

Opportunities and challenges for youth's participation in horticultural production in the face of GlobalGAP standards in Kenya

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Abstract

This paper draws on the case of youth smallholder fresh produce production and marketing in Eastern and Central Kenya. Specifically, the paper focuses on how youth farmers have embraced the opportunities that facilitate GlobalGAP compliance and the challenges encountered in the process of acquiring GlobalGAP certification. The research study was conducted between 2010 and 2011. Both primary and secondary data was collected through community-level and household surveys. Community level surveys used the following instruments: Participatory Rural Appraisals; Focus Group Discussions and key informant interviews. The household survey targeted smallholder horticultural producers of export vegetables. Systematic and purposive sampling procedures were used to select participants in the study. Descriptive statistics have been used in analysis.

Enforcement of Eurep-Gap (now known as GlobalGAP) standards in year 2005 was expected to enhance market access for farmers among other benefits such as exploring emerging markets, improved production, better information flow and promotion of domestic horticulture. Compliance with GlobalGAP standards meant that farmers would require additional investment to acquire the recommended infrastructure and certification process. Despite the envisioned benefits, enforcement of GlobalGAP standards introduced new challenges for the Kenyan smallholders and thus, limiting their potential in export horticulture. Youth horticultural farmers have not been an exception. The main challenges encountered in pursuit of GlobalGAP compliance are unfavorable land tenure systems and insecure lease agreements, limited access to funds, limited awareness of potential effects/impact of GlobalGAP compliance, limited awareness of emerging export markets, non-binding contracts and poor coordination of stakeholders making compliance costly and complicated. However, opportunities that youth could tap into to facilitate compliance and horticultural activities include subsidized funding schemes, government-driven infrastructure development, contract farming, formation of strong young farmer groups for collective action in production and marketing, use of ICT services in financial service delivery, technical support and market access, skills development through training and exploring emerging markets.

Youth's engagement in export horticulture is ranked more favorably compared to other farm-level enterprises due to the high returns per unit area, short production period and regularity of income. However, these benefits are more skewed to the resource endowed youths who can afford the heavy and lumpy investments required to meet GlobalGAP standards. On the flip-side, the less resource-endowed youths either totally or temporarily exit export-bound horticultural production for other enterprises, remain non-compliant or maneuver their way into accessing the export market. The policy implications emanate from this study: the existing funding opportunities need to be re-modeled in such a way that taps social capital of the resource constrained youths; there is a need to harmonize agencies mandated with horticultural development and allocate them resources that match their roles, coordination of stakeholders is necessary to create synergies for greater impact and lastly, the new land policy should ensure secure land rights are vested on youths and promotion of a culture of using legally binding land lease agreements.

Key words: Youth, GlobalGAP, opportunities, challenges, smallholder horticulture

1. Introduction

The horticultural industry has overtaken most of the traditional cash crops in terms of foreign exchange earnings, family income, employment creation and other indirect effects which contribute to economic growth. In addition, horticultural production occurs in most regions in Kenya and with a high presence of the private sector. Through its vibrant growth in the last decade, the sub-sector has also been accredited for improved rural incomes hence poverty reduction, both directly and indirectly (Mutuku et al., 2004). It is estimated that horticulture sub-sector in Kenya employs approximately 4.5 million people directly in production, processing, and marketing, while another 3.5 million people are employed indirectly through trade and other activities (World Bank, 2010) Unlike other main crops viz. maize, beans, potatoes and tea, horticulture recorded lower levels of output and export volumes in 2010 compared to 2009. The decline in exports was associated with lower demand for Kenya's output in the traditional export markets, flight cancellations and insufficient rainfall (African Economic Outlook, 2011). However, horticulture sub-sector still leads in income generation in agriculture, contributing at least Ksh120 billion (\$1.85 billion) in 2009 (KHDP, 2009). Horticultural exports from Kenya are mainly destined for European markets. Other emerging foreign market outlets include Middle East, South Africa, Norway, USA, Canada and Japan (HCDA 2007; Minot and Ngigi, 2004).

Enforcement of GLOBALGAP standards¹ in 2005 challenged most smallholders in terms of competitiveness in the horticultural market (Okello *et al.*, 2008, Asfaw 2007). Smallholders involved in fresh produce production targeting export markets are amongst the most affected due to the high costs of investing in GLOBALGAP infrastructure, process of compliance and subsequent certification. Asfaw, (2007) notes that increasingly, supermarkets and exporters of horticultural products find it easier to deal with large scale farms as opposed to smallholders. This is because large scale farms command high volumes, invest in proper documentation regarding production practices and can be easily monitored for GlobalGAP compliance. This leaves majority of smallholders with the options of group formation to pool resources together for compliance or seek other means to raise the capital for investment in GlobalGAP infrastructure and facilitate the process of certification. Similarly, enforcement of GlobalGAP standards has had varied impact on youths' participation in the horticulture sector.

¹ Benefits associated with compliance to GlobalGAP standards include enhanced market access; improved production, better information flow, promotion of domestic horticulture, a more organized horticultural sector and provision of support services.

According to UNDP, the average age of a farmer in Kenya is 60 years. But, youths in Kenya number about 9.1 million and account for about 32% of the population. Of these 57% are female (UNDP, 2011). Thus, the involvement of youth (who are the majority in Kenya's population) in the mainstream economy, particularly the agricultural sector is of national significance and it should not be by default, but by design. Despite the fact that agriculture provides unparalleled potential for future employment and support to sustainable livelihoods, Kenya continues to experience high rates of youth unemployment and rural-urban migration in search of jobs, good remuneration and westernized lifestyles, which they consider 'cool'. A joint FAO, ILO and UNESCO meeting in 2009 addressing challenges and opportunities for rural youth employment in Asia agree with UNDP's position that youth are opposed to traditional farming methods and more receptive of decent jobs including modern farming methods². Kenya's Horticulture Policy, 2010 recognizes three main challenges of engaging youth in horticulture namely, a negative attitude towards agriculture aggravated by the education system and social perceptions, limited access to and ownership of land for farming and lack funds to invest in commercial horticulture.

Despite the significant growth that the horticulture sub-sector attained in 2011, sustaining this growth will require providing incentives for youth to attract the youth back in agriculture, to take up opportunities in horticulture and devising strategies to mitigate challenges encountered in production and marketing. This paper draws on the case of youth horticultural farmers' production and marketing in Eastern and Central Kenya to analyze opportunities and challenges for compliance to GlobalGAP standards. Central and Eastern provinces lead in smallholder horticultural produce targeting export markets (HCDA, 2007). The leading horticultural crops of grown in these sites were French beans, snow peas, sugar snaps and snap peas (Mburu et al. 2009). Specifically, the paper focuses on how youth farmers have embraced the opportunities presented by enforcement of these standards and how they cope with the challenges in the process of acquiring GlobalGAP certification. Assessing these opportunities and challenges will inform policy, guide stakeholders involved in formulating programs and projects targeting youth in horticulture sector and provide lessons that entice the youth to invest their time and funds into horticulture.

