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## **How can the poor benefit from the growing markets for high value agricultural products?**

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January 2006

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# How can the poor benefit from the growing markets for high value agricultural products?

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Junior Davis

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## Summary

This paper aims to identify critical areas for trade, marketing, capital market development and regulatory reforms that can facilitate the integration of small-scale farmers (small-scale farmers) in domestic, regional and global markets for high-value agricultural (HVA) products in particular high value crops, livestock, fish and non timber forest products in a sustainable manner and to increase and diversify the incomes of small-scale farmers in the long-run. The paper places particular emphasis on the issues that may need to be addressed through research and development undertaken by the international, regional and national research communities.

A common problem for small-scale farmers entering HVA market chains is that their products often do not comply with the prevailing technical standards. To sustain success in the market place, products have to be of a specific standard, which is difficult to achieve for small-scale farmers whose production techniques and technology may not always attain the standards demanded in dynamic markets including export. In addition, small-scale farmers often try to enter HVA markets without any relevant market analysis. Even where there is demand for a product, quality standards are often lacking. Technical support services are often essential to help refine products and to make them marketable. However, such services are often only available for payment and are therefore not easily accessible, especially to small-scale farmers. The core role of the public sector should be reviewed to consider their role in service provision e.g. quality, inspection services and testing laboratories.

We maintain that the international research community and CGIAR can contribute to the integration of small-scale farmers in domestic, regional and global markets for HVA products by better understanding what markets want and expect and helping to develop appropriate technologies and systems to facilitate this for the poor. The international research community needs to grasp the agronomic, physical, economic, and social system interaction complexities of global HVA markets; and develop stronger public-private sector research partnerships which take emerging standards into account. Governments, donors and the research community need to be more entrepreneurial to help small-scale farmers be productive, competitive, and sustainable through alliances/clusters.

Research and Development is required to support and guide public and private policy interventions to improve the access of small-scale farmers to HVA markets. However, to achieve poverty reduction the international research community must also go beyond the usual technical solutions in research and development to fully incorporate policy and interventions that effects the required changes. They need to beware of what failed previously with traditional commodities such as over dependence, oversupply and declining prices in real terms and not focus solely on supermarkets as a panacea for agricultural sector and product market problems. Supermarkets may not be the most profitable outlet for all small farmers, especially where the upgrading of traditional markets is both viable and easily accessible to small-scale farmers.

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## 1 Introduction

There is a growing international debate in the context of globalization and world agriculture concerning *how the poor (particularly small-scale farmers) can benefit from the growing markets for high value agricultural products?* It is argued that high-value agricultural activities have the capacity to provide real opportunities for enhancing farm incomes and reducing poverty in the developing world. Rising per capita income, migration, urbanization and globalization is changing consumption behaviour in many developing and developed countries towards high-value agricultural (HVA) products such as fresh fruit, vegetables, livestock, milk, meat, fish and non timber forest products. However, the key trends driving this process are: (i) globalisation as well as sourcing of horticultural products; (ii) concentration in developed and increasingly developing country retailing; and (iii) the increasing complexity of public and private standards. This paper aims to identify critical areas for trade, marketing, capital market development and regulatory reforms that can facilitate the integration of small-scale farmers (small-scale farmers) in domestic, regional and global markets; high-value agricultural products (in particular high value crops, livestock, fish and non timber forest products) in a sustainable manner and thus increase and diversify the incomes of small-scale farmers in the long-run. The paper will place particular emphasis on the issues that need to be addressed through research and development undertaken by the international, regional and national research communities.

Small-scale farmers (small-scale farmers) constitute a significant proportion of the rural economy and the poor in developing countries (Narayan and Gulati, 2002). In Sub-Saharan Africa, Asia and South and Central America small-scale agriculture remains the majority activity of the rural sector and the major source of rural employment but, confronted with changes in world trade and falling commodity prices, its viability has been questioned. There is no universally agreed definition of small-scale farms in developing countries. In much of the development literature, farms of less than five hectares can be considered “small”. In general these farms often have limited capital or other assets. For the purposes of this paper which focuses on Sub-Saharan Africa (SSA), Asia and South and Central America we adopt a broad definition of a small-scale farmer. A small-scale farmers derives their livelihood from a holding of < 2-5ha (usually < 2ha); and around 10 to 20 heads of livestock (although often there is < 2 or none at all). small-scale farmers may practice a mix of commercial and subsistence production (in crops or livestock) or either, where family provides the majority of labour and the farm provides the principle source of income. In the paper we define poor individuals involved in fishing as traditional fishermen; generally those using small mechanised or non-mechanised boats usually without their own processing facilities. Regarding NTFP for convenience we also refer to individuals growing and cultivating tree crops as small-scale farmers; but those who are employed to collect and process NTFP as forest workers.

The paper is structured around the three key questions it seeks to address:

1. To what extent does the growing market for high value agricultural (HVA) products (crops, livestock, fish and non timber forest products - NTFP) offer an opportunity for the rural poor in marginal areas to improve their livelihoods?

2. What are the major research and development issues that need to be addressed in promoting high value products through value addition and diversification of the production systems of resource poor farmers in marginal areas as a means of making a significant contribution to the reduction of rural poverty?
3. What are the necessary conditions for the rural poor to benefit from emerging market opportunities for high value products?

In addition, this paper also aims to identify potential entry points for further CGIAR research and development in the given commodity/sub-sector regarding institutional, technical, organizational, regulatory and policy interventions?

The case studies synthesise different experiences in connecting small-scale producers with dynamic particularly high value agricultural product supply chains.

## 2 What is driving the shift from traditional commodities to HVA production?

### 2.1 The changing structure of agricultural trade

With the post-liberalisation of domestic commodity markets, there has been a shift in the proportion of the global value of much international commodity trade to market participants located outside the producing country. Commodity processing in some of the least developed countries has declined sharply.<sup>1</sup> Also, some commentators e.g. Henson and Reardon, (2005) have also begun to question the future of small-scale farmers in consideration of their capacity to meet social standards and other market requirements (e.g. Sanitary and Phytosanitary Measures, SPS). Before the 1990s, for example SPS standards were of limited importance in relation to ‘traditional’ commodity exports (sugar, coffee, tea, cotton, etc.) and competitiveness for most developing countries.

For the purposes of this paper we distinguish between ‘traditional’ and ‘non-traditional’ (mainly HVA) commodities.

**Table 1 ‘Traditional’ and high value agricultural commodities**

<i>‘Traditional’</i>	<i>‘Non-Traditional’- HVA Products</i>
Sugar	Dairy products
Cotton	Meat products
Jute	Vegetables
Tobacco	Fruit
Coffee	Fish
Cocoa	NTF products: nuts
Tea	Spices and essential oils
Bananas	Herbs
Cereals, roots and tubers	
Oilseeds	

<sup>1</sup> UNCTAD (2002). The Least Developed Countries Report, 2002: Escaping the Poverty Trap, p.147.

The primary basis for ‘traditional’ commodity competitiveness remains price and quality; and the traditional form of trade preferences and protection (tariffs) remain a contentious issue for these products. However, with the changing composition of developing country exports’ with an expansion in highly perishable HVA products, has drawn attention to the major disparities between countries in terms of standards for food safety and public health. Table 2 shows the expansion of international trade in HVA commodities over the past decade which is in part driven by changes in consumer tastes, purchasing power, and advances in transportation and supply chain technologies. Fresh fruit and vegetables, fish, live animals and meat, nuts and spices now account for 50 percent of the total value of agri-food exports of developing countries, up from a 31 percent share in 1980/91 (see Table 2). Demand for, and production of, livestock and livestock products in developing countries is expected to double over the next 20 years and will account for more than half of total global agricultural output in financial terms(Delgado *et al.*, 1999). This process has been termed the ‘livestock revolution’.<sup>2</sup>.

**Table 2 The changing structure of agricultural trade (% of export value)**

	Total for developing countries		Total for industrialized countries		World exports	
	1980/81	2000/01	1980/81	2000/01	1980/81	2000/01
<b>Traditional tropical products</b>						
Coffee, cocoa, & tea	18.3	8.5	2.5	3.6	8.5	5.4
Natural fibres	8	3.3	4.5	2.6	5.9	2.8
Sugar & confectionary	10.5	4.3	3.9	2.3	6.4	3.1
Nuts & spices	2.4	2.8	0.7	0.8	1.3	1.5
<i>Subtotal</i>	<i>39.2</i>	<i>18.9</i>	<i>11.6</i>	<i>9.3</i>	<i>22.0</i>	<i>12.7</i>
<b>Temperate products</b>						
Meats, fresh & processed	7.2	6	14.8	15.4	11.9	12
Dairy products	0.3	1.1	7.9	7.6	5	5.2
Grains	9.3	7	21.6	11.6	16.9	9.9
Oilseeds & edible oil	4.6	5.5	4.8	4.4	4.7	4.8
Animal feed	7.5	8.5	7.7	5.3	7.7	6.4
<i>Subtotal</i>	<i>28.8</i>	<i>28.1</i>	<i>56.9</i>	<i>44.2</i>	<i>46.3</i>	<i>38.3</i>
<b>Fish and horticulture</b>						
Fish, fresh & processed	6.9	19.4	5.5	8	6	12.2
Fruits, vegetables & flowers	14.7	21.5	13.1	17.3	13.7	18.9
<i>Subtotal</i>	<i>21.6</i>	<i>40.9</i>	<i>18.6</i>	<i>25.3</i>	<i>19.7</i>	<i>31.1</i>
<b>Other products</b>						
Tobacco & cigarettes	2.6	3.3	3	4.8	2.8	4.2
Beverages (spirits, vinegar, soft drinks)	1.1	3.6	6.9	11.5	4.7	8.6
Other products/processed foods	6.7	5.2	3	5	4.4	5.1
<i>Subtotal</i>	<i>10.4</i>	<i>12.1</i>	<i>12.8</i>	<i>21.2</i>	<i>11.9</i>	<i>17.9</i>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: World Bank (2005).

Developing country exports of fresh and processed fruit and vegetables now exceed the combined value of their exports of ‘traditional’ tropical beverage crops (tea, coffee), cotton,

<sup>2</sup> One characteristic of the livestock revolution has been the industrialisation of livestock production, with production changing from being the traditional local multi-purpose activity to an increasingly market-oriented and vertically-integrated business (Delgado *et al.*, 1999; Steinfeld, 2002). However, the economies of scale of these larger units, combined with the high compliance costs of more stringent sanitary requirements, could ‘crowd out’ poorer livestock producers (Ahuja *et al.*, 2004).

sugar and tobacco. The value of traditional tropical products has fallen to 18.9%. Non-traditional exports such as sweetcorn, fresh mushrooms, mangoes and single strength orange juice have grown at a faster rate than traditional products (e.g. concentrated orange juice and canned pineapple) (Huang, 2004). These HVA products enjoy developed country year-round demand, higher income elasticities of demand and in most cases, lower price volatility than many 'traditional' commodities. To some extent, greater trade liberalisation in terms of reduced tariffs has enabled the expansion of trade in fish, spices and horticultural products (Jaffee, 2005).

Gross imports of food by developing countries grew by 115 percent from 1970 to 2001. Imports by developed countries, which already import a higher proportion of their food, grew by 45 percent. A closer look at the data reveals that food imports by developing countries increased rapidly during the 1970s, grew more slowly during the 1980s and accelerated again over the 1990s (UN FAO, 2004). Beyond 2005, developing countries are expected to become increasingly net importers of foodstuffs for the following reasons: (i) high population growth (currently at about 80 million persons annually) occurs in the developing countries; the majority of which have low levels of per caput food consumption, hence a significant scope for further increases in such consumption; (ii) such potential will increasingly materialise as actual growth in effective demand for food as more developing countries embark upon a path of sustained economic growth; (iii) many of these countries, particularly the most populous ones in Asia (China, India), have limited potential for increasing domestic production, especially of those foodstuffs that are likely to experience rapid growth in demand, e.g. HVA products, wheat for direct food consumption and coarse grains for feed. Consequently, meeting their growing demand for food will involve significant increases in their food imports from the rest of the world; and (iv) according to United Nations estimates, the world's urban population is expected to increase by 70 percent over the next three decades. Most of this growth will take place in developing countries, particularly in Africa and Asia. In 1985, almost 70 percent of the population in developing countries lived in rural areas; by the year 2020, more than half of these 6 billion people are expected to live in cities (UN FAO, 2004). Their higher incomes and urban lifestyles are likely to bring about further changes in the structure of global imports, accelerating the trend towards higher-value and processed foodstuffs.

