricultural Research Institutes (NARIs) are the focal point for country level agricultural research in SSA countries, the report reckons that NARIs are overextended financially. They lack adequate trained personnel to effectively address HVAPs issues; and more so, specific aspects such as the role of smallholders in emerging HVAPs; especially when one considers that agricultural research challenges range from agronomy, breeding and biotechnology, post-harvest technologies, marketing and even socio-economics of farming systems. An additional phenomenon is that traditionally, much of the research in SSA countries focussed on cereals, and on non-traditional export crops. Most CGIAR centres in region (CIMMYT, IITA, ICRAF, etc.) touch on HVAPs but not as their main areas of focus.⁷ InterAcademy of Science report of 2004, reckons the same, and also accounts for only limited levels of research on HVAPs by NGOs and Universities. Beintema and Stads concur with the IAC on the need for doubling Africa's agricultural research intensity ratio (agricultural R&D investments as a percentage of agricultural GDP).

Reports on 'one-off' field visits, case studies, and results of pieces of work conducted by horticulture marketing organisations shed light on areas of focus. Between 2000 and 2004, the FAO, World Bank, The International Food Policy Research Institute, studied SSA's HVAPs and the engagement of smallholder producers. The following are brief accounts of the nature of the research. Other activities include those by FoodNet, RATIN, or CIAT's recent incursion into agro-enterprise development. These activities address some of the non production-related aspects of 'linking farmers to markets' (market information, business developments services, market opportunity identification, farmer organization). All of which are highly relevant.

⁷ There is no research network for horticulture or HVAPs as such in the region. Agricultural research networks in SSA include: ASARECA Animal Agriculture Research Network. African Highlands Initiative. Biotechnology and Biosafety Programme. Coffee Research Network. East African Plant Genetic Resources. East African Rootcrops Research Network. Eastern and Central African Bean Research Network. Eastern and Central Africa Maize and Wheat Research Network. Eastern and Central African Programme for Agricultural Policy Analysis. Eastern and Central Africa Sorghum and Millet Network. Eastern and Central Africa Rice Research Network. Post Harvest Processing Network. Regional Potato and Sweet Potato Improvement Network for Eastern and Central Africa. Regional Agricultural Information Network. Soil and Water Management Network. Trees on-Farm Network.

a. The UN's Food and Agricultural Organisation Studies

This study was titled: The market for non-traditional agricultural exports. The research took place in the early 2000s, and the report is dated 2004. This research covers developments in the marketing chains of HVAPs, value-adding aspects, and issues regarding exporting countries compliance with grades and standards, and compliance costs. Other matters covered by the study are entry aspects i.e. participation of smallholders in production and export. The analysis, in addition, addresses macro issues regarding the role of the governments in facilitating local and inward investments, fiscal and monetary policies, investments in infrastructure, and finally foreign investments in the agricultural and food processing sector. This study covers Africa and other developing regions. Key conclusions of this study have been alluded to in this review; and conform to the observations regarding increasing importance of HVAPs, challenges facing the entry of smallholder producers, and the need for in-depth research in agronomic and economic fronts.

b. International Food Policy Research Institute's Studies

IFPRI covers HVA products as a key focus area under the Markets, Trade and Institutions Division. Several reports by IFPRI have therefore analysed the HVAPs markets in SSA. However, since 2000, two notable pieces of work are worth mentioning here (i) the successes stories studies which culminated with a December 2003 Conference in South Africa and (ii) a discussion paper on 'Market Opportunities for African Agriculture' that examined demand side constraints.

The 'African Agriculture Success Stories' research work by IFPRI was not addressing HVAPs exclusively, however amongst case studies that were analysed were those of HVA products such as horticulture. A notable case study covered by this research and of relevance to this paper was that addressing the question whether the Kenya's horticultural exports are a replicable story – see Minot and Ngigi (2000). Issues addressed and key lessons derived from this study included the role and impacts of the actions of the state, the results of linking smallholder to export markets of HVAPs, contract arrangements, investments in agricultural infrastructure such as irrigation and effects on HVAPs. Lessons from the research point to the need for stable policy environment, promotion of needed institutions, deliberate support to link small scale producers with markets, contract enforcement and investment in irrigation as useful preconditions for a success resembling that of Kenya or - using the authors words – “replicate it”.

