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Poverty Alleviation in the Horticulture Sector: Insights from Uganda and Vietnam

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Abstract

This paper examines whether poor and vulnerable groups in society share in the benefits of a foreseen economic expansion in the demand for fruit, vegetables and flowers from consumers at home and abroad. Primary survey data is collected on the differentiated position of low-income households in different supply structures (with varying levels of vertical coordination) and markets (national, regional and international markets).

The data support the following hypotheses: (i) For many resource-poor agents, horticulture-related activities make substantial contributions to their livelihood security – certainly in the short term. (ii) Farming, trading services, small-scale retail, and farm labour are activities to which members of resource-poor and economically vulnerable households have the best access given their endowments. (iii) A move from food production for home consumption towards cash crops or off-farm labour is supported when there are sufficient options to reduce livelihood risk in the household. (iv) Both value creation and the generation of opportunities for (self-) employment in domestic marketing channels are substantial, and possibly outweigh the economic impact of overseas export marketing.

Policy support is best tailored to specific conditions and specific actors to achieve a maximum impact on poverty alleviation. For that purpose, a three-tiered grouping of marketing channels for livelihood development is proposed.

1 Introduction

There is increasing insight into how household poverty in rural and peri-urban areas is affected by developments in the markets for fruit, vegetables and flowers. This study extends the knowledge, and feeds into the debate on agricultural growth policies. In addition, our data and analyses reflect on the poverty-alleviating impact of development assistance and trade policies of the European Community/Union.

This study provides a positive outlook on the growth of horticultural production and distribution and marketing in the low income countries of Uganda and Vietnam. Will poor and vulnerable groups in society share in the benefits of the foreseen economic expansion? The data collected show that, for many resource-poor agents, these activities make substantial contributions to their livelihood security, certainly in the short term. Little evidence was found that alternative job positions or entrepreneurial activity provide better opportunities for poverty alleviation in the rural and peri-urban areas.

Uganda and Vietnam were selected as study countries. Both are low-income countries, and neighbours of countries (Kenya and Thailand, respectively) that are

more specialised in horticulture. We explore what conditions must be fulfilled at an early stage of sector growth to maximise poverty alleviation in the longer run, along two central themes: poverty alleviation via export horticulture vis-à-vis domestic markets, and types of marketing arrangement (or supply chain) in relation to poverty alleviation.

The current study provides a potential contribution to ongoing policy debates on the question of what type of rural development supports poverty alleviation. More specifically, the research project tries to answer two research questions:

- Given the current revival of agriculture as an important engine for growth, and the identified potential for horticulture, should emphasis be placed on small farmers (family agriculture) or on larger more commercial agriculture enterprises from the viewpoint of poverty alleviation,?
- What are the constraints to be overcome, or opportunities to be created, by means of institutional development¹ in order to achieve the potential for poverty alleviation and economic growth in rural areas?

2 Background: Horticulture and Development

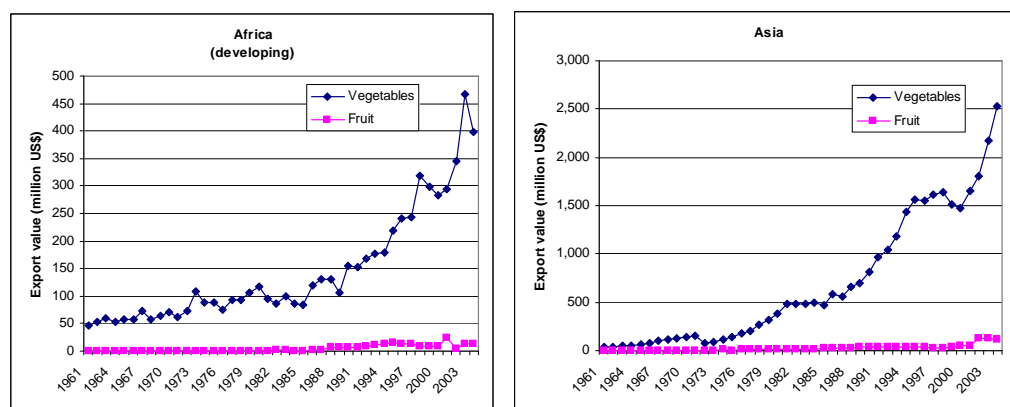
Over the past decades, the impact of several drivers of change has been evident in the agricultural sector in developing countries, and in the economies of the countries more generally. The most significant of these drivers of change have been globalisation and liberalisation, which have gone hand in hand.

Some changes reflect general trends, such as the global process of increased international trade and investment, and the structural changes in the global food markets. Some changes are specific to countries, such as the liberalisation of the trade and investment regimes in developing countries – policy reforms which often accompany privatisation and domestic price reforms (Swinnen and Maertens, 2006; Lamb, 2005). Trade liberalisation has caused major changes in trade of agri-food products, increasing the participation of developing countries in world agricultural trade. The liberalisation of the investment regimes has induced foreign investments in agribusiness, food industry, and further down the chain, with major implications for farmers (Dries and Swinnen, 2004).

