

# Mapping the Domestic Market for Organic Products in Nairobi, Kenya

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**Abstract** The organic agriculture sector in Kenya remains in nascent stages of growth, with little policy or financial support rendering producers unable to maintain consistent supply of organic products. The study sought to map the domestic organic sector in Nairobi and the adjacent counties where the main domestic markets and organic farmers in Kenya were located. Data were collected from organic farmers on production and marketing practices as well as the challenges faced. Value Chain and SWOT analyses were then performed to describe the domestic organic value chain. The market consisted of input suppliers, organic outlets, small scale organic producers, consumers and several support organisations. In addition to production functions, organic farmers were involved in retailing and production of organic inputs. The producers at about 52 years' average age, worked on an average of one acre land units with up to 8 years of formal education. About 19 per cent of them were not certified and up to 43 per cent of the organic farmers sold through conventional channels. Integrating to perform the retailing function improved farmers' incomes. The main challenges included inadequate inputs, information, high certification costs and few organic market outlets close to the farmers. These results provide a baseline for in-depth research and coordination of the organic sector.

**Keywords:** domestic market, Kenya, organic products, SWOT analysis, value chain functions

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## 1. Introduction

Organic agriculture as defined by the [1] and International Federation of Organic Agriculture Movements [2] is a sustainable food supply system. It has gained support as an environment friendly and market driven commercial production across various parts of the world as it utilizes local, renewable resources to protect the health of soil, animals and people [2] It is particularly important for developing countries by contributing to poverty alleviation, food security and climate change adaptation [3,4]. Other benefits from organic production systems include reduced production costs, better market competition and better prices to producers.

Global leaders including the United Nations have recognised the environmental benefits of organic agriculture through improved agro-biodiversity and reduced use of agrichemicals [5]. This coupled with the increasing demand from consumers has led to a steady annual growth in land under organic cultivation, value of organic produce and number of organic farmers (Table 1). Between 2008 and 2009, the global organic agricultural land area increased at the rate of 10.2%. In 2009, one million ha. representing 3% of the total 34.2 million ha. in the world, were under organic production in Africa [6].

Between 2003 and 2009, the global demand for organic products tripled from about US\$ 20 Billion to US \$ 54.9

Billion in 2009. The growth of organic food segment in Europe and North America is one of the fastest, with annual growth rates of between 10-20%. The increasing demand constitutes an import proportion from developing countries and therefore the bulk of organic products in Africa are destined for export [7]. Accordingly, farmers organize themselves in groups for export or coordinated by exporters or their agents as out-growers, to assure supply volumes [3]. Europe is also the main destination for Africa's agricultural exports including organic produce. However, the challenge of meeting foreign standards of approval for the third country status to allow exportation to Europe is complex. Thus the domestic market is becoming the viable option [6]. However, the domestic market is controlled by the national organic standards developed in line with the EU regulations and overseen by private third party certifiers or through the local organic assurance systems.

**Table 1. Recent Growth in Number of Organic Agricultural Producers**

	2012	2015
Global Organic Agricultural Producers (million)	1.9	2.2
African Organic Agricultural Producers (million)	0.57	0.59
Kenyan Organic Agricultural Producers (million)	0.13	4.89

Source. Willer and Kilcher, 2016.

Approximately a third of the new farmers, are in Africa which indicates a high potential for growth in organic production. Kenya's organic producers grew in tandem with other African states. In 2006, 4,535 Ha of agricultural land, were certified organic in Kenya while in 2015, the total organic agricultural land area had reached 4894 Ha. (Table 1) excluding wild or extensive production. The organic consumers, usually in the high end urban areas of major cities, drive the demand for organic products where domestic organic market grew at an estimated rate of 42 per cent per annum in 2010, valued at more than Kshs. 200m [5], attracting the attention of the government of Kenya, researchers and environment conscious consumers [7].

Agricultural marketing in developing countries has been characterized by low and unstable prices, lack of training on marketing skills and lack of an appropriate role of the state in marketing and pricing and other issues [8]. The vertical and horizontal linkages in developing countries also tend to be weak leading to low adoption of new technologies [9]. These challenges may be even more limiting for the organic sector which is still in the development stage.

Using a value chain approach, case studies on organic value chains in developing countries noted both long and short chains with distinct roles and responsibilities of participants and observed a steady growth. The chain actors were more specialized with functional farmer organizations. Buyers, mainly the private sector as well as government innovative programs supported farmers with credit, training and certification [10].

Most of the research on the marketing of organic food products has focused on consumer demand analysis and the export marketing of fruits and vegetables [11]. Other organic market studies have analyzed returns from different market contract decisions [12] including the role of transaction costs in market access [13]. Hardly has research attention been directed to domestic organic markets in developing countries.