The other piece of work by IFPRI (Xinshen et al 2003), besides reviewing patterns and developments of both traditional and non-traditional agricultural exports from Africa, and food production in SSA, it modelled and simulated various scenarios regarding the future. One key conclusion made by the study was that non-traditional exports have the fewer constraints and remain the most profitable option for increasing export earnings. However, because of their relatively small base, they have only limited potential to raise incomes on the scale required to affect overall income growth and poverty reduction over the next 10-15 years. The research covered country studies that drew on the implications for smallholder agricultural production for Mozambique - principally covering cashew nut, and within a narrower focus addressing vegetables and fruits, fish, shrimp and prawns; Uganda - covering exports of cut flowers, fresh vegetables and fruits, fish and fish products, hides and skins; Kenya – horticulture, fresh and

frozen fish. We draw on these case studies, and others, to derive lessons learnt in the next section.

c. FoodNet, RATIN and CIAT

These organizations have focused on non-production crop development research and development interventions; more under the framework of agribusiness development. Appendix 3 demonstrates the mode of operation. Establishing consortiums – research and development partners, participatory approaches and building on the strengths of power empowerment approaches e.g. farmer field schools. In Uganda, vanilla and potato development, as exemplified by the Nyambuba farmer group case study, have recorded successes. These activities address some of the non production-related aspects of ‘linking farmers to markets’ (market information, business developments services, market opportunity identification, farmer organization).

d. Changes in National Agricultural Research Organisations Focus and Universities Roles

Research policy developments in Africa signal progress towards conferring more importance on small-scale farmers links with markets. For example, as part of its overall realignment strategy and process, NARO recognised the need to develop capacity to respond to the needs and opportunities provided by the market. Consequently the Task force on mainstreaming market-oriented research in NARO was constituted. Through a process involving planning, literature review, and inventory of MOR within the NARO institutes, a consultative workshop with NARO managers and drafting retreat, a strategy has been developed.

The overall goal of the strategy is to enhance NARO’s capability and capacity to undertake research that is responsive to market demands and opportunities. The strategy consists of three main elements. The first element is institutionalising ability to respond to market demands, emerging issues and new opportunities in NARO. This is to be achieved through incorporating market demands and emerging issues in NARO’s research projects and establishing and operationalizing mechanisms for collecting, collating and updating information on emerging issues. The second element is establishing effective partnerships within NARO; the third element is developing capacity and skills to undertake market-oriented research in NARO (NARO Uganda, 2004).

Another useful institution that needs to be brought to the centre of this research agenda is African Universities. Though overall the contribution has been low, the arrangement demonstrated by the DFID funded – Regoverning Markets: Market Access for small-scale producers is a worth emulating. The initiative is analysing growing concentration in the processing and retail sectors of national and regional agri-food systems and its impacts and implications for rural livelihoods and communities in 18 countries in five regions. Chema at. al. (2003) reckons that although reforms are going on in most SSA NARS, there are differences and disagreements in the specifics such that it will take some time before there is coherence in institutional strengths, coherence in policy and emphasis of research.

7. Lessons

Challenges facing small-scale producers engagement in HVAPs are: the evolution of supermarkets and large retailers as the major buying force, as a result sidelining small-scale producers and traders. Nonetheless, various forms of contract farming, out-grower schemes, appropriate institutional arrangements for specific commodity and a market chain may bring on board small-scale producers. On the domestic markets front, traditional domestic market traders are competing with some success, operating side by side with the supermarket chains, and still maintain a sound share of the market, hence favouring small-scale traditional producers.

There is a broad domain for the role of public sector investment. Such public investments are needed to resolve the following problems: low physical and human capacity, poor technology, underdeveloped market infrastructure, high transaction costs, and the lack of financial, research, and extension services. These constraints have been a focus of agricultural marketing research for decades. More work is needed to provide answers to the question of “*how changes can be brought about*”, rather than only addressing the “*what should be*” question as has been in the past.

a. Private Sector Engagement in Initiatives to benefit Small-scale producers.

Multinationals, purely private sector entities, can have a role to play in developing institutional arrangements that support small-scale, low resource endowed farmers to participate in non-traditional HVAPs markets – see Appendix 2.

Key lessons are:

- i. Producers and exporters of HVAPs and their inputs for production have the potential of contracting small-scale growers in the SSA region.
- ii. To achieve the above, however, such companies must stretch beyond mainstream commerce responsibilities and enter into rural and urban development processes. The case at hand demonstrated this by establishing a department of agronomy, a section that conducts trials and demonstrations in farmers’ fields to check the quality of the seed and train the farmers to improve their cultivation methods.
- iii. Such initiatives benefit from gradual growth, rather than starting outright in large scale. The case reviewed showed a growth from 25 out-growers in 1994, and the number of small-scale farmers interested in flower seeds production has increased by 20.8 percent, reaching more than 120 former coffee growers in one district today.
- iv. Where such programmes work, further growth happens naturally. For example, experienced growers in the case study were reported to be expanding production and investing in the production process, a rare phenomena in traditional farming. A small-scale farmer spent between Tshs. US 75 and 100 to rent between three and four acres of land for production of flower seeds, plus other costs for inputs.

