*50% discount – use code **50CEM15N** when ordering*

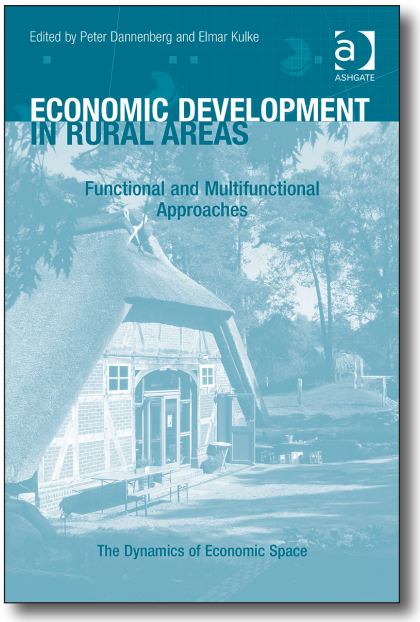
ASHGATE

Economic Development in Rural Areas

Functional and Multifunctional Approaches

Edited by **Peter Dannenberg**, University of Cologne, Germany and **Elmar Kulke**, Humboldt-Universität zu Berlin, Germany

The Dynamics of Economic Space



'Rural areas across the world are changing rapidly. To make sense of these changes, we need new and innovative ways of thinking. This book makes a great contribution to these important problems. As editors, Peter Dannenberg and Elmar Kulke have brought together a good range of contributors to address a wide variety of case studies. It should be read by researchers across the spectrum of rural studies.'
Bill Pritchard, University of Sydney, Australia

In rural areas of industrialized societies, food production as a basis for growth and employment has been declining for many decades. In the Global South, on the other hand, food production is still often the most important factor for socio-economic development. Analysing the ongoing changes and dynamics in rural development from a functional perspective through a series of case studies from the global north and south, this volume deepens our understanding of the importance of new functional and multifunctional approaches in policy, practice and theory.

May 2015 252 pages
Hardback 978-1-4724-4481-3 £65.00/$119.95

View online at: www.ashgate.com/isbn/9781472444813 and use code 50CEM15N

ebook PDF: 978-1-4724-4482-0 ebook ePUB: 978-1-4724-4483-7
Discount not available for these electronic versions. Please see www.ashgate.com/ebooks for suppliers.

ASHGATE www.ashgate.com

Chapter 2

Regional Linkages in the Kenyan Horticultural Industry

Peter Dannenberg and Gilbert Nduru

Introduction

Since the 1980s, exports from Kenya have grown by several hundred per cent and the Kenyan fresh fruit and vegetable (FFV) industry is considered a success story (see below; Barrett et al., 1999; Ouma, 2010).

Newer studies on Kenyan horticulture analysed this success by focusing on integration in the international value chain (Barrett et al., 1999; Dolan and Humphrey, 2000) and on the role of institutions (Jaffee, 1994; Humphrey, 2008). The theoretical framework for this analysis is mostly historical (Minot and Ngigi, 2003), institutional (Jaffee, 1994; Humphrey, 2008), as well as value chain approaches (e.g. Dolan and Humphrey, 2000; Gereffi et al., 2005) with a special focus on the rise of supermarkets and the proliferation of private standards (Graffham et al., 2007; Asfaw et al., 2007; Humphrey, 2008).

This chapter aims to broaden the view of the success factors of Kenyan horticulture by looking at the linkages and networks of the industry itself and within its environments. It is argued that horizontal linkages between farmers and other actors like private services and public extension officers significantly contribute to the competitiveness of the farmers, their bargaining position with the direct buyer and their chances to integrate into the international value chain. This chapter provides an additional explanation for the successful integration of small-scale farmers into international value chains, which has often been neglected in similar studies.

The conceptual background for this chapter includes studies on the success of the Kenyan horticultural system which are linked with work on clusters and creative milieus especially for small-scale businesses (Porter, 1998; Maillat and Lecoq, 1992; Giuliani and Bell, 2005; Dannenberg and Kulke, 2005).

State of the Art on Kenyan Export Horticulture

The Kenyan Horticultural Success Story

Kenya has a strong horticultural tradition in the production of fruits and vegetables (i.e., French beans, mangoes, and snow peas) for export markets (Okado, 2007).

The success and importance of the horticultural industry has increased during the last 25 years after horticulture became a major export industry.

In 2010, the total earnings from horticulture exports reached approximately US$922 million, topping the list of Kenya's largest foreign currency earner as well as being one of the largest suppliers of horticultural products to the European Union (www.trademarksa.org/, 2012). Since it is highly labour-intensive, the industry is a major employer, providing job opportunities both directly and indirectly through associated industries (Okado, 2007).

Although the estimated numbers of farmers involved in horticulture export in Kenya differ significantly, the Kenya Horticultural Development Program (KHDP) estimates that in 2008 about 20,000 farmers (most of them small scale family farmers) grew fresh horticultural products for the export market (see also Ouma, 2010).

Several household surveys showed that farmers producing for export and people employed in farming or related businesses in the industry (i.e., packaging, logistics) are better off than non-export smallholders, earning significantly higher annual household incomes (McCulloch and Ota, 2002; Asfaw et al., 2007; Mwangi, 2008).

