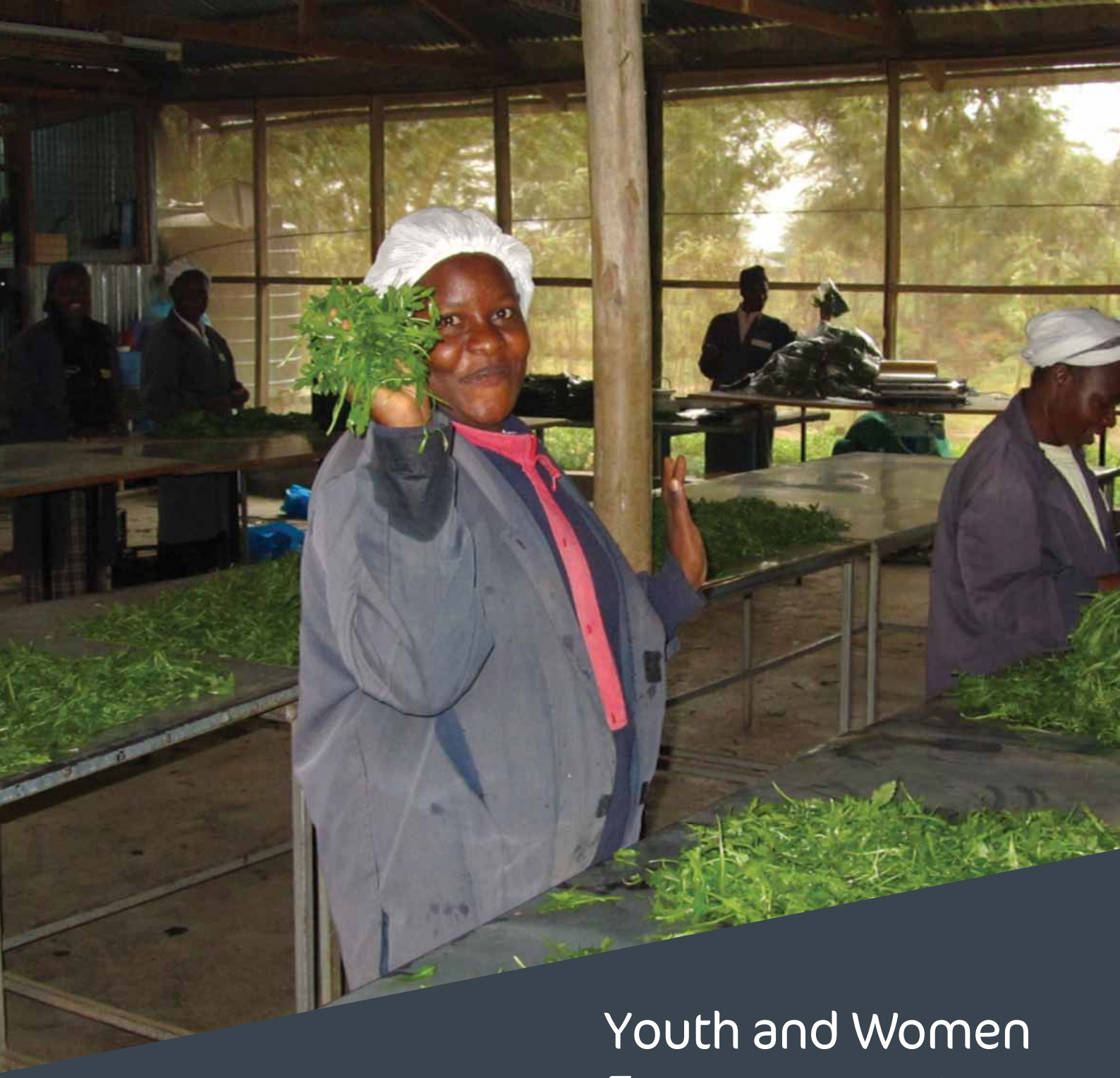

Youth and Women Empowerment through Agriculture in Kenya

Main Report By
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List of Acronyms