- v. Such developments should be followed-up with studies identifying emanating challenges. For example, small-scale farmers in the case study pointed to credit for further improvement as being an issue that emerged as a result of the growth in experience and value for the enterprises.

b. The need for Farmer, Development Agency, and Research Institutions Collaborations

There is greater potential for success when interventions to help small-scale farmers penetrate HVAPs markets are collaboratively pursued by farmers, a development agency, and a research institution. The Key lesson is that challenges faced by farmers are multifaceted; such collaborations have a better scope to address such multiplicity of constraints.

The case of Nyabyumba farmers demonstrates the lesson. The growth and enhanced lucrativeness of potato growing was contributed by:

- i. A research organisation, NARO Uganda, producing a better variety for the farmers.
- ii. A development agency, an NGO called Africare, brought in extension methods – The Farmer Field School approach – to enhance the adoption of new methods of growing potatoes.
- iii. Farmers were forefront to tap on social capital and responded positively to innovative collective action and management systems centred on committees.

CIAT reports that by late 2004, the group has supplied over 70 tonnes to Nandos (a retail food chain) and similar amounts of lower grade potatoes to other outlets. These small-scale farmers' welfare has improved, and they have constant savings. Key lessons include (a) long-term support from a consortium of research and development partners (b) increased technical skills in potato production, and better management including social capital development, and (c) collective marketing.

c. Innovations are needed beyond crop production techniques

Information and technology advancements can be tapped on to benefit small-scale producers. A key lesson here is that there is need to research on matters beyond the farm gate. FoodNet's innovation in using cell phones and the Internet for disseminating market information to farmers at a cost, proved to be a very useful support to small-scale producers. As a result the method is expanding across the Eastern and Southern Africa region.

The case study demonstrated the use of Market Information Points, Internet Based Price and other Market information, and the role cell phone message (SMS) systems could be used to regularly up-date farmers on prices etc – Appendix 4.

A Key lesson is that interventions to support farmers should go beyond development of new crop varieties and husbandry practices; to using technology to address challenges encountered in the markets.

d. Supply Led v/s Demand Driven Research and Development

A lesson from a case study of a succeeding woman entrepreneur is that research and development agencies ought not be driven by internal derived agenda, goals and research or development priorities. Significant flexibility is required for responding to needs for research, ready made technologies and also demanded support in exact challenges concerning management.

Particularly beneficial impacts of such an approach can be realised in the case of post harvest, value-adding sub-sector. Standards, sanitary and phytosanitary specifications are particularly thorny areas to be addressed by this approach.

The case study tells us about an entrepreneur who embarked on supplying highly nutritious soya, sorghum and bean flours to the local market, targeting pregnant women, the aged and those with HIV/AIDS. Recently, she began to make inroads supplying her flour to refugee camps in Tanzania. But when new food safety regulations came into effect for food aid products in 2001, she couldn't compete--she began to lose her market share to overseas suppliers. Not one to give up easily, she sought advice from FOODNET, a regional USAID marketing and enterprise network. Through this relationship, she gained assistance to purchase a specialized high pressure cooker, technically known as an "extruder". FOODNET also linked the lady with entrepreneurs from the region who helped her to develop an appropriate business plan. The extruder--the first of its kind to be used commercially in Tanzania--has enabled the entrepreneur to greatly increase her volume of production. Perhaps more importantly, it has made it possible for her to produce flours that meet the most stringent international standards for food safety and hygiene. She is now producing higher value products that are available in most supermarkets across Tanzania. She has also been awarded contracts from the U.N. High Commission for Refugees to supply UNIMIX to a refugee camp.

8. Priorities for research

From a combined domestic and export marketing point of view, the way to ensure that low resource endowed farmers maintain a position in the emerging HVAPs chain, is to upgrade their skills and overall capacity such that they consistently, and cost effectively, meet consumer demands and out compete imported products; both, in terms of quality as well as price. This requires a considerable change in the production systems and the structure of SSA's small-scale farmers. In addition, there is also a need to improve institutional arrangements, not only for output marketing, but also for inputs distribution. Such improvements are needed in both areas: physical infrastructure and organizational set-ups. If farmers, development practitioners, and policy makers can successfully respond to these challenges, then the export markets (regional and international) and domestic chains for HVAPs can become a strong driver in the region for the integration of small-scale farmers in food retailing, with significant benefits to the poor rural

dwellers. The following priority research areas are recommended; categorised into micro, meso and macro level pertinent issues.⁸

8.1 Micro Level: Farmer Level and Production Systems Challenges

Breeding and Agronomy Research

Crop development for adaptation to local condition is a requisite to address challenges posed by the climatic conditions, pests and diseases and water deficiencies in SSA. Breeding and biotechnology for drought, diseases and pest resistances – addressing abiotic and biotic stresses - is therefore a relevant research area. In line with breeding, crop development could also take the form of improving and promoting indigenous vegetables, fruits, and spices. Good seed, planting material, genetic technology (including genetic engineering technology), are all important for continued development of the smallholder based HVAPs sub-sector. Land degradation and unsustainable use of natural resources are a potential near future constraint to production of HVAPs by smallholders, research on sustainable use of such resources by low resource endowed farmers is relevant. Currently, there are profound deficiencies in research funding and human resource capacity to undertake such research in SSA. Research stations in SSA will also have to forge collaborations with Northern partners in order to address correctly and ultimately meet requirements of the developed countries' market.