The Contemporary Discussion on the Success Factors of Kenyan Horticulture

Some positive factors like the availability of cheap labour, good climatic conditions and general improvements of transportation links to global markets have clearly been outlined (McCulloch and Ota, 2002). However, the poor performance of other countries with similar attributes indicates that Kenyan horticulture possesses advantages that go beyond these obvious ones. Apart from historical factors (in particular the sector's good connections to the market of the former colonial power UK), infrastructural advantages (in particular the Jomo Kenyatta International Airport, the premier East African centre of air transport to Europe), and institutional advantages (in particular a variety of supporting institutions and a liberal legal framework), recent studies especially outline the effective organization of the value chain in Kenya (Asfaw et al., 2007; Dolan and Humphrey, 2000; Ouma, 2010; Dannenberg and Nduru, 2013).

Ouma (2010) as well as Dolan and Humphrey (2000) show that while the EU supermarkets dominate and coordinate the Kenyan horticultural value chain, large portions of the chain's organizational work in Kenya is done by Kenyan exporters, who have both increased their own horticultural production and improved the integration of the Kenyan horticultural industry (Gereffi et al., 2005). Andrew Graffham et al. (2007) and Ouma (2010) underline the role of Kenyan exporters as gatekeepers and supporters (e.g. with training and technical support) of horticultural farmers, especially since the introduction of the private process-orientated EU supermarket standard GlobalGAP, which is the key stipulation for entering the EU market (see also Humphrey, 2008; Mithöfer et al., 2008; Dannenberg and Nduru, 2013). According to Ouma (2010), the requirements of GlobalGAP are so sophisticated that most Kenyan farmers can only achieve them with the support of

their exporters. In particular, exporters with high knowledge, technical, and financial *capabilities* help farmers develop integrated 'quality management systems'.

However, Dannenberg and Nduru (2013) showed that still today large numbers of small scale farmers managed to stay integrated in the chain without being supported by exporters. They could partly explain this phenomenon through informal arrangements in which farmers could enter the chain without full formal GlobalGAP certification. However, they did not explain, why large numbers of farmers, including farmers with full formal certification, which did not get exporter support could reach a high level of bargaining power, a high access to business relevant knowledge and a high competiveness which is comparable to the situation of those farmers who are supported by exporters. This chapter will outline this positive situation for these farmers and argue that it can be explained through regional horizontal linkages similar to those which occur in industrial clusters or milieus (Porter, 1998; Maillat and Lecoq, 1992).

A Synthesis of Clusters, Milieus, and Value Chain Approaches

While agricultural economic activities in rural areas of developing countries have been intensively analysed, there are few studies on the development of regional production systems, innovative milieu or regional cluster-like networks in this area. Yet, the positive developments in the Kenyan horticulture industry suggest that such networks have evolved in those regions and contribute to its success. Therefore, this chapter introduces cluster and network approaches (including institutional approaches) and links them to the value chain analyses. This eclectic combination within a synthesis framework allows for a detailed look at regional and interregional linkages. These aspects are analysed in the regional case study for the Mt Kenya horticultural region.

The importance of regional production networks (based on spatial proximity) in the competitiveness of firms was outlined by Alfred Marshall (1920) and regained importance in the 1990s with creative milieus, regional clusters or regional innovation systems (Porter, 1998; Humphrey and Schmitz, 2002).

The fundamental idea behind these concepts is that spatial proximity between companies and supplementary units (i.e., suppliers and institutions) not only leads to classic advantages of agglomerations (i.e., low cost of transport and transactions), but also to the possibility of immaterial exchange relationships (i.e., information, experience; Porter, 1998).

The exchange of information within the network – especially the exchange of non-codified, or partly experience-based knowledge ('tacit knowledge') – can lead to learning processes. Ideally, the resulting 'best practice solutions' for the production process, for improvement of products and innovations increases the competitiveness of the various units within the production system and lead to upgrading processes. Such exchange is mainly possible through personal communication between trusted actors (Dannenberg and Kulke, 2005). As Porter (1998) showed using different empirical examples, in an environment of trust

even competitors cooperate ('coopetition') under certain conditions and trust relationships to, for example, improve their buying or selling bargaining power.

Existing case studies on regional agrarian systems (e.g. Dannenberg and Kulke, 2005; Giuliani and Bell, 2005; Porter and Bond, 1999) have outlined some basic elements of these systems: regional agrarian systems can consist of farms, which are supported by networks among each other and by relationships to preliminary units (e.g., suppliers of seeds, fertilizer, production facilities), downstream units (e.g., wholesalers, value-added production, and processing), and to a variety of different service providers (e.g. maintenance, finance, education). An agrarian system can be competitive especially if material input–output relationships are supplemented by immaterial knowledge flows.

As Dannenberg and Kulke (2005) showed using the case study of Poland, regional networks can have positive effects on the competitiveness of small-scale farming systems. Specifically they showed that farmers who were embedded in the regional agrarian systems by mutual formal and informal linkages had better competitiveness (e.g., better bargaining positions) than those who were not. In the case of small-scale farms, joint organization and actions (e.g., knowledge exchange, use of facilities, marketing) were especially important, as these businesses usually did not have the financial and human resources to develop solutions on their own. This is a challenge that most horticultural farmers in Africa also face (Dannenberg and Nduru, 2013).

Nevertheless, as Gereffi et al. (2005) showed, an evaluation of the quality and competitiveness of a regional agrarian system especially in the case of an export based industry must also include a comparative analysis of the networks along the export value chain, which goes beyond the region. Here the existing value chain approaches (Gereffi et al., 2005; Gibbon et al., 2008) are a complementary analytical tool which can be linked with regional production system approaches (Figure 2.1; see also Humphrey and Schmitz, 2002).