2. Study methodology

² FAO, ILO and UNESCO, July, 2009. **Meeting on Addressing Challenges and Opportunities for Rural Youth Employment in Asia.**

2.1 Study area

The study was conducted in six districts of Central and Eastern Provinces of Kenya namely Buuri, Laikipia and Mbooni districts of Eastern Province and Kirinyaga East, Kirinyaga West and Kirinyaga South districts in Central province³. These provinces were selected because they lead in smallholder horticultural production targeting export markets (HCDA, 2007). Eastern province experiences both very wet and dry weather conditions and two rainy seasons in most parts. The “long rains” extends roughly from March to June and the “short rains” lasts from October to December. There has been poor distribution of rainfall for the last 2-3 years, coupled with periodic droughts and delays in the start of the rainy seasons (NEMA, 2007). Buuri and Laikipia districts are on the leeward side of Mt. Kenya and they share horticultural marketing infrastructure. Mbooni District is on the drier parts of Eastern Province. Buuri and Laikipia districts house some company-owned large-scale farms that cultivate wheat, barley and horticultural crops. The average size of small-scale farms is 2.8 and 2.7 acres, respectively. On the other hand, small-scale farms practicing horticultural production in Mbooni have relatively smaller farms of 1.4 acres on average. The main export vegetables grown in study districts of Eastern Province are French beans, garden peas, snow peas, snap peas, and chillies (HCDA, 2007). Other common economic activities in Eastern Province are farming of other crops like potatoes, coffee, cabbages, etc., livestock keeping, khat (miraa) production, dairy farming, basketry, poultry farming and Jua Kali activities.

Kirinyaga East, Kirinyaga West and Kirinyaga South districts were all carved out of the larger Kirinyaga District (now Kirinyaga County). The county is one of the most densely populated in Kenya with a population density of 478 persons per square Kilometer (KNBS, 2009). The average size of small-scale farms is 1.5, 0.7 and 1.4 acres in Kirinyaga South, Kirinyaga East, Kirinyaga West, respectively. In most of the areas, the soils are deep and moderately to highly fertile. The average annual temperature range is 15°C- 28°C. Cumulative rainfall is over 2000mm per year. The most important horticultural crops are tomatoes; French beans, onions, banana, mango, pawpaw and avocado. French beans production dominates other horticultural enterprises (KARI, 2005).

The average age of horticultural farmers in the two provinces is 48 years. Most of the farmers have grown export horticultural crops for the last eleven (11) years (Mburu et al., 2009). General training on GlobalGAP standards was conducted in 2004/2005 by the Ministry of Agriculture (MoA) and exporters. MoA’s trainings were open to all horticultural farmers while the trainings facilitated by exporters focused on contracted farmers/farmer groups prior to being contracted. No other comprehensive training had been done since the 2004/2005 trainings. Thus, the level of compliance

³ See Map of study area in Annex

is deteriorating due to admission of new untrained farmers into the production of vegetables for export. This trend among other challenges may jeopardize continued access export market, and possibly reduce gains from export horticulture.

2.2 Data sources

The survey design involved community level surveys and household survey. Community surveys were in form of Participatory Rural Appraisal (PRA). The target group was smallholder horticultural producers. Multi-stage sampling procedures were used to select participants in the study. The main tools for data collection included a Focus Group Discussions, a checklist for key informant interviews, problem analysis and problem ranking matrix, institutional analysis, trend lines, community resource maps and semi-structured questionnaire.

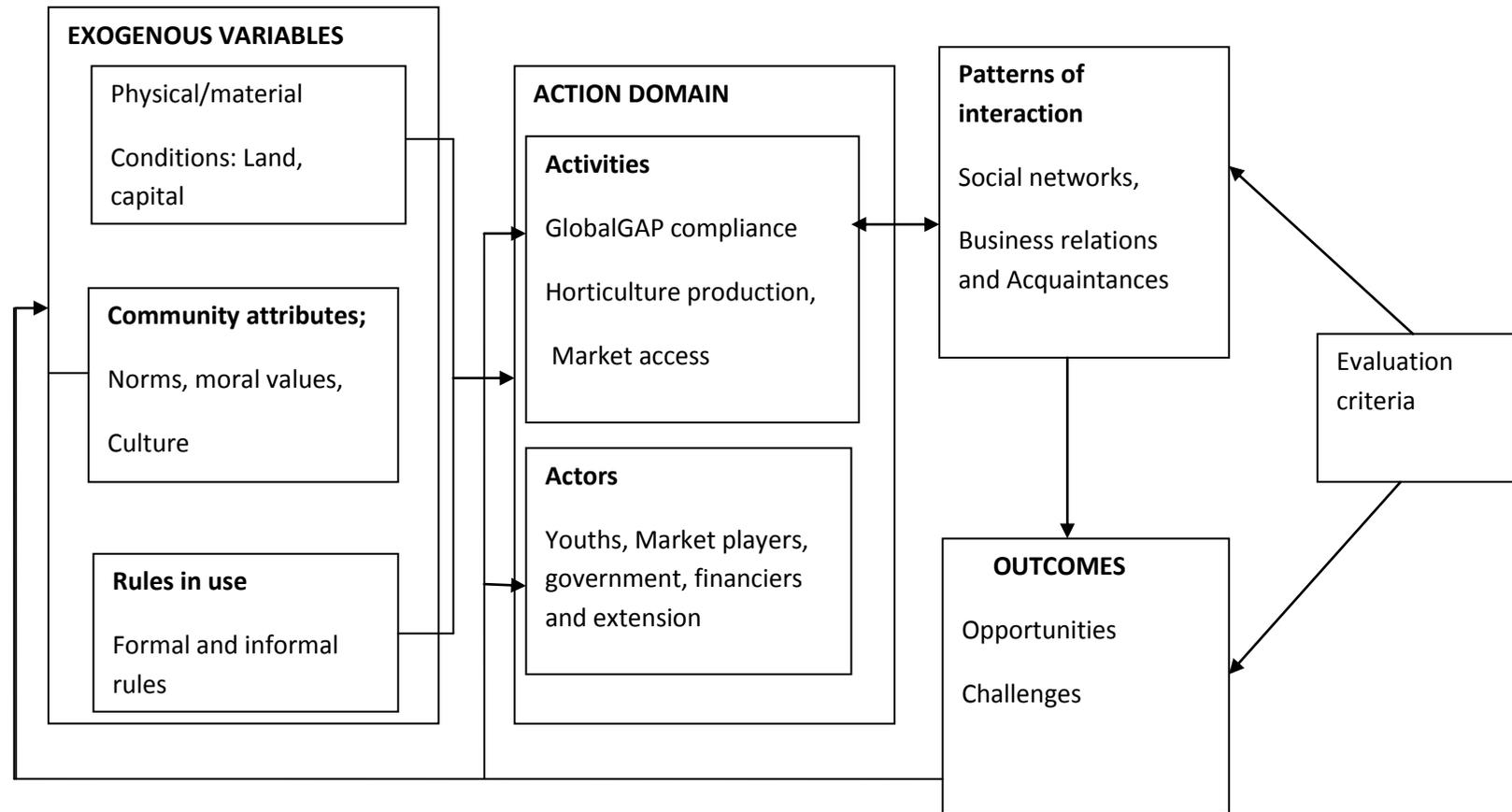
In total, nine (9) PRAs were conducted across the two provinces and one thousand and three hundred and forty one (1341) households interviewed between May and September, 2010⁴. Descriptive analysis has been used in data analysis.

2.3 Conceptual Framework

Institutional Analysis and Development (IAD) framework was applied in identifying opportunities and challenges faced by the youth in their quest to attain GlobalGAP compliance and thus remain in horticultural production and marketing. The IAD framework permits analysts to make comparisons and evaluations by focusing the analyst's attention on individuals or actors who make decisions over some course of action (Ostrom, 2005). This framework has three main features; the environment (exogenous variables), action domain and outcomes which are operationalized as shown in Figure 1 below. At the core of the IAD framework is the action situation/domain affected by external variables (Ostrom, 2010).