Information Systems

High value products require producers and traders who are knowledgeable, up-to-date and well informed about local, regional and export markets and also means to readily access those markets. Market information is therefore crucially essential. Meeting regulatory and commercial standards is an additional challenge in the case of HVAPs compared with non-traditional crops. There is need for research and development for strategies to impart such knowledge and skills amongst smallholder producers, or to service providers focusing on smallholder producers. Continued research in this area is crucial because HVA product's markets are dynamic and new innovations emerge rather continuously.

Input supply systems for HVAPs

High value products require high levels of inputs such as fertiliser, herbicides and pesticides and water supplies at sustained regularity (irrigation). There is need to undertake research to establish effective uses of such inputs, and also local irrigation systems and how to get small-scale farmers to effectively manage farm water schemes. With a sight on organic production, it is necessary to research on locally adapted, integrated crop management strategies that would meet market demands.

⁸ Whereas these research area recommendations are based on the review made by this paper, Appendix 6 presents the importance of different constraints to horticultural production. The two could be analysed jointly for further prioritisation and for comparison of priorities across a broader range of regions.

Post-harvest Technology

There is need to conduct research and generate knowledge suitable for smallholder producers about post harvest management and required technologies. Research that would assist smallholder producers to address the following: quality deterioration due to improper harvesting, management systems after harvesting, food standards and grading, preventing contaminations, on-farm value adding processing methods, are all relevant themes. New heating technology, such as the use of micro-waves and freezing, e.g. cryogenic, and appropriate packaging may be of relevance, but needs research to adapt to local situations. Analyses of the sanitary and phytosanitary conditions, and ways to enable farmers take actions and processes that would ensure adherence to these is important.

In a broader context, beyond producers, SSA countries have to research and develop efficient storage and distribution systems capable of using raw materials from smallholder traditional producers. HVAPs processing industries, that links well with smallholder producers, will have broader rural development implications, particularly in relation to rural employment. Such developments may contribute towards reversing the rural urban migration pattern observed across SSA.

Farmers Organisations Analysis

Under this sub-theme crucial aspects that need research and development include horizontal and vertical integration mechanisms that would benefit traditional smallholder producers, low resource endowed farmers. There is need to conduct market chain analyses with the aim of continuously identifying challenges faced by smallholder producers and ways to resolve them. Various production inter-linkages such as out-grower schemes, contract farming ought to be further studied. Successful experiences will have to be appropriately adapted and scaled-up to cover a broader region of the SSA. Farmer cooperatives, brokerage arrangements, forward contracts, and appropriate business development services providers systems are all worth studying. The ‘How’ question is critical in this area.

Gender equity

This review has not done justice to the role that women play in the HVAPs industry. Whereas women play a significant role in SSA as farmers, labourers, entrepreneurs, food vendors etc; they are relatively disadvantaged in terms of accessing land, credit, and information and technology. Gender based research aimed at identifying best ways to enhance their access to above resources is crucial. Comparative researches analysing gender dimensions of HVAPs production and marketing across sub-regions may shed light on constraints, best practices and favourable modes of interventions.

8.2 Meso & Macro Levels: Policies, Institutional, Farmer and Traders Organisational Aspects

a. Policy Environment

The goal under this theme should be to develop, establish and improve the environment to ensure that smallholder production and marketing of high value products grows. In essence, ensuring an enabling environment exists; one that blends well economic, social, and political attributes for

development. This requires continued research in national macro and micro economic policies and their implications for the development of HVAPs sub-sector and the engagement of smallholder producers. It has also been noted that successes in FDI into SSA has happened where policy environments are conducive. Research on how best to further improve policy environments for FDI to help smallholder producers; and, studying documenting and replicating success stories, say from one country to another, or from one sub-region to another, would contribute positively towards the growth of the HVAPs and impacts on smallholder farmers.

b. Institutional and Infrastructure Support

The goal in this case should be to identify effective support institutions that would benefit smallholder producers and traders. Two broad categories of institutions need to be studied and developed: (a) institutional arrangements that link producers and processors and exporters (b) institutions that would link exporters of smallholders' produce with foreign markets. Such support institutions would also include financial systems: policies, financial products, and human capital development. Strong human capital that combines field, factory, managerial and technical personnel is also important – research on the types required and ways to develop and maintain such HR are relevant research themes. In addition, identification of the nature and types of infrastructure needed to enhance effectiveness of smallholder producers (roads, railways, airports, cold storage systems, communication, etc) and how to manage them in a sustainable manner, over long periods, is a worth research subject. In these areas, considering the public goods element of the investments, it would be worth researching on feasible public-private partnerships in development.

