

## CAN SMALLHOLDERS CONTINUE TO EFFECTIVELY PARTICIPATE IN GLOBAL COMMODITY CHAINS? THE CASE OF FRENCH BEAN PRODUCTION IN KIRINYAGA REGION OF KENYA

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### **Abstract**

The participation of smallholders in global commodity chains such as export horticulture has often been characterised as problematic given the high transaction costs that these farmers face. The involvement of small holders in Kenya's export sector has therefore been hailed as an exception rather than the rule success story especially given the fact that it has developed largely under the private sector. However, changes in certain standards in export markets such food safety standards have posed a threat to these farmers' participation. For example, there is increasing evidence that exporters of fresh produce prefer to work with larger farmers or even engage in production rather than work with small farmers. If smallholders are going to continue participating in export horticulture value chains, they will have to among other things develop and participate in institutional arrangements that reduce the increasing transaction costs brought about by international food safety standards. This study aims to describe the various institutional arrangements that small farmers use to participate in export horticulture and the challenges and constraints they face within these arrangements. In addition, it will determine factors that affect farmers' choice of alternative institutional arrangements that exist. A survey of 240 farmers was carried out in Kirinyaga to obtain household data and 4 focus group discussions were held in each of the four districts in Kirinyaga. The case study methodology was used to gather in-depth information on the key institutional arrangements used by farmers. The study found that the most dominant institutional arrangements were selling individually to brokers, followed by selling as part of a group to an exporter. Some farmers were involved in more than one arrangement perhaps as a strategy to overcome the inherent disadvantages found in some arrangements.

**Key words:** Smallholders, participation, export horticulture, institutional arrangements

## 1.0 Introduction

Export horticultural sub-sector has continued to experience significant growth since the 1990s to become Kenya's leading export earner in 2007, ahead of tea and coffee. In 2008, export earnings from this sector grew to Sh. 73.7 billion up from Sh. 57.3 billion in 2007. Of the three main export horticultural products namely, fruits, vegetables and cut flowers, small farmers have played a more important role in the production of export vegetables. The largest vegetable exports by volume are French beans, which are also referred to as Green beans or Kenya beans, the latter giving an indication of Kenya's dominance in the export markets which are mainly the United Kingdom, France and Germany (Okado, 2000). In 2003, Kenya was the world's largest exporter of French Beans. French bean production and export by small scale farmers was the focus of this study. Although export horticulture continues to grow becoming Kenya's leading foreign exchange earner, there are concerns that the benefits from this lucrative sector may bypass small scale producers who initially formed the bulk of producers in this sector. A key challenge for many small holders has been the changes that have occurred in the main export markets that have necessitated the enforcement of stringent food safety and quality measures which in turn threaten the procurement of produce from small farmers in developing countries (Dolan *et al.*, 2001; Henson *et al.*, 2008; Vermeulan *et al.*, 2008).

These requirements have been shown to threaten the participation of small producers in developing countries largely due to their financial investment needed to meet these requirements (Dolan, 2001; Graffham *et al.*, 2007 and Jaffee, 2008). The major destination for Kenya's French beans is the European Union with the United Kingdom (UK) accounting for 53%, French markets 24% and the Netherlands 7% of the market. Collectively the European market introduced a food quality and safety standard referred to as the EUREPGAP protocol for fresh fruits and vegetables in September 2003 which became mandatory in January 2004. It consists of control points that cover aspects of agricultural production from seed to delivery of product at farm-gate. It also includes environmental and social aspects. Kenyan French bean exporters therefore have to seek certification under this protocol in order to continue sending their produce to these markets. It is believed that due to the high costs involved in both getting many small farmers certified as well monitoring their compliance to the standards, exporters will prefer to work with larger farmers who can meet certification costs easily or they may prefer to move into direct production. This in turn threatens to lock out smallholders from export horticulture (McCulloch and Ota, 2002; Dolan, 2001).