As noted earlier the Kenyan production system is dominated by large EU retailers. While there is no agreement about the type of governance (Gereffi et al., 2005), there is a general agreement that the terms and conditions (including the prices, the quality, and the standards under which the products are produced) are set by the large retailers. Accordingly, these retailers provide their supplying actors with the needed information on their requirements (i.e., the GlobalGAP standard).

Under these conditions, it is questionable how far an agrarian system in a rural area might possess influence on the international scale and in the value chain as a whole. However, at the local scale, networks can provide mutual exchange of knowledge (e.g. how to fulfil the standards and best production practices) and improve the farmers bargaining power with direct buyers and suppliers. Additionally, there may even be the possibility that regional networks contribute to a higher degree of independence through the application of joint marketing which might increase the total sales volume. In total, such interlinked systems might lead to higher competitiveness and success of the embedded companies. Figure 2.1 outlines the synthesis between cluster and value chain approaches and shows typical expected linkages.

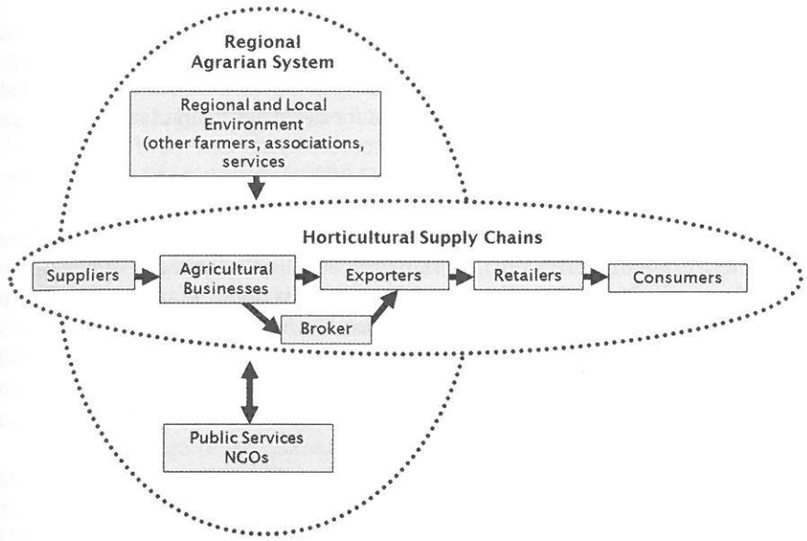


Figure 2.1 Connection between the regional agrarian system and the horticultural supply chain

Source: Own design; see also Dannenberg and Kulke, 2005.

In summary, the following objectives are central to this analysis:

- First, does intensive cross-linking between FFV farms themselves and complementary units (suppliers, buyers, services, and further involved actors) exist at the regional level?
- Second, are the FFV farms involved in the system competitively better off than the non-integrated ones?
- Finally, how much do the different linkages contribute to the success of the FFV farms in relation to each other?

Based on these objectives we draw a conclusion that outlines the relevance of our results in the broader state of the art and for policy applications.

Methods of Data Collection and Analysis

Characteristics of the Case Study Area – Mt Kenya

Because of favourable soils and climatic conditions the Mt Kenya region has one of the largest concentrations of FFV farms in Kenya (Waitathu, 2008).

The number of FFV farms in Kenya and in the Mt Kenya region is volatile, depending on the seasons and differ significantly in studies over the years (see e.g. Ouma, 2010; Mithoefer et al., 2008). According to Ouma (2010: 209), Kenya had about 20,000 farmers growing fresh produce for the export market in 2008. Given a population of 38,610,097 (population census, 2009) and an area of 581,834 km², this leads to a density of 0.52 FFV farms per 1,000 inhabitants and 34.37 farms per 1,000 km² (KNBS, 2012).

For the Mt Kenya region (districts Embu, Kirinyaga, Meru Central, Meru North, Meru South, and Nyeri), Mithofer et al. (2008) came up with roughly 7,200 farms (in 2005) for only four districts (Kirinyaga, Meru Central, Meru North, and Nyeri). While we could not access reliable data for the other two districts 7,200 farms already leads to a concentration of 1.84 farms per 1,000 inhabitants and 530 farms per 1,000 km² for the entire Mt Kenya region,[1] which demonstrates the high structural clustering of export FFV farms in the region (KNBS, 2012).

Most of the farms are individually owned and unaffiliated small-scale operators with less than 10 ha (McCulloch and Ota, 2002). Their horticultural export products include French beans, snow peas, avocados, and mangos (Kaburu et al., 2001; Waitathu, 2008).

Data Collection and Analysis

A methodological blend of expert and stakeholder interviews and standardized questionnaires on the relevant farming businesses was used to gain detailed insight into the networks of the horticultural industry. Overall, a standardized survey involved 169 export-orientated individual FFV farms from 42 randomly selected villages from all different districts of the Mt Kenya region. Five per cent of the surveyed farmers had no formal education; 32 per cent attended only primary school (own results). Additional qualitative interviews were conducted with 32 farmers in the survey and with 42 experts and stakeholders in the region and along the value chain (see Table 2.1).

The experts and institutions were selected based on literature review of existing studies on the industry (e.g. Ouma, 2010; Mithofer et al., 2008). The interviewed brokers were met personally and at random collect points in the region. The importers and exporters were selected randomly via trade directories.