8.3 Macro-Level Issues: Beyond The Country Borders

a. Regional, and International Markets Aspects

Developments in retail chains in Europe (supermarkets) and changes in policies e.g. preferential trade options ranked high amongst drivers of growth of exports of HVAPs from SSA to Europe. A lesson is that policies in the North matter for growth and development in the South. There is a need to study what policies may have further positive direct effects on smallholder producers and traders, for example – how would reduction of tariffs escalations help SSA countries to capitalise on off-season demand for HVAPs in developed countries. Research systems in SSA have to research and monitor trends of policy changes in the north, evolution of food markets in a manner that they may articulate niches to be tapped by smallholder producers. Identification of additional exact niches to be tapped in additional foreign markets, for example the growing economies of South East Asia, and especially China, and forging links with importers is an area that research can contribute.

Factors that impair intra-regional trade between SSA countries should also rank high in the research agenda. SSA has the potential to benefit from other within Africa markets, particularly the North Africa market where climatic conditions are not as conducive for fruit production. There is need to undertake research and development regarding infrastructure network development that would buttress HVA products' flows in the region. Harmonisation of policies

including those governing trade, tariffs, sanitary and phytosanitary standards are also important researchable themes.

8.4 R&D Framework to capture diverse natures of small-scale producers

While addressing the above, one needs to direct attention to the exact target groups amongst primary producers. Apparently, these range from the primarily subsistence agricultural producers to pretty advanced commercial entrepreneurs who are already strongly integrated in the supply value chains. In between, there may be two or three categories of primary producers at various developmental stages. Such a dichotomy may be found within a country or sub-region, but different localities within the sub-region may have different mixes of the various stages of the farmer development agri-systems. Needs, and hence relevant research and development initiatives for the various categories would inevitably differ. Appendixes 7 and 8 are products of GFAR-FAO and stakeholders on-going strategic thinking. FARA and the Challenge programme in Africa are considering using this framework for post harvest initiatives refer to GFAR-FAO-PhAction-FARA (2005). The framework suggests that weight and hence importance of the nature of R&D that may be more relevant for the different characteristics of sub-economies where a particular category of farmer pre-dominates. One could argue that for relatively underdeveloped subsistence agricultural systems, R&D in subjects under the micro-level category, i.e. post-harvest technology development and quality improvement, nutritional upgrading, value and safety enhancement may rank high. Agricultural systems with primary producers at early stages of commercialisation would benefit more from research aimed at post-harvest technology and business development services. Those at either advanced stages of development, or highly commercialised and adequately integrated into value chains, would benefit more from research in macro-level issues: business policy and international trade. This exercise here is inconclusive, and is presented simply to trigger further thinking and articulation of the nature of interventions that stakeholders may wish to explore and invest in.

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Appendix 1. SSA Farmers Characteristics

Entities producing export commodities can be grouped into three types: (1) exporter owned or leased farms, (2) large commercial farms, and (3) small farms. In the beginning of the fresh produce export from Africa, most of the crops were grown on small farms. In 1992, small-scale producers produced approximately 75% of fruits and vegetables for export from Kenya. African fresh produce was in demand only during the season they could not be grown in Europe. Gradually, Europeans expanded procurement year-round and increased the variety of fruits and vegetables purchased. The volume requirement thus skyrocketed and drew commercial farms and export firms into cultivation of fruits and vegetables. By 1998, four of the largest exporters in Kenya were sourcing only 18% of their produce from small farms, while 42% came from large commercial farms, and 40% from exporter owned or leased land.

Exporter Owned or Leased Farms. To increase the profit margin exporters have gotten into on-farm crop production. This way they gain control of all operations on the export side of the supply chain. It also makes harvesting to value added processing an integrated operation and oversight on labor laws, pesticide regulations, and safety compliance is easier. Growing crops on their own farms guarantees continuity of supply and reduces risk of losing suppliers to competition.

Large Commercial Farms. Large exporters prefer dealing with commercial farms because they can supply different products, meet large volume requirement for export transactions and are managed professionally. It is also not very difficult to monitor their compliance with various regulations. As the number of exporters has shrunk, the number of commercial farms growing fresh produce has grown.

Small Farms. The number of small farms producing crops for export has been steadily declining. Exporters find it convenient to deal with a few large commercial farms than with many small holders. Variations in crop quality due to non-uniform agronomic practices from farm to farm, logistic problems of overseeing compliance with pesticide use, child labor, and worker safety regulations, and difficulty of communicating with large number of growers make small growers less attractive to exporters.