International trade in HVA products is one of the most dynamic and rapidly growing components of international agricultural trade. Many developing countries have diversified into horticultural crop production and exports based on favourable climatic conditions and lower labour costs. Developing country exporters are targeting markets in the European Union (EU), the Middle East, China, India, Japan and North America, which are continuing to expand in their all year round demand for horticultural produce (fruit, vegetables and flowers). The range of products imported is constantly widening and so is the number of countries attempting, with differing degrees of success, to supply these markets.

With globalization the following global trends and drivers are likely to have significant implications for smallholders in developing countries (Narayanan and Gulati, 2002):

- Agreement on agriculture under WTO;
- Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) measures;



- Increasing scale and concentration of agri-business;
- Foreign direct investments in agro-processing and retail distribution;
- Increasing incomes and urbanization leading to demand for high-value products.

We will return to these global trends and drivers later in the paper. However, it should be noted that in addition to coping with these trends, many developing countries have to tackle inflation, devaluing currencies, environmental pressures as well as major public health challenges (HIV/AIDS, malaria). In addition, most developing countries have not reduced their dependence on primary/ 'traditional' agricultural commodities<sup>3</sup>. The following 'commodity problems' driving the shift from 'traditional' to HVA production among small-scale farmers in developing countries will be addressed in turn, namely: increased demand for HVA products within (and outside) developing countries, declining terms of trade for 'traditional' products, price and earnings volatility, overdependence, market concentration, standards (e.g. SPS), consumer health and safety, and niche markets/ ethical trade.

## 2.2 Growing demand for HVA products

The developing country transition from 'traditional' commodity production to high value agricultural products is largely driven by three forces (Birthal, 2005). First is the rising export demand for fruits, vegetables and other high-value products including processed food. The liberalization of trade and foreign investment and improvements in transportation and communications has enabled small-scale farmers in developing countries to link with high-income consumers in other countries. Second is the growing demand for high-value agricultural products within developing countries. Rising incomes increase the demand for fruits, vegetables, milk, eggs, meat, fish, and other high-value foods. For example, about 70% of rural households in developing countries, including a large proportion of the poorest, keep livestock. The trends in meat consumption for different regions are shown in Table 3. This shows that total meat consumption in developing countries overtook that of the developed countries in the mid-1990s, and that the gap is projected to grow still wider by 2020. The changing shares of developing countries versus developed countries in milk consumption are shown in Table 4; and most of the projected increased demand is derived from developing countries.

**Table 3 Meat consumption by region, actual and projected**

Region	Total Meat Consumption (million metric tons)			
	1983	1993	2001	2020
Developing world	50	88	132	188
Developed world	88	97	102	115
World	139	184	239	303

Sources: Delgado *et al.*, 1999; FAOSTAT (for 2001 data).

**Table 4 Milk consumption shares: developing and developed world (percent)**

Region	1982/84	1996/98	2020 (projected)
Developing World	34	44	57

<sup>3</sup> Some HVA small-scale farmers producers face pressure to grow enough staple food products where consumption of excess export crops (e.g., mini-corn) attracts no domestic interest in terms of consumer demand.

Developed World	66	56	43
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Source: Delgado *et al.*, 2002

Increased urbanization also results in changes in lifestyles and access to markets for various high value products both of which have increased the demand for horticultural products, livestock, and processed foods (Reardon and Berdegue, 2002). For example, China is developing a taste for western-style foods, especially those associated with the fast-food industry, e.g. potatoes, beef, chicken, wheat products, fruit juices, and dairy products. As supermarkets develop and spread, China will also become a larger market for high value exotic foods and for high quality traditional Chinese foods. China will also expand production and consumption of medicinal plants, especially those enhancing vigour or stamina (*chi*) (Huang, et al., 2004).

Finally, the restructuring of food marketing channels has increased the role of food processors due to shifts in demand towards more processed food and more outward-oriented trade policies. Furthermore, food retailing in many developing countries is moving from traditional wet markets and small-scale shops to supermarket chains. However, in China a moderately divergent trend appears to be developing. Hu, Rozelle et al (2004) notes that both wet/wholesale markets along with more dynamic HVA supply chains still co-exist and growth on turnover in both continues to expand. In many locations the reasons for this continued parallel growth is that supermarkets are unable to compete with small traders in procurement because contracting costs are too high. The monitoring and coordination effort of doing this for millions of small-scale farmers (avg. 0.5 ha) are almost inconceivable and the premium is still too low to justify the high expense (i.e., consumers will not pay for the quality/safety premium). Beyond contracted production in peri-urban locations, Chinese supermarkets do procure reliably on urban wholesale markets as small traders maintain an abundant supply of fruit and vegetables flowing to China's urban wholesale markets and at a very low price (markets are integrated, competitive and efficient) (Huang, et al., 2004).

### 2.3 Key drivers of the shift from traditional to HVA commodity production

Given the developing countries experience of trading in 'traditional' commodities the development of HVA products and new markets opportunities for small-scale farmers (regionally and internationally) there are potential cross-cutting trends and lessons which can be identified. Clearly, pro-poor rural development policies need to raise farm incomes for small-scale farmers and increase rural employment. Securing and enlarging small-scale farmers' access to local, regional and international markets to sell their food is one essential component for poverty reduction in rural areas<sup>4</sup>.

- (a) The failure of international trade co-operation to stabilise (in terms of buying power) 'traditional' commodity prices, and the lack of any international mechanism for keeping commodity production in line with demand, has resulted in overproduction and huge stockpiles of some commodities (Oxfam, 2002).

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<sup>4</sup> Via Campesina is a network of around 100 major small-scale farmer organizations around the world which has focused on improving farmer access to markets in LDCs.

- (b) Failures and distortions within the international trading system. It is argued that much of the volatility in commodity prices can be explained by the development of commodity exchange markets. (Fitter and Kaplinsky, 2001)
- (c) The effects of market liberalisation and deregulation. At national level, market deregulation, removal of input subsidies, and cuts in publicly provided extension services may have undermined small-scale farmers producers' capacity to produce high quality food products.<sup>5</sup>
- (d) Steady growth in developed country demand for year-round highly perishable horticultural produce from developing countries over the past decade.
- (e) Growth in EU and North American demand for alternative health products has increased the market for high value non-timber forest products e.g. essential oils, sandal wood etc.
- (f) Growth in local and regional developing country markets for HVA products through new and dynamic wholesale and retail outlets including e.g. supermarkets. This growth being mainly driven by increased urbanization and growing purchasing power of these consumers in developing countries (e.g. evident driver of HVA growth and changes in procurement systems in China, South Africa and South and Central America).
- (g) Rapid rise in supermarket chain growth. As these grow they tend to centralise procurement from many stores in a few distribution centres, which buy in bulk, from a few producers, including importers of "cheap" commodities and large scale farms, rather than from brokers who tend to purchase from small-scale farmers. Reardon and Berdegue, (2002) emphasise the exclusionary impact of supermarket sourcing policies in developing countries.
- (h) Supermarket procurement from a few large-scale suppliers drives standardization of food that erodes diversity in taste, cultural heritage and nutrition.
- (i) For fresh produce in Europe, national and European food safety legislation which requires 'due diligence'<sup>6</sup> along the supply chain has led supermarkets to exert high levels of control (indirectly leading to concentration in production) along the supply chain in terms of SPS and quality assurance (World Bank, 2005).
- (j) Involvement of multinationals at lower levels of the supply chain. Deregulation has opened new opportunities for supermarkets, private traders, exporters and multinationals to become involved in the production, marketing and trade of food in producing countries. This involvement at country level is implicated in lower prices and significant falls in government revenue<sup>7</sup>, estimated to have cost producer countries around US\$20bn per annum at 1999-2001 prices (Fitter and Kaplinsky 2001).
- (k) There is also the potential to develop new markets for traditional commodities for example minor crops (indigenous vegetables), or sugar cane use in bio-diesel production.

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<sup>5</sup> Up to the 1990s, producers were protected by fixed price stabilisation schemes. Although producers generally received a low share of profits, (e.g. 30% of export price in Uganda and 40% in Ethiopia) after deregulation they lost guaranteed prices and subsidies.

<sup>6</sup> This means that that the retailer can be held responsible for lapses in food safety that occur at any point along the supply chain. In order to limit risk and to identify potential hazards, they establish systems of traceability all along the supply chain

<sup>7</sup> For further information on the trend to introduce contract farming and concentrate land ownership/displace poor, see N and D Runsten (1999) World Development, 27 no 2 'Contract farming, smallholders and rural development in Latin America'.

### **3 To what extent do HVA product markets provide opportunities for poor small-scale farmers?**

For the purposes of this paper, we adopt a broad definition of a small-scale farmer. A small-scale farmer derives their livelihood from a holding of < 2-5ha (usually < 2ha); and around 10 to 20 heads of livestock (although often there is < 2 or none at all). small-scale farmers may practice a mix of commercial and subsistence production (in crops or livestock) or either, where family provides the majority of labour and the farm provides the principle source of income. Many small-scale farmers who fit the above description actually possess little land or livestock as compared with the regional average. small-scale farmers constitute a significant proportion of the rural economy and the poor in developing countries. For example, small-scale farmers number 1.3 billion in South Asia; and account for 90% of agricultural production in SSA. In Sub-Saharan Africa, small-scale farmers constitute the vast majority of the rural poor (approximately 73%) (European Commission, 2002); and in Asia 49% of the poor (Narayan and Gulati, 2002).

Whilst globally, poverty reduction has fallen over the past forty years the pace of poverty reduction and the depths of rural deprivation are often masked within national statistics. Different regions have seen different rates of poverty reduction with the more rapid decline in Asia in particular in the countries of South East Asia and with relatively little progress made in sub-Saharan Africa where the numbers of people living below the poverty line has doubled over the last twenty years<sup>8</sup>. Agriculture remains at the economic heart of many developing countries contributing to the bulk of employment, and significantly to GDP and export earnings. Given its relative dominance on the economy, it will remain a primary source of growth and means of poverty reduction for some time to come (Proctor, 2005). Further, agriculture remains the backbone of the rural economy where the majority of the worlds' poor live and where they will remain through at least 2035 (IFAD, 2001).

The evidence is quite clear at the macro level, that growth in agriculture has consistently shown to be more beneficial to the poor than growth in other sectors (see for example Warr, 2001; and Gallup et al 1997). Thus for those developing countries which remain dependent on agricultural production and exports the growth in the global trade in HVA products has the potential to raise rural incomes and reduce poverty. Table 5 shows the key routes through which HVA markets may impact poverty for small-scale farmers and the rural poor.

HVA products often require specialized inputs, so that the upstream growth in HVA implies increased derived demand for seed, fertilizer, pesticides, and water. To the extent that these input sectors use poor household labour (or other non-tradable inputs), the growth in HVA products may have multiplier effects on these sectors and thus on poverty. Similarly the growth of demand for HVA products downstream implies that farmers with the resources and skills to produce these commodities will earn higher incomes. Although the higher prices of HVA products do not necessarily imply higher net income; part of the higher

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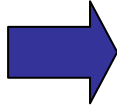
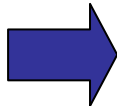
<sup>8</sup> <http://www.worldbank.org/research/povmonitor/index.htm>

price is associated with returns to production skills and risk, which does imply a higher net income for the producer. However as Birthal and Gulati (2005) notes the degree to which poor farmers participate in the production of HVA commodities will be critical in terms of its impact on poverty (see Table 5).

While prices and export quantities for traditional agricultural products have stagnated or declined, quantity and price trends for non-traditional horticultural exports have generally been favourable for developing countries<sup>9</sup>. Also, the rise in unit values of exports derives in part from processing activities. For example, McCulloch and Ota, (2002) in their study of the horticultural sector in Kenya show that for every two people working on farms growing vegetables, another one person is likely to be employed in a packhouse. Similarly, where HVA production (in this instance for the horticulture export sector) is generally dominated by large-scale (non-poor) growers. However, the sector may have a pro-poor impact through the labour market. If HVA production is labour-intensive, then growth in the sector may generate a demand for unskilled farm labour. Thus, where HVA is labour intensive, it can generate relatively high levels of employment and incomes<sup>10</sup> per hectare of land in use.