In the survey, the farmers were asked about their immaterial business linkages (business-relevant knowledge exchange and support on fulfilling standard requirements) to various supplementary units. To identify the success of each farming business, the farmers were asked to estimate their annual turnover, bargaining position and future business expectations. The indicators were selected based on interviews with different experts (including Ouma and Kulke). There are a large number of indicators measuring the competitiveness of firms, which all

1 At a given population of 3,903,626 people and an area of 13,580 km².

have advantages and weaknesses (Day and Wensley, 1988). Although the two final indicators are based on subjective judgment, when combined with the turnover data and the qualitative results, they give a useful basis for analysing the importance of the business linkages. Furthermore, similar indicators have successfully been used in related studies (Dannenberg and Kulke, 2005).

The data was collected from October 2008 until August 2009. Further interviews for validation took place in October 2012. During the qualitative interviews, the experts and farmers were separately asked to describe and assess the importance of the different linkages and give examples for such interactions (if applicable). Farmers without business-relevant linkages, were asked, why they were not linked. The interviews were manually recorded in order to maintain a trusting and open atmosphere. Afterwards, we analysed and classified the interviews with the social science software Maxqda (which is commonly used for qualitative empirical studies).

The percentage of the quantitative-surveyed farmers who were immaterially linked with the respective actors in the region was outlined to indicate the network activities. Secondly, the farmers were grouped as 'linked' and 'not linked' (knowledge exchange or support) and then compared with competitive performance (indicators: annual turnover, opinions of the farmers on their bargaining position and future expectations) using tabulations.

The quantitative analyses only gave evidence for the existence of direct linkages. Beyond these limits, the qualitative farm interviews indicated the existence of further unquantifiable linkages.

The interpretation of the results and the documentation and explanation of the underlying causalities were completed through quantitative and qualitative comparison of the results and through the interviews with experts, complementary units in the region and other actors along the value chain, and in the context of relevant literature.

Table 2.1 Overview of the interviewees

External experts (scientists)	7
GlobalGAP certifier	3
Retail	5
Importers	8
Exporters	5
Middlemen/brokers	3
Local institutions	11
Farmers	32

Source: Own results.

Results

Vertical Connections in the Industry

Our results show that our sample farmers in the Mt Kenya region are linked to different direct suppliers (i.e. of seeds and pesticides) and buyers through material linkages. In a large number of cases, these linkages go beyond the buying and selling of products, and include knowledge transfer and different ways of support (i.e. in implementing GlobalGAP).

Fifty-nine per cent of the farmers have business knowledge exchanges with their direct suppliers (Table 2.2). This knowledge includes information about how to produce and market their products (i.e., according to the GlobalGAP standard). While this number shows the significance of these linkages, the cross-table calculation shows no positive influence on the farmers' competitiveness (i.e., turnover, bargaining position, or future expectations). The results even indicate a negative correlation. While in European countries, input suppliers often have a close connection to the farmers and train them on the use of their supply (Dannenberg and Kulke, 2005) farmers and suppliers in Kenya stated that suppliers in the area are usually just local traders and only have very limited knowledge. Other farmers directly get their input supply including intensive technical training through their exporters. This positive knowledge exchange was included as 'knowledge exchange with buyers'.

Table 2.2 Overview of vertical linkages of the surveyed farms in the Mt Kenya region

Linkage partners	Percentage (n = 169)	Larger turnover (>100,000 KSH)	Better bargaining position	Better future expectations
Knowledge exchange with supplier	59%	41%	15%	39%
No knowledge exchange with supplier	41%	40%	33%	51%
Total (n = 163)	*100%*	*40%*	*22%*	*44%*
Knowledge exchange with buyer	40%	45%	36%	61%
No knowledge exchange with buyer	60%	38%	12%	33%
Total (n = 166)	*100%*	*41%*	*22%*	*44%*

Source: Own results.

Farmers' competitiveness is highly connected to the linkages with direct buyers. Forty per cent of the farmers stated that they get valuable business knowledge that goes beyond the transaction of goods from their direct buyers. As with the suppliers, this knowledge transfer includes information on how to produce different products, and direct advice on how to fulfil the standards of the international markets. In comparing the 'linked' and 'non-linked' farmers, 36 per cent of the 'linked' farmers saw their bargaining position as at least equal, while only 12 per cent of the non-linked felt the same way. In addition 61 per cent of the linked farmers viewed their future expectations as neutral, good, or very good, while only 33 per cent of the non-linked did. Finally, linked farmers achieved larger turnovers than those who were not linked. This gives first hand evidence that immaterial linkages with buyers improve the situation of farmers. As the buyers differ significantly, it is still necessary to analyse this category further.

The most common way for farmers to sell their products to the export market is through an exporter. This is usually a larger professional company, which manages the transportation of the products with cooled or non-cooled trucks from the farm or a collection point. In this survey 84 per cent of the farmers sold at least part of their products directly to exporters.

The second most common way (54 per cent) is selling to a middleman or a 'broker' (though 38 per cent of farmers sell through exporters and middlemen). In contrast to exporters, these brokers usually have low capabilities. They are mostly located in the region, are much less organized, often possess poor transportation equipment, and are less reliable when it comes to payments and general agreements. Working with brokers is especially common for farmers who are peripherally located and for whom these buyers are often the only connection to export markets. As a farmer from the peripheral northeast of Mt Kenya describes the situation, 'For us it is too difficult to get directly in contact with the exporters because they are so far away' (Farmer A, 15 August 2009). As a result the product marketing of the farmers located in those areas often depends on single brokers, who then have a monopoly of the bargaining position.

