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Production and Marketing of Vegetables among smallholders in Ethiopia: The case of Lume district of Ethiopia

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Abstract

Irrigated vegetable crop production as a viable economic venture helps farmers gain full employment, all year round and generate substantial amount of income. However, the positive prospects of emergence of dynamic and strong commercial horticulture sector among small farmers in the Lume area (as in other parts of the country) depends partly on further support on marketing and improved post-harvest product handling techniques.

Specifically, there is a need to develop and improve marketing outlets for producers, and to improve marketing efficiency and competitiveness of existing vegetable markets. Any marketing support to small vegetable producers should focus on identifying and minimizing/neutralizing the factors that help brokers and wholesalers to determine price to their advantage. Any intervention should also be along the whole vale chain as competitiveness of one market depends on the other that precedes or follows it. It is essential to design marketing strategy for increasing market chain competitiveness (both along the whole value chain and in a given market especially where vegetable growers sell the bulk of their vegetable.

Introduction

Fruit and vegetable cultivation is not the main activity for most of Ethiopian small farmers. In most cases, it is supplementary to the production of main crops (largely grains) and managed by a household. The cultivation is on a very small plot of land (at a subsistence level), largely seasonal with scanty and volatile supply even in areas where irrigation is possible (Guta, 2011

However, in the past decade, a combination of at least two factors resuscitated the production and expansion of vegetables among small farmers. Institutional support in terms of small scale irrigation and extension services was improved. Domestic market demand for vegetables has also evolved rapidly as a result of population growth, increased urbanisation and changes in diet or eating habits.

Following these changes, small-scale irrigation has been expanded in many parts of the country with subsequent positive impact on vegetable production and commercialisation of small farmers (in many of mixed, diversified farming system). Horticulture sector also emerges as an avenue for vertical diversification of Ethiopia's narrow export base as well as commercialisation and diversification of small farmers. This has also contributed to small but gradual changes in production objectives of smallholders from '*sell what you have produced to produce what you can sell*'.

Despite such considerable progress, most of recent interventions are farm-level technical support, weak market structures holdback the benefits producers should have gained from these interventions. This paper from the Future Agricultures Consortium (www.future-agricultures.com) intends to investigate price transmission along the different stages of the value chain, producers' benefit from growing vegetable production in the study area and to identify institutional and administrative bottlenecks that impede market competitiveness and market power of small producers.

Methodology

The study used primary data collected from pre-identified market actors (producers, collectors, retailers, wholesalers, brokers, and marketing cooperatives) who were identified during initial observation conducted to get greater understanding of the characteristics of the situation being studied. Different value chain actors were involved and consulted in the planning stage which was conducted at all levels along the value chain that stretches from on-farm to the nearby central markets.

The initial rapid assessment was followed by detail information gathering exercise with samples selected at every stages of the value chain. As there are multiple market outlets, the study selects major markets and value chain actors both along the vertical and horizontal lines of the value chain.

Considering the small sample size, effort was made to include a number of actors with wide difference in their socio-economic background which helps to assess variance across different actors. At production level where on-farm spot market carried out, respondents were selected

after qualitative interview with the extension service officer and chief of sample villages. For other steps in the value chain, the snowball principle or random selection was applied. After the initial contact with a given actor who expected to be suitable and ready for the interview (which was assessed based on few questions from checklist), the study team asked him/her to name other relevant persons he/she knew to make the second contacts (from who again one or more will be selected) and so on.

After mapping out the value chain the study proceed into actual data collection. The survey was conducted in October and November 2011. Markets along horizontal of the chain were surveyed on the same time/ date, whereas markets along the vertical line were surveyed within two days after the survey in lower level of the chain was completed. This arrangement was made to contain or minimise difference in price response that might arise from differences in supply-demand associated with the corresponding variation in time of supply.

Data collected through semi-structured interviews and focus-group discussions. Moreover, data collected three years ago for the same producers for similar study was also used especially to assess the dynamics of vegetable production in the study area. Different kind of descriptive statistics were used for data analysis.

Results and discussion

Background: Context of the case

The study area is Lume Woreda (district); located at the central part of Ethiopia, close to the capital of Addis Ababa. It is densely settled with an estimated 200 persons per square kilometre in 2005. Some 68% of the population live in rural areas where the predominant occupation is sedentary mixed farming, carried on smallholdings of 0.5 to 4ha. Farmers produce food crops including teff, wheat, chickpeas as well as fruit and vegetables.