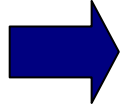
HVA products often require specialized inputs, so that the upstream growth in HVA implies increased derived demand for seed, fertilizer, pesticides, animal feed and livestock services and irrigation. To the extent that these input sectors use poor household labour (or other non-tradable inputs), the growth in HVA products may have multiplier effects on these sectors and thus on poverty. Similarly the growth of demand for HVA products downstream implies that farmers with the resources and skills to produce these commodities will earn higher incomes. Although the higher prices of HVA products do not necessarily imply higher net income; part of the higher price is associated with returns to production skills and risk, which does imply a higher net income for the producer. However as Chowdhury, Gulati et al (2005) notes that the degree to which poor farmers are able to participate in the production of HVA commodities will be critical in terms of its impact on poverty (see Table 5).

**Table 5 Potential impact of high-value agriculture on poverty**

		<i>Impacts on poverty</i>			<i>mall-scale farmers Challenges</i>
		<i>Upstream/ downstream effects</i>	<i>Employment/ income effects</i>	<i>Poverty outcome</i>	
<i>Growth in demand for HVA commodities</i>		Demand for additional/ new inputs	Employment/income growth in input sectors	Lower poverty if input sectors are labour intensive	Slow growth in demand from export and/or domestic sector,
		Demand for HVA commodities	Higher farm income, but higher risk	Lower poverty if (poor) small-scale farmers participate	Maintaining increased productivity and quality

<sup>9</sup> For example, Humm (2005) notes that imports of fresh peas and beans from SSA into the EU rose in volume terms by 270% in the period 1988-2003. Over the same period, the price per tonne of these exports also rose, by 13.5%, resulting in an overall increase in revenue of 320%. Over the same period, imports of coffee from Africa into the EU fell by 47% in volume and also by 47% in value per tonne. As a result, the total value of coffee imports fell by 67%. During the period 1988-90, the value of imports of coffee into the EU was 25 times greater than those of peas and beans. By 2003, the ratio had fallen to less than two-to-one.

<sup>10</sup> Weinberger *et al.* (2005) cite data for five developing countries to show that net farm income is substantially higher in HVA horticultural smallholder farms than for non-horticultural smallholder farms.

		Demand for labour by large HVA farms and processors	Higher wages/ employment	Lower poverty if HVA production and processing is labour intensive	Competitiveness locally and regionally
		Effect of HVA on food prices	Production of HVA commodities may affect staple food prices	Possibly higher urban poverty if staple prices rise	

Source: Adapted from Chowdhury, Gulati et al (2005) and Davis (2005).

It has been argued that the growth of HVA may have implications for food prices (Muendo and Tschirley, 2004; Narayan and Gulati, 2005). Namely, that by diverting land and labour from staple food-crop production, the growth of HVA will reduce food supply and raise food prices, thus potentially exacerbating poverty in urban areas and placing at risk rural household supply of food crops. This is most likely where HVA products account for a substantial share of crop land and the staple food is non-tradable. However, if the staple product is tradable, its price will depend on world prices rather than domestic supply and demand conditions. In Kenya, sales of highly processed products that are more labour-intensive to process (ready-to-eat and ready-to-cook products) are growing much more rapidly than sales of basic trimmed and packed vegetables (Humphrey *et al.* 2004). There is probably scope for greater investment in the processing of staple food products to add-value for small-scale farmers, and to supply growing urban domestic demand in developing countries. Opportunities for adding value also come in more intangible forms, particularly in the provision of “service” elements (quality assurance, innovation, complex scheduling, etc.). Location is clearly important for HVA exports, as production zones are typically located in areas with good transportation and close to air or sea freight links.

The production of horticultural products offers opportunities for poverty alleviation, because it is usually more labour intensive than the production of staple crops. Often horticultural production requires between two to four times as much labour than the production of cereal crops (Weinberger and Lumpkin, 2005). Labour-intensity and the absence of economies of scale tend to favour developing countries as a whole, and small-scale farmers in particular (because of their ability to call upon family labour). Developing countries with relatively cheap labour are in a strong position to compete in world markets, and those in the southern hemisphere are also able to provide counter-season HVA supplies to the major developed country markets in the North. However, it should be noted that the dramatic growth of supermarkets alone does not imply that they have much impact on economic opportunity for small-scale farmers in all regions. In countries such as Kenya, Uganda, India, and Bangladesh, the number of supermarket outlets is growing at 10-20 percent per year, but they still account for a small share of food retailing (Narayan and Gulati et al, 2005).

#### 4 Major HVA research and development issues to be addressed

In this section of the paper we aim to identify key researchable issues and derive policy lessons for public and private sector actors for each of the HVA sectors. The comparative analysis will compare these policy lessons to assess their potential for replication and scaling-up. Two dimensions are central to the presentation of the sectoral studies: *The stage*

*of market restructuring* – i.e. the degree to which modern forms of processors and retailers dominate the overall agri-food system; and *the stage of development of the supply chain* – i.e. the degree to which the following have been put in place: (a) centralization of procurement, (b) specialized, dedicated wholesalers, (c) private grades and standards, and (d) preferred suppliers. The key challenge for small-scale producers it is not only to access HVA product markets but rather to keep pace with the rapid changes in the conditions of participation. The stage of development of the supply chain determines the skills and capacities that small-scale farmers need in order to access dynamic high value agricultural product markets.

#### **4.1 What are the main characteristics of the horticulture supply chain**

Developing countries play a major role in supplying the EU with tropical and sub-tropical fruits including (papayas, tamarinds, lychees, bananas, guavas, mangoes, pineapples, dates, passion fruit and avocados). In 2003, developing countries supplied at least half of total EU imports (by value) of these products. EU fresh vegetable imports are dominated by intra-EU trade and are smaller than fresh fruit. Nevertheless, they amounted to almost € 9.2 billion /10.4 million tonnes in 2003, representing a growth of 9% in value and 6% in volume on 2001 data. The marketing chains for fresh horticulture products vary in relation to the type of retail outlet and between countries. Table 6 offers a simplified overview of traditional and modern supply chain.

**Table 6 The horticultural marketing chain – simplified scenarios of “traditional” and “modern” sub-sectors**

	<i>Traditional sector</i>	<i>Modern sector</i>
<i>Production</i>	Large number of producers of varying sizes, with significant presence of smallholders	Fewer number of large-scale farms (high input systems e.g. IPM varieties, irrigation etc.), some operating out-grower schemes, with 3 <sup>rd</sup> party audited GAP systems, and full traceability
<i>Packhouses</i>	Producers use non-audited packhouse systems, producing product for a range of customers using manual systems	Fully audited (BRC or HACCP <sup>11</sup> certified) packhouses, often with automated grading and packaging systems
<i>Transport</i>	May have refrigerated transport	Refrigerated transport from packhouse to market or export point
<i>Traders</i>	Local traders often collect from a large number of rural farmers, and then sort for exporter’s demands. No traceability.	No intermediary traders in the chain
<i>Processors</i>	Minimal semi-processed products, usually confined to trimming and simple packaging	Processing plants to produce ready-to-eat and ready-to-cook, frozen or chilled fruits and vegetables. Often prepared in to slices and vacuum-packed. Implementation of HACCP and audited by 3 <sup>rd</sup> party.
<i>Exporter</i>	Deal with range of players, often directly with farmers and traders.	Export agents are used if the processing plant does not export directly.
<i>Transport to export market</i>	Transport by sea or air – but sometimes problems with guaranteeing air freight space	Transport by sea or air, Air-freight managed either through own company or with firm contract with air companies.
<i>Importer</i>	Importer supplying wholesale, catering and some retail outlets.	Dedicated category manager will procure for whole supermarket chain, manages producers to ensure quality assurance, compliance with its requirements, responsible for technology development and information flows. May also seek new product lines.
<i>Wholesalers</i>	Wholesale markets play an important role in the marketing chain in some importing countries.	Bypasses wholesale markets.
<i>Retailers</i>	Local retailers and supermarkets.	Supermarket chains with high demands in relation to GAP, due diligence and traceability. Often with own in-house codes of practice and/or EUREPGAP, due regard also given to environmental and social welfare of all players in the supply chain.
<i>Consumers</i>	Local and international consumers. Imports.	Overseas consumers. USA, EU and Japan are main export markets, but regional markets are becoming more important (e.g. Middle East).

## **4.2 Researchable issues that might enable market access of small-scale farmers in horticulture sector?**

### **4.2.1 Institutional**

Enabling environment – horticulture requires a transparent legislative and policy framework, adequate local and regional infrastructure, and institutions with a focus on capacity development. Capacity building – access, on a continuing basis, to technical and

<sup>11</sup> Hazard Analysis and Critical Control Points



market knowledge is important to maintain access to horticulture markets. Lack of human, institutional and research capacity to resolve constraints in the sector is a problem experienced by smallholders. Larger-scale farmers are often able to resolve technical issues through their vertical integration with agri-business partners (contract farmers, outgrower schemes etc.). Enhancement of capacity for all players along the chain, including farmers, service providers, and researchers is essential to support smallholder involvement in horticulture;

#### **4.2.2 Technical**

Technical standards and regulations (SPS and TBT) in HVA horticultural markets are a critical issue for small-scale farmers access to dynamic new domestic and international markets. As previously noted, high value horticulture markets in the EU, USA and Japan are attractive to southern developing countries because of the price and volume opportunities. However, the trend in the EU and other high-value markets is to place increased emphasis on standards, retail-driven codes of practice, traceability and differentiation by product quality.

The stricter food regulations in the EU, beginning from the introduction of pesticide laws in the 1990's, and the need for access to a due diligence defence has led to some of the market chains involving supermarkets being increasingly buyer driven with greater levels of governance and vertical integration between retailers, their buyers and producers. This has led some European retailers to come together to develop their own strict commercial standards culminating in the introduction of EUREPGAP (European Retailers Protocol for Good Agricultural Practice). EUREPGAP has been the main driver for change in many producer and exporter practices.

In addition, regulatory bodies are also increasing their requirements for adherence to food quality and safety standards and for greater inspection by recognised competent authorities of produce at point of entry to ensure compliance with quality, SPS regulations. The EU have introduced food and feed laws governing imports from third countries, however, the current guidelines indicate that there will be no immediate changes to the current requirements to import fruit and vegetables. However, this position could change in the future.

These public and private sector demands are seen by the retail sector as minimum entry requirements, before commercial issues such as price competitiveness, volumes, packaging, varieties, seasonality, regularity of supplies, and quality factors are addressed by suppliers. Existing and new produce suppliers must be able to continually assess market requirements and meet these or risk the loss of market share. As such these represent increasing challenges for the small-scale farmers.

Opportunities may also exist for small-scale farmers to access and supply these markets in the area of *indigenous fruit and vegetables*. Indigenous fruit and vegetables make a variety of contributions both a food source and income, for the poorest people. Women dominate both cultivation and trading. Research is required to increase productivity through the development of appropriate, locally adapted and traditional varieties.

*Opportunities for small-scale farmers HVA organic production* plus low input agriculture, integrated crop production and permaculture systems can potentially be achieved by providing improved access to organic markets. Although a niche market, globally the organic market is valued at £14 billion. The USA is the largest market for organic products, followed by Germany and the UK. Organic produce accounts for less than 2% of fruit and vegetable sales in most EU markets, but commands a price premium. From a technical perspective there are a range of specific issues that have to be researched to support small-scale organic farming:

- Sustainable soil fertility and nutrient management;
- Breeding for the selection of disease-resistant cultivars, and
- Development of IPM/biological control methods suitable for organic farmers.

*Small-scale farmers' income generation opportunities from traditional crops.* Although fruit and vegetables are viewed as ideal crops for high returns, it is important not to lose sight of the opportunities from other crops. Even staple crops such as cassava can produce high-value products for both national and international markets (e.g. industrial products – starch, glucose, enzymes, and medicines). Over a period of at least 50 years much effort has been devoted globally towards research (cultivation, improved varieties, processing technology and product development), technology transfer (awareness creation, training activities and production of manuals, guides and recipe books) and commercialisation approaches (small-scale village cooperatives and large-scale turn-key factory projects) for cassava as an important tropical crop.

#### **4.2.3 Organizational**

Graffham's (2005) research on supporting small-scale farmers access to HVA markets through the development of improved production and management systems compliant with EUREPGAP shows that small-scale farmers must be: (i) organised into near homogenous groupings that can be classified as single farms; and (ii) with individual growers becoming blocks within the parent farm to implement EUREPGAP and achieve certification. Success depends on small-scale farmers having access to finance and information to establish the required infrastructure, management and production practices and the capacity to arrange 3<sup>rd</sup> party auditing. There is a need for better understanding of the determinants of success regarding the role public and private sector institutions, optimal level and types of farmer groups, production systems, and traceability.