In several African countries, foreign and domestic non-governmental agencies and governments have set up projects to bring more small holders into export oriented crop production. However, to enable small-scale farmers to make prudent decisions, they should be given full facts about the benefits and risks of export crop enterprises including: (1) average income in good growing seasons and amount of loss from crop failure, (2) market price variability over time, (3) marketing institutions and their weaknesses and strengths, (4) higher input requirements and the need for credit, and (5) special production skills and quality control requirements. Evidence from different countries suggests that the income effects from diversification are positive and can help reduce income inequality among small-scale farmers.

Labor-intensive crops that require staking and picking of individual pods are suitable for production by small growers. While large farms have to hire outside labor and supervise them, small-scale farmers use family labor, which is both low-cost, and self-supervising. Small holders compete favorably also in organic crop production. For small-scale producers operations to be successful it is essential to have an adequate number of willing growers in close proximity. Farms should be located in areas with good road and transportation systems. Otherwise it becomes uneconomical to collect produce from the different farms and set up post-harvest processing centers.

Source: Singh, Bharat P. (2002).

Appendix 2. An Export Market Case Study: Coffee-Farming Ditched For Flower Seeds

FLOWER seed production, which is dubbed as “green gold” in the northern regions of Tanzania, is likely to outpace traditional crops, particularly coffee in Arusha and Manyara regions, the *Financial Times* has reliably learnt. So far, an estimated 300 smallholder coffee growers in both regions have uprooted their coffee trees. They are now growing flower seeds. A survey carried out by some journalists revealed that a number of peasants who recently took such a bold decision, have started reaping the benefits.

The Arusha-based Multiflower Ltd, producers and exporters of cut flowers and flower seeds and the importers of hybrid seeds, has, since 1995, been contracting flower seed out growers in the northern regions. In Arumeru district, Arusha region, where the firm started with only 25 out growers way back in 1994, the number of small-scale farmers interested in flower seeds production has increased by 20.8 percent to date. The Multiflower firm which started up a decade ago, engages itself in producing chrysanthemum cuttings and cuttings of garden/pot plants in greenhouses for export to Holland. It exports the flower seeds it buys from the out growers to Europe, Japan and United States and it imports high quality hybrid and open pollinated vegetable seeds from Europe and Asia for supplying local farmers. The department has an agronomical section that conducts trials and demonstrations in farmers’ fields to check the quality of the seeds and train the farmers to improve their cultivation methods.

Available records indicate that Multiflower has so far managed to capture more than 120 former coffee growers in Arumeru alone, who have signed agreements with the company to obtain seeds and advisory services free of charge on condition that they should sell the flower seeds to the firm, at prices agreed upon during the contract signing. The firm has introduced five varieties in the district and their prices per kilogram in brackets as *zinnia tall* (US\$ 2.5), *ipomea quamoclit* (US\$ 4), *tagetes dwarf* (US\$ 2.5), *cosmos bip* (US\$2) and *tithonia* (US\$ 1.5).

Farmers under this scheme are capable of growing between half an acre and five acres and some of them have formed their own groups to secure loans from her firm in order to boost their crop acreage. To them flowers seem and a reported to be easy to grow compared to other conventional crops whose prices have also significantly dropped, and unlike other crops, flower seeds could be harvested twice a year. In addition the crop does not demand artificial fertilizers provided a farm had a sufficient water supply, and soil used for growing other traditional crops.

Experienced growers are now investing to expand production, they now spending between Tshs. US 75 and 100 to rent between three and four acres of land for production of flower seeds; and, according to a Multiflower official, other flower seed varieties introduced, their acreage and US \$ prices in brackets included: *ageratum* – 100 kilogram (kg) per acre (US\$ 10 kg), *cosmos sulpherus* – 250kg per acre (US\$. 1.8 per kg), *impatiens balsam* – 100 kg per acre (US\$ 2.3), *impatiens dwarf* – 7.5kg per 350 square meters (US\$ 75 per kg), *impatiens holistic* – three kg per 250 square metres (US\$ 50 kg) and *gerbera* – 10kg per 1.225 square metres (US\$ 120 per kg). An expert at the firm added that a farmer had to invest US\$ 102 in growing an acre of zinnia during the rainy season or has to add US\$ 25 irrigation cost if he or she is to grow the crop during a dry season. Other costs includes US\$ 25,000 would be used for renting land, US\$ 15 for ploughing, US\$ 10 for harrowing, US\$. 12 for weeding, US\$ 15 for harvesting, US. 20 for sieving, US\$ 1.50 for packing, and US\$ 3.5 for transporting it to the firm’s headquarters.

Elipokea Michael (30), a small flower farmer commented “I spend part of the benefit accrued from this lucrative flower seeds business on my family’s basic needs and save the remaining amount of my earnings for various enterprises, including keeping goats and dairy cows”. A smallholder farmer, Harriet Nnko, cited lack of access to loans and land scarcity as problems affecting Arumeru district peasants, and preventing them from cultivating more than one acre of flower seeds per season. “I possess only one acre with which I have to strike a balance between food and cash crops”, she complained, explaining that she could not abandon the beans and maize, as her children would be unhappy seeing their peers chewing raw maize during the harvesting season.