An important aspect of export horticulture development in Kenya has been the fact that it has developed largely within private sector hands. The government has by and large played a regulatory role through the Horticultural Crops Development Authority (HCDA). With the absence of direct government involvement and subsequently state run marketing boards, the export of horticultural products has resulted in the evolution of various marketing institutional arrangements. An institutional arrangement, also known as governance structure, is a term used within the New Institutional Economics (NIE) to describe a structure within which members of a society individually or collectively cooperate. Doward *et al.*, 1998, define institutional arrangements as arrangements between economic units that govern the way in which these units can cooperate and/or compete. These economic units, e.g., farmers and exporters must find arrangements that help to reduce transaction costs that they face. Transaction costs are defined as the costs incurred in the process of exchanging good and services and include the costs of identifying and screening different trading opportunities, outlets and partners, the cost of negotiating trading agreements, the cost of transferring the goods, services and ownership rights as well as the costs of monitoring the trade conditions to ensure that they are being complied with and enforcing the consequences of breaching the terms of agreement (Jaffee, 1995). Buyers and sellers will seek to form and participate in institutional arrangements that minimise these transaction costs.

This study attempted to identify the various marketing institutional arrangements that are used by small farmers involved in export French bean value chain and determine which ones better enabled their participation in the sector in order to ensure that the farmers continued to derive sustainable livelihoods from this sub-sector. This study therefore aimed to address a key challenges faced by small farmers in Kenya's horticultural sector by addressing the following questions; what institutional arrangements were available for them to participate in and what constraints did they face as they participated in these arrangements?

## 2.0 Methodology

### 2.1 Study Area

This study focused on farmers within Kirinyaga area, which has had a long history of growing this crop (Kyengo Per.Comm 2008). Kirinyaga region (which was formerly Kirinyaga District has now been split into 4 districts- Kirinyaga East, Kirinyaga kWest, Kirinyaga Central and Kirinyaga South Districts) and is situated on the southern slopes of Mt. Kenya. It covers an area of approximately 1478 sq. km with a population density of 309 persons per km<sup>2</sup>, and an estimated population of 500,000 people (census 1999). It borders Nyeri and Murang'a to the West, Embu to the East and Mbeere to the south and is approximately 100 km, North-East from Nairobi.

### 2.2 Research Design

This study primarily used the survey type of research which is defined by Mugenda and Mugenda (1999) as an attempt to collect data and from members of a population in order to determine the current status of that population with respect to one or more variables. One of the main advantages of this approach is that it enables the researcher to collect original data for the purposes of describing a population which is too large to observe directly (ibid.). The survey approach was complemented by qualitative approaches namely case study, focus group discussions and key informant interviews. A case study according to Yin (2009) is an empirical inquiry that investigates a contemporary phenomenon in-depth and within its real-life context especially when the boundaries between phenomenon and context are not clearly evident. The case method was also employed in identifying and describing the nature of institutional arrangements.

### 2.3 Sample Size and Sampling Procedure

The field survey was carried out in August and September 2010. The sample size for this study was 240 farm households involved in French bean production in 2009. The sampling procedure used for this study was stratified random sampling, in order to achieve a high degree of representation. The sub-location with the highest concentrations of French bean farms within each of the four districts was selected. The exception to this is Kirinyaga South where three sub-locations were used accounting for almost 50% of the sample because this district alone accounts for about 50% of the total French bean production in Kirinyaga. Farmers lists were generated from these areas and households randomly sampled for the questionnaire survey. The table below summarises the sampling results.

Table 1: Sampling results

District	Location	Sub-location	No. of French bean farmers
Kirinyaga Central	Kanyakine	Kathare	40
Kirinyaga West	Mwerua	Gitaku	40
Kirinyaga East	Kirima	Mutige	40
Kirinyaga South	Tebere	Kiarukungu	40
	Murinduko	Kamunyange	40
	Kangai	Gathiga	40*
<b>TOTAL</b>			<b>240</b>

Source: Author

Data for this sub-location is still being cleaned and analysed

### 2.4 Data Collection Tools

The following data collection tools were used:

- (i) A questionnaire that was administered to sampled households
- (ii) Key informant interviews with the District Horticultural officer, FPEAK official, farmer group officials
- (iii) Focus group discussion in every district

### 2.5 Data Analysis

Data entry and analysis was done using Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to analyse characteristics of the sample. Key informant interviews provided data used to identify and describe the institutional arrangements as well as give in-depth information on the nature and operation of these arrangements. The results presented below are preliminary results from the study.