⁴ This paper is of an IDRC funded three year research project, "Drivers, Viability and Livelihoods Impact of compliance to GlobalGAP standards among horticultural producers in Kenya. See www.foodsafetystandards.org

Figure 1: Institutional Analysis and Development (IAD) Framework



Source: Adapted from Kirsten and Vink (2005) and Ostrom (2010).

Action domain refers to the social spaces in which economic agents/ actors interact. Aoki (2001) in Kirsten and Vink (2005) states that there are six main types of action domain; Commons, organization, polity, economic exchanges, social exchanges and generic organizational fields. It is worth noting that action domains interact hence, no action domain can be analysed in isolation. For agricultural development in Africa, economic exchange of goods and services is considered as a vital element thus allowing different individuals, groups or regions to specialise in production activities according to comparative advantages in access to and use of assets (North, 1990). The key elements within the action domain are actor activities and the actors themselves. Actors are the economic agents making decisions on various transactions to meet the goal of the enterprise he/she is involved in. They must decide among diverse actions in light of the information they possess. This information relates to how actions are linked to the potential outcomes and the costs and benefits assigned to actions and outcomes. Actors' activities of interest in this study include; compliance arrangements with GlobalGAP standards, youth's engagement in export horticulture and market access. The actors include youth farmers, market players, extension service providers, financiers, government and the markets.

At each level actors constantly interact in a variety of ways in economic and social exchanges which impacts on the outcome of the activity of interest to them. This interaction takes place in an economic setting of scarcity which brings about competitive behavior since all actors would like to maximize benefits from an activity. Interaction occurs through social networks, business relations and acquaintances. They can either be formal or informal. This leads to a continuum of institutional change with the institutions presenting the best incentives being favored. The choices of actors at one level jointly produce patterns of interactions and influence outcomes.

Outcomes are the expected results upon completion of a certain transaction. Outcomes are influenced by the actor's decision regarding activities to engage in and resource commitment towards these activities. The outcomes are transmitted back to the action domain and also influence the environment in which the activities are taking place.

3. Results and discussion

3.1 Results

Descriptive statistics

Out of the 117 youth farmers (18-30 years) interviewed, 14 respondents were excluded because they had never grown export crops⁵. Of the remaining 103 youths, 35% were female youths. The findings indicate that most youths in the sample entered horticultural production after enforcement of GlobalGAP standards, evidenced by the average years of farming export crops in table 1 below. About 45% of the youths had been contracted by export companies for three (3) years on average mainly under group contract.

Table 1: Descriptive statistics of youth in horticulture

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|-----|---------|---------|--------|----------------|
| Age (Years) | 103 | 13.00 | 30.00 | 26.9 | 3.07397 |
| No. of years of schooling | 101 | 3.00 | 14.00 | 8.6 | 2.32558 |
| Years of experience in growing export crops | 81 | 1.00 | 15.00 | 5.8 | 3.40388 |
| Average years in group | 86 | 1 | 13 | 3.2 | 2.694 |
| Total acres of land owned | 12 | .120 | 10.00 | 1.07 | 2.814161 |
| Total cultivated family land (acres) | 90 | .125 | 9.750 | 1.25 | 1.357995 |
| Total cultivated rented-in land (acres) | 44 | .25 | 4.00 | 1.07 | .77117 |
| Annual income from other crop enterprises (US \$) | 101 | 66.7 | 11333.3 | 1663.8 | 1.295365 |
| Export crop income per season (US \$) | 59 | 38.7 | 5538.7 | 739.4 | 947.41104 |
| Amount of credit obtained (US \$) | 34 | 8 | 800 | 146.3 | 212.1733 |

Source: Survey data, 2010

Group membership was a pre-requisite for being contracted and hence, majority of the youth (92%) had been members of farmer groups for an average of 3 years. Respondents indicated that many groups were formed haphazardly and are not cohered or disintegrated altogether.

⁵ Youth farmers (18-30 years) were 117 in total, from the entire sample of 1,341 farmers, which is approx' 9% of the sample.

About 57% of the youths belong to two groups—indicating their desire for collective action in input acquisition, access to credit and market and also for communal welfare.

Land tenure issues continue to impede many youths from engaging in horticulture. Only a few youths (11.7%) have exclusive ownership rights to the land they farm horticultural crops. This not only limits their investment on the land but also their access to loans secured against land title deeds. However, the number of youths has been increasing at a decreasing rate (table 2), with a 1.8% increase between 2000 and 2005 and 1.1% increase between 2005 and 2010. The PRA participants associated this trend with enforcement of GlobalGAP standards in 2005 which required high capital outlay for acquisition of recommended GlobalGAP infrastructure, skills, high price fluctuation of the export vegetables and erratic weather.

Table 2: Trend of youths' entry into horticulture

| Year started production | Number of youth in horticultural production | Percentage (%) | Change (%) |
|--------------------------------|--|-----------------------|-------------------|
| Before 2000 | 18 | 21.2 | - |
| 2001-2005 | 32 | 37.6 | 1.8 |
| 2006-2010 | 35 | 41.2 | 1.1 |
| N | 85 | 100 | |

Source: Survey data, 2010.

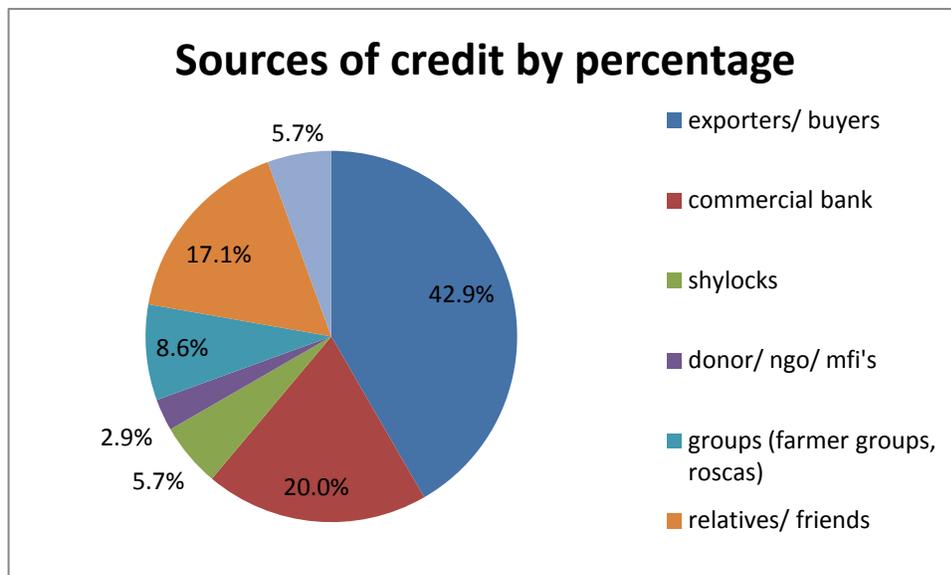
However, the income from the export vegetables was much higher considering that farmers' plant the export crops on average three times in a year whereas the other crops are planted for two seasons only. This finding was also echoed in focus group discussions with smallholder farmers who posited that youth's rank horticulture more favorably compared to other farm-level enterprises due to the high returns per unit area, short production period and regularity of income. 44.7% of the youth in horticulture approximated their daily income to be Ksh 150 (US \$ 1.8), while 51% estimated their daily income to be above Ksh 150 (>US \$ 1.8). Unfortunately, only half of the youths indicated that they can get employment, in or outside the farm throughout the year. This signifies that the problem of unemployment even in rural settings is far from over.