Source: The Guardian-Tanzania. 31-08-2005.

Appendix 3: Impacts of R and D: Farmer, NGO, and NARI Collaboration

In Uganda there is a farmer group called Nyabyumba. It was formed in 1998, with 40 members. The group concentrated on improving potatoes using improved seed produced by The National Agricultural Research Organisation. Development support is provided by Africa; an international organisation. The extension and development approach used by the group is based of Field Farmer School framework. In 2000, Nyabyumba farmers group used this method to enhance their knowledge in potato production and about improved seed of the crop. In 2000, with the support from NARO and Africare, they significantly increased their yield of potatoes. The support included better production skills, analysing and identifying markets, developing a business plan for commercial potato production. With such skills at hand the group identified and pursued a business relationship with Nandos, a fast food retail in Kampala, and a wholesale markets, also in the capital city.

This development intervention led to improved management and institutional organisation amongst the farmers, they form several committees to manage their production, management and marketing of their potato business. Most interesting was their approach to ensure constant supply of potatoes. For this they established a staggered planting schedule to ensure they market between 5 and 10 tonnes of potatoes every month, from which the best tubers were selected and sent to the Kampala market. CIAT reports that by 2005, the group has supplied over 70 tonnes to Nandos and similar amounts of lower grade potatoes to the other outlets. These small-scale farmers' welfare has improved, and they have constant savings. Key lessons include (a) long-term support from a consortium of research and development partners (b) increased technical skills in potato production, and better management including social capital development, and (c) collective marketing.

CIAT Website. Enabling Rural Innovation in Africa (ERI). www.ciat.cgiar.org/africa/eri

Appendix 4. Kenya Agricultural Commodity Exchange (KACE)

The FoodNet Programme of IITA, a CGIAR, innovated the use of IT in market information. The innovation has been taken-up in the region. The following is a case example of its application. Kenya Agricultural Commodity Exchange (KACE) is a private sector firm launched in 1997 to facilitate linkage between sellers and buyers of agricultural commodities, provide relevant and timely marketing information and intelligence, provide a transparent and competitive market price discovery mechanism and harness and apply information and communication technologies (ICTs) for rural value addition and empowerment.

KACE's Vision, Mission and Objectives:

To be a Commodity Exchange of the highest integrity, facilitating competitive and efficient trade in agricultural commodities in Kenyan, regional and international markets. The vision is To establish a Commodity Exchange in Kenya of the highest integrity, available to Kenyan as well as regional and international traders based upon an open free market system for the mutual benefit of sellers and buyers, and to facilitate the marketing of any commodity provided or desired by any consenting parties through the auspices of the exchange. The objectives are therefore:

- To facilitate linkage between sellers and buyers, exporters and importers of agricultural commodities in trade.
- To provide farmers and market intermediaries (traders, brokers, processors and consumers) with relevant and timely marketing information and intelligence, and other services that enhance their bargaining power and competitiveness in the market place;
- To provide a transparent and competitive price discovery mechanism through the operations of the exchange trading floors; and
- To harness and apply the power of information and communication technologies (ICTs) as a strategic tool for rural value addition and empowerment.

Methods and Approaches

KACE has developed an internet-based RECOTIS for dissemination of market information. RECOTIS is an electronic database of clients interested in buying, selling, importing, exporting or distributing agricultural commodities. KACE collects and disseminates marketing information on commodity offers, bids and prices through RECOTIS as frequently as it compiles the data, sometimes several times a day. Information recipients can dialogue back-and-forth with the KACE information technologists for more information. There are currently about 500 client recipients in the database, spread in about 26 countries around the world, the majority being in eastern Africa

SMS is text messages sent and received with mobile phones. KACE is harnessing this ICT technology to disseminate market information and intelligence. KACE has developed an SMS market information service branded as SMS Sokoni in partnership with the Safaricom Limited, a leading mobile phone service provider in Kenya.

A farmer anywhere in the country where the Safaricom network exists can in easy steps access market information like commodity prices in different markets, who is buying or selling what commodity, at what prices, where and when, as well as access extension messages using their mobile phones. The user receives and pays for the SMS messages to the service provider. SMS is easy to use, reliable, convenient and low-cost. The information is updated everyday and hence is most current and timely to the user. KACE is in the process of developing a similar service with a second mobile phone service provider in the country. A MIC is established to manage and service MIPs which are located in rural market centres which do not have electrical power supply and/or fixed landline telephone service to enable internet connectivity. A MIC is established at a District Headquarter. It is equipped with ICTs: landline and mobile phones, fax and computer with email and Internet connectivity. In areas where MIPs are located in market centres supplied with electrical power and fixed telephone services, they are equipped with the ICTs including Internet connectivity. In this case MIPs are directly linked to the KACE Headquarters for information exchange, and a MIC is redundant. Currently, there is a MIC in Bungoma servicing the four MIPs in Western Province in Kenya.