## **2.0 Results and Discussion**

### **2.1 Description of Sample**

There were 220 respondents who gave information on household composition, farm characteristics, household income and enterprises as well as French bean production on their farms. In terms of infrastructure, the mean distance to the nearest market is 3.2 km for French bean farmers, while that to the nearest agricultural office is 8.2km. The mean distance to the nearest electricity hook-up was 1.1 km. In terms of the type of road leading to the nearest market, 48% of respondents used a non-paved road, 37% used murrum while only 14% had tarmac on the road leading to the nearest market.

The mean size of land was 2.1 acres for and in terms of ownership rights on the land they were farming, 30% were on land with a title, 48% on land that had been sub-divided but had no title, 18% was leased while 3.2% were on land given as gifts by relatives. 75% of the respondents reported that the soil type on their farm was loam, 0.5% clay and 24.5% clayloam. 65.4% reported that the land they farmed on was relatively sloppy, while 27.4% farmed on flat land. Only 7.4% of the respondents claimed that the land was very slopy. 95% of the respondents had irrigation on their land with 65% of these using furrow irrigation.

In terms of household characteristics the mean age of the farmers was 41.6, while the mean number of years spent in school was 9.4 years. The mean asset value for these farmers was Kshs. 130,885.70 (excluding the value of land).

#### **3.1.1 Description of institutional arrangements**

Eight institutional arrangements were identified as being used by farmers to market their French beans during the focus group discussions held in March-April 2010. They are:

- (i) Selling individually to exporter
- (ii) Selling as part of a group to an exporter

The two channels involve selling directly to a buyer who is an exporter of French bean. The key difference between the two is that the buyer will work with an individual farmer in the former while in the second he/she will work with a group of farmers. In order for one to get an individual contract one has to plant at 3 acres of French beans at any planting which therefore excludes many small farmers. The second arrangement is more commonly used where a group of farmers will approach an exporter to buy produce with them. A written contract is often negotiated between the group officials and the exporter and will include among other things the grade to produce, the price per kilo, the quantity the exporter will purchase at certain intervals for example weekly or twice weekly, pest control methods to use as well as technical advice. Farmers may also be provided with seeds and pesticides on credit and transport of the produce from the grading shade to the packhouse in Nairobi. This cost is deducted from the farmers' earnings. Rules against side-selling are also specified as well as the requirements necessary for a farmer to meet certain global standards including a grading shed, toilet facilities and protective gear. Penalties for not adhering to all the set out rules and regulations are also spelt out. The group operates independently of the exporter (unlike outgrower schemes where farmers are organised by an exporter) and will often have a constitution which regulates its activities and will be registered by the relevant government departments. Many of them also operate like saccos where farmers buy shares (usually deducted from French bean earnings) and against which farmers can borrow.

- (iii) Selling individually to exporter agent
- (iv) Selling as part of a group to an exporter agent

The buyer in these two institutional arrangements is contracted by an export company to identify and contract either individuals or groups of farmers to produce. He is based within the locality of the farmers and therefore is familiar with the area and with the farmers, unlike the exporter who is based in Nairobi and only makes periodic visits to the area. Apart from this difference, the mode of operation is similar to the arrangements involving the exporter.

- (v) Selling individually to a broker/other farmer within the area
- (vi) Selling as part of a group to broker/other farmer within the area

In these arrangements the buyer is commonly referred to as a broker and is often a local farmer. He is very familiar with the farmers in the area and he is able to easily identify which farmers have a crop of French beans. In this channel, the farmers are rarely provided with any information or assistance. These brokers operate seasonally, especially when there is scarcity of French beans and they are able to acquire produce from farmers by buying at very high prices. They are often accused of raiding farmers operating under the exporter arrangements and buying produce from them that should have gone to the exporter. However, it is important to note that there are farmers (either individuals or groups) who produce just to sell through this channel.