This study, sought to map the functional structure of the organic value chain, and identify the constraints limiting growth as a starting point. The study hypothesized that actors in the domestic organic sector performed specialized but uncoordinated functions. A better understanding of the domestic organic sector would enable value chain actors to make better business decisions for the benefit of the entire sector. Specifically, the results may inform the required private and public interventions such as farmer capacity building and certification.

## 2. Applied Research Methods

The organic farmers participating in the study were drawn from the peri-urban counties of Kajiado, Kiambu and Nairobi. They consisted of trained organic farmers both certified and uncertified. These are the peri-urban farmed regions within the Metropolitan. Farm data, organic farmers' marketing practices as well as their demographic and transaction costs were collected. Qualitative information was also gathered through interviews with experts in the organic sector and key informant interviews with the representatives of the

organic Non-Governmental organisations (NGOs), farmer groups as well as retail outlets.

The NGOs included the umbrella national movement Kenya Organic Agriculture Network (KOAN), Community Sustainable Agriculture and Healthy Environmental Program C-SHEP, Hand in Hand, Centre for Research, Extension and Development in Africa SACRED Kenya, Sustainable Agriculture Community Development Program (SACDEP) and Kenya Institute of Organic Farming (KIOF). Semi structured questionnaires were used to collect cross sectional primary data from farmers. This was achieved with the help of trained enumerators. Data collection involved personal interviews with the organic farmers where a total of 117 farmers were interviewed using semi structured questionnaires.

According to [14], value chain analysis may involve the functional and financial analysis of the organic value chain, i.e. describing the activities undertaken and values accruing to different actors along the value chain. Value chain approach (VCA) has been deemed as more optimal to analyze agricultural market access, income growth and value distribution of a food sector. [10]. SWOT analyses [15] were used in addition to map the organic value chain in Nairobi, Kenya and identify constraints and opportunities to developing the value chain. The governance section of the study aimed to identify the elements of structure, power relations, coordination of activities and institutions within the organic value chain [16].

## 3. Results

The domestic organic value chain in Nairobi was mainly observed as a short chain from the producer direct to the consumer or to the retailer without the involvement of wholesalers and transporters, also known as middlemen (Figure 1).

Production and retailing were the most functional levels of the organic value chain where regular chain activities took place. The retailers performed such services as packing, transportation and distribution to the final consumer, were mostly performed by retailers. A relatively smaller proportion of the organic produce was channeled through a processor. Organic production occurred mainly in the central region close to the main source of demand in the capital city. Fresh vegetables mainly tomatoes and kales were the most common products grown. Other products included spices, fruits, tubers and cereals. Although recognised by KOAN and the group members as organic, many producers were not certified. On average, the organic farmer had 8.3 years' experience in production of organic products in which period most of them had attended organic training on various organic techniques (Table 2).

**Table 2. Demographic Characteristics of Organic Producers**

Variable	N	Mean	Std. dev.
Age (Years)	104	52.19	14.91
Education (Years)	104	8.94	4.15
Land size (Ha)	104	1.19	1.93
Organic Experience (Years)	104	8.28	7.85

Source: Author field interviews.