¹ With institutional development we mean the development in formal and informal rules that impact on institutional arrangements such as agreements and contracts within a value chain or organizations such as producers organizations.

In addition to an increasing volume of global agricultural trade, also the structure of this trade changed considerably during the past decades. There has been an increase in the share of high-value products – mainly fish and fishery products, and fruits and vegetables in world agricultural trade. Figure 1 shows how fruit and vegetable exports boomed in Africa and Asia.

Figure 1: Export value of vegetables and fruits in Africa and Asia, 1961-2004 (million US dollars)



Source: FAOSTAT | © FAO Statistics Division 2006

Associated with these changes is the spread of (private and public) food standards. Consumers are increasingly demanding specific quality attributes of processed and fresh food products and are increasingly aware of food safety issues. Food standards are increasingly stringent, especially for fresh food products such as fruits, vegetables, meat, dairy products, fish and seafood products, which are prone to food safety risks. Moreover, urbanisation, which increases the scope for economies of scale in food marketing and distribution, has led to a remarkable increase in the volume of food marketing handled by supermarkets, and to substantial organisational and institutional changes throughout the food-marketing chain (Pingali, Khwaja and Meijer, 2005).

Further, companies and property rights have been privatised in many developing countries. In the past, the state played an important role in agricultural production and marketing in most developing countries. Governments were often heavily involved in agricultural marketing and food processing through the creation of parastatals (marketing boards, government-controlled cooperatives and parastatal processing units). The withdrawal of the state often produced a vacuum – the private

sector that was expected to fill that vacuum did not arise, or only slowly. The dismantling of state-controlled vertical coordination generally led to the decline of input and credit supply to farms.

Yet, recently, new forms of vertical coordination² have emerged, through private vertical coordination systems. These are growing rapidly in response to consumer demand for food quality and safety, on the one hand, and the problems that (small) farms face to supply such products reliably, consistently and timely, on the other. . Underlying causes for these problems are financial constraints (deficient credit markets), as well as difficulties in input markets. Specifically for high-standard products, farmers may lack the expertise and have no access to crucial inputs such as improved seeds. There are therefore major institutional constraints: the importance of vertical coordination in developing countries is further explained by the lack of efficient institutions and infrastructure to assure consistent, reliable, quality and timely supply through spot market arrangements (Swinnen and Maertens, 2006). Vertical coordination can therefore be seen as a private institutional response to the above described market constraints.

The liberalisation of the 1990s and greater openness to trade has led to a reduction in the economic potential of the rural sector. With rapid global technical change and increasingly integrated markets, prices fall faster than yields rise, so rural incomes fall despite increased productivity. The integration of rural with urban areas means that many healthy young people move out of agriculture, head to town, leaving behind the old, the sick and the dependent. The increased sophistication of agricultural markets (and value chains) excludes traditional smallholders, who are poorly equipped to meet the demanding product specifications and timeliness of delivery required by expanding supermarkets. Moreover, the natural resource base on which agriculture depends is poor and deteriorating in many places. Productivity growth is therefore increasingly more difficult to achieve.

² Vertical coordination can take various forms, which can be thought of as institutional arrangements varying between the two extremes of spot markets exchanges (no coordination) to full ownership integration (full coordination). Within these extremes, there is a large variety of different forms of coordination; an equally vast literature has tried to classify these various forms. A useful distinction is between marketing and production contracts. Marketing contracts are agreements between a contractor and a grower that specify some form of a price (system) and outlet. Production contracts are more extensive forms of coordination and include detailed production practices, extension services, inputs, quality and quantity of a commodity and a price.

Finally, HIV/AIDS has had a major impact on many rural areas in developing countries and is affecting agricultural production. HIV/AIDS has become mostly a rural issue in many developing countries (FAO, 2006).

3 Research design

To examine the impact on livelihood development of the poor rather than sectoral growth, one needs to go beyond export earnings and pay attention to the creation of opportunities for employment and for income generation within product supply chains. For this, we develop a basic framework that specifies marketing channels for livelihood development according to the amount of value added created in the supply chain, and the scale on which the fruit and vegetables and flowers are cultivated. A marketing channel describes all activities that move a product from the producer to the consumer. A marketing channel comprises many individual marketing chains that link actors together and through which products flow from producer to consumer. Value creation is generally lower in supply chains for domestic outlets. However, the potential impact on local (national) economic development is related to the absolute share of value that accrues to actors in this chain. From this perspective, export horticulture will require scrutiny of the share of profits that remain within the country; with domestic horticulture it should be tested whether there is sufficient value creation for livelihood development of the growers, and traders and retailers involved.