AgGDP:	Agricultural Gross Domestic Product
ASDS:	Agricultural Sector Development Strategy 2010-2020
CIG:	Common Interest Groups
CIMMYT:	The International Centre for Research in Maize and Wheat),
GoK:	Government of Kenya
HCDA:	Horticultural Exporters Asssociation
FPEAK:	Fresh Produce Exporters Association of Kenya
GDP:	Gross Domestic Product
ICTs:	Information and Communication Technologies
IDRC:	International Development and Research Center
KACE:	Kenya Agricultural Commodity Exchange (KACE)
KARI:	Kenya Agricultural Research Institute
KEFRI:	Kenya Forestry Research Institute
KIRDI:	Kenya Industrial Research and Development Institute [the Kenya Sugar Research
KSC:	Kenya Seed Company:Foundation,
MFI:	Micro Finance Institutions
NIB:	National Irrigation Board
PARC:	Pesticides and Agricultural Resource Centre (PARC).
PBG:	Producer Business Groups
SRA:	Strategy for Revitalizing Agriculture
SVTED:	Strengthening Vocational Training for Enterprise Development
VSO:	Voluntary Services- Overseas

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Executive Summary

This reports contains the findings of a study on Youth, Women and Agriculture conducted in the months of January- March 2012. The study was carried out within the framework of the VSO's Jitolee mandate of empowering the Youth and Women for self reliance through enterprise creation. VSO's interest in agriculture as a platform for youth and women economic advancement nests well within Kenya's macro economic framework Vision 2030 whose main thrust is to transform Kenya into a middle income country by the year 2030. Vision 2030 positions the agricultural sector as a key driver for delivering the 10 per cent annual economic growth rate envisaged under the economic pillar of Vision 2030. The sector has set itself a goal of achieving an average growth rate of 7 per cent by 2015. A key thrust of the current agricultural development strategy is to increase productivity, commercialization and competitiveness of agricultural commodities and enterprises.

A new business approach is needed to agricultural development. The youth and women - two demographic groups whose full potential has not been fully exploited - can be key drivers of this change. There is recognition that despite long hours of toil by women in rural areas, they do not get an equitable return on their work and effort as compared to men. The circumstances of the youth in many rural areas are characterized by underemployment, idling, and often, alcohol abuse . The paradox of the undeveloped capacity of rural areas is the fact that agricultural productivity is at a fraction of the full potential. Women, the youth and the underutilized land potential provide some of the supply side opportunities that can spur the growth of vibrant enterprises in small holder agricultural sector.

There are emerging opportunities that can help accelerate the transformation of agricultural activities into viable businesses. We highlight a few of these such as [i] Opportunities offered by rapid urbanization, a growing middle class in Kenya and increased access to international markets for fresh, high quality, agricultural products. [ii] The decentralization process envisaged in the new constitution – if well implemented - offers new investment resources in rural areas that can lead to development of new infrastructure, value chain services and emergence of new markets that can stem the tide of rural-urban migration. [iii] Emergence of new agricultural technologies and intensification of some of the agricultural sub-sectors such as horticulture, aqua-culture, dairy and poultry farming requiring less land, more intensive labour and management skills.

More fundamental is the policy anchorage offered by vision 2030 and the Agricultural Sector Development Strategy [2010-2020]. This has led to development of new forms of partnerships, institutions and financial instruments in support of growing business enterprises in agriculture.