Table 2.3 Overview of the distribution channels of the surveyed farms in the Mt Kenya region

Distribution channel	Percentage (n = 169)	Larger turnover (>100,000 KSH)	Better bargaining position	Better future expectations
Exporter	84%	43%	24%	46%
Broker	54%	35%	13%	41%
Total (n = 169)	*100%*	*41%*	*22%*	*44%*

Source: Own results.

This problem also underlines the important function of the brokers as a link to the market for the farmers in peripheral locations. The brokers themselves sell the products either directly to an exporter or sell them to another broker. In some cases, three or more brokers can be involved before the products reach the exporter. Other options like selling to other farmers, or selling to a public institution were only used by a minority (<5 per cent each).

Strong differences are especially evident when comparing bargaining position of the farmers connected to different buyers. Twenty-four per cent of the farmers who sell to exporters state that they have at least an equal bargaining position. Only 13 per cent expressed a similar bargaining position.

A clear difference between the brokers and the exporters lies in their networks. As outlined in several interviews, brokers are usually from a similar background (according to their location, social and cultural ties, and education) as the farmers. Thus, they can only give farmers limited knowledge (see also Dannenberg and Kulke, 2005) which is often 'second hand' such as on international market requirements:

> If you sell to broker you do not know so much about GlobalGAP, they often only noted what the neighbours do. (Exporter A, 10 August 2009)

In comparison, the networks of the exporters have four advantages:

- Most exporters have established quality management systems for farmers that allow the exporters to supervise and advise their farmers on management and production methods through technical assistants on the farm (Jaffee, 1994; Minot and Ngigi, 2003).
- Most exporters are located in Nairobi and are therefore more closely linked to the government offices, businesses, and donors that shape horticultural policies and other key developments. Therefore, they have and can offer quick and first-hand information (personal interviews with Exporter A, 16 August 2009; and Exporter B, 19 August 2009).
- In their role as exporters they are also directly linked to their international counter parts, which give them quick information on ongoing developments in the markets.
- In addition, most exporters belong to the Fresh Produce Exporters Association of Kenya (FPEAK). While FPEAK generally supports its members with information, lobbying and marketing, one of the key functions of FPEAK is also the promotion of members' compliance with international standards. As the CEO of FPEAK stated, 'We are monitoring Japan, EU and US standards [...] and we then advise our members as soon as possible, so that they can comply on time' (Exporter C, 10 August 2009). Because of the support of FPEAK, the exporters teach their suppliers how to fulfil required market standards (FPEAK, 2008).

Some of the exporters are also producers with large capital intensive production units in the region. However, these exporter-owned production units usually do not directly compete with the smaller individual farmers, but work in close cooperation with them to increase joint export sales volumes. While the number of these exporters was too small for meaningful quantitative analysis, the interviews suggested that the linkages to these larger companies had especially positive effects on the competitiveness of both larger and smaller farms. As the manager of a large scale exporting and producing company described:

> We need the small farmers and they need us. We help them with training and information and even let them work on our farms but we also buy their products during peak demand, when we do not have enough volume to sell. However, we only can buy their products if they fulfil the requirements of our buyers, so that is why we train them. (Large-Scale Farmer C, 14 August 2009)

In this way, large-scale and small-scale farmers are not only acting as competitors but also as partners in certain areas of joint production and knowledge exchange (coopetition; Porter, 1998).

This leads to the conclusion that interregional and internationally based exporters, with their historically developed quality management systems and their good international connections, can be seen as key buyers with access to key knowledge about the market. While Peter Gibbon et al. (2008) use the term 'turn key supplier' as crucial interfaces to organize the flows in the value chain from a perspective at the end of the chain, this case shows the perspective from the farm gate.

While the importance of the linkages to the exporters has already been highlighted, it is interesting, that large numbers of farmers are not directly linked to exporters, but still sell through brokers, who usually do not have good access to relevant business information. The question arises as to whether there are other networks or sources, which may support the small-scale farms to produce and fulfil the high requirements of EU buyers.

Horizontal Business Connections

Regarding the linkages between farmers themselves, the majority of the farmers (85 per cent) are members of local or regional farmers associations that are formally organized and usually registered with the Kenyan Social Service department or the Ministry of Cooperative Development and Marketing. The associations hold meetings and assemblies where they elect their leaders and discuss their business problems. Through these associations, the farmers can access training (i.e. private consultants) on various aspects of horticultural production (i.e., pruning, fertilization) and receive help meet export standards such as GlobalGAP.

Table 2.4 Overview of horizontal linkages of the surveyed farms in the Mt Kenya region

Linkage partners	Percentage (n = 169)	Larger turnover (>100,000 KSH)	Better bargaining position	Better future expectations
Member in an association	85%	43%	25%	44%
No member in an association	15%	28%	8%	48%
Total (n = 169)	*100%*	*41%*	*22%*	*45%*
Knowledge exchange with cooperatives	9%	67%	27%	60%
No knowledge exchange with cooperatives	91%	38%	22%	42%
Total (n = 163)	*100%*	*40%*	*22%*	*44%*
Knowledge exchange with private consultants	7%	64%	36%	73%
No knowledge exchange with consultants	93%	39%	21%	41%
Total (n = 163)	*100%*	*40%*	*22%*	*44%*

Source: Own results.