There is a well-documented trend in horticulture in Africa towards tightening the linkages in supply chains and reducing numbers of suppliers (Dolan and Humphrey, 2000). These changes impact on the involvement of the poor, basically in terms of increased opportunities for involvement as a wage worker, or contract farmer in an outgrower scheme. The position of independent smallholder farmers and small-scale traders (assembling and retail) weakens when facing large-scale competitors, unless small-scale actors unite within effective organisations.

Uganda

Our case study of Uganda explored value creation and organisation structure in several horticultural supply chains, and examines the validity of a three-tiered grouping of marketing channels for livelihood development:

- high-value horticulture in a large commercial setting, often involving exports of produce sourced from large farms, and with few domestic actors involved;

- the marketing of high-value horticultural produce, produced by smallholder farmers, involving domestic traders who operate mostly in export markets, but also domestically through emerging supermarket retail;
- domestic marketing of produce of limited value, yet involving a large smallholder supply base and many small-scale entrepreneurs in trade and retail.

The Uganda case study adopted a participatory process approach in executing the various activities planned. The study aimed to describe and interpret the contribution of selected horticultural commodity supply chains to poverty alleviation and reduction in Uganda. Six horticultural commodities were selected for the study: hot pepper, onions, pineapples, passion fruit, vanilla and cut flowers. These commodities were selected on the basis of their importance (in terms of value and/or volume) to the horticultural sector; the number of persons involved in their production and marketing; and their actual or potential contribution to poverty alleviation.

Field data was collected in the central region of Kampala and surrounding districts and in the district of Kasese on the western border, between July and December 2004. Several methodologies were applied. Representative enterprises were visited for a survey of management.³ The survey covered three retailers including one supermarket (Uchumi), several plants of one large processing company (RECO), and six exporting companies. The subset of the survey data on growers, traders and farm workers that was analysed with quantitative techniques comprised 25 growers, 14 assemblers and wholesalers, and 14 workers on flower farms.

Vietnam

The second case study focused on the poverty impact across a variety of marketing channels for roses in North Vietnam (Me Linh commune in Vinh Phuc province and Sapa commune in Lao Cai Province). In this study we analyse the current status of the marketing channel in Northern Vietnam for the supply of roses to Hanoi and explore the effectiveness of its chains in sustaining livelihoods and their impact on the poor.

The marketing channel for the supply of roses to Hanoi is pictured in figure 2. This study analysed six of the marketing chains pictured within the channel, three beginning with producers in Me Linh (close to Hanoi) and three with producers in Sapa (remote from Hanoi). All channels end with consumers in Hanoi City. Although

³ None of the workers were interviewed

not all locations supplying Hanoi have been analysed, we believe that our choice of marketing chains in this analysis was representative of all types of chains in North Vietnam supplying Hanoi.

Figure 2: Rose marketing channel supplying consumers in Hanoi

Location of Farmers	Chain	Description				
Me Linh	1A	Farmers	Wholesalers		Flower shops	Consumers
	1B				Flower stalls	
	1C				Mobile hawkers	
	1D				Supermarkets	
	2A	Farmers			Flower shops	Consumers
	2B				Flower stalls	
	2C				Mobile hawkers	
	3	Farmers				Consumers
Sapa	4A	Farmers - large	Wholesalers		Flower shops	Consumers
	4B				Flower stalls	
	4C				Mobile hawkers	
	4D				Supermarkets	
	5A	Farmers - small	Wholesalers		Flower shops	Consumers
	5B				Flower stalls	
	5C				Mobile hawkers	
	5D				Supermarkets	
	6	Workers	Large flower company	Wholesalers	Flower shops	Consumers

Data were obtained by interviewing representatives from three groups involved in the marketing channel of roses: producers, wholesalers and traders, and retailers. In the Me Linh (specifically Hoi, Lieu Tri, and Duong hamlets) and in the Sapa commune Pro-poor researchers held semi-structured interviews with rose producers and key informants and held group interviews with individuals involved in rose production and individuals who were not (Dang Viet Quang et al., 2004; Van Wijk et al., 2004). 14 wholesalers and one assembler in the Quang Ba wholesale market were interviewed to gather information about their marketing activities . Additional information about this group of actors was gathered through group interviews with wholesalers (World Union of Wholesale Markets, 2004; Dang Viet Quang and Pham Thi Mai Huong 2005). The remainder was obtained through semi-structured interviews of producers and retailers (on chain flows) and from key informants in Me Linh and Sapa (on the percentage of production destined for Hanoi).

Flower shops, flower stalls and hawkers were sampled systematically. Streets and markets were randomly chosen and then every fourth retailer was approached for an interview in 2005. Additionally, 16 workers at flower shops were interviewed.