#### **4.2.4 Policy**

A supportive public policy environment is essential to support the establishment of appropriate legal, regulatory and food control framework, land tenure, credit, and water use systems. Sustainable production systems and natural resources management – to achieve adequate returns from horticulture crops usually requires access to high inputs and water combined with a knowledge of the necessary production and management skills. small-scale farmers often lack access to both inputs and knowledge and therefore research and development of locally-adapted and integrated crop management systems that meet market demands are required.

*Gender equity* – in horticulture women play an important role as farmers, labourers in packhouses and processing, entrepreneurs and consumers. Further research is required to better understand the socio-economic implications of increased participation of women in the sector and intra-household labour (and revenue retention) impacts of a transfer from traditional commodities to HVA products.

*Genetic resources conservation and development* – research is required to increase productivity through the development of appropriate, locally adapted and traditional varieties. New opportunities could be developed through greater development, exploitation and conservation of indigenous crops for local, regional and international markets. It will be important to capture and make use of rapidly disappearing local knowledge.

#### **4.3 What are the main characteristics of the livestock supply chain**

In most of SSA and South Asia there are a range of marketing systems for different livestock species and products. More formal systems are found for milk (for example the formal and state-sponsored dairy co-operative system in India, or the rise of private dairies in the hinterland of Nairobi) and for the procurement of FMD-free meat for EU markets for countries, notably Botswana, which have satisfied EU veterinary requirements and have been given quotas. Systems for eggs, red meat and livestock on the hoof tend to have certain “traditional” features, especially reliance on local markets for primary purchase from the producers.

Taking India as an example, under the scavenging poultry system the main marketable product is live birds, which are sold for meat consumption. Marketing systems vary depending on social, cultural and economic factors. In some situations very few birds are sold, and those that are tend to be sold to individual prospective consumers from the locality (exemplified by tribal areas of western India). At the other extreme (exemplified by parts of Trichy district, Tamil Nadu) the majority of birds produced may be sold, either in local markets or to traders who come to the village of the producer. In some cases traders sell the birds in urban centres 30-150 kms away, and they may also make arrangements to buy birds from particular producers well in advance of the bird being mature enough for sale. Below we briefly describe two livestock supply chains (for eggs and goats) in India.

Eggs are fragile and have a relatively short shelf-life, so their marketing requires effective methods of collection, storage, packing, transport and distribution. Common channels through which eggs are marketed in India are (Mohapatra, C.M., 2003):

- *Producer → retailer → consumer*
- *Producer → wholesaler → retailer → consumer*
- *Producer → collector → assembly merchant → consumer*
- *Producer → collector → assembly merchant → wholesaler → retailer → consumer.*

Poultry products commonly pass through several intermediaries before they reach the consumer, and there is a need to shorten the chain, which could benefit both producers and consumers (Mehta *et al.*, 2003).

For goats the most common marketing channels are:

- *Goat-producer → village level trader → secondary market → slaughter house → city meat shop-keeper → consumer;*
- *Goat-producer → village level commission agent → secondary market → city meat shop-keeper → consumer.*

Sometimes a small number of secondary market traders handle most of the goats sold, as in Jaipur secondary market, and their oligopsonistic position may enable them to make large profits. Trucks are the dominant mode of transportation. The trucks tend to be packed, and the animals tend to experience shrinkage, and sometimes bruising or even death. Transportation death and loss in weight adds to the cost of marketing.

There is a huge trade, largely supplied by traditional extensive production systems including pastoralism, of livestock on the hoof from African countries to the Middle East and to coastal West Africa. Much of this trade has strongly traditional features, involving traditional merchant classes, personal networks of trust, and continued importance of trekking or overland trucking. Despite widespread beliefs to the contrary, trader profits have been shown in studies not to be excessive. The threats to these systems, and the small scale producers who supply them, lie more in the veterinary regulations and constraints on movement of stock, both internal (as within Kenya) and international (as between East Africa and the Gulf) which often have dubious scientific bases. While it is less of a problem than previously, competition from the subsidised export of meat from developed countries is also an issue.

#### **4.4 Researchable issues that might enable market access of SSF in the livestock sector**

The influence of poor livestock-keepers on policies and research agendas is in general minimal. A more pro-poor client-oriented research and extension system, and a stronger voice of the poor on key policy issues would clearly be desirable.

*Smallholder organization and linkages* - For smallholders to compete with large-scale producers they will need to be involved in some form of vertical coordination with processors and input suppliers. Options include joint partnerships with larger scale producers offering shared access to technology and integrated management systems; and the formation of effective cooperatives and farmers' groupings. New models of cooperative operation, small scale producer out-production linked to larger scale operations are likely to become the norm. The policy environment must be favourable towards the integration of small producers with larger production chains.

*Extension* - Government research and extension services are generally not well geared to meeting the needs of poor livestock producers. In India, and probably in many other developing countries, there is a need for a major re-orientation of public livestock and veterinary extension systems so that they (a) service the poor rather than the better-off

producers; and (b) promote technologies and systems that are relevant to the poor and adoptable by them.

*Veterinary services* - Like extension services, veterinary services in India are geared almost entirely to large ruminants, with a particular emphasis on milk production (Kurup, 2002). The departments of animal health have “grossly neglected preventive veterinary care”, which has resulted in epidemics that cause substantial annual losses, the brunt of which are borne by poor livestock-keepers (ibid.). Veterinary services are constrained, even for milch animals (ibid), which suggests that veterinary services for small stock kept by the rural poor, such as goats and chickens, are severely limited or non-existent in most of the country. For example, more than half of the rural tribal women covered by one survey of backyard poultry were not even aware that an effective vaccine was available against Newcastle disease – “a good example where technical solution is available but is not used, due to lack of proper approach to organising delivery of services” (Rangnekar and Rangnekar, 1999).

*Marketing and infrastructure* - Marketing is a particular challenge in relation to eggs and milk, due to their perishability. In most countries there is a need for improved infrastructure of various kinds including: abattoirs; transportation facilities; and better and more extensive cold storage facilities.

#### **4.4.1 Policy**

Livestock and other government policies affecting livestock can be pro-poor, anti-poor or neutral, and hence can significantly influence the impact of the livestock revolution on poor livestock-keepers. Policies affect the costs of livestock production, and thus the location and type of production at home and abroad. Policies towards infrastructure, pollution, sanitary standards, access to capital and rural organisation will affect the comparative advantage of smallholders versus large industrial enterprises.

Strategic intervention is required to ensure that poor livestock producers secure a greater share of the benefits from the livestock revolution, but this will not be easy to achieve. It will require a major increase in public sector resources, combined with radical changes in service providers’ priorities and the way they operate. Despite some positive examples, progress on both these fronts has been slow and no major initiatives are in the pipeline.

#### **4.4.2 Potential entry points for further research and development**

*Extension systems* - The weaknesses of existing extension systems have already been noted. There is a need for research into how modern Information and Communication Technologies (ICTs) – including radio, mobile phones, CDs, interactive computer software and the internet – can be harnessed to complement conventional public sector extension systems. The application of the Farmer Field School approach to livestock development (Farmer Livestock Schools) – including its efficiency, effectiveness, and sustainability – is another topic meriting further research.

*Appropriate provision of credit* - If well-designed and delivered credit can be a valuable input to smallholder livestock development. However, experience with the Bangladesh small-scale poultry model has highlighted some of the problems that can arise if the provision of credit

is a compulsory component of poultry development. Put simply, the poorest may be excluded (or may opt out); and technologies that could jeopardise the viability of the enterprise, through being unsustainable (e.g. hybrid birds) or too expensive (e.g. housing) may be forced upon producers. For these reasons, research was recently recommended on the strengths and weaknesses of starting poultry activities without credit, and instead using simple savings and birds, feeds and materials that are readily available (Riise *et al.*, 2005). This issue is relevant to the livestock sector in general.

*New models of producer grouping and vertical linkages* - There is a need for research into the suitability of different models in different situations, and (where relevant) the key factors in their success. The capacity of the poor to belong to and participate effectively in producer groupings, and to forge effective linkages with input supplier and marketing agents, is a part of this.

*Improved and exotic livestock breeds for increased productivity* - Exotic and improved breeds have been promoted with varying degrees of success and failure in the poultry and other sub-sectors. There is often a need for more rigorous comparison of the performance of improved and exotic livestock *vis-a-vis* local ones, taking account of costs and benefits as well as technical productivity (and over an animal's lifecycle not just day-to-day) and also of producers' objectives and criteria.

*Veterinary services* - There is now a wealth of experience in new models of animal health service provision, especially those involving Community-Based Animal Health Workers (CAHW). Further research, institution-building and policy reform is needed to expand those systems to national level, and to make them truly sustainable, for example through new forms of contract between private veterinarians and CAHWs.

*Animal nutrition* - There is a need for continued research on animal nutrition, to provide small scale producers on the edge of formal markets with cost-effective feeding strategies. For milk producers especially, solutions to allow milk production to continue year-round, rather than declining markedly over the dry-season, will be important for maintaining a foothold in dairy markets. Research that maximizes the benefits to livestock from crop or processing residues will also be useful.

*Management of transmittable livestock diseases* - There is continued work to be done on infectious diseases, both diseases of production and of trade. The great steps taken towards rinderpest eradication following the development of a thermo-stable vaccine show that technical research in animal health can have a major impact. Improved knowledge of disease transmission can help to rationalize sanitary regulations that currently act as barriers to trade.

*Environmental management* - A better understanding of the environmental impacts of formal and informal livestock enterprises, and policy research on how a polluter pays principle can be operationalised, would serve to level the playing field of livestock product pricing towards small-scale producers.

*Niche products* - The acceptability of dryland livestock products from Africa in developed country markets is still a long way off, and depends on both better animal health service provision and reforms to international sanitary standards. But it is important also to recognise that meat from extensive tropical dryland systems may eventually come to have positive market qualities: firstly it is almost by definition organic and secondly it is free from any stigma of having been produced on land taken out of food crop cultivation or converted from tropical forest. It is not too early to research how the potential for such niche marketing could be realised.

#### 4.5 What are the main characteristics of the fisheries supply chain

International trade in fish and fishery products has grown rapidly over the last two decades, with export values rising from US\$15 billion in 1980 to US\$56 billion in 2001 (Bostock et al, 2004). Developed countries absorb 80% of world imports, with Japan, USA, and the EU being the principal destinations (Lem, 2003; quoted in Bostock et al, 2004). Whilst capture fisheries production has been stagnating or declining in many parts of the world since the 1990s, in particular in Asia aquaculture production has increased significantly during the last two decades. In SSA the situation is different in that policy makers are willing to promote aquaculture for domestic consumption and export. However, it has yet to contribute significantly to fish output (NRI and Foodnet, 2002). In Latin America, Chile has a large aquaculture fishery production in marine fishing areas (542,000 tonnes in 2002), whilst Brazil is the largest aquaculture producer in inland fishing areas (174,000 tonnes in 2002).

In some countries the domestic marketing chain is no longer dominated by the “traditional” sector in that the “modern” sector is increasingly supplying fish to the domestic market. This may be the case in countries where small-scale boats are being replaced by larger-scale, mechanised vessels, and where the retail sector is undergoing rapid change (Kleih, et al, 2003). Also, as a result of exports or declining domestic supply leading to relative price rises, certain fish species which used to be commonly consumed by the local population are no longer affordable for low-income groups (Kleih, et al, 2003).

High demand and attractive prices in overseas markets such as USA, EU and Japan are major driving forces behind the fish export sub-sectors in many developing countries. More recently, new markets have started to open up, including China and the Middle East. Due to high returns to be made, substantial investments were made in the fish export and processing sectors by both domestic and foreign investors, depending on the financial resources locally available and the legislation. In some countries the latter favours joint ventures rather than entirely foreign owned entities.

**Table 7 The fish marketing chain – simplified scenarios of “traditional” and “modern” sub-sectors**

	<i>Traditional sector</i>	<i>Modern sector</i>
<i>Fish catching</i>	Traditional fishermen, generally using small mechanised or non-mechanised boats	Fishermen using different types of boats and gear, ranging from small vessels to industrial trawlers. The latter often also have their own processing facilities, and bring the fish to their export destination
<i>Agents</i>		In some cases commission agents are used for

		assembling by the owners of processing factories
<i>Transport</i>		Collector boats which sometimes belong to factories; Road transport if required.
<i>Traders</i>	Local traders	
<i>Processors</i>	Fish mongers	Processing plants; they play a key role in the export marketing chain. As indicated, industrial trawlers often have onboard processing facilities.
<i>Export agents</i>		Export agents are used if the factory does not export directly
<i>Transport</i>	Mostly road transport using different means of storage (e.g. ice and baskets)	This mostly involves transport by sea or air; road or even rail transport may also be required
<i>Wholesalers</i>	In some countries (e.g. Bangladesh), wholesale traders control a significant part of the traditional marketing chain	Wholesale markets still play an important role in the fish marketing chain in some importing countries (e.g. Billingsgate Market in London)
<i>Retailers</i>	Local retailers	Supermarket chains have increased their market share during the last decades
<i>Consumers</i>	Local consumers, including neighbouring countries in some cases (e.g. informal fish exports from Uganda to DRC)	Overseas consumers. USA, EU and Japan are the main export markets, but regional markets are becoming more important (e.g. China and Middle East for Asian exporters).