The survey showed positive correlations between membership of a local or regional association and higher FFV success in the turnover and bargaining positions, although, there is no clear correlation between being an association member and the future expectations of the member. Also, our qualitative interviews revealed membership advantages for association members:

- The exchange of knowledge about different buyers and their reliability.
- The pooling of their produce to achieve volumes that make them attractive to more buyers and give them better market options.
- The creation of direct connections with exporters, which leaves out middlemen and provides exporters with single negotiation partners. One farmer stated: 'When we organized ourselves we could go directly to the exporter and we had a better bargaining position for the prices. With our organization we could also check out different exporters in Nairobi and bargained. So it was a self-empowerment' (Farmer D, 10 September 2009).
- The ability to pressure buyers to deal with them fairly or lose business with the entire group.

Apart from official associations, the majority of the farmers were organized in their local villages (mostly embedded into village hierarchies led by village elders).[2] In these communities, the cooperation varied but often included collective storage of the products (i.e. in a joint shed), buying farm supplies in order to lower costs, and jointly negotiating with buyers. A chief of a group of 20 farmers organized at the village level described their cooperation: 'I as a chief organize and buy the supply for the whole group. I also get in contact with our buyer and we exchange information [...] In the past, they have shown us how to produce but also how to build storages' (Farmer E, 15 August 2009). This statement also underlines the importance of the group in improving linkages with external actors. Another aspect of group actions in several villages is the building of joint charcoal-powered cold storage for perishable horticultural produce. While this form of cooperation was commonly practiced informally (and could therefore not be recorded in the questionnaire), 9 per cent (in total 15 farmers) were members of a formal cooperative. While this number is low (and therefore quantitative evidence is limited), our survey underlines the positive effects of cooperation as a cooperative in all three indictor variables.

A third horizontal linkage that is positively discussed in cluster approaches is the linkage that farmers have with private consultants. In our sample, private services (i.e. banks, consultancies and trainers) were generally used by larger companies and organized groups to share the relatively high costs of such services. The survey indicated that only 12 farmers individually had business relevant immaterial linkages.[3] Group trainings by professional trainers were seen as critical sources of knowledge for all 42 villages that we visited. Most of these training sessions focused on proper usage of chemicals, storage solutions for perishable goods, and the fulfilment of standards.

Local banks offer farmers additional support and training. For example, Equity Bank employs 25 horticultural specialists in the Mt Kenya region. These specialists conduct free training sessions that are open to entire villages at local farms. In these training sessions, specialists e.g. demonstrate production methods. As one of the officials noted: 'The idea behind it, is of course, that those farmers we help will go to us if they need credits, and if we help them running a successful business, they become better customers' (Officer of the Equity Bank, 11 August 2009).

2 The concrete number is hard to tell as the level of organization goes hand in hand with the general organization of the village and is mostly informal.

3 Those immaterial linkages transmit business information (especially the exchange of knowledge on production and marketing) that goes beyond normal services like banking.

Connections with Institutions and the Further Local Environment

Apart from private business relations, different support units could be identified in the local and regional environment.

Most farmers stated that they had good relations with the local municipalities.[4] Based on interviews with the farmers, interaction with public extension officers varied strongly according to the quality and the availability of the public extension officers. In general, the officers aimed to help and consult farmers in different areas of production and marketing. Some local districts had a variety of officers with specialties on certain crops, while others just had one or two officers, with low qualifications. There were clear differences in the quantity and intensity of the linkages depending also on the infrastructural connection of the villages.

Apart from the local governmental support at the municipality level, our study could identify the Horticultural Crops Development Authority (HCDA) as a supporting unit in the Mt Kenya region. While the general supportive effects of the HCDA have already been outlined in different studies (see above) its activities at the regional level have less of a positive impact. In the Mt Kenya region, HCDA has several projects, including the building of large cooling stores for fresh fruit and vegetables and other forms of logistical support. Unfortunately, as both farmers and officers of HCDA stated these projects have so far not led to larger benefits, because there is no agreement between farmers and HCDA as to who is responsible for the costs of running the facilities. One officer in charge of an HCDA depot described the current situation clearly: 'Our facilities are too expensive for most farmers and are not used much' (Institution A, 13 August 2009). In contrast, the transport, cooling, and packing facilities at Jomo Kenyatta International Airport are highly frequented.

As mentioned above, another group of supportive actors in horticultural businesses, which have been controversially discussed in literature (see e.g. Humphrey, 2008) are the different international and national donors. According to our study results, the role of donors seems to be rather marginal. There is generally a large variety of national and international donors in Kenya. Even so, only 5 per cent of the farmers stated that they got any donor support. This is partly because donor connections to the farmers in Mt Kenya villages are limited by bad roads (different interviews with farmers; see also Dannenberg et al., 2011). As an officer of an international donor outlined, 'Of course the main parts of our activities take place in the rural areas, but it is impossible to reach everybody' (Institution B, 18 August 2009). Another reason for the limited success of the donor activities is the lack of trust. As one farmer stated: 'farmers are not cooperative with foreigners, they do not accept foreign aid. They need trustful people' (Farmer F, 12 August 2009). This was underlined by an expert from Moi University: 'The farmers have much more trust in local organizations' (Expert A, 17 August 2008).

4 It was not possible to quantify these networks, as the contacts to municipalities, public extension officers and donors take mainly place at the village level and not directly with the farmer.