Appendix 5. FOODNET Supports The First Woman Entrepreneur To Meet International Standards For Her Locally Blended High Nutrient flours.

POWERFOODS Managing Director is a successful entrepreneur in Dar es Salaam, Tanzania. She had built up her business supplying highly nutritious soy, sorghum and bean flours to the local market, targeting pregnant women, the aged and those with HIV/AIDS. Recently, she began to make inroads supplying her flour to refugee camps in Tanzania. But when new food safety regulations came into effect for food aid products in 2001, Anna couldn't compete--she began to lose her market share to overseas suppliers. Not one to give up easily, Anna sought advice from FOODNET, a regional USAID marketing and enterprise network. Through this relationship, she gained assistance to purchase a specialized high pressure cooker, technically known as an "extruder". FOODNET also linked the lady with entrepreneurs from the region who helped her to develop an appropriate business plan. The extruder--the first of its kind to be used commercially in Tanzania--has enabled Anna to greatly increase her volume of production. Perhaps more importantly, it has made it possible for her to produce flours that meet the most stringent international standards for food safety and hygiene. She is now producing higher value products that are available in most supermarkets across Tanzania. She has also been awarded contracts from the U.N. High Commission for Refugees to supply UNIMIX to a refugee camp, thus moving Tanzania closer to meeting its own food security needs rather than importing all food aid.

"The Extruder is running perfectly up to this moment. We try to blend locally available crops such as sorghum, cassava, millet and beans to make high value nutritional products for making breakfast and ugali (a local porridge). Two of the UNIMIX products have already been certified by the Tanzanian Bureau of Standards and the (UN) World Food Programme."
Entrepreneur

Source: FoodNet – IITA website

Appendix 6: Importance of Different Constraints to Horticultural Production in SSA

9. Constraint	Central Africa	East Africa	Southern Africa	West Africa
Market Information	●	●	●	●
Organization	●	●	●	●
Access to Markets	+++	+++	+++	+++
Standards	●	+	●	●
Food Safety	●	●	●	●
Processing	+	++	++	++
Infrastructure	+++	+++	+++	+++
Post-harvest practices	++	++	++	++
Germplasm	+++	+	++	++
Adapted varieties	+	++	+	++
Propagation	+++	+++	+++	++
Agrochemicals	●	●	●	●
Pests and diseases	+++	+++	++	++
Appropriate technology	+	++	+	++
Climate	●	●	+	+
Water	+	+	+++	+++
Soil	+	●	●	+
Productivity	+	+	+	+
Lack of Information	+++	+++	+++	+++
Skilled labour	+	+	++	+
Extension	+	++	+	●
Research				
Capital/Land	++	+++	+++	+++
Policy	+	●	++	●
Risk	●	●	●	●

Importance of different constraints to horticultural production in the sub-regions of SSA.

The symbols indicate the relative frequency at which the specific constraints were mentioned in a survey, as a proportion of overall responses.

(a) +++ indicates that the constraint was in the first quartile – top 25%.

(b) ++, +, and ● were in second, third and fourth quartile, respectively at 25% intervals.

Source: USAID (2005). Global Horticulture Survey

Appendix 7: Research and Development Strategies Versus Primary Producer Characteristics

Key Primary Producers at various Stages of development of Agri-systems	Primary Producer Characteristics	Strategy 1: Policy		Strategy 2: Institutional strengthening				Strategy 3: Supply chain		Strategy 4: Networking
		Trade policy	Business policy	Market tool-kit	Business development Services	Post-harvest technology	Quality, nutritional value and safety	Supply chain integration	Post-harvest and market infrastructure	Communication learning, and exchange of experiences
1. Subsistence producers	Individual farmers producing predominantly for their own consumption, selling small surpluses to local markets. Precarious access to services and no use of purchased inputs. Low asset accumulation, most vulnerable									
2. Small-Scale Rural Enterprises	Small-scale rural enterprises with low levels of value addition and weak business orientation and incipient social cohesion among group members. Access to services is incomplete and irregular, which limit enterprise growth.									
3. Commercially Oriented Enterprises	Commercially oriented enterprises with higher levels of social cohesion that have incorporated value adding handling and/or transformation processes, and product diversification. Selling into regional and national markets. Access to services that permit enterprise growth.									
4. Advanced Commercial Enterprises	Farmer enterprises are fully integrated into supply chains and meeting demands in terms of quality and frequency of supply, both nationally and for export. Are capable of identifying and paying for required business development services.									

Appendix 8: GFAR-FAO-PhAction Strategic Framework