4 Findings from the case studies

Uganda

The Uganda case study examined value creation, job opportunities and earnings in horticultural activities that are accessible by the poor. Table 1 summarises the results. Four activities were identified for potential involvement of the poor: farm work or contract farming on export farms, growing in smallholder setting, local trade services, and retail in market stalls and on street markets. Throughout the analysis we maintained the framework of three marketing channels for livelihood development that was introduced above. The combination of activities and market channels defines potential focal points for government or donor involvement that aims to support pro-poor growth.

Table 1: Areas for involvement of the poor, and potential impact

	High-value (exports) large scale, few actors	High-value (exports) smallholder supply, many actors	Low-value (home), smallholder supply, many actors
Farm work/ contract farming	25% poor HOPLI = 75%	n.a.	n.a.
Small scale growers	n.a.	7% poor HOPLI = 53%	11% poor HOPLI = 45%
Trade services: assembling, wholesale	n.a.	GM = 9-13 x poverty line income	GM = 2-60 x poverty line income
Retail: stalls, street markets	n.a.	n.a.	GM = 14-200 x poverty line income

Notes: HOPLI = Horticulture out of Poverty Livelihood indicator: the share of respondents that are non-poor due to involvement in horticulture.

GM = Gross Margin. Source: authors' computations.

n.a.: combination is irrelevant or has not been examined.

The horticultural sector supply chain participants are faced with several challenges at almost every stage. The smallholder participants face most of the challenges, especially concerning their limitations in providing the resources needed and meeting the quantities and the quality requirements for the export market. The specific challenges are fourfold.

In the first place, constraints are related to the production process and include a lack of improved varieties, the application of inappropriate farm management

practices and skills, poor research and extension services provision, poor post-harvest management and quality control mainly due to a lack of knowledge and facilities, limited access to information on production and marketing, poor infrastructure, and inaccessible financial services. Many of these result from imperfect institutions in Uganda such as imperfect input and financial markets and lack of well-functioning information systems (including research).

In the second place, the performance of the sector is affected by poor coordination and interaction of the various stakeholders involved in the provision of various services within the sector. The main challenges are the fragmentation of the stakeholders and the lack of common approaches for capacity building and the strengthening of groups and associations. The poor coordination and fragmentation of the various stakeholders entail high transaction costs, which means that information does not flow freely but is costly to share and coordinate.

In the third place, most of the production is carried out under rain-fed conditions, which implies that supply during the dry period is very unstable. This places limitations on commitments to take importers' orders running over long periods. The limitation is affecting the long-term relationship between exporters and smallholder producers that target export markets and leads to a potential danger of exporters switching from smallholder producers preferring large producers who operate under irrigated conditions. On the other hand, after the rainy season, a glut period may be experienced, and farmers fetch very low prices. The constraint of depending on rain-fed agriculture is largely technical – if small producers would have the technical means to produce throughout the year, they could commit to producing for exporters all year round.

In the fourth place, though there is potential demand in the domestic market for locally produced fruits and vegetables, the organisation and retailing conditions leave a lot to be desired. This has consistently hindered significant growth in quantities that end up in the local markets⁴. The inability for the retailers in the local markets to operate with economically viable volumes has led to some of them giving up. An expansion to supermarket retailing has created competition among horticultural products retailers in the major markets such as Kampala. Their operations boost the incomes of producers making one segment of the poor benefit.

⁴ Cultural factors such as the fact that each household maintains a vegetable garden also limits opportunities in the domestic market.

The constraints described in the domestic market are again largely institutional. Apparently, it is difficult to increase the scale of operations for retailers: buying up larger quantities from a range of producers and selling to a larger number of traders is not possible. The transaction costs for doing so (including contacting , contracting a large number of producers and traders and handling a great number of small quantities) may be too high. Transport costs for instance are high. This is addressed by using the cheapest means of transportation such as bicycles and combining loads in one vehicle. Transport costs also affect exports, mainly through the costs of air freight. Limited freight capacity, resulting in a deterioration of fresh produce, may be a further threat.

The ability to deal with the constraints described above, by small scale producers and actors in the supply channel depends on their exposure and resource endowment while at the same time, the impact of the constraints determines to a large extent whether the actor remains active in the supply chain or quits. For instance, producers face the risk of being excluded to the EurepGap regulations and failure to have their farms certified because of technical constraints (e.g. lacking irrigation). The constraints on the farm (mostly technical) are of lesser magnitude than those related to the market (mostly institutional), such as low prices and conditions of exporters.

