



An Institutional Ethnography of a Horticulture Production Investment in Northwest Mount Kenya



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Abstract

Introduction

Horticulture in Kenya is currently the second most important agricultural subsector after tea. It accounts for 33 per cent of Kenya's gross domestic agricultural product. The sector is dominated by export oriented large-scale production for mass markets in Europe aimed at reducing on transaction costs and maximizing profits. The ethnography adopted the new institutionalism theory to analyze horticulture production and explore the institutions and actors' there-in. Data was collected through participant observation recorded as field notes; and supplemented through informal in depth and key informant interviews. Thematic analysis was applied to the qualitative data. Formal and informal institutional setting and actors is identified. Emic perspectives of food production and power relations between different actors are highlighted. The study reflects on the institutional transformations as highlighted in model of institutional change and highlights how formal and informal rules and regulations are formed and negotiated, and which actor benefits in which way.

Keywords: Ethnography; Institutional settings; Actors; Export horticulture; Kenya

Abbreviations: IDI: In-Depth Interview; EU: European Union; KII: Key Informant Interview; GoK: Government of Kenya; HCDA: Horticulture Crops Development Authority; SSA: Sub-Saharan Africa; UK: United Kingdom

Introduction

While Kenya's export-oriented horticulture began with a small number of Asian-owned family enterprises in the 1960s, several well-financed exporters had joined the sector by the 1980s [1-3]. International investments (foreign direct investments) in Kenya grew rapidly after independence and these included investments into the export-oriented horticulture sector [3-5]. The multinational exporters viewed direct sales of horticulture produce to retailers in Europe as a way to exploit their advantages in investment, scale and market linkages [3,6]. Additionally, the land reforms post-independence transformed Kenya's horticulture sector. The land reforms launched by the new government bought vast amounts of the land farmed by Europeans and distributed it to thousands of African smallholders particularly in the western highlands, which largely coincides with the Laikipia County, the focus of this study [7-8]. Laikipia County is one of the booming export-oriented horticulture producing regions in Kenya with about 30 companies operating on 35 farms [9-10]. Several small holder farmers engaged in export-oriented horticulture out grower schemes.

This agricultural subsector has been regarded as beneficial for national development and poverty alleviation through the income opportunities provided for out grower farmers and

wage workers in this sector as well as creation of supporting industries [11-12]. Studies have also interrogated the food and safety standards for production and export as well as the implications of the sector to the national economy and resource utilization [13-15]. However, there is a dearth of literature on export-oriented horticulture in relation to actors, institutions and processes in this global value chain.

Based on new institutionalism analysis in social anthropology we carried out a qualitative study to thoroughly interrogate export-oriented horticulture and not only assess the availability of food in the sector but rather at all processes related to food production, distribution, processing and consumption. The paper describes the institutional setting (formal and informal rules, regulations, norms and values) of export-oriented horticulture and provides a basis for further interrogation of the institutions and actors there in [16-17].

Materials and Methods

Description of the study area

The qualitative analysis of export-oriented horticulture targeted an exporting company with headquarters in Nairobi and a farm and packhouse in Northwest Mount Kenya. These

were setup in 2004/2005 on approximately 350 hectares of land in Laikipia North sub-County. The region is a semi-arid zone prone on the lee-ward side of Mount Kenya characterized by dry spells and erratic rainfall patterns averaging 400mm per annum [10]. The farm is located downstream the Ewaso Ng'iro

river sub-catchment area with closed proximity to two rivers which pass by the hedges of the land on two sides and this was a guarantee to water availability namely, River Timau and River Ontilili as in (Figure 1).