Table 2.5 Overview of the linkages with institutions and the local environment of the surveyed farms in the Mt Kenya region

Linkage partners	Percentage (n = 169)	Larger turnover (>100,000 KSH)	Better bargaining position	Better future expectations
Exchange with local environment	40%	52%	23%	43%
No exchange with local environment	60%	33%	21%	44%
Total (n = 163)	*100%*	*41%*	*22%*	*45%*
Exchange with family	21%	56%	12%	53%
No exchange with family	79%	36%	25%	41%
Total (n = 163)	*100%*	*40%*	*22%*	*44%*

Source: Own results.

While the analysed actors all came from a professional farming-related background, the study also identified that 40 per cent of the farmers also used private local contacts (i.e. family members, friends, and neighbours) as sources of knowledge exchange and support. The most important source of this was family, with 21 per cent (54 per cent of all named sources).

The impact of these linkages on the competitiveness of the farms is inconclusive. Our interviews reveal a lack of competence of the actors in the local environment in specific aspects of farming, especially where qualified knowledge is needed such as for meeting international standards. Here, local friends and family networks could not substitute professional help (interviews with various farmers and experts, 2008–2009).

Conclusion and Outlook

The results show the existence of different horizontal and vertical networks in the Mt Kenya region, which go beyond input–output, command, and control relations in the value chain. Buyers and suppliers are seen and are frequently used as business relevant knowledge sources by large parts of the farmers. Apart from these vertical linkages a variety of horizontal business relationships and connections with institutions and the local environment exist. However, these linkages vary strongly according to their total number and their impact on the competitiveness of the farmers.

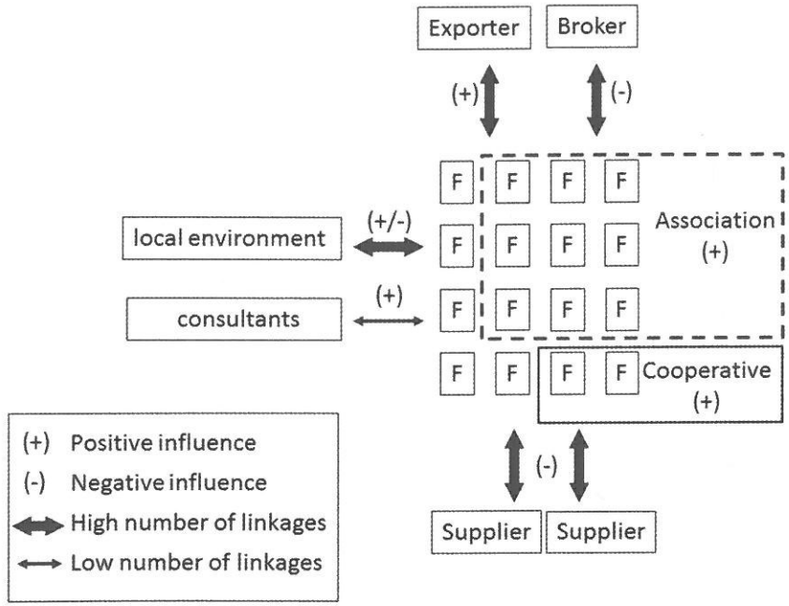


Figure 2.2 Key knowledge and support networks in export-orientated FFV farming in Mt Kenya

Source: Own design.

The example of the relation between small-scale and large companies reveals that this structural mixture leads to synergies for both farming groups. Valuable knowledge spillovers even take place between trusted local competitors ('coopetition'). While the results outline the key role of exporters, the large number of competitive producers not working directly with exporters but linked with regional actors and institutions shows that integration in regional networks positively affects the competitiveness of the embedded farms. The comparison of 'linked' and 'non-linked' farmers shows that it is not only the structure (i.e., the existence of valuable organizations and institutions) of the regional agrarian system (or a complete industry) that matters, but also the interaction that take place within the system. This study emphasizes the importance of local networks for less developed countries and regions with poor transport systems and limited access to information. However the study also shows that the different linkages also differ in their impact on the competitiveness. For example, the knowledge exchange with (typically low-qualified) suppliers and family members has not improved the competitiveness of the farmers.

In terms of the discussion of global value chains, our results suggest that a focus on value chains, power relations, and institutional frameworks alone,

without considering the importance of the linkages, networks, and structures in regional agrarian systems leaves out important explanations for the success of the Kenyan horticultural industry.

Our study can also give new additional knowledge insights for developing and improving regional policy and donor support systems. This could include training measures for the suppliers and brokers who have high numbers of contacts with farmers and could therefore be used as multipliers in areas where accessibility for donors is difficult and where farmers are not integrated in exporter-based quality management systems.

While the study so far indicates, that horizontal linkages occur mainly in local and regional networks so far, future research should also consider possible broader linkages with actors outside the region, which might develop due to an increasing use of information and communication technologies (ICT) for businesses (Dannenberg and Lakes, 2013).

References

Asfaw, S., Mithöfer, D., and Waibel, H., 2007. What Impact Are EU Supermarket Standards Having on Developing Countries Export of High-Value Horticultural Products? Evidence from Kenya. In: 105th EAAE Seminar, 'International Marketing and International Trade of Quality Food Products', Bologna.

Barrett, H., Ilbery, B., Browne, A., et al., 1999. Globalization and the Changing Networks of Food Supply: the Importation of Fresh Horticultural Produce from Kenya into the UK. *Transactions of the Institute of British Geographers* 24 (2), 159–74.

Dannenberg, P. and Kulke, E., 2005. The Importance of Agrarian Clusters for Rural Areas – Results of Case Studies in Eastern Germany and Western Poland. *Die Erde* 136 (3), 291–309.