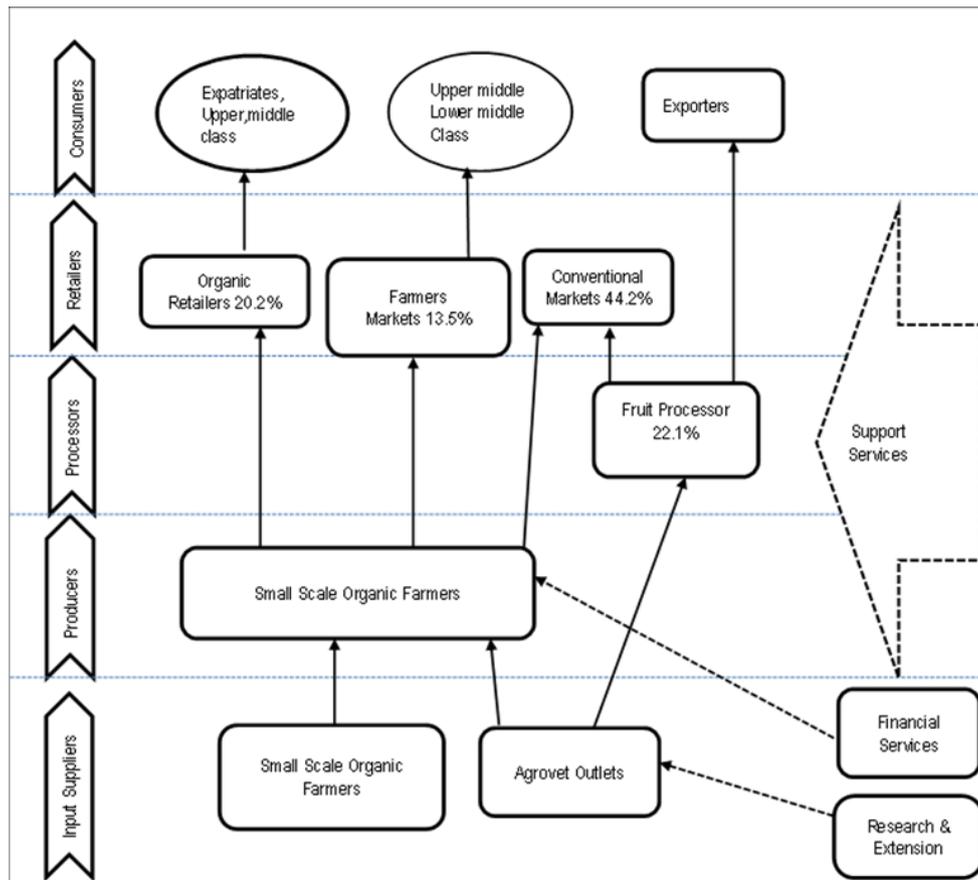


Figure 1. Map of the Domestic Organic Vegetable Market Chain in Kenya (Source: Author **Compilation**, number of respondents 117 organic farmers)

The mean age of organic farmers was 52.2 years with an average education level of 8.94 years. The farmers were well educated and usually retirees from different professions. The organic farmers mostly have small land holdings of 1.19 Ha on average (Table 4). The organic marketing channels included organic retail (a restaurant and a green grocer), a farmers' market and a processor. About 57 per cent (Figure 1) of the organic producers sold their products through the organic channels. The other farmers sold in the local conventional markets. Where the produce was not sold to retailers, the farmers perform the sales activities themselves to reach the final consumer directly in the organic farmers markets.

The Farmers' markets are weekly open air events located close to the up market residential areas where expatriates and upper middle class citizens reside. The organic farmers markets were managed by the organic farmers with support from the national organic movement, (KOAN). The common practice by producers was generally waiting till the produce was ready or almost ready for

harvest before contacting buyers. A simple comparison between the revenue shares received by producers from two different channels (Table 3) indicated farmers benefitting more by upgrading to perform the retailing function in the farmers markets than selling to the retail outlets.

Assuming the same price paid in both channels, farmers selling to the retail outlets received 46.5 per cent of the purchase price paid by the consumer for each unit of organic tomato. The revenue share is even smaller at 32.2 per cent for a bunch of kales. The retail outlets were more consistent, relatively successful and in constant communication with the consumers through repeat sales. Selling at the farmers market on the other hand is more casual and does not guarantee repeat sales. It also involves more time and a higher risk for the farmer as not all the produce may be sold out in a given market day. for quality and quantity assurance. About 22 per cent of the organic farmers interviewed reported sales to a processor for specialised products mainly fruits and preliminary processing before packaging for export.

Table 3. Comparison of Retail and Farmers Market Gross Revenues from organic Tomato and Kale

Tomato	Producer	Retailer	Consumer
Retail outlet Share of revenue (%)	46.5	53.5	100
Farmers market Share of revenue (%)	100	0	100
Cost Ksh./Kg	31.4	74.5	124
<b>Kales</b>			
Share of revenue (%)	32.2	67.8	100
Farmers market Share of revenue (%)	100		100
Cost Ksh./0.5kg Bunch	9.4	17	33

Source: Author field observations.

**Table 4. Functions of Agents in the Organic Vegetable Value Chain**

	Agrochemical Shops, support institutions	Producers	Processors	Retailers
Retailing		√		√
Value		√	√	√
Assembly		√	√	√
Production		√		√
Input Supply	√	√		

√ Value chain Function performed at this level.

Source: Author Field Observations.

The study observed few input suppliers in the domestic market. The main inputs used in the sector were seeds, farmyard manure and organic pesticides. Seed and manure were mainly produced by the organic farmers on their farms. For certain products, conventional seeds were sourced from the local agrichemical shops (Table 4). Most of the organic farmers were not informed of available organic input outlets or the relative costs. They hence resorted to producing their own seeds and pesticides which were exchanged amongst them. In most instances, conventional seeds were used from the local agrichemical shops. The producer's other functions included nursery and land preparation, manure and pesticide application, planting, weeding and harvesting.