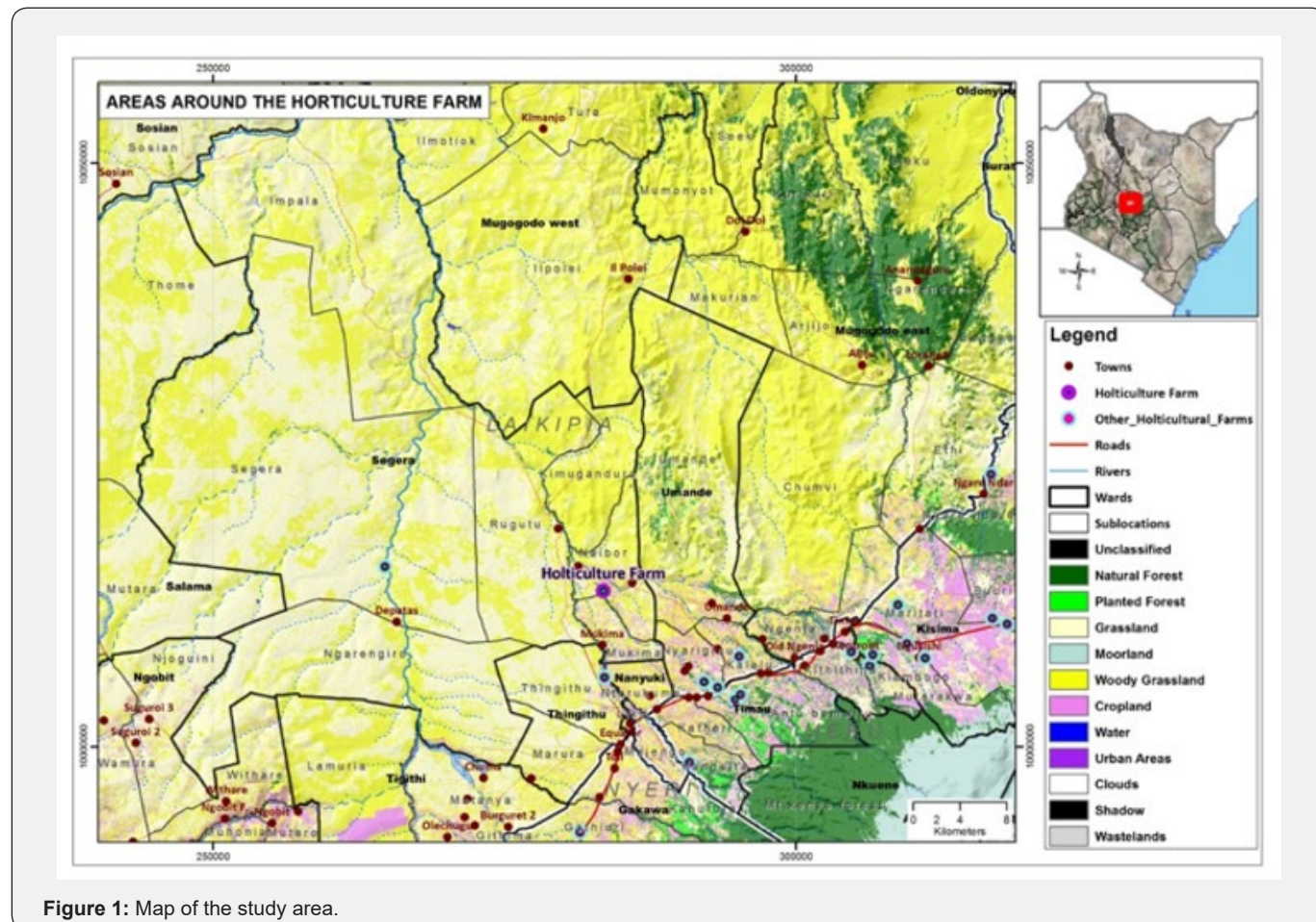


Figure 1: Map of the study area.

Theoretical framework

Anchored on the theory of new institutionalism the study adopted an emic perspective accessed through a social anthropological approach [16-17]. When regarded through the institutional change model lens, export-oriented horticulture it can be analysed comprising; external factors that influence the relative prices. The changes in relative prices of the commodities influence internal changes that in turn influence the distributional effects as the socio-economic behaviour of the setting and these have an effect on the external factors which define export-oriented horticulture production. To understand institutional development, change or maintenance; ideologies, institutions, organisations and bargaining power are endogenous spheres that influence each other and are themselves influenced by external factors [16-17].