Youths' access to credit and information

It is acknowledged in many forums that access to credit has been a major constraint for small scale producers, more so in developing countries. The youth are not an exception to this, as

established in this study, where only 33% had accessed credit for use in horticulture in 2010 (table 1 above). Yet, the findings from the problem ranking matrices⁶ indicated that capital constraint as the most important problem in Buuri/Laikipia and as the second most important in Mbooni. This coincides very well with the limited presence of formal banks in these production areas (Mburu et al, 2011).

Figure 2: Sources of credit by percentage



Source: Survey data, 2010.

80 % of youth farmers accessed credit from informal sources (exporters, relatives and friends and groups) compared to the 20% who accessed formal credit. Exporters continue to play a key role in supporting youth’s horticultural activities by provision of input credit, accounting 42% of credit from informal sources. Most youths obtain Ksh 2,000 (US \$ 26.7) of credit each season for horticultural farming. This amount is way below the average amount required for GlobalGAP compliance, US \$ 132 per season, under group compliance (Nyota, 2011). The low amount of credit accessed by most youths mirrors the sources of financial/credit information; whereby youth farmers networked mainly with fellow smallholder farmers on a monthly basis. Contact with banks and MFIs was limited to 1 to 3 times a year (See table 4 below). This explains the low outreach of these potential formal financiers in rural Kenya. Hence farmers are not well

⁶ See problem ranking matrix in the Annexes

informed of the available formal financial services and products, decreasing their chances of approaching banks for credit.

Table 3: Sources of credit information

| Frequency | Bank/MFIs | Smallholder farmers farming export crops | Smallholder farmers farming other crops |
|------------------------|------------------|--|---|
| After a year | 20% | | |
| 1 to 3 times a year | 60% | | |
| 1 to 3 times a month | 10% | 15.4% | 100% |
| 1 to 3 times a week | 10% | 61% | |
| 3 or more times a week | | 23.10% | |

Source: Survey data, 2010.

Youths also make use of local networks to share knowledge and tackle day to day challenges they face in horticultural farming. These include smallholders and technical staff, who reside in close proximity to the villages. But then, technical advice from staff employed by the exporters is limited to the export vegetable in production. 50% of youths reported having benefited from exporter facilitated trainings and field days. The government and agrochemical companies (through Agro-chemical Association of Kenya, AAK) also offered general technical advice, to 46% and 22% of youths respectively. The youths have embraced modern ICT in networking as evidenced by 88% of them owning a cell phone while 91% own a radio. The PRA participants indicated that cell phones are particularly useful in facilitating banking, money transfer and in accessing/exchanging marketing information⁷. Majority of the youths can easily access collection centers for export vegetables, market centers and banks (See table 4). These infrastructures are useful in acquiring information and knowledge exchange, which are vital for the dynamic horticulture industry.

⁷ As at the end of June 2010, the penetration of mobile phone services in Kenya was reported at 51.2 per 100 inhabitants, still below the world average of 67.0 per 100 inhabitants. **Source: Kenya Economic Outlook**

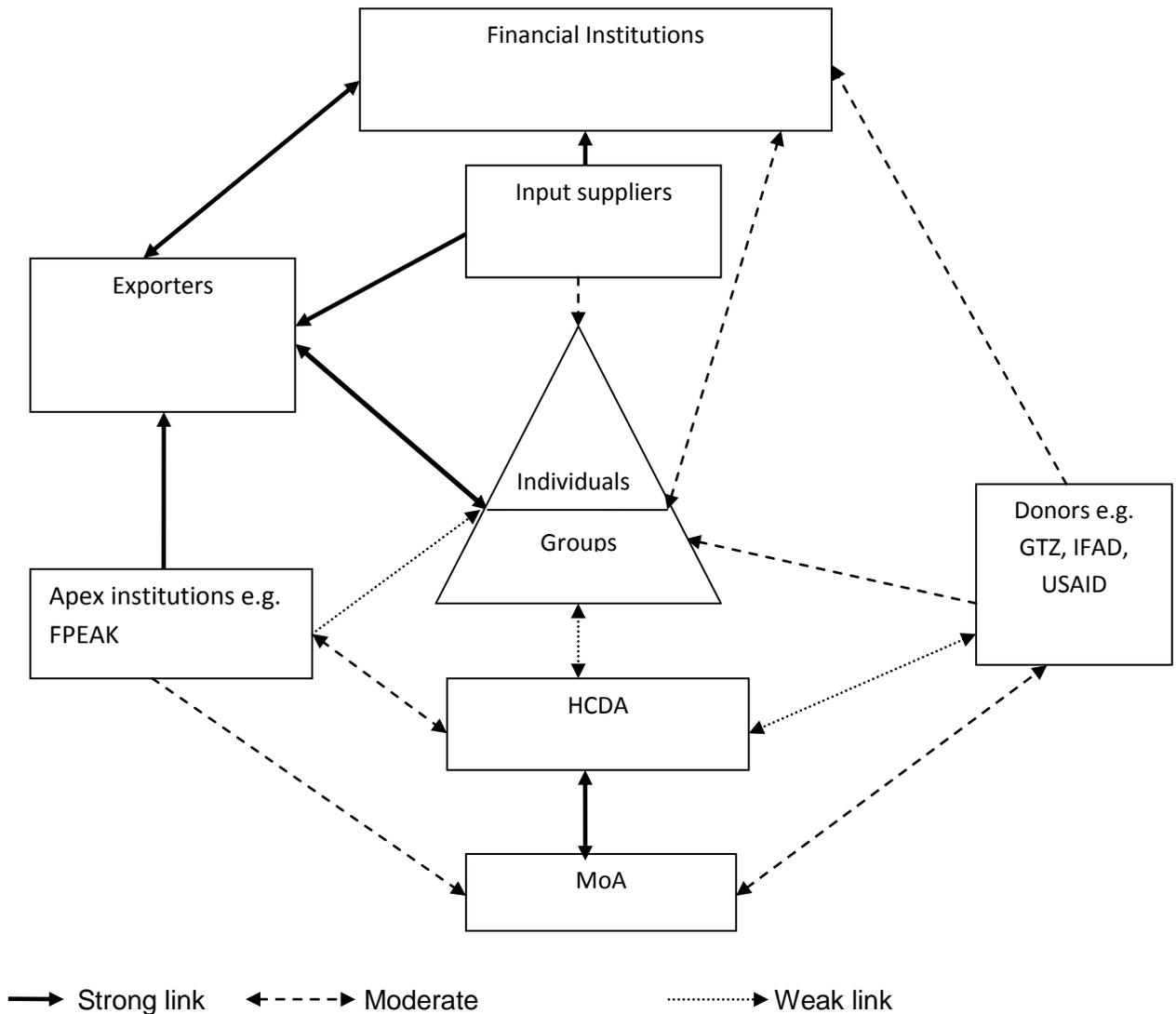
Table 4: Distance to local markets

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|-----|---------|---------|---------|----------------|
| Distance to the nearest market centre from the farm (Kms) | 103 | .25 | 20.00 | 4.4073 | 3.55085 |
| Distance to the French bean/ snow peas/ snap peas collection centre or shed from the farm (Kms) | 90 | .20 | 15.00 | 1.9920 | 2.41702 |
| Distance from farm to the most important town / urban centre (Kms) | 102 | .40 | 63.00 | 12.4255 | 13.55958 |
| Distance from homestead to bank/MFI (Kms) | 94 | 1.00 | 30.00 | 10.5000 | 13.22876 |