More than 30 institutions in Kenya provide organic farming training and other support services at different levels. These included organic NGOs included in the study, researchers, universities and other tertiary educational institutions. The national organic movement (KOAN) provided certification services by developing the certification standards, carrying out standards inspection and training farmers and inspectors. The Center for Insect Physiology and Entomology (ICIPE) spearheads research on organic pests and disease solutions and has developed some effective organic fertilizers and pesticides. Financial support services were available from some NGOs, banks and microfinance institutions though the majority of organic farmers did not access them.

### 3.1. Chain Governance in the Domestic Organic Market

Although the buyers both in the retail outlets and farmers' markets demanded products of a generally good appearance, specific quality requirements were not formally communicated to the producers. Buyers complained about low quality and quantity of produce usually delivered while producers mentioned issues of delayed and low payment. Without access to market information or prior agreements, prices, quality and quantities sold in the organic outlets may be as dictated by the buyers. The marketing of vegetables in raw form lends farmers further low bargaining power due to the short shelf life.

Generally, both vertical and horizontal linkages in the sector are weak. This implies limited possibilities to share market information and new technologies between farmers, buyers and the support environment. The civil society led by the umbrella national movement KOAN and the private sector promotes and coordinates the sector while the role of the government through policy or extension services was missing. Support, services by these organizations was uncoordinated and only linked few farmers. The NGOs' roles included providing training, limited credit, advocacy,

market linkages, standards' development and certification advice.

About 80 per cent of the organic farmers were certified through various modes options of certification available. About 22 per cent of the organic producers were inspected and then certified through the buyer they produced for. The buyer in this case incurred the certification cost. EnCert, was the prevalent third party certification scheme certifying 24 per cent of the farmers as both groups and individuals. About 19 per cent of the farmers were not yet certified (Table 5) although they claimed to produce organic products and were affiliated to KOAN.

**Table 5. Modes of Certification Available to Organic Farmers**

Type of Certification	Per cent farmers	Certification Cost (Ksh)
Individual certification by <i>EnCert</i>	22	15000 - 30000
Group certification by <i>EnCert</i>	2	1500
Group certification by PGS	36	300
NOT Certified	19	None
Certified through buyers	22	Paid by buyer

Source: Author Field Survey.

The individually certified farmers paid the highest certification costs of up to Kshs. 30,000. For a common crop like kale, simple calculations indicated the farmer would expect to spend up to 30% of their gross margins on certification charges. For the scale of production observed in this study at an average acreage of about one acre, this cost may take a long time to recover from the organic sales.

The PGS is a local certification program for small holder groups which involves internal controls by trained farmers. Organic producers directly participate in the development and implementation of these standards. Hence this mode of certification was deemed as more democratic, cheaper and empowering to farmers than the third party certification. Failure to comply with the organic standards may still result in sanctions including expulsion from the group or the farmers' market.

### 3.2. Constraints and Opportunities in the Domestic Organic Market

Many challenges in the sector are due to inherent weaknesses and potential threats but there exist also strengths and opportunities which can be exploited to grow the value chain. Most challenges faced the producers who often resort to their own innovations and advice from fellow farmers to cope. Some of the weaknesses identified included little marketable surplus due to small land areas and limited access to productive resources, random production and marketing and weak chain linkages (Table 6).

**Table 6. SWOT Analysis of the Kenyan Domestic Organic Market**

<b>Strengths</b> <ul style="list-style-type: none"> <li>• Farmers already organized in groups</li> <li>• Cheaper organic guarantee system through PGS</li> <li>• Vibrant organic NGO sector with high capacity for training farmers</li> <li>• Many organic farmers already trained</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>• Marketing of too many small products in raw form</li> <li>• Lack of functional production and marketing groups</li> <li>• Limited availability of organic inputs</li> <li>• Limited use of organic labels and existence of uncertified organic producers</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>• Unmet demand for organic products in the market</li> <li>• Vertical integration possibilities through produce aggregation and delivery to consumers by farmer groups</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>• Losses due to drought</li> <li>• Lack of credit access</li> <li>• Conventionalisation</li> <li>• Lack of government support</li> </ul>

Source: Author Compilation from Discussions with Stakeholders.

The organic farmers are already well organised into groups but the group activities were not fully aligned to organic production and marketing. The farmers interviewed indicated that formation of functioning marketing groups would improve market access to a greater level than even certification subsidies possibly would. The PGS certification system offers the organic farmers a more convenient mode of certification and labelling which can further enhance organic product awareness and utilization.