- (vii) Selling individually to a broker from outside the area
- (viii) Selling as part of a group to a broker from outside the area

In these arrangements the broker or middleman is from outside of the area and will often go from farm to farm or park his truck in a strategic place where farmers can go and sell their produce to him. He does not have as much knowledge of the area and will often use local scouts to determine where he can get produce. The mode of operation is very similar to that of the local broker.

### 3.1.2 Operations of the Institutional Arrangements

The extent to which each of the arrangements is used by farmers was determined by district and sub-location as indicated in the tables below.

Table 2: Summary of use institutional arrangements per district

Institutional arrangements	District				Total
	Kirinyaga East	Kirinyaga West	Kirinyaga Central	Kirinyaga South	
Selling individually to exporter	4 (6.5)	3 (7.9)	8 (17.0)	27 (22.0)	42
Selling as part of a group to exporter	22 (36.0)	24 (63.2)	14 (29.8)	5 (4.0)	65
Selling individually to exporter agent	2 (3.3)	1 (2.6)	6 (12.8)	8 (6.5)	17
Selling as part of group to exporter agent	8 (13.1)	10 (26.3)	1 (2.1)	1 (0.8)	20
Selling individually to broker/other farmer within area	17 (27.9)	0 (0)	15 (31.9)	44 (35.5)	76
Selling as part of a group to broker/other farmer within area	3 (5.0)	0 (0)	1 (2.1)	7 (5.7)	11
Selling individually to broker/other farmer from outside the area	5 (8.2)	0 (0)	2 (4.3)	25 (20.3)	32
Selling as part of a group to broker/other farmer from outside the area	0 (0)	0 (0)	0 (0)	6 (4.9)	6
TOTAL	61	38	47	123	269

Source: Author, Field Survey, 2010

Notes:

- (i) ( ) percentage
- (ii) Percentages and totals based on responses

Table 3: Summary of use institutional arrangements per location

Institutional arrangements	Location					
	Mwerua	Kanyakine	Tebere	Kirima	Murinduko	Total
Selling individually to exporter	3 (7.9)	8 (17.0)	5 (6.5)	4 (6.6)	22 (47.8)	42
Selling as part of a group to exporter	24 (63.2)	14 (29.8)	5 (6.5)	22 (36.1)	0 (0)	65
Selling individually to exporter agent	1 (2.6)	6 (12.8)	3 (3.9)	2 (3.3)	5 (10.9)	17
Selling as part of group to exporter agent	10 (26.3)	1 (2.1)	1 (1.3)	8 (13.1)	0 (0)	20
Selling individually to broker/other farmer within area	0 (0)	15 (31.9)	30 (39.0)	17 (27.9)	14 (30.4)	76
Selling as part of a group to broker/other farmer within area	0 (0)	1 (2.1)	7 (9.1)	3 (4.9)	0 (0)	11
Selling individually to broker/other farmer from outside the area	0 (0)	2 (4.3)	20 (26.0)	5 (8.2)	5 (10.9)	32
Selling as part of a group to broker/other farmer from outside the area	0 (0)	0 (0)	6 (7.8)	0 (0)	0 (0)	6
Total	38	47	77	61	46	269

Source: Author, Field Survey, 2010

Notes:

- (i) ( ) percentage
- (ii) Percentages and totals based on responses
- (iii) Data for Kangai location missing

From the two tables it can be concluded that the most dominant institutional arrangement used by farmers in Kirinyaga is selling individually to a broker or other farmer within the area. It is then followed by selling as part of a group to an exporter. The only exception to this trend is Kirinyaga West where selling as part of a group to an exporter is the most dominant arrangement followed by selling individually to a broker from within the area. This is perhaps because the type of French bean grown predominantly in Kirinyaga West is the canning variety which is only bought by one buyer. Out of the 269 responses above, it was noted that 188 responses were those of farmers using only one arrangement to market their French beans. Other farmers indicated that they used more than one arrangement, specifically, 58 respondents used 2 arrangements, 21 used 3 arrangements and 2 used 4 arrangements. Interestingly, for those who participated in more than one arrangement, the most preferred arrangement was the selling as part of a group to an exporter.