Dannenberg, P., Kunze, M., and Nduru, G., 2011. Isochronal Map of Fresh Fruits and Vegetable Transportation from the Mt Kenya Region to Nairobi. *Journal of Maps* 11 (0), 273–9.

Dannenberg, P. and Lakes, T., 2013. The Use of Mobile Phones by Kenyan Export-Orientated Small-Scale Farmers – Insights from Fruit and Vegetable Farming in the Mt Kenya Region. *Economia Agro-Alimentare* 2013 (3), 55–76.

Dannenberg, P. and Nduru, G., 2013. New Challenges and Realities in International Value Chains – Analysing the Proliferation of Standards beyond the Exclusion Debate. *Tijdschrift voor Economische en Sociale Geographie* 104 (1), 41–56.

Day, G. and Wensley, R., 1988. Assessing Advantage: A Framework for Diagnosing Competitive Superiority. *Journal of Marketing* 52 (2), 1–20.

Dolan, C. and Humphrey, J., 2000. Governance and Trade in Fresh Vegetables: The Impact of UK Supermarkets on the African Horticulture Industry. *Journal of Development Studies* 37 (2), 147–76.

FPEAK, 2008. Fresh Produce Exporters Association of Kenya [online]. Available at: http://www.fpeak.org/ [accessed: 15 November 2013].

Gereffi, G., Humphrey, J., and Sturgeon, T., 2005. The Governance of Global Value Chains. *Review of International Political Economy* 12 (1), 78–104.

Gibbon, P., Bair, J., and Ponte, S., 2008. Governing Global Value Chains: An Introduction. *Economy and Society* 37 (3), 315–38.

Giuliani, E. and Bell, M., 2005. The Micro-Determinants of Meso-Level Learning and Innovation: Evidence from a Chilean Wine Cluster. *Research Policy* 34 (1), 47–68.

Graffham, A., Karehu, E., and MacGregor, J., 2007. *Impact of EurepGAP on Small-Scale Vegetable Growers in Kenya*. Fresh Insights (Cmnd. 6), London, International Institute for Environment and Development.

Humphrey, J., 2008. Private Standards, Small Farmers and Donor Policy: EUREPGAP in Kenya. IDS working paper (Cmnd. 308), Brighton, Institute of Development Studies.

Humphrey, J. and Schmitz, H., 2002. How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters? *Regional Studies* 36 (9), 1017–27.

Jaffee, S., 1994. Contract Farming and Shadow Competitive Markets: The Experience of Kenyan Horticulture. In: Watts, M. and Little, P. (eds), *Living Under Contract. Contact Farming and Agrarian Transformation in Sub-Saharan Africa*. Madison, University of Wisconsin Press, pp. 97–139.

Kaburu, K., Kangara, J., Ngoroi, E., et al., 2001. *Diversity of Vegetables and Fruits and Their Utilization Among the Nduuri Community of Embu, Kenya* [online]. Available at: http://archive.unu.edu/env/plec/clusters/Eastafrica/nov2001/Kaburu.pdf [accessed: 15 November 2013].

Kenya National Bureau of Statistics, 2012 [online]. Available at: http://www.knbs.or.ke [accessed: 15 November 2013].

KHDP, 2007. Kenya GAP Launched. Update on Kenyan Horticulture. Nairobi: KHDP.

Marshall, A., 1920. *Industry and Trade*. 8th Edition. London, Macmillan.

McCulloch, N. and Ota, M., 2002. Export Horticulture and Poverty in Kenya. IDS working paper (Cmnd. 174), Brighton, Institute of Development Studies.

Minot, N. and Ngigi, M., 2003. *Are Horticultural Exports a Replicable Success Story? Evidence from Kenya and Côte d'Ivoire*. InWEnt, IFPRI, NEPAD, CTA conference, 'Successes in African Agriculture', Pretoria, 1–3 December 2003.

Mithofer, D., Nang'ole, E., and Asfaw, S., 2008. Smallholder Access to the Export Market: The Case of Vegetables in Kenya. *Outlook on Agriculture* 37 (3), 203–11.

Mwangi, T., 2008. Impact of Private Agrifood Standards on Smallholder Incomes in Kenya. Kenya Horticultural Development Program [online]. Available at: http://www.agrifoodstandards.net/en/filemanager/active?fid=135 [accessed: 15 November 2013].

Okado, M. 2007. Lessons of Experience From the Kenyan Horticultural Industry. United Nations Conference on Trade and Development, Nairobi, 29–31 May 2001.

Ouma, S., 2010. Global Standards, Local Realities: Private Agrifood Governance and the Restructuring of the Kenyan Horticulture Industry. *Economic Geography* 86 (2), 197–222.

Porter, M., 1998. Location, Clusters and the 'New' Microeconomics of Competition. *Business Economics* 33 (1), 7–17.

Porter, M.E. and Bond, G.C., 1999. *The California Wine Cluster*. 1st Edition. Harvard, Harvard Business School.

Trademarksa, 2012. Kenya Food Exports Underpinned by Rising Prices [online]. Available at: http://www.trademarksa.org/news/kenya-food-exports-underpinned-rising-prices [accessed: 15 November 2013].

Waitathu, N., 2008. Kenyan Horticulture: Weathering the Political Storm? [online]. Available at: http://www.new-agri.co.uk/08/02/develop/dev1.php [accessed: 15 November 2013].