The sector provides many opportunities for income generation and employment for all actors along the supply chain. The various actors are attracted to participate in the horticultural supply chain based on observations of progress made by those who entered earlier, experience gained by working in companies or firms active in the sector or after realising the potential in the horticultural sector. The main factors assessed as attractive by the key actors include assured markets, the profitability of enterprises and associated marketing activities, the opportunity for diversifying income-generating activities, and getting a source of employment. The following opportunities for pro-poor development are provided by the horticultural chain development:

- Increase in rural per capita income, where the resource poor engage in production for the market. If production is done under good management and the input and output chains are organised better, per capita income could increase significantly. The direct effect of this could be reduced migration from rural to urban areas.

- Growth of domestic, regional and export markets as a result of producing more attractive products. Population growth leads to increasing demand for horticultural produce. Changing eating habits also produces additional demand for some of the products, especially fruits and vegetables, in the domestic scene.
- Options for organic production and other market niches (such as overseas ethnic markets). Currently, Ugandan farmers already have the ability to produce organically grown horticultural products. The main difficulty appears to be the certification process.
- The availability of cheap labour and surplus land implies that most smallholder farmers have adequate opportunities to undertake horticultural production as income generating activity. Diversification, and the setting up of chains of enterprises, offers additional prospects.
- Intercropping allows the diversification and intensive use of land for small landowners. This also facilitates for cost effective use of resources. In many cases, the climate in Uganda allows for at least two harvests in per annum
- Local processing, which adds value to horticultural produce, is another avenue for increasing the income from horticulture. Farm level value addition – in comparison to industrial activity – has greater potential for improving the livelihood conditions of poor farmers.

Though there is great potential for an involvement of the poor in horticultural production for income generation and employment, there are some limitations to entry at each actor level. All actors are vulnerable to exclusion although the level of vulnerability decreases as one moves away from primary production to export. The level of vulnerability is influenced by the ability to cope with technical and institutional constraints along the chain.

The smallholders engaged in export production run the highest risk of exclusion and the causes of this risk are mostly institutional as smallholders lack the connections with exporters. They tend to be linked to exporters through assemblers or training organisations – and these could fail them at any time. Smallholders also depend to a large degree on their organisational embedding in recognisable groups, as these are used as entry points for training acquisition of knowledge. Women generally

have a higher risk of exclusion since they have limited access to capital and land⁵, the reasons for this are institutional. But some reasons are also technical - certain activities such as spraying are harmful especially for pregnant women.

Distance to markets combined with poor infrastructure also increases the chance of exclusion, as farmers far in the interior have fewer opportunities to participate in horticultural production for income generation. This applies not only to output markets but also to input markets, the lack of planting materials and associated high cost of inputs implies a challenge to smallholder producers to remain active in the sub-sector. On the other hand, given the physical circumstances related for instance to lower pest pressures, the latter group may have certain opportunities, for instance, in seed supply.

Assemblers and retailers involved in export marketing could be excluded if exporters reject their produce or if they lack good interpersonal relationships with the producers and other assemblers. Establishing relationships of trust (also termed social capital) are important factors for success in export markets, besides entrepreneurial skills. Training of the resource-poor with regard to entrepreneurial skills could place them in a better position to participate in the supply chain.

Vietnam

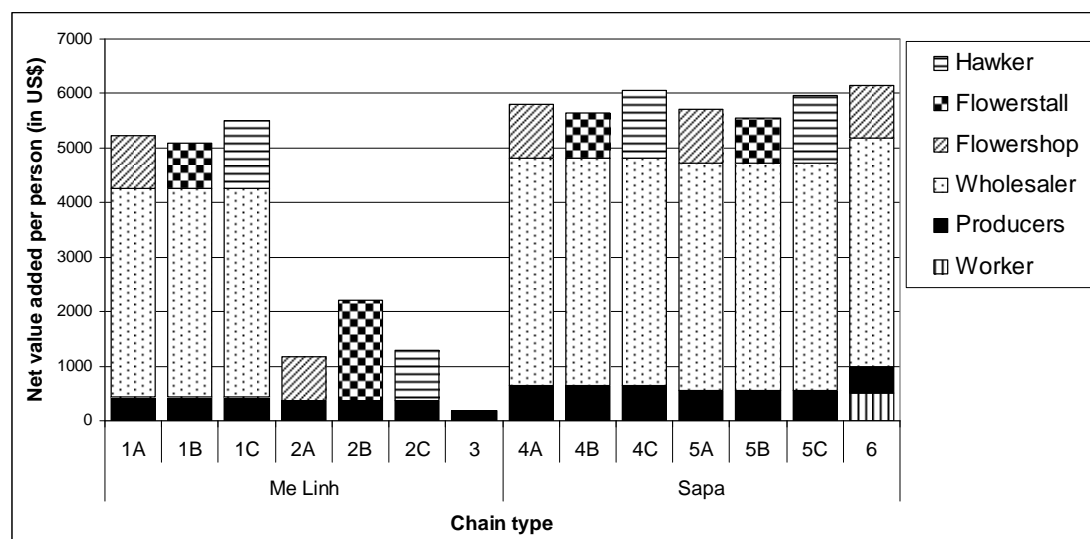
The horticulture marketing chain is important in creating jobs and income for people in northern Vietnam⁶. Horticultural producers rely heavily on rose production as a source of income. Farmers depend upon rose production for 79 per cent (in Me Linh) and 58-75 per cent (in Sapa) of their income. If farmers in Me Linh would not be able to produce roses and would switch back to vegetables or rice (which they were producing less than 9 years ago), between 45 and 55 per cent would end up below the poverty expenditure line. At the time of study, only 15 per cent of the farmers in Me Linh classified as poor according to the expenditure approach of poverty measurement. From this we tentatively conclude that of our sample farmers in Me Linh 30 per cent were lifted out of poverty by switching to rose cultivation. Retailers, on the other hand, were less reliant on the sale of roses for their income, but were dependent on overall flower retailing for an average of 50 per cent of their income,