Study Design and data collection: The study entailed qualitative data collected through participant observation recorded as field notes; and supplemented through informal in

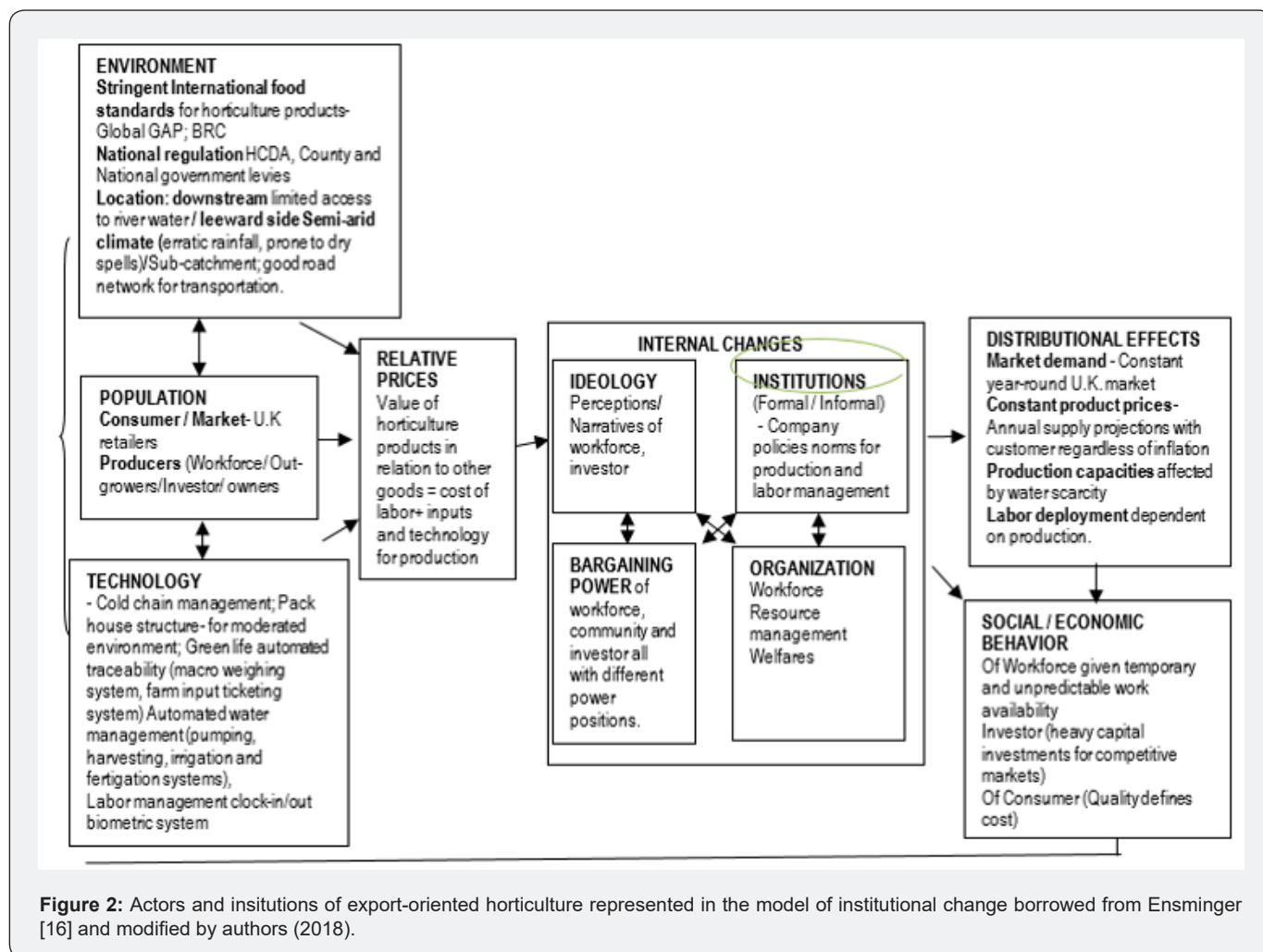
depth and key informant interviews. The researcher interacted in the study setting as a participant as observer and also carried out interviews with different actors to further inform the study. Approval to conduct the study was obtained from the horticulture company and the Laikipia County government. Information about the study was given to all potential participants and informed consent was sought before any data was collected. Permission to take pictures and record audio files of the key informant interviews was sought. The data was transcribed and coded for thematic analysis aligned to the study questions.