The study identified the following as factors that inhibit youth participation in agriculture:

- **School-to-work transition:** The school curricula have generally tended to alienate the youth from careers in agriculture, and as a result the negative effects of the youth study-to-work transition have been more extensive in the agricultural sector than in any other sector. Agriculture is considered to be an occupation of last resort.
- **Access to land:** Access to productive land is an impediment for both the youth and some women in agriculture. Traditional systems bestow land ownership to family heads, invariably the senior male of a household. This restricts ability of youth to have access to land on which they can invest. For married, whereas they may have access to productive land from their husbands, they often do not have control over its usage.
- **Low returns on time and input investments:** The traditional staples are slow to mature, risky and often yield low returns
- **Seasonality of income:** This is tied to rainfall/ harvest cycles. This means that for long periods of time, the youth would have no income.
- **Lack of sufficient innovations** in the sector leading to reliance on traditional and ardous labour-based production techniques.
- **Concentration on a narrow range of agricultural commodities** mainly staple crops,

- **Low investment** in the infrastructure such as roads, hubs for produce consolidation, cooler houses and processing plants necessary for evolving of efficient value chains.
- **Underutilization of ICT** for production and market information.

The study recommends injection of a number of innovations in the sector in order to accelerate its transformation from a non-economic, traditional means of livelihood, to a vibrant sector that can attract new ideas and energies that are represented by the youth and women.

- **Rebranding:** There is need to address the long held belief that agriculture and rural areas are for those who cannot make a livelihood anywhere else. Agriculture needs to be rebranded as the new unexplored frontier for growth in business opportunities.
- **Specialization:** Re-direct and train youth to specialize either on production, processing or marketing instead of trying to carry out all activities in a value chain..
- **Develop innovative financial packages:** There is need to provide incentives for entrepreneurs in the sector by developing financial packages that are tailored to the diverse production and marketing conditions and risk factors. The Government and Micro Finance Institutions [MFIs], need to develop a variety of guarantee schemes that would underwrite the risks involved in such packages and invest sufficiently in the same. Increase the level of investment to ensure a regular monthly income of over Ksh. 8,000 per month for the rural areas.
- **Value addition:** Investment in value addition through processing, branding, quality, shelf life improvements would lead to higher prices, new jobs and eventually increased aggregate incomes in the rural areas.
- **Irrigation:** Sufficient investment in irrigation and other water harvesting technologies to facilitate full time engagement of the youth and shorter waiting time for economic returns.
- **Development of value chains:** There is need to improve the performance of the agricultural value chains in Kenya if they have to deliver reasonable returns to all the actors. Currently the value chains for the different commodities are long, un-transparent and cluttered with many players making them inefficient, slow and unresponsive to needs of particularly the producers. A comprehensive approach to value chains for various commodities should be a challenge that each County Government should be persuaded to undertake in partnerships involving the youth, women and the private sector. A listing of some of the key stakeholders is provided in Annex 6.
- **ICT:** Digitization of agricultural production and marketing information into web-based resources. This would enable wider outreach and use since the few available extension officers don't reach all farmers in all locations. The youth could actively participate in the generation, posting, management and utilization of this information.

The study was carried out in a sample of 9 regions where VSO Jitolee has ongoing programmes. An inherent limitation of the study was developing an analytical framework that captures and simplifies the wide variety of agricultural, economic, and social complexities in such geographically diverse circumstances. Finally, another conceptual challenge has been to try and unify women issues with those of the youth. Although there is an intersection of common issues, especially where the women considered were in the context of a youth group, in general, it would seem more practical to deal with the needs of these two demographic groups separately.

1.0 Background and Context

This study was commissioned by Voluntary Services Overseas [VSO] Jitolee within the framework of a programme known as Strengthening Vocational Training for Enterprise Development [SVTED]. SVTED is funded by Ford Foundation East Africa. SVTED focuses on economically empowering youth and women, to enable them contribute effectively to their personal and national development. SVTED is nested within a broader macro policy concern of poverty reduction as a human rights issue, and also as a peace and security imperative.

Youth and women constitute two key demographic domains of poverty. Whereas, there is a good body of knowledge on feminization of poverty as a dimension of contemporary economic development, increasingly coming into policy attention is the growing economic, social and political disempowerment of the youth. Failure to exploit the opportunities provided by the "youth bulge" not only shuts down a key economic window to national development, but predisposes society to political and social instability.

Efforts by Kenya to achieve international targets within the framework of MDGs as well as the national policy objectives contained in the medium development plans and the vision 2030 need to rally the potential of women and youth as a very significant demographic group.