⁵ Women do often not have land rights and this limits their access to credit, as land titles are often used as collateral.

⁶ The rose marketing chain supplying roses to Hanoi consumers generated approximately 17,000 jobs, US \$27.8 million in gross value, and US \$7.4 million in net value in 2003-2004.

with 5 per cent of retailers being completely dependent on flower selling. Five hawkers, who had the lowest income per capita of retailers, relied on roses for 50 per cent or more of their income, while they relied for 65 per cent or higher of total income on flowers. Our analysis also looked at the efficiency of actors in producing net value with their available labour (see figure 3).

Figure 3: Net value added per person (in US\$) per chain type



To determine which value chain is most ‘pro-poor’ it is important to know what wholesalers will do with their profit (multiplier effect). In all chains, producers receive only a small share of total net value added with farmers in chain 4 obtaining the highest net value (although this is only 11% of total net value). Farmers get a higher net value per person when they sell to wholesalers, compared with directly selling to retailers. Value chains 1 and 6 provide earnings opportunities for the poor but the hired labourers which are attracted by chain 6 generally do not come from the poorest households. Interestingly, the workers at the flower company are innovators who are there to learn. But when the cultivation area expands and more people will be employed, it is expected that also the poorer will join.

Developing rose value chains in cooler mountainous areas (Sapa), targeting the hot summer period, has a lot of poverty reduction potential, as they generate employment in relatively remote rural areas⁷. To make this option even more

⁷ Wholesalers who sourced from Sapa in the summer and <e Linh in the winter have the highest value, US\$ 4176 for 10.000 roses because of the high turnover of flowers and the relatively small labour input required to sell the roses.

attractive, experiments should be done to see if the production period can be extended to the colder winter months with the use of cheap plastic greenhouses. An interesting option could be to stimulate the company and outgrowers scheme model. Attracting foreign direct investment could speed up developments and give access to export markets.

Although there are many benefits of rose growing there are several constraints too. The high use and especially misuse of pesticides is one of the most important disadvantages of rose growing, especially when this happens at a large scale in relatively unspoilt and fragile mountainous areas, where people still rely on surface drinking water. More sustainable cultivation alternatives are necessary and can be developed through applied research with farmers, which will need to aim at improving the technological options but perhaps also at the institutional environment (with respect to laws on pesticide use).

Compared with the growing of other cash crops such as vegetables, rose cultivation requires more capital. Especially the first year is difficult because investments have to be made for the purchase of rose seedlings and the construction of a well, if irrigation water is not reliable. In Me Linh first year investments are about 4 million VND per sao⁸ (US \$7485/ha). The poorer farmers can only take this step if they have access to credit. The financial markets in Me Linh seem to be functioning well enough, as farmers have been able to get access to credit over the past 10 years (see Dang Viet Quang et al., 2004). However, credit might not be available to ethnic minority farmers in Sapa. Hawkers require little capital to sell roses and they can recover their costs quite easily making US \$4-5 for each day they work.

In Sapa a barrier to entry could be the need to have relations with traders in Hanoi, as currently no traders come to Sapa themselves. Orders are placed by wholesalers through telephone. Many of the current rose farmers have a background in rose cultivation in Me Linh and good links with traders. For the largest ethnic group in Sapa, the H'mong farmers, this might be a barrier as they do not yet have these links. But we expect that in the near future the current rose farmers and companies in Sapa will start outgrowers schemes. They will provide knowledge and buy the roses from farmers who do not have direct links with traders in Hanoi. This constraint is largely institutional – building relationship networks is a crucial element

⁸ Around 0.035 ha

of establishing an effective chain. Farmers that are more remote, such as those in Sapa have a clear disadvantage in this respect compared to farmers who are close to Hanoi (i.e. in Me Linh) and have established networks with exporters.