Results and Discussion

When analyzed by applying Ensminger's [16] model of institutional change with input from [17] on institutions, the external factors (social and physical environment, the technology and the population) have a direct impact on the relative prices of export-oriented horticulture. These are expressed in the internal changes that manifest in the formal and informal institutions that incorporate the organization, ideologies and power positions

of the different actors in the horticulture production. The impacts are further manifested in the socio-economic behavior

and distributional effects of export-oriented horticulture and redirected to the external factors (Figure 2).



External factors

Physical location: The physical location export-oriented horticulture farm was a defining factor for its establishment. The company ventured into establishing the farm in Northwest Mount Kenya region because of the availability of cheap unutilized large tracts of land. Around 2004 when the acquisition of the land took place, land rates in the County were fairly cheap compared to other areas. One acre cost the company of Kshs 50,000 and they were able to get the 700 acres of unutilized land within one locality and from one owner. Additionally, the company settled for this farm because of the proximity to 2 rivers flowing from the mountain which hedge the land on two sides. The proximity to the two water sources seemed as a guarantee to water availability for the water intense cultivation the company was venturing into water is crucial in horticulture production in the fields and packhouse and as such the particular physical location was thus very strategic. However, water availability has over the years since the farm was acquired changed with the rivers drying up and becoming seasonal. Presently the location is now a challenge for production given the erratic rainfall patterns in Laikipia County and the seasonality of the rivers.

Socio-political environment (Standards, certifications and regulations for export-oriented horticulture):

Establishment of the farm and packhouse was in response to rising market driven international food standards that resulted to the company needing to have more control over the production of fresh fruits and vegetables for export. These international to national food standards continued to shape the company’s rules of the game for production of fresh vegetables and fruits. Export-oriented horticulture is subject international and national certifications and government (national and county) authorization and regulations. Nationally for export-oriented horticulture the farm and exporting company complied with Sanitary and Phytosanitary certification (SPS) from the Kenya Plant Health Inspectorate (KEPHIS) and Kenya Bureau of Standards (KEBS). For environmental management, the horticulture farm is audited and certified annually by the National Environmental Management Authority (NEMA) as well as vetted as part of the Global GAP and Linking Environment and Farming (LEAF) certifications. Land tenure for the farm for which the exporting company has a free hold title obtained through purchase of the property is provided from the Ministry

of lands. For business authorization the company was licensed annually and cleared by the County government (s) where it is located and operates within. The North West Mount Kenya farm was located within Laikipia County which consequently issued its annual business licenses. The horticulture farm and exporting company was subject to county levies for transportation of produce across the Laikipia, Meru, Nyeri and Nairobi Counties. The company was also at a national level subject to government taxes. Internationally, the exporting company had committed to global competitiveness through compliance to the private voluntary standards (PVS). The main certifications to which the farm and the exporting company were accredited by were; Global Good Agricultural Practices (Global GAP); British Retail Consortium (BRC) and Linking Farming to the Environment (LEAF). The Global Good Agricultural Practices (GAP) formerly EUREGAP is a market driven certification developed by EU retailers to ensure product safety, environmental protection and the health and safety of workers and animals. The horticulture farm also ascribes to Kenya GAP which is also benchmarked in the Global GAP standards. At the company level there were formal and informal institutions 'rules of the game' namely: the norms, values, regulations, rules and laws which included policies for employment and welfare of the workforce; production on and off farm and common pool resource management that guided the operations and functioning of the horticulture farm and exporting company. Formal 'rules of the game' were largely informed by the national and international level standards and regulations. For instance, in production, the company has in place very elaborate policies and standard operating procedures that define all the processes and activities of handling produce in the farm, packhouse and while on transit until it reaches its destination. On the other hand, the informal institutions on the other hand included the undocumented norms that apply in the daily running and activities of the horticulture set up. The informal institutions are often devised by one set of actors and picked by the others for instance a norm can be initiated by the management and borrowed by the workforce or vice versa. For example, besides the written down rules on employment and labor management, workers would often quit and come back in search of employment in the same premises to get better employment terms. Since the company held a higher bargaining power position on the basis of the formal institutional policies, workers would utilize informal 'rules of the game' to formulate ways of increasing their own bargaining power positions, like for instance quitting work to renegotiate a position.