Good water resources which include both surface and underground water, relatively bigger land holding size combined with good rainfall and closeness to the Addis market are favourable conditions for intensive horticultural production. Though comprehensive public action might not be necessary, strategic interventions by ministries of agriculture or other development agencies are crucial to help small farmers to seize such local opportunities. What happened in Lume illustrates this.

Commercial horticultural production has expanded significantly since 2005 when national agricultural development policy sees commercialisation of

agriculture and integration of small, subsistence oriented farmers into markets as fundamentally important preconditions to ensure sustainable and rapid development in the agricultural sector.

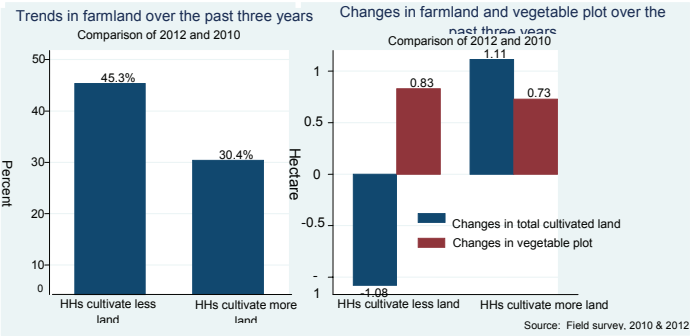

Fig. 1: Changes in farm and vegetable land over the past three years

The trend which was started some years back with small public sector investment in small irrigation infrastructure accelerated since then as more and more farmers expand and intensify their commercial horticulture. Most of the producers expand their vegetable plots despite the declining trend in the average farm size. Irrigated vegetable landholding of the 80 small vegetable producers (who surveyed in 2010 and again in 2012) increased by 64% over three year period from 23.3 ha in 2010 to 36.6% in 2012. At household level, the average irrigated vegetable land also increased from 0.38 ha to 0.70 hectare during the same period. Interestingly, both households who managed to expand their farmland as well as households whose farm size fallen were interested and capable in expanding their vegetable landholding. This has pushed the share of irrigated vegetable landholding (in total cultivated farmland) from about 11% to 27% during the past three years (for the surveyed farm households).

There is a gradual but consistent shift from diverse products to more specialised production, though this doesn't imply expansion of a single enterprise. This positive trend in specialisation and commercialisation process could sustain and move forward if current support go beyond production and focused more on vegetable markets (as well on food markets) that characterised by weak competition and high transaction costs that deprive producers earn reasonable income from their growing vegetable production.

Vegetable markets/chain and actors

For majority of onion and tomato producers, on-farm spot markets constitute the default option for marketing their vegetables. Data from field survey indicates that about 83% of tomato and 60% of onions were sold at spot markets where on-farm or farm-gate transaction is not formal as conducted at the point of production. This lack of formal market place creates opportunities for market manipulation and monopoly for few well-interconnected wholesalers or brokers. Major buyers in these markets are wholesalers who accounted for 63% of onion and 51% of tomatoes sold in such 'markets'. They are followed by brokers, assemblers/collectors and retailers with different market share that range from 7% to 28%.

While some progress had been with marketing, vegetable markers where producers supply their produce are still characterised by a range of problems including imbalance-marketing power, unregulated interference of brokers and capacity problems. Nearly all of surveyed vegetable producers reported that they are working under one or more kind of market problems. Producers complain inadequate marketing outlets, low price, high and sudden price fluctuation, seasonality and unpredictability of demand, unregulated or unfair market practices of brokers and low capacity to transport and take part in markets that could offer better price.

Even in markets at village and district levels, producers are systematically discouraged from selling directly to consumers through the informal network established by few dominant wholesalers and brokers.

Though it is not widely practiced, some financial strapped producers take some credit from wholesalers and brokers in exchange for their un-harvested produce. This arrangement might guard producers from potential low price due to oversupply. The problem is, however, traders have better information to forecast future production and they, as creditor, have also greater power in setting prices and win potential disputes. It is, therefore, necessary to improve producers' access to credit and improve their freedom to engage future contract purely based on their choice.

Most of these marketing problems are more frequent and common at village or on-farm spot markets where the vegetable growers sold the bulk of their vegetables. However, such problems diminish little even if some capable producers transport to sell at higher hierarchies of the chain. Most of these producers reported that the involvement of brokers is not their choice but mandatory if they want to sale the nearby district and town markets, which implies the high probability of recurring of

marketing problems they try to avoid by marketing at higher hierarchies of the marketing chain.

Price and price transmission structure

As shown in Fig. 2, producers' share of wholesalers' price is in general very low. In case of tomato, it varies between 25% to 39% depending on the supply season and market where the wholesalers sale tomato they bought from the surveyed producers. In low supply season when the probability for tomato demand to outstrip supply is high, producers received even a lower proportion of price what buyers (retailers, hotels and other large buyers) paid to wholesalers.