Stakeholder linkages in implementation of GlobalGAP

Exporters have been quite influential in enforcement of GlobalGAP standards since they came into force in 2005. Figure 3 below entails farmers' perception of the impact each of the stated stakeholder has had in relation to GlobalGAP implementation. These are stakeholders that farmers considered significant in GlobalGAP implementation, although with different levels of influence. The Ministry of Agriculture (MoA) conducted nation-wide trainings on GlobalGAP in 2005, supported by GTZ/PSDA program. MoA remained as the regulator of all agriculture sub-sectors. There was overlap of roles between MoA and Horticultural Crops Development Authority (HCDA) because when HCDA was established, one of its functions was to regulate horticulture industry. In addition, HCDA was charged with licensing exporters, advising farmers on contractual farming, monitoring production and marketing activities and arbitration in case of disputes between parties to a contract. A Key informant from HCDA indicated that HCDA has weak links with the farmers because of limited financial and resource capacity to enforce GlobalGAP standards. On the other hand, farmers and exporters often overlook HCDA during the contracting process, making it difficult to arbitrate when disputes arise.

Figure 3: Farmers' perception of stakeholder linkages in GlobalGAP compliance



The exporters have had the greatest impact regarding compliance, especially through information sharing, provision of input credit and enhancing access to export markets. Exporters' investment in compliance is a reflection of a desire to satisfy European market requirements. Over time, exporters are finding it easier to deal with medium-large scale farmers (drawing individual contract farmers, who met a set criterion⁸) as opposed to groups comprised

⁸ The basic criterion for individual contracts is that medium scale farmers must commit 7-10 acres of land for production of export crops in question while the large scale farmers are capable of dedicating over 10 acres of land throughout the year. Access to water for irrigation is also key. Source: Key informant interview, 2010.

of small scale farmers due to challenges in quality control and high administrative costs (Kangai et al, 2011). Individual contracting is common in Buuri and parts of Kirinyaga South Districts.

Donor activities in relation to GlobalGAP compliance were considered few and sporadic. It is only in Kirinyaga where GTZ/PSDA supported GlobalGAP activities—supported MoA’s national-wide sensitization campaigns and farmer trainings, gave grants for establishing common infrastructure as part of GlobalGAP compliance and also gave small loans to farmer groups to facilitate initial compliance at farm level. Donors and HCDA used collective action as their entry point in the community. There is high concentration of stakeholders in Kirinyaga production area, which is equally very active in export horticulture business. Most farmers in Eastern Province were unaware of the donor-funded projects in horticulture. The weak links with financial institutions is an indicator of the low credit access from these institutions for purposes of GlobalGAP compliance.

Half of the youth farmers acquired knowledge of GlobalGAP standards from agents of exporters. The aspect of GlobalGAP that most youths were aware of was the recommended chemicals--a requirement emphasized mainly by exporters and Agrochemical companies. However, only 23% of the youth had been trained on GlobalGAP standards. Most youths joined groups in 2007 and thus, did not benefit from the initial trainings carried out in 2005 (ibid). In addition, there had been no follow-ups, after the initial national awareness campaigns and trainings of 2004/2005. At the time of the survey, many of the youths were in the process of acquiring compliance (see table 5 below).

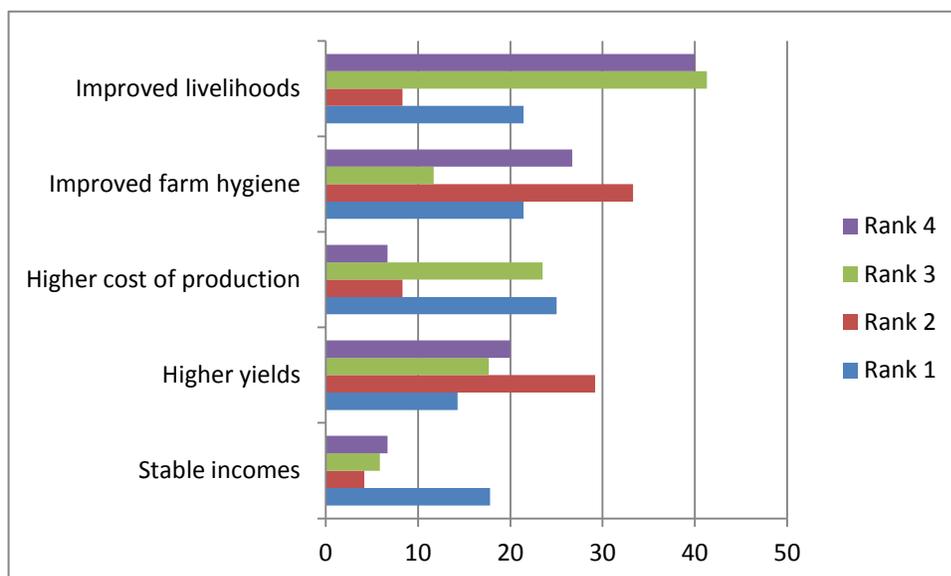
Table5: GlobalGAP compliance status of the youth farmers

| Compliance status of the farmer | Percentage |
|--|-------------------|
| Individually fully compliant farmer | 7.94 |
| Group contract farmer | 20.63 |
| Group scheme farmer (exporter owns facilities) | 7.94 |
| Never adopted standards | 28.57 |
| Undergoing compliance process | 33.33 |
| Compliant farmer who sells through brokers | 1.59 |
| Total | 100 |

Effects of adopting GlobalGAP standards

When asked to rank effects of GlobalGAP compliance in order of significance, youths in horticulture were somewhat pessimistic (See figure 4 below). The first ranked effect was increased cost of production, followed by improved livelihoods and better farm hygiene. Farm hygiene and higher yields were also ranked as the second most important effect.

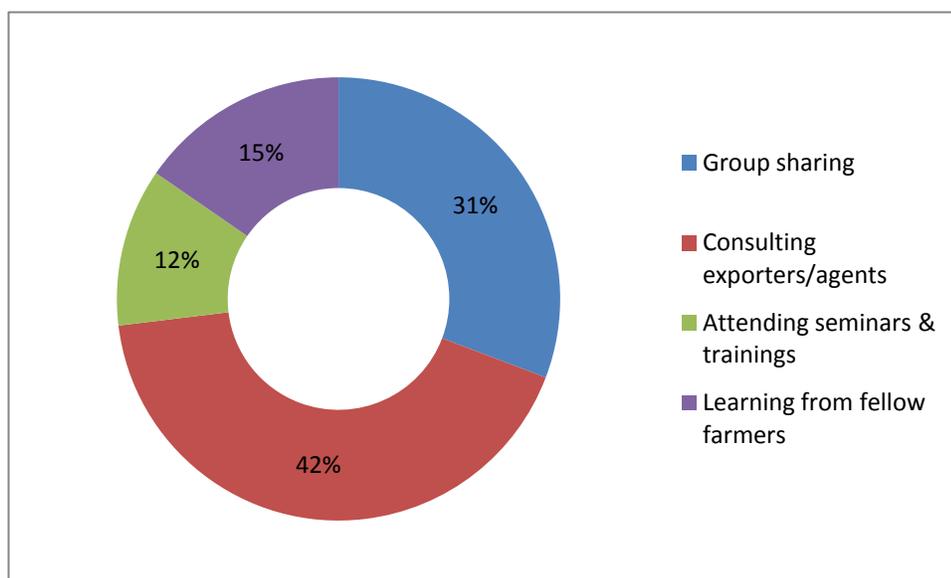
Figure 4: Youth's perception of effects of GlobalGAP compliance



Source: Authors' compilation.