Overexploitation of fish stocks is a major concern regarding the sustainability of capture fisheries. In many countries the trend towards stagnating or declining stocks is likely to continue without the introduction of more efficient fisheries management systems.

#### **4.6 Researchable issues that might enable market access of SSF in fisheries sector?**

##### **4.6.1 Institutional**

Institutional reforms mainly relate to better fisheries management. Despite its complexity, effective fisheries management must be seen as the cornerstone for sustainable trade. At the national level, institutional reforms are required to foster more effective sector governance, particularly related to the establishment of sustainable fisheries management systems. Effective institutional structures will vary between countries and it is highly unlikely that any unique solution exists. In cases where fisheries management responsibility is devolved to communities (co-management arrangements), the question arises as to how international processes (such as WTO) can relate and link up with sometimes highly localised management institutions. Clearly, good linkages between central and local government are important. While in some countries (e.g. Uganda) these appear to work, in others they do not.

Supporting public-private partnerships (PPP) is also something that institutionally could improve SSF access to high-value fisheries markets. PPP closely linked to policy, would facilitate efforts to accommodate trade measures. Appropriate institutional structures and participatory mechanisms will be required to enable such partnerships to function effectively. Aside from the productive sector and government, NGOs and export promotion agencies (for example) could be involved in PPP.



#### **4.6.2 Technical**

As previously noted, many developing countries face a range of problems associated with SPS/TBT compliance. Bostock et. al., (2004) note that SPS/TBT measures introduced (e.g. shrimp ban in Bangladesh; Nile perch ban from Uganda) represent major shocks for export fisheries sectors in developing countries. In the short-term this may lead to a significant loss of foreign exchange earnings, bankruptcies and unemployment. However, in the medium- to long-term, the sectors appear to recover well, often with a smaller but better equipped processing sector, improved marketing strategy, and strengthened institutions (difficult lessons learned). Nevertheless, despite the notably “post-ban” recovery, there is little doubt that there are also long-term losers, perhaps through increased polarization, and particularly related to the poor and vulnerable. Little information exists on the extent of this problem.

#### **4.6.3 Organizational**

Fisheries subsidies are firmly on the international agenda, and it is acknowledged that they have both positive and negative impacts which are very site and context specific. Whilst there appears to be a generally held view that subsidies lead to over-exploitation of fish stocks (and by implication negative social and economic impacts), this may not necessarily be the case. It is recognised that the removal of subsidies alone cannot resolve the problem of over-exploited fisheries. A crucial factor in this regard is the existence of an effective fisheries management system (which, in some cases, may be subsidised).

#### **4.6.4 Policy**

Although there is evidence that international seafood trade has opened up opportunities for the poor in that new jobs are created, trade liberalisation alone cannot ensure equity of opportunities and sustainability of livelihoods, particularly in a global context. As concluded by OECD (2003), policies must target market liberalization and improvements in fisheries management simultaneously, in a coherent and comprehensive manner if benefits are to be realised. Effective sector governance and management are prerequisites of sustainable trade, mitigating problems such as conflict between industrial and artisanal operators, and increasing competition for raw material in the processing sector. Such problems which occur frequently in unmanaged or poorly managed fisheries inevitably have greatest impact on the poor and vulnerable. Although improved sectoral management may itself require difficult short-term decisions (especially where capacity reduction is called for), long-term benefits to trading partners can only accrue if trade and fisheries management systems are developed responsibly, hand in hand.

Stakeholders that lose out due to liberalised fish trade or the introduction of new technologies, require assistance in finding alternative employment (e.g. traditional fish processors). Also, social security needs to be improved for those that are vulnerable to job losses or have undergone profound social changes. This may involve strengthening of the fisheries associations at grass roots level. In particular, womens organisations require support, in that (a) many traditional female operators such as processors and traders are losing out due to shifting supply patterns, and (b) if new jobs are created for younger women in the export supply chain, this often requires significant social adaptation on their

behalf such as moving from rural areas to urban centres where processing factories are located.

#### **4.6.5 Potential entry points for further research and development**

Embedded with specific technical and policy recommendations are key areas that may themselves warrant further research. Specific technical recommendations include the following:

- Foster greater recognition of the problems that developing countries face in complying with SPS/TBT standards, alongside efforts to change institutional structures relating to SPS/TBT standard setting. This should include greater involvement of developing countries in setting standards and implementation of related regulations (i.e., through regional Codex Commissions).
- There is still a need for a greater understanding, at both international and national levels, of the impact of various SPS/TBT requirements on developing countries. This requires the recognition that the implementation of trade measures is a highly dynamic field with frequent changes taking place and often at short notice. Further empirical studies are needed to monitor impacts on poor and vulnerable groups, particularly women processors; shrimp seed collectors, small-scale fishers/farmers, and labourers.
- The conduct of risk and exposure assessment (and building national capacity to implement risk analysis as part of the regulatory decision making process) is needed before the formulation of regulations. Based partly on the risk assessment analysis, the provision of longer periods in which to achieve compliance may be possible and beneficial. While this may not be possible with regard to immediate food safety issues there are possibilities with regard to TBT and environmental issues. As indicated above, governments should be encouraged to become more proactive, thereby assisting the private sector in finding solutions.
- Traceability will become a major influence on food safety, yet the vast majority of stakeholders in the fishery sector are totally unaware of this impending measure. Without sufficient preparation, many countries are likely to be caught by surprise as was the case with the EU introduced SPS-related export bans in the 1990s. Practical information on what is involved and its potential to become a major issue is urgently required. At the same time, the issue of 'traceability' needs to be negotiated as part of WTO and other fora (e.g. ACP / EU Economic Partnership Agreements).
- With the growth of large scale and often capital intensive aquaculture the trade offs with other kinds of less intensive systems and alternative production needs to be better understood including the impacts on poverty reduction and the environment

Specific research and policy recommendations include the following:

- There is a need for ensuring that the rights of the poor are better preserved in global trade agreements, and to take up active, meaningful and participatory programmes to enhance their capacity to take advantage of the process. The Doha Development Agenda should provide scope to include relevant statements in future agreements.
- Help in establishing monitoring units to oversee and resolve conflicts and tensions that may exist between stakeholder groups. Location specific approaches will be required – while local NGOs can play an important role in reducing conflict in some countries, in others traditional responsibility has been vested within local government and /or community based organisations.

- Strengthening of the fisheries associations at grass roots level and at meso and macro levels to support their efforts to maintain and strengthen their position in the market chain including securing access to technology and credit. In particular, women's organisations require support.

#### **4.7 What are the main characteristics of the NTFP supply chain**

Approximately 80% of the population of developing countries utilise non-timber forest products (NTFPs) in some form for nutritional or health requirements. Traded products contribute to the fulfilment of their daily needs and provide employment and income for the rural poor (especially women) (FAO, 2003)<sup>12</sup>. International trade in NTFPs is composed of the import and export of a wide range of products at different stages of processing. If all the individual plants used in the medicinal trade were included this would cover 700 products. In some developing countries these products are amongst the main exports. For example, in Sudan, gum Arabic is the fifth most valuable export crop worth US\$ 26 million in 1999 (Economist, 2001)<sup>13</sup>. In India nearly 60% of all recorded forest revenues come from NTFPs and these provide around 70% of all employment in the forestry sector. Commercial NTFPs alone are estimated to generate US \$100 million annually (FAO, 2003).

There are a wide range of commercially traded NTFPs : food products (nuts, fruit, edible fungi, starches, bamboo shoots, shea nut oils etc.); spices and condiments (nutmeg, allspice); industrial plant oils (tung oil etc.), plant gums (e.g. Arabic); fibres and flosses (rattan, bamboo etc.); vegetable tanning materials; latex (rubber etc.); insect products (e.g. honey, silk etc.); incense woods (sandal wood, aloewood); essential oils, medicinal plants; bushmeat; and plant insecticides (FAO, 1993<sup>14</sup>).

Traditional markets are geared to small district collectors selling either through localised open markets or through organised collection points. If the product is not utilised locally then there is a tendency for the producer-to-consumer-chain to be weak, which detracts from successful commercialisation. Deficits tend to be at the beginning of the chain where rural households are directly involved and improvements are more difficult to realise. For high value products where there is direct international interest, the marketing structures are more clearly defined. In some cases there can also be an element of government control especially with respect to exports.

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<sup>12</sup> Trade and Sustainable Forest Management – Impacts and Interaction. FAO 2003.

<sup>13</sup> Economist Intelligence Unit Report 2001.

<sup>14</sup> Mohammed Iqbal, 1993. International Trade in NWFP: An overview. FAO.

#### **4.8 Researchable issues that might enable market access of small-scale farmers in NTFP sector?**

A natural extension in the process of collecting NTFPs and wood from a common resource is to move to domestication of the product and for extension agencies to encourage its cultivation on-farm, rather than for the rural population to be seen as purely collectors of a common resource product. Three factors in particular may influence small-scale farmers decisions about tree management to produce saleable products:

- The influence of market opportunities and constraints
- The relationship between tree crops and different factor endowments and needs
- The roles of trees in risk management

Markets for tree products can be important to resource poor small-scale farmers and the rural landless when costs and risks are low i.e. there is a low cost of entry; an early return on inputs; and market channels are operating which serve both small-scale as well as large-scale producers).<sup>15</sup>

In these markets however small-scale farmers can encounter forms of competition and policy constraints that make it difficult for them to compete. In situations where they are competing with NTFPs that are being harvested from natural stocks (whether collected legally or not) and hence regarded as effectively free at the point of production: they face an immediate disadvantage. This is often the case unless the overall cost of transportation to the point of sale proves to weigh in their favour.

##### **4.8.1 Institutional**

Key institutional constraints on small-scale farmers access to HV NTFP markets include the following:

- Poor knowledge base by producers especially in relation to market price and the market potential of some NTFPs.
- Market access issues due to a “free-rider” problem in producing and trading some NTFPs, and the role of government regulation (e.g. in gum Arabic markets) and subsidies distorting NTFP markets and limiting market potential for small-scale farmers.
- Majority of forest-derived products do not feature on the government radar and hence are not adequately represented in agricultural or economic policy and planning and receive scant support in terms of extension agents.
- Lack of credit for small-scale farmers NTFP project development

##### **4.8.2 Technical**

For many NTFPs there are series of common technical issues, whose importance obviously varies from product to product:

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<sup>15</sup> Arnold J.E.M.1998: Economic factors in farming adoption of forest product activities. Domestication and Commercialisation of NTFP in Agroforestry systems. Publ. UN-FAO, Rome, 1998.

- Limited knowledge of the distribution of the tree/plant, its ecological requirements, and its natural variation.
- Limited knowledge of the botany of the crop and the requirements for propagation
- Inadequate knowledge on optimum methods of management.
- Storage difficulties of the product especially when transportation difficulties limit access to a ready market.
- Variable NTFP quality control.
- Limited knowledge of key products
- Lack of recognised standards and quality by regional and international markets; these as with other HVA will tighten in the future.

#### **4.8.3 Organizational**

Key organisational constraints on small-scale farmer access to HV NTFP markets include the following:

- Lack of infrastructure in the rural areas, making access to market difficult
- Low volumes of products in each location
- Weak producer organisations and hence weak negotiating power
- Lack of direct links between the collectors and the processor
- Insufficient information on the income for a range of farming systems models

#### **4.8.4 Policy**

From the above we can begin to identify some of the key implications for research and development at the three levels of (i) CGIAR; (ii) the public sector and (iii) private sector.