Agriculture provides the single most important platform for expansion of employment, income generation and food security in Kenya. About 65% of the Kenyan population lives in rural areas, with 70% of rural households dependent on agriculture as the main livelihood pillar. The agriculture sector holds an important key to poverty reduction through increased productivity, value addition, improved marketing and linkages to other sectors.

Agriculture has largely remained unattractive to young people – men and women- for a variety of reasons.

Some of the reasons given include:

- Low returns on time and input investments.
- Seasonality of incomes.
- Lack of education/knowledge on modern farming and marketing approaches.
- Risks due to unpredictable weather and other natural factors such as pests.
- Lack of innovations leading to reliance on traditional labour-based production techniques.
- Concentration on a narrow range of agricultural commodities mainly staple crops.
- Limited access to land among the youth and women.
- Low investments in the infrastructure necessary for efficient value chains, such as roads, hubs for produce consolidation and cooler houses.

The purpose of this study was to examine further the bottlenecks hindering youth and women's participation in agriculture and to help VSO Jitolee to identify potential entry point for support of youth and women in agriculture. The results of the study are provided in the subsequent chapters.

2.0 Terms of Reference

VSO has activities in **15** counties

2.1 Purpose of the study

The purpose of the study was to:

- Determine the level of youth involvement in agriculture in selected areas of the country.
- Identify the types of agricultural based activities that youth and women engage in.
- Identify the types of supportive services offered by development agencies.
- Determine the gender dynamics among the youth in agriculture.
- Determine if there is value in application of ICT in agriculture and how this can be enhanced.
- Bottlenecks hindering youth activities in agriculture and the inherent strategic interventions.
- Identify potential entry points in support of youth and women in agriculture.

2.2 Key tasks

The key tasks included:

- Reviewing of key documents that address youth in agriculture.
- Undertaking research to identify appropriate entry points for VSO into youth, women and agriculture programmes in selected areas.
- Identifying the service providers in these areas (financial and non-financial providers) who can work closely with VSO in support of the youth and women in agriculture programmes.
- Determining the major agricultural activities that the youth and women can engage in, in the selected areas that can enhance employment.
- Reviewing a number of Youth Polytechnics implementing agriculture programmes and how this can be improved to enhance income generation for the youth.
- Identifying how ICT can be used by youth for increased access to information in agri-business.
- Finding out the gender dimensions in agriculture and factors hindering entry of young women into agriculture.
- Proposing possible interventions that VSO and other development agencies may put in place to support youth and young women in agricultural activities that lead to employment creation.
- Presenting of case studies of best practice (success stories by youth) that can be used for programme interventions.

3.0 Methodology

3.1 Geographical Scope of the Study

VSO has activities in 15 counties. The study team clustered these Counties into agro-ecological zones given that generally, similar agro-ecological zones have similar agricultural practices and are likely to experience similar challenges. A total of 9 agro-ecological zones were identified from which a random sample of one county per zone was selected. The field study was subsequently carried out in the following nine regions that included Muranga, Meru, Kwale, Loitokitok, Kakamega, Eldoret/Uasin Gishu, Nakuru, Kitui and South Nyanza/Migori.

3.2 Methods of data collection

Five methods were used to collect the required data. They included literature review, focus group discussions, personal interviews, key informant interviews and telephone interviews.

3.2.1 Literature review

Review of relevant documents. Key among them were the Strategy for Revitalization of Agriculture [SRA] 2005-2015, the Agricultural Sector Development Strategy [ASDS] 2010–2020 and the Livestock, Forest and Fishery policies. Other studies on the participation of youth and women in agriculture and development in general were also reviewed.