The length of participation in the preferred arrangement was between 1-25 years with most farmers having participated for between 3 to 10 years. In terms of the type of agreement that exist between buyer and farmer, the most common type of agreement for those who participated in selling individually to exporter was an individual written contract (37.5%), while for those who participated in the selling as part of a group, it was a group written contract (92.5%). Those who participated in the broker arrangement were split between individual verbal agreement (38%) and no agreement (38%).

In terms of assistance that growers get from buyers, it is evident that those who participate in channels where the buyer is an exporter or exporter agent receive more information than those whose buyers are brokers as shown in the table below.

Table 4: Information of assistance received within the various arrangements

Institutional arrangements	Received Information/ Assistance on					
	Quantity to produce	Grade to produce	Seeds	Inputs	Spraying schedule	
Selling individually to exporter	40%	84%	65%	28%	87.5%	
Selling as part of a group to exporter	78%	90%	82%	24%	73%	
Selling individually to exporter agent	42%	42%	42%	28%	57%	
Selling as part of group to exporter agent	56%	81%	12%	6%	25%	
Selling individually to broker/other farmer within area	0%	37%	0%	0%	3%	
Selling as part of a group to broker/other farmer within area	0%	0%	0%	0%	0%	
Selling individually to broker/other farmer from outside the area	0%	0%	0%	0%	0%	
Selling as part of a group to broker/other farmer from outside the area	0%	0%	0%	0%	0%	
Total						

Source: Author, Field survey, 2010

### 3.2 Advantages and Disadvantages of the Various Institutional Arrangements

Each of the arrangements identified above has advantages and disadvantages associated with them. Within the selling to individual exporter the most important advantage identified was access to a guaranteed market (50%). In the selling to exporter as part of a group, access to guaranteed market (75%) and access to technical assistance (25%) were identified as most important benefits of the arrangements. For all the broker arrangements, the most important advantage cited was the higher price compared to other arrangements.

In terms of disadvantages, in the selling individually to exporter, the most important disadvantage the high reject rates (66%) and the buyer not keeping to terms of the agreement. In the selling as part of a group to exporter, equal weight was given to lower price, high reject rates and buyer not keeping to the terms of the agreement all at 33%.

In the broker channel, uncertain market accounted for 50% of all responses and the lack of credit and lack of assistance from buyer both accounted for 33% of all responses.

### 3.0 Conclusion

The broker channel specifically, the selling individually is the most dominant arrangement in the four out of five locations where the sampled households were located. And while the main advantage of this arrangement is that it could offer higher prices than most arrangements, its ability to help farmers participate sustainably over a long period of time in export French bean trade is suspect for two major reasons. One, it is not a secure marketing arrangement as no long-term relationships are established between buyer and seller and the arrangement is usually active when there is a scarcity of produce. Secondly, and perhaps more importantly, this arrangement does not provide farmers with assistance necessary to stay competitive in global markets. Specifically, this arrangement does not provide a means for farmers to obtain certification to the necessary food and safety standards that have proliferated export markets. As a result the future of participants of this arrangement is insecure.

The second most dominant arrangement is the selling as a group to an exporter. It is the most dominant arrangement in Kirinyaga West where the canning variety of French bean is grown. This arrangement was also the most preferred arrangement where farmers participated in more than one. Given the advantages associated with this arrangement including access to technical assistance, international certification and the possibility of a guaranteed market perhaps more needs to be done to make it more attractive to farmers. Specifically, more needs to be done to ensure that exporters are held accountable to terms of agreement such as buying produce in the quantities and frequencies agreed on. In addition, there is need for transparency in determining the grading and the subsequent rejection of produce. Furthermore, many of these exporters tend to offer a fixed price for the produce which many farmers feel is too low. It is one of the reasons why farmers side-sell to brokers. This is one area that requires urgent attention. Finally there is need to educate farmers on the need to use their collective bargaining power to negotiate contracts effectively and ensure that all members of their groups keep to the contract terms.

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