These potential policy interventions are mainly directed at the government level:

- Address land and tree tenure issues and other ambiguous property rights that restrict the investment of time and money into the management of production areas within open community land.
- Support the development of independent producer associations which can be linked to potential exporters.
- Provide the necessary institutional support for micro-financing organisations to flourish and provide the initial operating funds for producer groups.
- Ensure ready access to market information.
- Limit government intervention in price fixing of forest products where these restrictions are artificially decreasing open market prices.
- Provide real control of marketing of illegal extracted material.
- Control the imposition of “informal” taxes often levied on bulk material extracted from forest and community land.
- Provide some feedback of any formal taxes imposed on the products back to the producer organisations or the communities to encourage continued investment in protection and management of resources.

Of the above, the public sector should have a role in improving market information providing feedback on price variations and global supply-demand forecasts. The private

sector would be required to support this activity and to provide details of product quality requirements to meet market expectations.

#### 4.8.5 Potential entry points for further research and development

There is a role for all the main players with respect to research in interventions as indicated in the following table:

**Table 8 Main research interventions required to support NTFP development**

<i>Research Activity: to be undertaken by</i>	<i>International Regional level</i>	<i>National level (Public Sector)</i>	<i>Private Sector</i>
Analysis of the geographical distribution of the species and varieties of key NTFP where this basic information is still weak.	√	√	
Techniques for propagation of species where domestication is considered most suitable policy	√	√	
Improved hybrids, varieties and breeding material	√	√	√
Procedures for sustainable management of natural stands and establishment of conservation areas	√	√	
Growth and yield parameters where these are considered to be inadequate	√	√	
Provide guidelines and support of seed supplies as required	√	√	
Provide guidelines to the key phenotypic characteristics to maximise production of the commercial components	√		
Provide analytical standards for extractives etc	√	√	√
Provide multi-national regional projections on production and forecast demand	√		√
Provide national/regional (sub-national) projections		√	
Chemical analysis of major components	√	√	√
Encourage and support the search for alternative uses of those products where demand appears to be diminishing and appreciable populations still rely on its collection as a key component of their income generating activities	√	√	√
Formulate cost-benefit models for a range of farming systems with varying dependence on NTFP production	√	√	
Develop processing and quality standards and guidelines on level of output of final product from raw materials	√	√	√

## **5 What are the necessary conditions for the rural poor to benefit from emerging market opportunities for high value products?**

Despite the challenges of gaining access to dynamic HVA markets, there is growing emphasis by governments and donors in trying to promote and assist small-scale farmers in either maintaining or gaining access. Some generic constraints include:

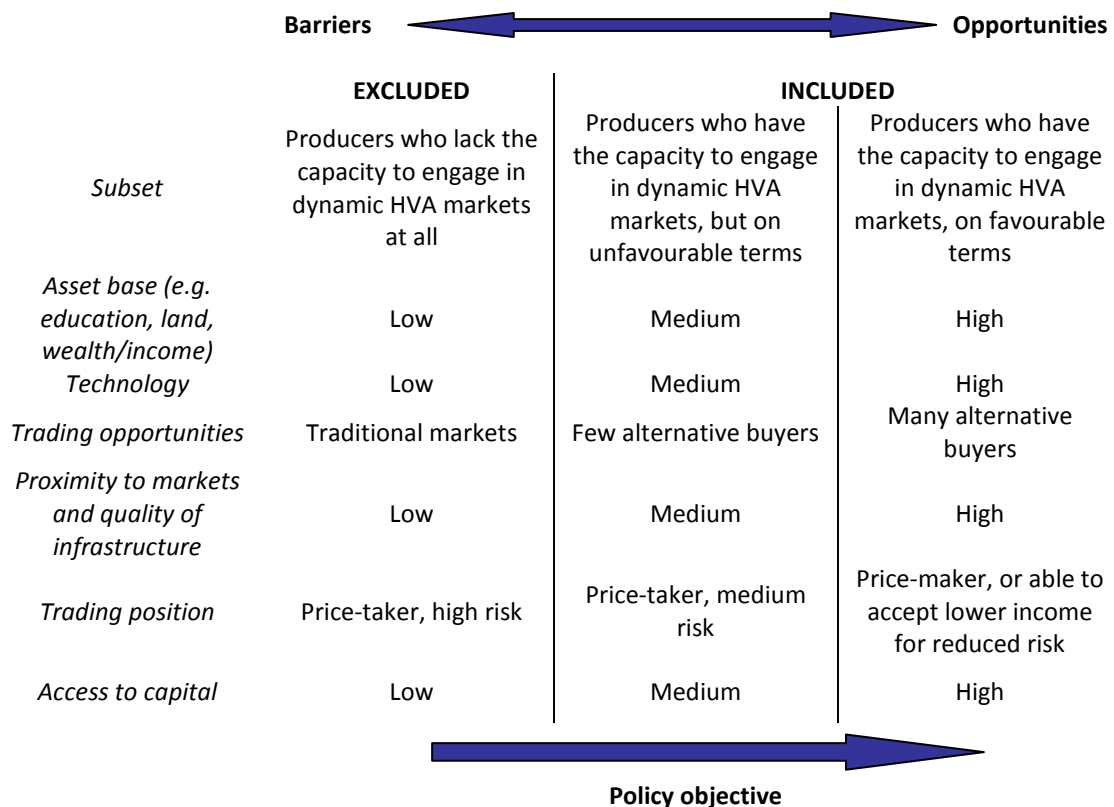
- Poorly developed entrepreneurial skills
- Limited technical and marketing expertise and knowledge;
- Lack of BDS and extension service organisations; these are particularly important for small-scale farm enterprises.
- Sectoral leadership dominated by a few large businesses;
- Low levels of formal education and social capital;
- Weak and/or non-existent farmer organisations (e.g. Cooperatives etc.)
- Low productivity (e.g. Access to land, poor agronomic practices, access to planting materials, lack of trained labour);
- Lack of vertical co-ordination within dynamic market structures including exporters and agribusiness;
- Inadequate infrastructure including irrigation, cold storage, poor post-harvest handling practices and lack of up-to-date handling and grading equipment;
- Limited and unsuitable transport infrastructure (including air freight);
- Lack of credit which may restrict investments in key equipment and technology;

Such constraints have resulted in a concentration in the supply base with large farmers, and enterprises, and a resultant decrease in small-scale farmers involvement. However, where some of these constraints are being addressed the role of public sector and support from international donors in infrastructure and capacity buildings, or diversification in non-farm activities has played an important role (Narayan and Gulati, 2002).

Figure 1 summarises the key determinants of small-scale farmers' access to HVA markets. It outlines the most often identified barriers to entry namely a small-scale farmers households asset base (education, land and technology constraints), location (less or more favourable agro-climatic region, distance from urban markets etc.), trading position and financial (lack of access to credit) constraints most small-scale farmers face in accessing HVA markets. On the positive side, we have identified the key opportunities which exist for those small-scale farmers who have the capacity to engage in HVA markets. In so doing, it becomes clear where potential policy and institutional interventions may be targeted; however sub-sectoral issues and bottlenecks which Figure 1 does not address are also important e.g. inadequate information and knowledge about production standards, and business management.



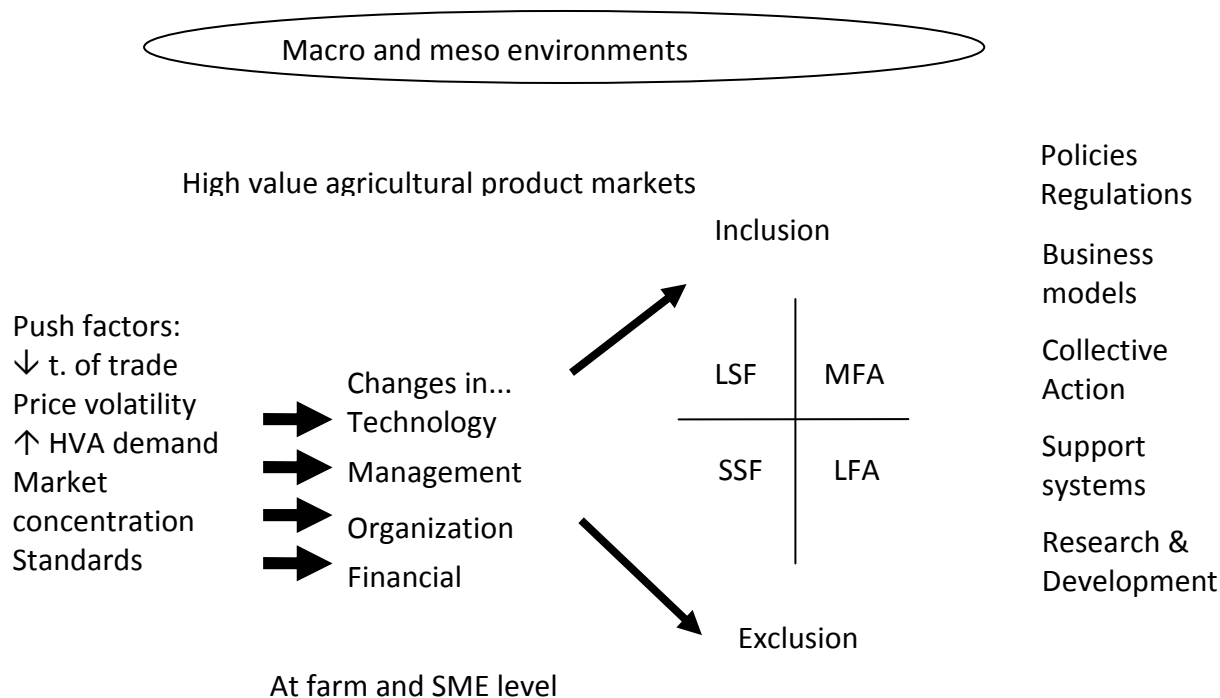
**Figure 1 Determinants of small-scale farmers access to dynamic HVA markets**



Source: [www.regoverningmarkets.com](http://www.regoverningmarkets.com)

On the basis of the research cited above and our sector working notes (presented below), in Figure 2 we highlight elements of the enabling and institutional environment in the form of a framework for addressing the key determinants of access to dynamic HVA markets for small-scale farmers and the rural poor. We will now explore the framework outlined in Figure 2 against the key HVA sectors (crops, livestock, fish and non-timber forest products), focusing on institutional, organizational, management and financial factors to derive the necessary conditions for the rural poor to benefit from emerging market opportunities for HVA products. We focus on these key elements of the framework because the support of small-scale farmers and rural entrepreneurs in accessing HVA markets requires a broad spectrum of assistance; some of which will be directed at but not limited to small-scale farmers. Thus, in addition to enhancing the skills of the small-scale farmers we also need to move towards appropriate support systems for institutional coordination, management and organisation, marketing, financing, technology and small-scale farmers collective action and networking support.

**Figure 2 HVA markets and institutional framework**



Source: Adapted from [www.regoverningmarkets.org](http://www.regoverningmarkets.org)

Key:

LSF: Large scale farmer; SSF: small-scale farmer;

LFA: less favoured area (in terms of agricultural production potential and agroecology); and

MFA more favoured area (in terms of agricultural production potential and agroecology)

Much of the literature on the *pro-poor potential of small-scale farmer participation in HVA markets* has either explicitly or implicitly recognised the contributions of three sectors of the local economy in providing income opportunities for the rural poor (see Narayan and Gulati, 2002):

- Agriculture, particularly oriented at high value crops and livestock.
- The non-agricultural sector driven by agriculture (ADNA) through backward, forward, and final demand linkages.
- The autonomous non-agricultural sector (sometimes defined as the rural-non-farm economy), when industry and services locate in rural areas independently of the performance of agriculture.

Following the Mellor model, much emphasis is given to the importance of a dynamic, smallholder-based agriculture in driving the growth of ADNA. This is also the Adelman model of ADLI (Agriculture Demand-Led Industrialization) that stresses the final demand linkages originating in agricultural incomes and inducing industrialization through demand for non-tradables. The Mellor-Adelman causality running from agriculture to industry and services may indeed be the main link. However, in some developing countries like Kenya, Tanzania, South Africa and Egypt where tourism is decentralized toward many rural sites,

the reverse causality is also worth exploring: the promotion of tourism and rural industries can create a local demand for high value crops and livestock products in agriculture. In part, the key to successful development of the high value crops and livestock sectors is not only rising productivity but mainly finding sources of effective demand. A successful regional economy, based in part on tourism and decentralized industries, can also be a source of effective demand for labour-intensive HVA. In this case, the model is one of I/SDLA (Industry/Services Demand-Led Agricultural Development). Clearly, both ADLI and I/SDLA approaches are worth pursuing through further research, which may provide an opportunity to experiment with this two-way approach.