#### 4. Discussion

The retail outlets represent an indirect type of marketing channel where the end consumer and the producer are connected through the retailer. Indirect markets are often expected to offer farmers better prices [17] which the study does not corroborate. Without formal contracts and in the face of few available outlets, the retailer may act as the market leader, reducing the bargaining power of small holder organic farmers. Linkage to marketing outlets and more market facilities is beneficial to both consumers and producers. This is the case as more outlets provide alternatives for both parties hence better prices and motivation [8] as well as reduced monopoly power by retailers.

In spite of observed price differences between the retail and direct sale channels, indirect channels may still be favourable to farmers as a ready market involving less time spent in the selling activity and less transaction costs involved finding direct buyers. Besides, the retailers are more specialised in retail functions and packaging products to address the end user expectations. The organic producers selling in the domestic retail channel face a short value chain and are often averse to middlemen. The latter are often perceived as exploitative [9]. However, Proper execution of this role mainly to minimise the transaction costs involved has induced market growth by stabilising prices. This may require building trust with the farmers and legal support through formal contracts [18].

Weak intra chain linkages in organic sector imply limited possibilities to share market information and new technologies between farmers, buyers and the support environment. To meet the demand for organic products in Kenya's domestic market, organic producers may need to synchronize their production with the buyers' requirements. This may call for strengthened chain linkages to facilitate effective communication. Strategic combinations of indirect marketing and bulking within the farmer groups

may be explored to reduce marketing costs and increase profits.

The high rate of group membership at 79 per cent is a potential benefit for the sector. Strengthening the existing farmer groups may be a feasible intervention to improve the chain governance through easier coordination. Such groups can also reduce transaction costs by organising farmers for access to inputs and information [19]. Similarly, they can be utilised for collective marketing and reduce marketing costs for individual farmers, increase bargaining power to farmers as well as credit access [20].

The small production areas may allow the relatively elderly organic farmers to handle most of the work on their own with occasional assistance from casual workers or other family members. However these along with lack of organic certification required in the organic outlets may cause organic farmers to resort to the conventional channel. These volumes are also uneconomical, unable to cover the transportation and time costs to the distant organic markets. The limited involvement of younger farmers also threatens the sustainability of the organic sector.

The study observed a number of support institutions working with the sector players though these were not well coordinated and focused mainly on training issues. Numerous farmers' trainings may not impact on market or chain development until marketing issues are directly addressed in such workshops [8]. Incorporating other enabling services such as storage facilities, transport, insurance, and supply of inputs by these organisations would also reduce transaction costs for farmers [9,21] and improve the economic sustainability of the organic systems [22].

Growth of the organic sector is often leads to development of organic standards and third party certification. The latter is perceived more objective and globally standardized and hence more credible to certify organic products [23]. Certification can also reduce search and monitoring transaction costs by retailers and consumers. However, though useful for market access, the cost of third party certification is high up to 30 per cent of the annual farm income [24]. In some cases, these costs exclude smallholder farmers from third party certification and consequently from high value organic markets and can result to conventionalisation.

KOAN recommends PGS as a more affordable mode of certification for the domestic market. It is also more socially, culturally and economically adapted to the reality of the local farmers [25]. However, the PGS still needs strengthening through legal recognition for equal validity with the third party certification. Establishing such internal

control systems and promoting local certification programmes have been deemed critical to reduce certification costs [26] as well as subsidizing the farmers' costs.

## 5. Conclusions and Recommendations

The development of the Kenyan domestic organic sector is hampered by specific constraints but certain opportunities are also available along the value chain. The organic sector was observed as a short value chain with few inputs suppliers and organic outlets and no middlemen. This leads organic farmers to perform multiple chain activities such as input provision, production, transportation and retailing as well as resort to the conventional market outlets. An environment of trust or legally binding contracts may help to include the role of middlemen in the short organic chain. These may also assist to collect and market economically sound quantities of organic produce.

The costs of certification are still high but could be reduced by promoting the more popular mode of certification namely the Participatory Guarantee System (PGS). Closer linkages and communication among the chain actors are recommended to enhance growth as well as value addition and chain integration by producers. Without contracts, marketing groups and well-coordinated support from the buyers, civil society or the government, the farmers may lack bargaining power and exit the organic outlets and eventually organic production.

The organic producers involved in the study lacked farm records which may imply as well a lack of production plans. Hence further studies may involve identifying incentives to motivate organic farmers to manage their farm projects as businesses and keep records. Similarly determinants of farmer group and middlemen effectiveness and the transaction costs involved would further inform research and policy on sustainable value chains in developing countries.

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