3.2.2 Primary data collection

Key methods used for primary data collection included:

- **Focus Group Discussions** with youth and women group representatives, randomly selected from a list provided by District Youth and Gender Officers. A total of 22 youth and 15 women Groups were interviewed [Annex 1 and 2]
- **Personal Interviews:** Targeting the randomly selected youth and women groups – involved and not involved in agriculture. A total of 352 personal interviews were conducted.
- **Key Informant Interviews:** Those interviewed included District Gender and Social Services Development Officers, District Youth Officers, District Agricultural, Livestock and Forest Officers. In addition, key contacts as provided by VSO such as Managers of Youth Polytechnics and Group Leaders were also interviewed. A total of 25 Key informant interviews were conducted as indicated in Annex 3.

The survey collected data from a total of 416 respondents the bulk of which was based on personal interviews with the youth [men and women] and older women representing all the nine counties.

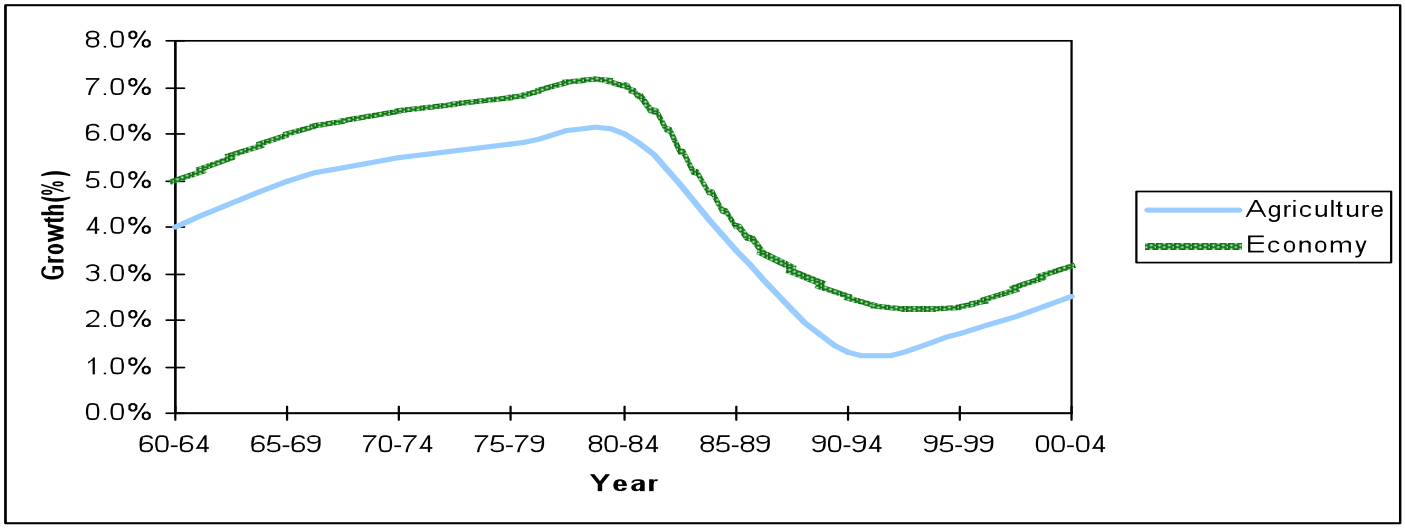
4.0 Policy Context

4.1 Agriculture and development in Kenya

Agriculture is the mainstay of the Kenyan economy and a key livelihood pillar for the majority. It directly contributes 26 per cent to the annual GDP and another 25 per cent indirectly. The sector accounts for 65 per cent of Kenya's total exports and provides more than 70 per cent of informal employment in the rural areas. The sector comprises six subsectors, namely: Industrial crops, food crops, horticulture, livestock, fisheries and forestry. As indicated in Figure 1, the growth of the national economy is highly correlated to growth and development of the agricultural sector. In the first two decades after independence, the agricultural sector, and in turn the national economy, recorded the most impressive growth in sub-Saharan Africa at average rates of 6 per cent per annum for agriculture and 7 per cent for the national economy suggesting that increased and deliberate investment in agriculture will translate into growth of the national economy.