In poor rural areas some households will take advantage of/ *access emerging market opportunities for high-value products*, taking into consideration the income differential between the traditional and new product markets, and the riskiness of each type of activity. Other households will not be able to access/ or choose not to avail themselves to such opportunities. Indeed the understanding of these socio-economic processes along with better knowledge of policy implications (public and private) for investment in these new high-value product markets will be very relevant. Also it is important to take into account the intra-household dynamics that affect the differential capacity of men and women in poor rural households to benefit from these opportunities, bearing in mind that as certain “traditional” economic activities become market oriented, women may benefit, or may lose control of previously important sources of food and income, with important implications for household and child welfare. We return to some of these issues below.

Successful rural development for poverty reduction requires that the rural poor in the region be able to capture at least part of the opportunities created by successful regional development. This demands specific types of investments in the rural poor and in the institutions and organizations servicing and representing them. A number of empirical studies have tried to identify the determinants of access to these opportunities (see for example Davis, 2004; Reardon, Berdegúe, and Escobar, 2002). Key determinants of access to the better paying non-agricultural employment (as opposed to poorly remunerated agricultural employment) are education, proximity to a source of non-agricultural employment, age (young), gender (often women according to types of activities), and membership to organizations and to social networks (important for access to information and for job referrals). Hence, a successful strategy of rural poverty reduction should be concerned with:

- (1) The supply of opportunities, achieved through successful regional development, using high value added agriculture, fisheries and livestock, ADNA, and autonomous non-agriculture employment.
- (2) Access to these opportunities by the rural poor on the basis of their asset endowments, including their social capital (the demand side).

Concern with the supply of opportunities not accompanied by concern with ability of the rural poor to seize these opportunities will result in growth, but not necessarily in poverty reduction. For this reason, confining interventions to: (i) sustainable pro-poor growth and (ii) rural people participation in decision-making processes and local level planning in resource allocation may not be sufficient. Providing the poor with abilities to be incorporated in the local growth process is also key.

Beyond the need to understand and respond to new and dynamic markets there is a need for further research on the “pro-poor” potential of traditional wholesale and retail markets where new technology and investment (e.g. in refrigeration and sanitation facilities) could promote access to markets and where value addition and diversification of the production systems of resource poor farmers in marginal areas could become a real possibility.

The *gender dimension to small-scale farming* in developing country HVA production does not appear to receive significant treatment in the broad body of literature and programmes reviewed for this paper. However, conditions of work and labour legislation in HVA production have received some attention. For example, in South Africa, Western Cape thousands of women casual workers growing fruit on farms accredited by global retailers are being exploited as low prices and tougher standards are forced on local fruit farmers (ActionAid). Global horticultural retailers squeeze local suppliers which is reflected in low wages and precarious employment conditions for the most vulnerable in the supply chain: casual women workers. Fruit growers increasingly have to comply with external certification standards on their farms – such as EUREPGAP – but besides pressure from global retailers, other factors have forced South African fruit farmers to cut labour costs and downsize their workforce and rely on more off-farm flexible labour (Greenberg, S., (2004). There has been some extension of South African legislation on employment, labour rights and security of tenure for women workers in export horticulture (Barrientos, et al., 2004). In developing countries women play an important role in horticulture as farmers, labourers in packhouses and processing, entrepreneurs and consumers (McCulloch and Ota, 2002). Further research is required to better understand the socio-economic implications of increased participation of women in the sector and intra-household labour (and revenue retention) impacts of a transfer from traditional commodities to HVA products.

Poultry development has been promoted in many countries as an income-generating activity for women. The Bangladesh model has been regarded as one of the few successful approaches to target the poorest rural women, and has attracted considerable international attention. Experiences with projects promoting the semi-confined system in Bangladesh have shown that having income and access to credit provided women with more influence within the household (Riise *et al.*, 2005). However, it was not clear to what extent this was due to them having increased income from poultry-rearing or having access to credit. These projects do not directly challenge the gendered division of labour, which restricts women to working only within the homestead. The female poultry producers often have to rely on male relatives or middlemen to maintain input supply and sale of eggs and chickens. Many of the implementing NGOs have social awareness programmes, but these were not always made available in project villages (Riise *et al.*, 2005). There is evidence that activities addressing the awareness-raising of women could have contributed more directly to the enhanced status of women. However, the Bangladesh model did not incorporate rights-based approaches to gender equality. Indian women from poor households tend to have the main responsibility for goat-keeping (Conroy, 2005). Goats are relatively easy to manage, eat low quality fodder and are useful for family nutrition and as a ready source of cash. Acquiring a goat is often a preferred option for which loans are sought by poor women in India when revolving credit funds are made available to women’s self-help groups. They are valued not just because of the subsistence and income benefits they bring, but also because

they become one of the few assets that a poor woman has and hence raise her status and self-esteem.

Women traditionally play an important role in the post-harvest fisheries sector, including processing and trading activities (Kleih et al, 2003). Recent changes in the fisheries sector have had broadly neutral effects on women. Traditional fish processors tend to find it increasingly difficult to access raw material for their business if fish supplies are declining due to decreasing capture production and / or fish being diverted into the export marketing chain. Thus, whilst women active in the traditional fisheries sector may lose out, there appear to be new jobs being created in the modern, export sector. For example, fish processing factories in Vietnam and Bangladesh tend to rely heavily on younger, female workers who often come from poor families. However, the commuting or migration required for these jobs can also have negative socio-economic consequences for these households. With the introduction of HACCP measures, much village fish processing in Bangladesh has shifted to urban factories, impacting on rural employment and increasing mainly female rural-urban migration to meet labour market requirements (Kleih, et al, 2003). According to the FAO (2003) non-timber forest traded products contributes significantly to household needs and is a particularly important source of employment and income for rural women. For each of the above sectors, there needs to be further research conducted to address the relative returns to gender – differentiated labour and profitability of small-scale vis-à-vis large scale commercial high value commodity production and post-harvest processing.

*Risk and small-scale farmers in the HVA market:* Lack of credit is a major factor limiting the ability of smallholders to procure and use inputs. However, the sustainable provision of agricultural credit depends on the profitability of agricultural production and the extent to which yield, marketing and price risks faced by farmers can be managed (Onumah, 2002).

Crop marketing systems in many developing countries are inefficient and small-scale farmers have been exposed to even greater uncertainty regarding the marketing of their output as a result of the liberalisation of agricultural markets since the 1990s. Most small-scale farmers sell the bulk of their output at harvest when prices are low, and household income in rural areas is, consequently, usually low and variable. Small-scale farmers usually cannot defer sale of outputs as they lack storage facilities and they cannot access finance for consumption smoothing. On the other hand, traders in agricultural commodities, especially the rural assemblers who are the main link between producers and wholesale markets, tend to be under-capitalised. While they often cannot access trade finance from financial institutions, they are usually required to offer trade credit to wholesalers and processors. This creates a liquidity problem and limits their ability to absorb (and store) the substantial surplus available during the harvest season. The consequent glut depresses farmgate prices (Onumah, 2002) and, in most developing countries, market instruments to manage price risks are not available (Coulter and Onumah, 2002).

The yield, marketing and price risks discussed here are usually covariant in rural areas, that is, large groups of farmers throughout a region face common shocks to their incomes as a result of fluctuations in the weather or unfavourable market conditions. This is a particular

problem when agricultural activities are not diversified, but concentrated on a few crops or livestock activities.

Credit provided by agri-marketing companies (suppliers, processors and traders) is an important source of funding for smallholder producers in rural areas. This includes interlocking arrangements such as contract farming and out-grower schemes (IFAD, 2003). In contract farming, the processing or marketing company provides inputs on credit, tied to a product purchase agreement. The initial repayment for the inputs is by means of produce supplied by the farmer at a predetermined price, with the rest being sold in the market or as specified in the contract. Out-grower schemes are a more integrated form of contract farming where the agribusiness has greater control. The farmers generally offer their land and labour in return for a package of inputs, extension services and an assured market. Crucially, interlocking arrangements reduce the risk of default to the credit provider, as farmers receive a range of non-credit inputs, advice and, in many cases, markets for their produce, thus reducing price and production risk (Davis, Onumah and Butterworth, 2004). The input credit enables farmers to increase the quantity and quality of their produce, while providing a guaranteed supply of product to the lending companies. The system also offers smallholder farmers an opportunity to participate in the production of high-value crops, providing valuable links to international markets.

The economic potential of a particular rural area largely depends on its natural resource base and *location and its impact on small-scale farmer HVA market access*. Low potential areas tend to score low on both accounts, in that they lack the economic resource base and suffer from remoteness. The economic and social infrastructure is generally poor and human capital levels are low. Because of the lack of economic opportunities, these areas normally export labour to other more prosperous regions within the country or abroad. It is important to note, however, that not all under-developed regions have low economic potential. Some may possess resources and dormant engines of growth, which have not been developed because of infrastructural constraints, bad governance or conflict.

Whilst interventions in low-potential areas may be desirable from a poverty reduction perspective, project agencies must be well aware of the difficult challenges ahead. Given the paucity of growth engines, infrastructural development in these regions may generate few employment and income opportunities while exposing them to increased competition from the outside, a scenario that would exacerbate economic distress and intensify migration outflows. In these adverse environments, the higher intervention costs, the need for a longer intervention timeframe, the difficulties of generating significant impact, and the potential sustainability problems must also be borne in mind. Still, even resource-poor regions may offer scope for cost-effective, demand-driven interventions. Livestock, forestry, fisheries or handicraft activities can often be targeted. Cultural specificities and natural beauty may in some cases present opportunities for developing tourism.

Despite the fact that some case study programmes and projects have intervened in poor communities and areas, knowledge on how to promote pro-poor growth in remote and low-potential areas is still insufficient. What sort of interventions should be developed for resource-poor and remote areas which lack clear growth opportunities? What sort of balance should be reached between support to higher and lower potential regions? Resources are scarce and difficult allocation choices must be made.

*Small-scale farmer organizational (collective action) and networking support* issues are key for the following reasons: (i) small-scale farmers need to articulate and represent their interests (in particular the poor) for fair negotiation in dynamic HVA markets; (ii) to create and strengthen local structures and organisations as the basis of channelling information, organising activities, dealing with collective action and promoting sustainability of interventions to support small-scale farmers access to HVA markets; and (iii) to give small-scale farmers opportunities to achieve economies of scale in input, supply and marketing, as well as to improve market access through improved quality (Rondot et. al., 2004). It is often beneficial for individual small-scale farmers to form partnerships, either to offer a greater quantity of produce at a given time in urban markets outside of the region or locality, or in international markets, or to guarantee a more regular supply to the market, which is often needed throughout the year. Furthermore, sharing information and experience between small-scale farmers could be mutually beneficial. Such an exchange can be carried out in the form of partnerships (cooperation, joint marketing, etc), local clusters (product chains covering a bigger market segment, joint marketing, etc) and associations (lobbying, joint training sessions, etc). It is clear that networking would be beneficial for small-scale farmers; however, in rural areas, which are quite often characterised by poor infrastructure and communication facilities, such an activity requires facilitative support.

Small-scale farmer organizations need good management and institutional support. Here the professional competence of the small-scale farmers and producer groups needs to be strengthened with regard to decision-making, organisational development, and the acquisition of relevant business information about finance, technology, inputs and materials, marketing, etc. These skills can be obtained through formal training courses, experiential learning and the use of consultants, counselling and mentoring. Small-scale farmers, pastoralists, forest workers and fishermen need to be able to react and adjust to changes in HVA production conditions resulting from internal or external factors. Small-scale farmers come from a wide spectrum of backgrounds, and business principles are often new to HVA market entrants. Small-scale farmer participation can be facilitated by targeted research efforts on farmer information systems, advice and training, provided in a tailor-made support system that caters for the specific needs of diverse rural entrepreneurs.

*Institutional coordination:* Such support is commonly rendered by government institutions NGOs and donor-supported initiatives. It focuses on individual small-scale farmers, producer groups, trade/business associations and whole sectors of the local or regional economy. The role of public policy coordination and facilitation is to identify, together with the small-scale farmers and or group the constraints to the successful operation of the businesses and to facilitate the provision of appropriate support (e.g., BDS or technical training). For example, the public sector can support small-scale farmers through standards, quality, testing laboratories and research and development.