Another constraints is the problem of market saturation. Vietnamese farmers have had bad experiences in the recent past, when their eager adoption of a new cash crop led to a rapid reduction of prices (for instance, coffee). Unfortunately, no domestic rose consumption data are available, so no estimate can be made of the growth of the domestic market. According to the focus group discussions with farmers in Me Linh, profitability per sao has dropped with over 37% from 1993 to 327 US\$ 2004 (Dang Viet Quang et al., 2004). Farmers expect profitability to decrease further to 230 US\$ in 2010. The main reasons for this decline are the increased problems with pests and diseases (leading to lower yields and requiring the use of more pesticides), the increase of input costs and a decline in prices for roses. This decline indicates that growth in supply has been catching up with the growth in demand.

The consequences of market saturation can be alleviated by diversifying in types and colours of roses and moving into the cultivation of other flowers. In addition, export markets should be developed. The foreign owned DALAT HASFARM has shown that this is certainly possible to do from Vietnam. To date, roses from Northern Vietnam have hardly been exported, only hesitantly to China. The cost price per Vietnamese rose is very competitive, but quality will have to improve a lot. More emphasis should be on extending the vase life of the rose. There is a lot of scope for quality improvement, as farmers until now have only had very limited access to research and extension. Through variety trials, integrated pest management and developing cheap plastic green houses a lot can be done to improve quality.

5 Conclusions

This paper contributes empirical insight on the relation between marketing channels and poverty alleviation. As such it contributes to ongoing policy debates on the question of what type of rural development supports poverty alleviation. The analysis suggests three main conclusions.

Both value creation and the generation of opportunities for (self-) employment in domestic marketing channels are substantial, and possibly outweigh the economic impact of overseas export marketing. In North Vietnam, the rose marketing chain,

which annually supplies the hub of Hanoi with over 285 million roses, creates about 17 thousand full time jobs, US \$34 million of gross value and US \$10 million of net value per year. In Uganda, for six garden crops under study, total annual net value added is crudely estimated at US \$193 million. Within the export sector in Uganda, the overall economic impact of small-scale fruit and vegetable (in terms of value added) is five times as big as large-scale rose production, but growth rates are much steeper for the latter.

The data for Uganda allow a comparison of the economic impact of export supply vis-à-vis home marketing. The domestic market generates 60 per cent of value added, and exports 40 per cent. Total employment creation for six garden commodities in Uganda is indicated at 37 thousand full time units of employment, excluding hired labour on the farm. The data do not provide a firm perspective on the relative employment impact of home marketing vis-à-vis export marketing. At first glance, labour absorption appears fairly equal across export supply and domestic supply, which implies that export supply is somewhat more labour-intensive than home supply. The evidence is shaky, however, as statistics on the use of family labour and casual labour (pervasive in domestic supply chains) are weak. The poverty alleviating impact of export horticulture is largely indirect, via economic growth, or via raised skills levels that are used in self-employment. The employment impact is strongly related to the extent to which domestic trading services are involved in the marketing chain.

Farming, trading services, small-scale retail, and farm labour are activities to which members of resource-poor and economically vulnerable households have the best access given their endowments. Horticultural supply chains provide various opportunities for workers and entrepreneurs with limited endowments in terms of education, capital, management level or transport. However, a minimum required level of skills, and access to land and information will often deter the opportunities for the poorest of the poor to take part in the growth of the horticultural sector. The livelihood options that are best accessible as avenues to escape from poverty are the growing of cash crops in the (home) garden, assembling or other trade services, and hawking or other forms of street retail. Employment as a farm worker on export farms of flowers in Uganda does not seem to provide sufficient income security to move out of poverty, but it does provide skills that should reduce vulnerability in the longer run. The incidence of poverty in our sample of horticultural growers and workers is far

below national averages. Based on a comparison of the earnings of horticultural growers to the alternative earnings as a wage worker, it is concluded that some non-poor grower households would slide into poverty when moving into farm work. However, getting a job in a non-agricultural sector would probably result in higher earnings than provided by horticulture. But some small-scale producers will be better off under alternative livelihood strategies, for instance as a worker on a commercial farm, or in off-farm employment. While the rise of plantation horticulture and services generates new livelihood opportunities in the rural economy, several conditions need to be met in order to ensure that households will be able to harvest these earnings opportunities. These conditions include access to input and output markets, and training.