Population

Consumers: Export-oriented horticulture in Kenya was produced for specific consumers who defined the market standards. The consumer dictated the farming inputs, the characteristics (color, size, shape) and the price of the horticulture produce. These regulations often referred to as private voluntary standards (PVS) defined the export-oriented horticulture markets. The horticulture products were mainly targeted at retail consumers in the United Kingdom (UK) who

accessed the produce from their preferred supermarket shelves. The consumers were safety and quality conscious and thus the stringent measures around the production of the food products. The retail chains together and formed consortiums for regulation of produce on farm and in pack house to ascertain quality, specifications for preference and safety for their wellbeing.

Producers (Investors/owners, workforce and out growers): Owners and investors provided the capital to access the land, water, technology, material inputs. They engaged out-growers and employ workforce for the labor-intensive horticulture production. The exporting company had three big farms for horticulture production and three pack houses in different regions of Kenya namely Nairobi, Laikipia and Mwea Counties. The company acquired the farm located in the North-West of Mount Kenya. The horticulture farm was owned by an established horticulture exporting company set up in the 1970s as a family business that has farms in other regions and also works with contract farmers as out-growers from all over Kenya. As at the time of the study the exporting company (investors) owning the horticulture farm was one of the four leading horticulture exporters in Kenya. The horticulture farm in North-West of Mount Kenya was established between 2004/2005 to respond to increased international standards for food safety and quality. Export-oriented horticulture is a labor-intensive venture given that most companies have their own production units. The production units comprising often farm and packhouse employed over 80 per cent casual wage based unskilled workers often referred to as 'seasonal'. The company had set up institutions to regulate production and manage its workforce in compliance with the international food safety and quality regulations they are certified to adhere to. Accordingly, workforce welfare is a major aspect and the company makes provisions to supplement the minimum wages earned. The greater proportions of over 75 per cent of these seasonal were women. This general labor force runs the daily activities of the farm and pack house to ensure that products are ready on demand and with the right specifications. They are in the different departments/sections within the farm and packhouse. Besides the on-farm produce, out growers from the locality were also engaged on contract farming by the horticulture company. Out growers included; individual farmers or farmer groups who'd been vetted and met the company and international standards for food safety and quality. They received farming inputs on credit and technical capacity to produce baby corn maize, and fine green and yellow beans for export. The out-growers were from all over Kenya usually drawn from within the North-West Mount Kenya region (the larger Laikipia, Nyeri (Narumoru) and Meru counties). Other out-growers are engaged to supply the produce to the other two pack houses (Mwea and Nairobi).

Technology

The export-oriented horticulture sector invested heavily in high resolution technology to align to market standards and ensure quality of their final products. Some of the technology

was not even available locally and investors would go to the extent of importing it as well as expertise on how to operate it.