As discussed earlier, majority of the youth are in the process of acquiring compliance. The youths seek new knowledge and skills necessary to improve compliance mainly from exporters, followed by group sharing sessions and then farmer to farmer knowledge exchanges in groups (See figure 5 below). Since these actors package the knowledge/skills differently, it was established that for the same issue, farmers seek advice from several sources, forming a continuum.

Figure 5: Activities undertaken to improve GlobalGAP compliance



Source: Authors' compilation

The compliant youth farmers indicated that the main challenge of maintaining or improving the level of compliance was frequent change in recommended inputs (60%), high volume of rejects (20%) and thirdly, the high cost of annual audits and certification (10%). The high cost of inputs was also considered a major constraint in pursuit of GlobalGAP compliance. This constraint is fuelled by the limited access to credit and often leads to delays in acquiring initial compliance and subsequent certification.

In summary, GlobalGAP compliance has been successful in some aspects and unsuccessful in others. The risk factors listed below either jeopardize gains already made through compliance or limits the impact of compliance.

Table 5: Successes and risk factors of enforcement of GlobalGAP standards

| | |
|---------------------|--|
| Successes | Training and technical support by exporters Marketing contracts Improved record keeping by individuals and groups Improved infrastructure |
| Risk factors | Haphazard group formation--low cohesion Perceived/real high cost of compliance Breaching of contracts--side selling by farmers Breaching of contracts-- imposition of supply limits and unreturned rejects Inadequate technical capacity Limited refresher trainings Admission of untrained members into contracted groups |

3.2 Discussion

Opportunities and challenges for youth in horticulture

Although GlobalGAP is a private standard, it is a mandatory condition for entry in EU markets, which is the main destination for Kenya's export horticulture (Graffham, 2006). Enforcement of GlobalGAP has been feared to exclude smallholder farmers from the lucrative export market because many lack sufficient resources and necessary skills to acquire and maintain compliance (Muriithi et al., 2010). The challenge of unemployment is still present in rural Kenya, despite the fact that agriculture supports about 75% of Kenya's population. Another nerve-racking fact is that Kenya's farming population is ageing (averaging 60 years according to UNDP, 2011), implying that agriculture is not a core attraction for the youth. Youth prefer modern farming technologies, higher returns per unit area and regular income. This is true for export horticulture, which is second after tea in terms of foreign exchange gains. This rest of the paper highlights opportunities and also draws attention to challenges which hamper youths' involvement in export horticulture. .

The opportunities drawn from this study include exporter's technological package comprising of GlobalGAP training, input credit, technical advice and market access through contract farming; penetration of ICT in banking, money transfer and access to information, collective action through groups, targeting emerging export markets, funding opportunities from government,

private sector and development partners, recognition of Agriculture as a key pillar in achieving Kenya's vision 2030 and endorsement of National Youth Policy and National Horticulture policy. As established above, exporters have played a key role in smallholders' quest for attaining GlobalGAP compliance. Their main entry point is farmer groups whom they contract to a lesser extent; they enter into individual contracts with smallholder farmers who can commit at least seven acres of their land to fresh export crops, throughout the year. Although exporters monitor production, they pass the production risks to the group through peer monitoring. This finding coincides with that of (North, 1990) who established that high social capital present in groups could influence adoption of new technologies such as food safety standards. Groups also facilitate exchange of information, as expressed in figure 5, above and also pooling of resources for setting up common infrastructure. Furthermore, being in a group enhances the possibility of accessing credit from institutions which use group lending approach. Youths should also capitalize on the collective bargaining power for favorable and binding contracts (Guenther, 2006).

What youths perceive to be 'cool' is far from any of the agricultural activities. It has to do with music, cell phones, lifestyle, TV and cars among others. This is an opportunity for stakeholders to package technologies and support services in a way that is appealing to the youth such as using mobile telephony for banking; money transfers and access to web-based technical advice and market information. Kirui et al., (2010) established that the penetration of mobile-phone based banking is moderate among smallholders, at 52% and being used mainly in on agricultural related purposes -purchase of seed, fertilizer for planting and topdressing, farm equipment/implements, leasing of land for farming and paying for labour. Due to the low literacy levels (mean of eight years of education), only a minority of Kenyan youths are tech savvy and use their cell phones to facilitate money transfers—with M-Pesa being most successful. According to Okello et al, (2009), low literacy makes navigation through the phone menus difficult especially where they are written in English. This service will yield if it is localized for instance, by use of Kiswahili language.

About half of youths interviewed were seeking alternative markets with fewer requirements. The search for emerging export markets should be encouraged so that the young farmers can diversify the export products and reap more from horticulture. In addition, exploitation of non-traditional horticultural export markets such as Asia, Eastern Europe and Africa will caution the

farmers against sudden policy changes in EU which would otherwise lock out Kenya's exports (Nyangweso and Odhiambo, 2004). The youths are also diversifying into horticultural production for domestic markets (see annex 2). However, enforcement of KenyaGAP standards (led by FPEAK with the support of local supermarket chains) will also have minimal impact on youths if the challenges they are facing under GlobalGAP will not be addressed in a timely manner.

Apart from seeking new markets, Kenya needs to continue searching for new technologies not only to entice the youths but to survive in the face of recurrent drought spells and general rise in global temperatures. Investing in irrigation technologies is one of Kenya's Vision 2030 goals for 2012- it is planned that an additional 600,000 –1.2 million hectares of ASALs be put under modern irrigation infrastructure. For the youth to benefit from this infrastructural development, land tenure constraints have to be addressed. This is because only few youth farmers possessed clear and documented land rights such as ownership rights and a culture of using legally binding land lease agreements. Lack of secure land rights vested on youths has hindered potential investment in land.

Another opportunity that youth can harness is the numerous funding opportunities from government, private sector and development partners such as USAID, IFAD and GTZ. For instance, in the last four years, the Agricultural Finance Corporation, (the government's main financial institution serving farmers) has increased the amount and number of loans issued for horticultural enterprises from Ksh 32 Million in 2008 to Ksh 70 Million in 2010 (See annex 1). The government commits approximately Ksh 200 Million per constituency for local development projects either in terms of capacity building or infrastructural development. The devolved schemes include Authority Transfer Fund (LATF), Water Services Trust Fund (WSTF), Women Enterprise Fund, Constituency Bursary, Fund, [Road Maintenance Levy Fund](#) (RMLF) and Youth Enterprise Development Fund. Other collaborative projects aimed at encouraging commercial horticulture among smallholder farmers and which youths can harness are summarized in box 1 below.

Box 1: Examples of horticultural projects in Kenya

The Government continues formulating horticultural projects and programs that address specific objectives. Four such projects include National Accelerated Agriculture Input Program (NAAIP), Njaa Marufuku Kenya (NMK), Smallholder Horticulture Marketing Project (SHoMAP), and the Smallholder Horticulture Development Project (SHDP). NAAIP targets 2.5 million smallholder farmers. It is involved in capacity building and provision of seed and fertilizer grants for one hectare per smallholder farmer. The focus of NMK is smallholder farmer groups who receive grants of up to \$ 6,250 per farmer group. SHoMAP addresses marketing and market infrastructure challenges and is earmarked to benefit 12,000 smallholders. SHDP is focused on establishing irrigation schemes for horticultural farming with a view of mitigating effects of climate change. The program has established 9 irrigation schemes with a total area of 2886 Ha; and is directly benefiting 5900 smallholder farmers.