A move from food production for home consumption towards cash crops is supported when there are sufficient options to reduce livelihood risk in the household. Field research has revealed that both in Uganda and Vietnam households specialise to varying degrees in the production or trade of cash crops. In the production centres of Me Linh and Sapa, in northern Vietnam, the growers of roses depend for at least 50 per cent of their household income on rose production. Retailers, on the other hand, are less reliant on roses for their income, but still depend heavily on a range of garden commodities. With the horticultural growers in Uganda, similar depths of specialisation on cash crops have been observed. Not all farm households are in the position to make the leap to market orientation, as the move towards cash crops entails a reduction in the level of food production for home consumption, and increases risk in terms of food security. If the returns to cash crops are modest or insecure, farm households tend to rely more on their own land to produce their food. Increased specialisation often raises the productivity of the land, and it is important to understand the constraints of making the transformation toward cash crop farming. Much of the risk is caused by imperfect institutions such as imperfect financial, input and output markets, involving high transaction costs as well as dependence on rain-fed agriculture. It seems that the institutional constraints are slightly less in Vietnam than in Uganda. For instance, food markets are better developed in Vietnam. A vast area of research has therefore underscored the importance of institutional arrangements that provide opportunities for risk reduction in the household as necessary conditions for change.

6 Policy implications

Based on the discussions above, we come to a set of general guidelines for support to pro-poor growth in horticulture:

- most poverty alleviation occurs outside the marketing channels with biggest economic impact;
- there is substantial untapped potential for horticultural development in Uganda and Vietnam, also in remote areas where few options for sustainable livelihoods exist;
- there is a risk of environmental depletion in remote areas under horticultural development;
- trade policies in the EU regarding tropical imports can be improved to support horticultural growth in the South, especially regarding residue levels for plant protection chemicals;
- a reduction of trade barriers will have a direct, but limited, poverty alleviating impact; the indirect effects (through economic growth) can be substantial, especially on local levels;
- from a poverty alleviation objective, it may be more important to support the development of local markets for horticultural produce;
- several key challenges that lie ahead relate to institution-building: these are best addressed in platforms that unite producers, government, developmental organisations, and donor countries;

Both value creation and the structure of the supply chain are important determinants of the impact of horticulture on poverty alleviation and livelihood development. Policy support should be tailored to specific conditions and specific actors to achieve a maximum impact on poverty alleviation. This chapter has explored value creation and organisation structure in several horticultural supply chains in Uganda and Vietnam, and proposes a three-tiered grouping of marketing channels for livelihood development (see table 2). First, high-value horticulture in a large commercial setting, often involving the export of produce sourced from large farms, and with few domestic actors involved ('channel A'). Second, high-value horticulture, marketing of smallholder supply involving domestic traders and post-harvest services, mostly for export markets and also domestically through emerging supermarket retail ('channel B'). Third, domestic marketing of produce of limited value, yet involving a

large smallholder supply base and many small-scale entrepreneurs in trade and retail ('channel C').

The constraints identified mostly relate to capacities and institutions. Other analysts have identified the policy agenda for pro-poor agricultural growth in terms of institutional development (Dorward et al. 2004). Based on the discussions above, a program of support initiatives is suggested in table 2.

Table 2: Major areas of intervention

(A) Export marketing, sourcing from commercial farms or outsourcing, few actors involved	
Farm work, contract farming	<p>Support the inflow of foreign direct investment.</p> <p>Develop adequate institutions to address food safety, agricultural health.</p> <p>Build coalitions to monitor environmental protection, working conditions on export farms.</p> <p>Deliver MRL dossiers for developing country chemicals.</p>
(B) Export marketing, smallholder supply, many actors involved	
Small scale growers	<p>Support producer organisation, market orientation.</p> <p>Bring market orientation into R&D, extension. Develop seed varieties adjusted to local conditions for best yield, consistent quality, and environmental protection. Otherwise import improved seeds.</p> <p>Apply yield improvement technologies: fertilizer, biotechnology.</p> <p>Unlock remote areas; improve road and communication infrastructure.</p> <p>Deliver MRL dossiers for developing country chemicals.</p> <p>Support on-farm processing of fresh produce.</p>
Trade services: assembling, wholesale	<p>Proper storage facilities, and transport equipment.</p> <p>Functioning credit markets, to cover the risk of producer losses.</p> <p>Develop a code for assembling practices, for instance, hygiene, administration, traceability.</p> <p>Improve infrastructure, reduce the costs of moving goods locally.</p>
(C) Domestic marketing, smallholder supply, many actors involved	
Small scale growers	<p>Support producer organisation, market orientation.</p> <p>Bring market orientation into R&D, extension. Develop seed varieties adjusted to local conditions for best yield, consistent quality, and environmental protection.</p> <p>Unlock remote areas; improve road and communication infrastructure.</p> <p>Risk sharing between producers in order to allow further specialisation.</p> <p>Create employment opportunities off the farm.</p>
Trade services: assembling, wholesale	<p>Functioning credit markets, to cover the risk of producer losses.</p> <p>Address the seasonality of demand for trade services.</p>
Retail: stalls, street markets	<p>Support for retailer, hawkers organisations to counteract increasing power of large-scale trade and retail.</p>

Note: Not all actors are shown in each channel, indicating marketing chains where this study finds little potential participation or potential involvement of households living in poverty.

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