Technology in production and post-harvest handling in export-oriented horticulture: The establishment produced fresh vegetables, herbs and fruits for the UK and is among the biggest Kenyan companies distributing to the EU, competing alongside Vegpro, Finlays and AAA growers. Horticulture crops grown at the farm are water intensive and the production is therefore irrigation driven. For instance, one crop of broccoli requires upto 20 litres of water from planting to harvesting. The farm practiced irrigation farming. Drip and pivot irrigation systems were used at the farm to complement each other in providing the most efficient and reliable crop watering system. The terrain, type of crop and the need to reduce water wastage informed the irrigation systems in place given that the farm experiences water scarcity challenges periodically. The farm had invested in water harvesting, storage and irrigation systems for efficiency and adequate supply. Man-made dams as reservoirs could store upto 2,000,000 cubic meters of water at any given time. An elaborate water pumping system was in place connecting the reservoirs to the drip and pivot irrigation systems and also from the river to the storage reservoirs. A fertigation system was in place to automate fertilizer application using the drip irrigation system for more efficient processes. Since horticulture crops are highly perishable, fast tracking post-harvest management processes are key to enhancing the shelf-life and value of the products. The packhouse was set up as an integrated facility within the horticultural farm using state of the art modern modified atmosphere technology. The facility included an elaborate cold chain management system, automated weighing and conveyer belt technologies. The packhouse operated on a 24-hour working schedule. Elaborate transport structures (road / air) were in place to reduce on time taken in the movement of the highly perishable products. The horticulture farm collected produce from its out-growers or its own farm in its own smaller insulated trucks for short distance cold chain management. For the road transportation the company worked closely with a freight company that provided refrigerated freight trucks and maintained the cold chain through-out the movement from the farm to the Nairobi outlet and later to the airport for airfreight to UK. 24-hour power supply was mandatory at the production unit to enable operations in the packhouse and in the farm. Traceability was a key factor in the safety and quality of horticulture produce. To comply to this the farm invested in farming program software used to monitor the processes from planting, weeding, fertilizer application and pest management until the crop is ready for harvesting. The computer program utilized a ticketing and labeling system that authorized inputs and monitored the processes. The post-harvest interval (PHI) after chemical application was strictly monitored for Minimum Residue Levels (MRLs) controls. In the packhouse produce would be graded and packaged with labeling for easy traceability to the farm in case of any safety and quality queries in the markets. For management of workforce the farm had in place a biometric

system for clocking in and out. Using the technology accounting for labor and produce output was made much easier given that the entity was founded on the economies of scale for profitability. Electrical energy was a major factor in running the technology in the horticulture farm and packhouse. Kenya Power and Lighting Company (KPLC) supplied electricity with transformers located within the farm to ensure that adequate and stable power is in place. Additionally, there huge generators in the premises located near the pump house and next to the packhouse facility to ensure automated power backup in the event of electricity outages.

Distributional effects

24 hours was the target time set from the farm to the market for distribution of the high value yet perishable horticulture products (vegetables, fruits and herbs). The horticulture producer, the road and air cargo handlers and a U.K based agent had contracts binding the cold chain management at the point of handing over produce to one or the other to ensure this aspect is well handled. Once in the UK the produce is then taken up by the agent charged with distribution and logistics to ensure that the produce in on the shelves in good time and condition. To enable this and strengthen its market base, the horticulture company had a working arrangement with its long-term agent based in the U.K. The agent coordinated market / consumer relations as well as orders and delivery of produce in the U.K. The agent would place the orders for the different products and redistribute to different supermarket chains in the UK. This agent /distributor had a long-standing partnership with the company for many years.

The horticulture products barely found their way into the local markets or consumption. In the grading process there are products that do not pass the grading process are classified as 'food waste / rejects'. The rejects were usually producing that did not meet the customer specification and was not exported yet considered fit for human consumption. In line with company policies these were disposed and not for sale in the local markets. In the case of the sampled farm, the food waste was utilized to prepare compost manure and maintain the ecosystem by feeding wildlife that was in the surrounding area. However, workers held the narratives that this export-oriented horticulture 'food waste' could be used to enrich their diets at the farm and in their households. This ideology often led to some workers stealing produce for household consumption and thus risking their job security.