In February 2012, a Public-Private Partnership between the Government (through YEDF) and Amiran Kenya Ltd was launched to entice youth in horticulture, labeled 'AgriVijana Loans' meaning agricultural loans for youth. 'AgriVijana loans' is a technological package comprised of a Green House Kit, technical support and horticultural seeds and chemicals to last one season. In the pilot phase, each constituency will get two such kits. The project intends to create employment for 5,000 youths in the first phase. The loan allocated by the YEDF to acquire an AgriVijana package is Kshs. 358,344. The group is expected to raise 10% of the loan amount. It is repayable within 3 years, with a grace period of 4 months and attracts a 10% interest.

Another example of private sector initiative is the Radio based marketing tool, 'Soko Hewani' which links buyers and sellers of agricultural commodities. It is an innovation of Kenya Agricultural Commodity Exchange (KACE).

Source: World Bank, 2010; various projects websites

There isn't sufficient information on how much of these funds have been allocated to youths farmers in horticultural projects.

The national youth policy of 2002 observed that efforts to engage youths in the mainstream economy are hampered by limited opportunities, uncoordinated youth policies and programs, inappropriate skills, resource constraints, population pressure and low status given to youth in the planning processes. A decade later, these problems continue unabated as enumerated in the national horticulture policy Endorsement of the National Horticulture policy in October, 2010 was timely as it captures the main challenges of engaging youth in horticulture including a negative attitude towards agriculture aggravated by the education system and social perceptions, limited access to and ownership of land, and lack of funds to invest in commercial horticulture. Other challenges identified in the study are poor coordination of agencies charged with regulation of the industry; limited awareness of effects/impact of GlobalGAP compliance, frequent changes in recommended inputs and non-binding contracts. These challenges are

contributing to the decreasing rate of youths entering export horticulture, especially after enforcement of GlobalGAP. To make youth in horticulture to be commercially active, we need a multi-disciplinary approach in addressing the above challenges. The policy recommendations are discussed in the next section.

4. Policy recommendations

It is imperative for stakeholders to ensure that more youths are productively and profitably engaging in horticulture for the sub-sector to sustain growth and development. The following are some recommendations for increasing youth involvement in horticulture in view of the challenges highlighted above.

The policy implication of limiting land tenure systems is that at the land policy should aim at improving land tenure agreements since farmers who receive long-term land rights are more likely to invest in it. This will encourage youths to invest in the GlobalGAP infrastructure

While designing lending schemes, it is vital to put into consideration that youths are resource constrained, and hence come up with models that are youth-friendly such as applying table banking models which maximize on social capital (which youths can build easily). It is also recommended that a database be established to continuously capture data on youth initiatives in agriculture, beneficiaries and innovations which can be scaled up. This can be hosted either within the Ministry of Youth Affairs and Sports or in the Ministry of Agriculture.

To fill gaps in technical information, the youth need localized and youth friendly extension service delivery, practical approach in learning from model youth farmers and programs supporting inter-generational knowledge transfer. For instance, involving school pupils through agricultural clubs and school gardening⁹ influences them to accept farming as a viable enterprise from an early age¹⁰. Supportive and localized ICT services such as Mobile-phone based banking or web-based extension and marketing services are likely to influence youths positively in their decision to comply with food safety standards.

⁹ “Schools are one of the main social contexts in which knowledge, behaviors, attitudes, values and life skills (e.g. personal responsibility, self-esteem, teamwork, decision-making and planning) are developed”. Source: Special Programme for Food Security, FAO, 2004.

¹⁰ Lessons drawn from Mwamuko-Mpya Organic Farming Association (MOFA) extension approach in Western Kenya, supported by Kilili Self Help Project, USA.

There is a need to harmonize activities of government agencies involved in regulating the sub-sector to avoid duplication of roles, delays and increased cost of complying with the food safety standards. In addition, inter-agency coordination on enforcement of the standards will create synergies for greater impact. Favorable government policies and investments in infrastructure, education, information access, market access and credit access will also go a long way in attracting youth into horticultural production and marketing and facilitate compliance to international food safety standards.

5. Conclusion

The study sought to establish what opportunities exist for the youth in horticulture and the challenges that hinder exploitation of these opportunities, especially beyond enforcement of GlobalGAP standards. Literature review established that GlobalGAP compliant farmers were significantly well-off in terms of income, asset holding, and wealth accumulation, better access to information, capital, household education and market access. Non-financial benefits enjoyed include more secure and long-term relation with their buyer, continued participation in export markets, increased awareness of agrochemical handling practices, improved farm hygiene and ability to replicate knowledge acquired in domestic production.

The existing opportunities to facilitate youth to comply with international food safety standards and gain from export horticulture are in funding, government-driven infrastructure development, contract farming, formation of strong farmer groups for collective action in production and marketing, use of ICT services in financial service delivery, technical support and market access, skills development through training and exploring emerging markets. These opportunities have not been fully exploited because of negative attitude towards agriculture, unfavorable land tenure systems and insecure lease agreements, limited access to funds, limited awareness of potential effects/impact of GlobalGAP compliance, limited awareness of emerging export markets, non-binding contracts and poor coordination of stakeholders.

There is an old adage which says, *“You are not successful until you have a successor”*, so is Kenya’s horticulture and the agriculture profession too. Thus the need to continuously address

factors that limit profitability of the sub-sector to make it an attractive economic venture for the youth and ensure improved and sustained food security in Africa.

References

African Economic Outlook.2011. *African Economic Outlook 2011: Kenya*. Retrieved February 15, 2012. www.africaeconomicoutlook.org.

Asfaw, S .2007. *Does a GlobalGAP standard marginalize poor farmers? Evidence from Kenya*. Leibniz University Hannover Faculty of Economics & Management Königsworther Platz 1.

Asfaw, S., Dagmar., M and Hermann Waibel.2007. What Impact Are EU Supermarket Standards Having on Developing Countries Export of High-Value Horticultural Products? Evidence from Kenya. Contributed Paper prepared for presentation at the 105th EAAE Seminar 'International Marketing and International Trade of Quality Food Products'. Bologna, Italy, March 8-10, 2007.

Beatriz, A and Morduch, J .2005. *The economics of Microfinance*. Cambridge, Mass: MIT press.

GLOBALG.A.P. 2009. *Control Points and Compliance Criteria: Integrated Farm Assurance*. Retrieved June 20, 2011. www.globalgap.org.

Graffham, A. 2006. "European Standards affect African growers". Developing country Initiative, Pesticide News 71 March 2006. Contributed paper for Fresh Insights on Small-scale producers and standards in agrifood supply chains.

Guenther, D. 2006. Building up an Internal Control System (ICS) for Certification to EUREPGAP Option 2 in the Horticultural Sector. Trade Standards Working Group Meeting March 2-3, 2006-Washington.

Horticultural Crops Development Authority, HCDA.2007. *"Export statistics in volumes and values for fresh fruits, flowers and vegetables for the year 2007 in Kenya"*. www.hcda.or.ke. Date accessed: 11th March, 2009.

Horticultural Crops Development Authority, HCDA.2008. *Domestic Horticulture Marketing and Market Infrastructure*. Nairobi Imaging Centre.