*Marketing support:* A thorough analysis of the specific HVA product market should equip small-scale farmers to establish market information systems that also 'map' competitors. Ideally, a system should be instituted that provides information continuously that will help to establish and adjust distribution and marketing channels. Since a support programme might cater for a wide spectrum of rural enterprises, implementation activities have to be able to vary. Small-scale farmers might receive training in order to achieve a standardised

marketable product. In this support bracket, it is necessary to assess the actual product(s) of a small-scale farmer to see whether it could be further developed and differentiated for the rural, urban, national, regional or international market. This may be particularly relevant in the development of value addition for some minor crops and new product development (including from traditional commodities). This entails creating the ability to identify and mobilise appropriate technologies and skills for product innovations.

*Financial Support Systems:* It is crucial for rural enterprises to have access to appropriate (micro)finance systems. Such support must reflect the specific needs of the respective group of enterprises (e.g., enterprises with seasonal production cycles) with regard to collateral requirements, duration of loans, repayment conditions, etc. Budgeting and cash flow generation are the most relevant support mechanisms to enable small-scale farmers to interact with financial service providers. In many developing countries there is a scarcity of other financial products appropriate for the needs and demand of rural small-scale enterprises (Davis, Onumah and Butterworth, 2004). The main players are commercial banks, whose product range is usually aimed at the formal established segment of the (urban) market. small-scale farmers-friendly loan schemes are often operated by NGOs and parastatals but it is difficult for their outreach and product portfolio to help a broad clientele in rural areas.

*Technical Support Systems:* A common problem for small-scale farmers entering HVA market chains is that their products often do not comply with the prevailing technical standards. To sustain success in the market place, products have to be of a specific standard, which is difficult to achieve for small-scale farmers whose production techniques and technology may not always attain the standards demanded in dynamic markets including export. In addition, small-scale farmers often try to enter HVA markets without any relevant market analysis. Even where there is demand for a product, quality standards are often lacking. Technical support services are often essential to help refine products and to make them marketable. However, such services are often only available for payment and are therefore not easily accessible, especially to small-scale farmers. The core role of the public sector should be reviewed to consider their role in service provision e.g. quality, inspection services and testing laboratories.

Research and Development is required to support and guide public and private policy interventions to improve the access of small-scale farmers to HVA markets. However, to achieve poverty reduction the international research community must also go beyond the usual technical solutions in research and development to fully incorporate policy and interventions that effects the required changes. They need to beware of what failed previously with traditional commodities such as over dependence, oversupply and declining prices in real terms and not focus solely on supermarkets as a panacea for agricultural sector and product market problems. Supermarkets may not be the most profitable outlet for all small farmers, especially where the upgrading of traditional markets is both viable and easily accessible to small-scale farmers.

## **6 References**



- Barrientos, S et al., (2004) National labour legislation in an informal context: women workers in export horticulture in South Africa, Commonwealth Secretariat.
- Birthal, P, Joshi, P., and Gulati, A. (2005). Vertical coordination in high value food commodities: implications for smallholders, IFPRI MTID Discussion Paper No. 85.
- Bostock, T., Greenhalgh, P. and Kleih, U. (2004), Policy Research – Implications of Liberalisation of Fish Trade for Developing Countries: Synthesis Report; Chatham, UK: Natural Resources Institute.
- Burnett, D. and Greenhalgh, P. (2002). A Scoping Study on the Functioning of Commodity Markets, Natural Resources Institute. Report No. 2549. August. Commissioned on behalf of the Department for International Development (DFID).
- CEC, (2004). Regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, Official Journal of the European Communities, 28 May 2004, available [http://europa.eu.int/comm/food/food/controls/index\\_en.htm](http://europa.eu.int/comm/food/food/controls/index_en.htm) (accessed July 2005).
- Chowdhury, Shyamal; Gulati, Ashok; Gumbira-Sa'id, E. (2005). High value products, supermarkets and vertical arrangements in Indonesia <http://www.ifpri.org/divs/mtid/dp/papers/mtidp83.pdf>
- Coulter, J. and G.E. Onumah (2002). The role of warehouse receipt systems in enhanced commodity marketing and rural livelihoods in Africa. *Food Policy* 27: 319–337.
- Davis, J.R. (2004) The Rural Non-Farm Economy, livelihoods, and their diversification: Issues and options. Chatham, UK: NRI publication ISBN 0 85954 563-6. Internet: [www.nri.org/rnfe/](http://www.nri.org/rnfe/)
- Davis, J.R, (2005) The trade implications of agri-food sector restructuring (unpublished mimeo).
- Davis, J., and Myers, J. (2004). Feasibility of smallholder organic tea certification and development in China and India, UN-Common Fund for Commodities.
- Davis, J.R., Onumah, G., and R. Butterworth (2004) Making rural finance work for the poor, DFID unpublished mimeo.
- Dolan, C. and Humphrey, J., (2000), 'Governance and trade in fresh vegetables: the impact of UK supermarkets on the African horticulture industry', *Journal of Development Studies*, Vol 37 No 2: 147-176
- Dolan, C. and Humphrey, J., (2004), 'Changing governance patterns in the trade in fresh vegetables between Africa and the United Kingdom', *Environment and Planning A*, Vol 36 No 3: 491-509
- Fitter, R. and Kaplinsky, R. (2001) 'Who gains from product rents as the coffee market becomes more differentiated? A Value Chain Analysis', *IDS Bulletin*, 32 (2).
- Greenberg, S., (2004) Women workers in wine and deciduous fruit global value chains. Women on farms project.
- Graffham, Andy and Bill Vorley (2005), "Standards compliance: Experience of impact of EU private & public sector standards on fresh produce growers & exporters in Sub-Saharan Africa" presented at European Commission (Health and consumer protection directorate-general) seminar on "Private food quality standards and their implications for developing countries" in Brussels, Belgium, 7<sup>th</sup> December 2005.
- Henson, S. and T. Reardon (2005) Private agri-food standards: Implications for food policy and the agri-food system. *Food Policy*, Volume 30, issue 3, 2005 pp. 241- 253.

- Hu, D., T. Reardon, S. Rozelle, P. Timmer, H. Wang. 2004. "The Emergence of Supermarkets with Chinese Characteristics: Challenges and Opportunities for China 's Agricultural Development," Development Policy Review, November.
- Huang, S.W. (ed.). 2004. Global Trade Patterns in Fruit and Vegetables. Washington D.C.: United States Department of Agriculture, Economics Research Service, available [www.ers.usda.gov/publications/wrs0406/](http://www.ers.usda.gov/publications/wrs0406/) (accessed November 2004)
- Humphrey, J. (2005). Shaping Value Chains for Development: Global Value Chains in Agribusiness. Paper Commissioned by the German Federal Ministry for Economic Co-operation and Development. pp 70.
- Humphrey, J., McCulloch, N. and Ota, M., (2004), 'The impact of European market changes on employment in the Kenyan horticulture sector', Journal of International Development, Vol 16 No 1: 63-80
- IFAD (2001) Rural Poverty Report (2001) The Challenge of Ending Rural Poverty, Oxford University Press.
- IFAD (2003) The Adoption of Organic Agriculture among Small Farmers in Latin America and the Caribbean. Thematic Evaluation', Report 1337, Rome, International Fund for Agricultural Development, available [http://www.ifad.org/evaluation/public\\_html/eksyst/doc/thematic/PL/organic.htm](http://www.ifad.org/evaluation/public_html/eksyst/doc/thematic/PL/organic.htm)
- Jaffee, S. (2003). "From challenge to opportunity: The transformation of the Kenyan fresh vegetable trade in the context of emerging food safety and other standards." PREM Trade Unit. Washington, D.C.: World Bank.
- Jaffee, S., (2005), 'Food Safety and Agricultural Health Standards: Challenge and Opportunities for Developing Country Exports ', Report 31207, Washington D.C., The World Bank, Poverty Reduction and Economic Management Trade Unit.
- Khatun F. (2004) Fish Trade Liberalisation in Bangladesh: The Implications of SPS Measures and Eco-labelling for the Export-Oriented Shrimp Sector, Centre for Policy Dialogue, Dhaka.
- Kitchen, S. (2002). The Tea Market and Production in Africa. Report No. 2. Commissioned by HTS Limited on behalf of Department for International Development (DFID).
- Kleih, U., Alam, K., Dastidar, R., Dutta, U., Oudwater, N., and Ward, A. (2003); Livelihoods in Coastal Fishing Communities, and the Marine Fish Marketing System of Bangladesh - Synthesis of Participatory Rural Appraisals in Six Villages, and Assessment of the Marketing System, Community Development Centre, Chittagong, and Natural Resources Institute, Chatham.
- McCulloch, N. and M. Ota. (2002). "Export horticulture and poverty in Kenya." Working Paper 174. Sussex, U.K.: Institute for Development Studies.
- Muendo, K.M. and Tschirley, D., (2004). 'Improving Kenya's Domestic Horticultural Production and Marketing System: Current Competitiveness, Forces for Change, and Challenges for the Future', Working Paper 08A/2004, Nairobi, Tegemeo Institute of Agricultural Policy and Development, Egerton University., available <http://www.tegemeo.org/viewdocument.asp?ID=21>
- Narayan, S., and Gulati, A. (2002) Globalization and smallholders: a review of issues, approaches and implications, IFPRI MSSD Discussion paper 50.

- Onumah, G.E. (2002). Facilitating smallholder access to the Warehouse Receipts system: which smallholder group model is suitable? Report of study undertaken for the Common Fund for Commodities-funded project in Zambia on WR (unpublished mimeo, see <http://www.nri.org/etfg>).
- Oudwater, N., Greenhalgh, P., and Clucas, I. (2002) Globalisation, seafood industry, and livelihoods; Project report. Chatham, UK: Natural Resources Institute. (unpublished).
- Proctor, F. (2005) A contextual framework for the new agenda for agriculture (unpublished mimeo).
- Reardon, T. and Berdegú, J., (2002), 'The rapid rise of supermarkets in Latin America: Challenges and opportunities for development', *Development Policy Review*, Vol 20 No 4: 317-334
- Reardon, T., C.P. Timmer, C.B. Barrett, J. Berdegue. (2003). "The Rise of Supermarkets in Africa , Asia , and Latin America," *American Journal of Agricultural Economics*, 85 (5), December: 1140-1146.
- Runsten, N and D Runsten (1999) *World Development*, 27 no 2 'Contract farming, smallholders and rural development in Latin America' .P 18
- Schütz, P., Balsevich, F. and Reardon, T (2004) *Small Producers' Access to Dynamic Markets: The Case of Beef in Nicaragua*, September 2004 (unpublished mimeo).
- Tschirley, D., Ayieko, M., Mathenge, M. and Weber, M.T., 2004, 'Where Do Consumers in Nairobi Purchase their Food and Why Does This Matter? The Need for Investment to Improve Kenya's 'Traditional' Food Marketing System', Policy Brief 2, Nairobi, Tegemeo Institute for Agricultural Policy and Development, available <http://www.tegemeo.org/viewdocument.asp?ID=129> (accessed May 2005)
- UN FAO (2004) *The State of Agricultural Commodity Markets (SOCO) 2004*, Published by UN Food and Agriculture Organisation, Rome, Italy.
- UNCTAD (2002). *The Least Developed Countries Report 2002: Escaping the Poverty Trap*, June.
- UN Statistics (2004) <http://unstats.un.org/unsd/comtrade/mr/rfCommoditiesList.aspx>
- Vannuccini, S. (2004), *Overview of Fish Production, Utilization, Consumption and Trade – based on 2002 data*; Fishery Information, Data and Statistics Unit, FAO, Rome.
- Warr, P (2001) *Poverty reduction and sectoral growth: results from south east Asia*. Australia National University Canberra.
- Weinberger, K. and Lumpkin, T., (2005) *Horticulture for Poverty Alleviation: The Unfunded Revolution'*, Working Paper 15, Shanhua, Taiwan, AVRDC, available [http://www.avrdc.org/pub\\_socio.html](http://www.avrdc.org/pub_socio.html) (accessed March 2005).
- Westlake, M. (2002). *The World Coffee Economy and Coffee in Africa*. Report No. 1. Commissioned by HTS Limited on behalf of Department for International Development (DFID).
- World Bank (2005) page 7

### **Sources of further information**

[http://www.sifar.org/DfID\\_Keysheets/wb\\_index.htm](http://www.sifar.org/DfID_Keysheets/wb_index.htm)  
<http://www.onefish.org/id/216206>  
[www.worldfishcenter.org](http://www.worldfishcenter.org)  
<http://www.dfid.gov.uk/aboutdfid/organisation/itc-eprp.pdf>  
<http://www.dfid.gov.uk/pubs/files/tradebrief-agrifisheries.pdf>  
<http://www.dfid.gov.uk/pubs/files/itdagriculturebrief.pdf>