Socio-economic behavior: The market for export-oriented horticulture was consumer- driven. As such the market defined and regulated the quality, safety and pricing of commodities. The export-oriented horticulture produce was regarded as 'high value' given the market prices informed by the inputs and processes that had been invested in its production. As long as the product met the consumer specifications, the pricing was not an issue. Often in the export-oriented horticulture producers even had code names for produce giving an indication of the

market value of the same. For instance, runner beans one of the most sought-after products was regarded as 'green gold' by the producers in export-oriented horticulture in Laikipia County. The wage workers in export-oriented horticulture engaged in the short-term contracts often without security of tenure to meet their livelihood socio-economic demands. Since a majority of the workforce was unskilled, working in the export-oriented horticulture farms and packhouse that recruited with no qualification or experience was a viable option. Additionally, workers preferred working specific departments in export-oriented horticulture like in grading and harvesting since these attracted bonuses as top up on their daily wages. Workers would often commit long working hours with little afterthought as they sought to earn additional incomes and improve their socio-economic wellbeing. In summary therefore, export-oriented horticulture production in Kenya is for both export and local markets with producers of both markets operating under different institutional settings and with different actors with varying perceptions. Export-oriented growers such as the study setting dominate export horticulture. With the market liberalization of the 1990's the horticulture sector became multi-stakeholder with the private sector playing key roles. These included input provision, credit, extension services, post-harvest handling, value addition, agro-processing and market access [18-20]. Based on Ensminger's model of institutional change, external factors in export-oriented horticulture, namely the changes in the socio-political structure (such as national and international laws, as well as informal institutions or product standards (such as the GLOBAL GAP) and natural environment), population (demographic changes) and technology (technological changes), which together influenced so-called "relative prices" [16]. This consequently had an effect on the internal changes namely; the ideologies, the organization, institutions and bargaining power of the different actors here in identified as the consumers, the producers (owners, workers and out growers) in export-oriented horticulture. The internal changes in turn affected the distributional effects and the socio-economic behavior in this sector. Changes in market prices and the national and international policies, for instance policies to support export-oriented horticulture with regard to taxes, trade agreements and quality control altered the institutional setting of this food system. It also altered the bargaining power, ideologies as well as the organization of involved actors as land is now more and more devoted to this sector [16]. This translated in changes of activities and interactions, as well as abilities of involved actors to steer, engage in and benefit from this food system. For instance, the international food safety and quality standards put the consumer and the market at a higher bargaining power position in relation to the producers [21]. In order to gain market, access the export-oriented horticulture producers re-aligned internal changes to fit the environment by complying with these international to national standards. The company formulated 'rules of the game' for production and produce handling which also influenced how labor and work force was engaged. This put the workers at

a lower bargaining power position that the company and from time to time the workers employ informal 'rules of the game' as discussed by Scott (1985) in weapons of the weak and exhibited everyday forms of resistance like quitting employment at will to try and negotiate for a higher power position [21-22]. Here the concept of institutions as fit turning to misfit and then to fit again is experienced as the formal and informal rules of the game are influenced to change to meet the different actors bargaining power for taking part in the food system [17]. All these interactions are manifested in the distributional effect and socio-economic behavior of export-oriented horticulture linked actors and in a cyclic effect manifest in the environment, population and technology aspects that influence the relative prices in this global value chain.

Conclusion

Export-oriented horticulture as a global value chain involves multiple actors and institutions at production, processing, distribution and well as consumption and each has different power positions founded on formal and / informal institutions. The investment of export-oriented horticulture in the environment, population and technology added to the cost of production and was eventually accounted for in the 'relative prices' of the commodity. The changes in 'relative prices' of export-oriented horticulture produce sparked the process of internal change which itself comprised the dynamic interplay of institutions (formal and informal) organizations, bargaining power and ideology of the different actors in the sector [16,17]. The product of this process of internal change then in turn influences the social/political behaviour as well eliciting distributional effects. Export-oriented horticulture setting is transformed based on the actors and institutions dynamics which are linked by the changes in 'relative prices' as illustrated in the study findings. To better situate this global value chain, there's need for larger data sets involving more export-oriented horticulture establishments from across the country to further interrogate the institutional setting.

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