Kangai, E., Mburu, J and Nyikal, R. 2011. Incentives and constraints of financing Mechanisms for compliance to GlobalGAP standards among smallholder horticultural farmers in Kenya. Contributed Paper presented at the 1st Biennial Scientific Conference of the Faculty of Agriculture, Upper Kabete Campus Nairobi, University of Nairobi. 26th - 28th September, 2011.

KARI, 2005. KARI-Thika, Priority setting document.

Kenya Horticultural Development Programme (KHDP). 2009. *Update on Kenyan Horticulture- July/August, 2008*. www.fintrack.com.

Kenya National Bureau of Statistics. 2010. 2009 Population and housing census highlights. Government printers, Nairobi.

Kirui, O.K., Okello, J.J. and Nyikal, R.A. 2010. Awareness and use of m-banking services in agriculture: The case of smallholder farmers in Kenya. Contributed Paper presented at the Joint 3rd African Association of Agricultural Economists (AAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference, Cape Town, South Africa, September 19-23, 2010.

Mburu, J., Nyota H., Nyikal,R., Kangai,E. and Muchigiri, S. 2009. *Site verification report. Identification of suitable sites for the project 'drivers, viability and livelihood impact of compliance with private food safety standards among smallholder horticultural producers in Kenya'*. Retrieved May 16, 2010. www.foodsafetystandards.org.

Minot, N. and Ngigi, M. 2004. "Are horticultural Exports a Replicable success Story?" *Evidence from Kenya and Cote'deivoire'*. EPTD Discussion Paper No. 120, International Food Policy Research Institute, U.S.A.

Muendo, M and Tschirley, D.2004. *Improving Kenya's domestic horticultural production and marketing system: Current competitiveness, forces of change, and challenges for the future*. Tegemeo Institute Working Paper No. 08A/2004. Vol 1: Horticultural production.

Mutuku, M., Tschirley, D., and Michel, T.W.2004. *“Improving Kenya’s Domestic Horticultural Production and Marketing Systems: Current Competitiveness, Forces of Change, and Challenges for the future”*. Tegemeo Institute of Agricultural Policy and Development, Working Paper No.08B/2004.Vol II. Horticultural Marketing.

Muriithi, B.W.2008. *Compliance with GLOBALGAP standards: determinants, Costs and Implications on profitability among smallholder French beans exporters in Kirinyaga district, Kenya*. MSc. Thesis. Egerton University.

National Environmental Management Authority. 2007. Provincial Environment Action Plan. Eastern Province. 2007-2011.

Nyangweso P.M. and Odhiambo M.O. 2004. Exporting Kenya’s Horticultural Products: Challenges and Opportunities in The 21stCentury. African Association of Agricultural Economists. *Shaping the Future of African Agriculture for Development: The Role of Social Scientists*. Proceedings of the Inaugural Symposium, 6 to 8 December 2004, Grand Regency Hotel, Nairobi, Kenya.

North, D.C. 1990. *Institutions, Institutional Change and Economic Performance* Cambridge: Cambridge University Press.

Ostrom, E. 2005. Understanding the diversity of structured human interactions *In Understanding Institutional Diversity*. Princeton University Press.

Okello, J., Narrod, C., and Devesh, R.2008. *Smallholder compliance with International Food Safety Standards is not a fantasy. Evidence from African Green Bean Producers*. Fresh Perspectives. www.agrifoodstandards.net. Date accessed: 30th October, 2008.

Okello, JJ, C. Narrod, D. Roy. 2009.”Food Safety Requirements in African Green Bean Exports and Their Impact on Small Farmers”. Draft IFPRI discussion paper.

UNDP.2011. *Development of short term training modules to respond to selected skill gaps for agri-business*. Retrieved January 18, 2012. www.ke.undp.org.

World Bank. 2010. *Kenya Economic update*. Retrieved April 29, 2011. www.worldbank.org/kenya/keu.

World Bank. 2010. *Smallholder farmers' involvement in commercial horticulture. Kenya's perspective*. Video conference on high value horticulture for Eastern & Southern Africa. Nairobi: The World Bank.

Web links

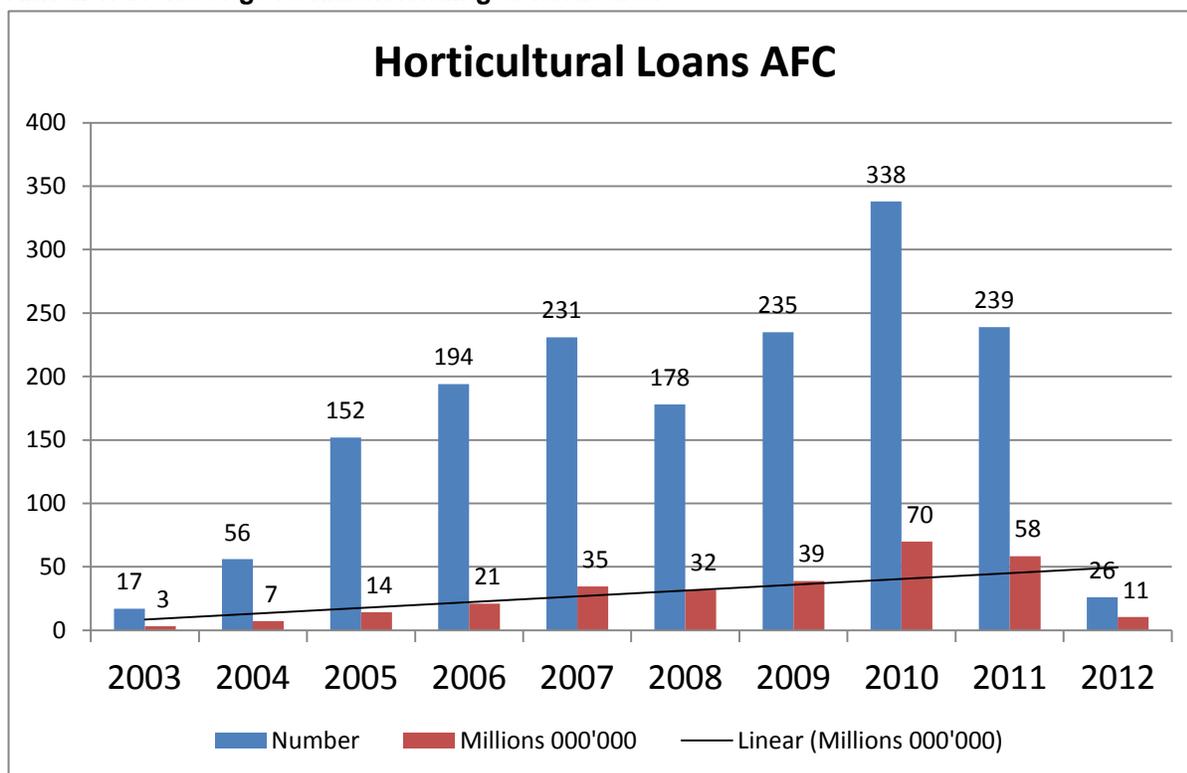
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Annex 1: Trend of government lending to horticulture



Source: Agricultural Finance Corporation, March 2012

Annex 2: Diversification into domestic horticulture

| Type | Percentage (%) of youths farming crop |
|-------------|---------------------------------------|
| Carrot | 4.2 |
| Cabbage | 16.8 |
| Courgette | 1.7 |
| Spinach | 6.7 |
| Tomatoes | 30.3 |
| Butter nuts | 3.4 |
| Kales | 28.6 |
| Pepper | 5.0 |
| Onions | 3.4 |
| Total | 100 |

Source: Survey data, 2010.

Annex 3: Map of Kenya