Survey data show that consumers or buyers at tertiary market in the nearby regional town (Adama) or Addis *Atiklit tera* market forced to pay 5 more Birr during low supply season (of the survey year) for a kilogram of tomato. The share of producers from this price increment which ultimately paid by the end consumers is only 20% or one Birr, and the remaining 80% of the rise in price went to intermediaries.

Even during lean season that otherwise expected to increase competition among traders is not sufficient to challenge the monopoly brokers and wholesalers enjoyed during high supply season (which naturally favours buyers). The result indicates the existence of asymmetric price transmission along the value chain as well as the imbalance in market power between producers and brokers/wholesalers.

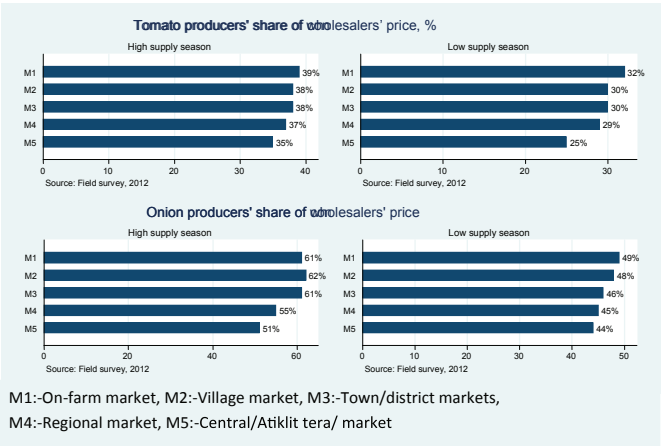

Figure 2. ***Producers' share of end consumers' price across different markets along the value chain***

In case of onion, producers' share of wholesalers' price is a little bit higher and went up to 44% to 62%, reflecting differences associated to supply season and market where the product sold. Unlike the tomato market, onion producers' share of wholesalers' price also improved and increased by 5% during low supply season.

Though the closeness of the study area to major regional and central vegetable markets and the perishability of the products (onions and tomatoes) which undergo minimal processing expected to contribute for relatively quick transmission of producers price to consumers price and vice versa (Reziti and Panagopoulos, 2008), the reason for the relative better transmission of onion price both during positive and negative price shocks is not clear, and needs further study.

High and sudden price fluctuations are also common. Yet again, they, as compared to other actors in the marketing chain, are on the gloomy side of this fluctuation. Survey data, for instance, indicates that in high supply season producers sold one kg of tomato by 2.6 Birr which was increased by 35% to 3.5 Birr in low supply season of the survey year. Wholesalers' price, however, increased on average by 62% from around 8 Birr/kg in high supply season to 13 Birr/kg in low supply season. Apart from seasonal price disparity associated to seasonality, vegetable growers also exposed to wide range of different prices even within a given season.

Producers price recorded at different stage of market also show the insufficiency of mere participation in better marketplaces to help producers earn high price or narrow the wide gab in producers' and wholesalers price recorded at lower level of the marketing chain.

Participation or marketing at higher stages of the marketing chain is, therefore, not a guarantee for producers for higher price. A number of factors including problems or the cost of searching good buyers, small and irregular supply, poor standardisation and grading and poor bargaining power associated partly to lack of storage facilities that hinder effort to wait and sale to good buyers who could offer better price could explain the failure of vegetable growers to exploit the opportunity the nearby regional; and central vegetable markets could offer them.

Conclusion and recommendation

Irrigated vegetable crop production as a viable economic venture is aimed at enabling farmers gain full employment, all year round and generate substantial amount of income. However the positive prospects of

vegetable farming in the Lume area (as in other parts of the country) could be sustained and consolidated if the identified problems are minimised.

Specifically, there is a need to develop and improve marketing outlets for vegetable crops in the area through appropriate marketing arrangements as a strategy to improve marketing efficiency and competitiveness of the vegetables. These should also focus on minimizing or neutralizing the identified factors that help brokers and wholesalers to determine price to their advantage. This, in turn, depends on ability to design a strategy for increasing market chain competitiveness (both along the whole value chain and in a given market especially where vegetable growers sell the bulk of their vegetable.

Provision of adequate short- as well as long-term credits might also help in easing financial liquidity of some producers and their practice of pre-harvest contract with brokers/wholesalers, which reported to expose producers to market exploitation, in addition to further intensification of irrigated vegetable production through investment in irrigation and procurement of critical inputs.

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