Figures 2a and 3 show the contribution of the sub-sectors to Agricultural Gross Domestic Product (AgGDP) and agricultural exports respectively as per 2009 data. Industrial crops contribute 17 per cent of the AgGDP and 55 per cent of agricultural exports. Horticulture is now the largest subsector, contributing 33 per cent of the AgGDP and 38 per cent of export earnings. Food crops contribute 32 per cent of the AgGDP but only 0.5 per cent of exports, while the livestock subsector contributes 17 per cent of the AgGDP and 7 per cent of exports. Livestock, fisheries and forestry sub-sectors have huge potential for growth that need to be exploited.

Figure 1: Trends in agricultural and economic growth (1960–2004)



Source: GoK 2010b: Statistical Abstract 2010. Nairobi.

Figure 2a: Contribution of Sub-sectors to AgGDP

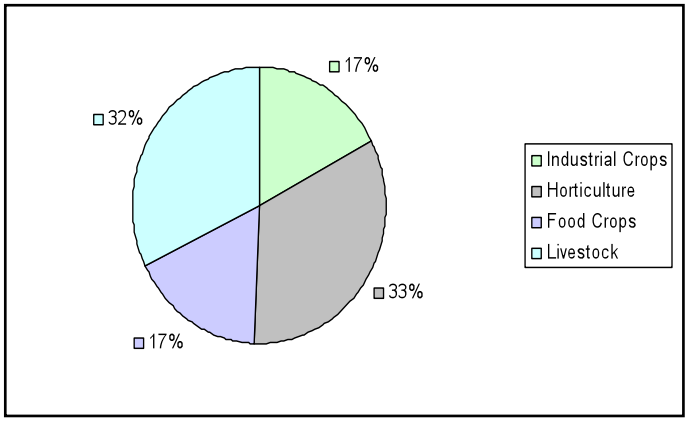
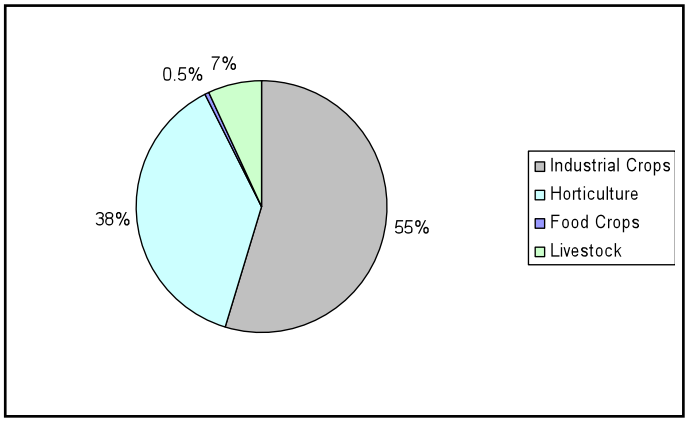


Figure 3: Contribution of subsectors to exports



Source: GoK: development Strategy [ASDS] 2010–2020

4.2 Key Policy Pillars

The Agricultural Sector Development Strategy 2010-2020 (ASDS) is the overarching national policy document for the agricultural sector ministries and stakeholders in Kenya. The ASDS updates the Strategy for Revitalizing Agriculture (SRA) that was developed in 2004. This policy framework is anchored in the long term development plan for Kenya, Vision 2030 whose main thrust is to transform Kenya into a middle income country by the year 2030. In order for this to happen, a Gross Domestic Product (GDP) growth rate of 10% per annum is targeted for the next 25 years. This is possible given examples of some countries like India that have tremendously increased their rural per capita income to approach those for urban areas by strategically locating and investing in agro-processing plants in the rural areas.

The ASDS aims at strategically positioning the agricultural sector as a key driver for delivering the 10 per cent annual economic growth rate envisaged under the economic pillar of Vision 2030. The overall goal of the agricultural sector is to achieve an average growth rate of 7 per cent by 2015.

The strategy provides a guide for the public and private sectors' effort in overcoming development challenges facing the sector. Key challenges meant to be overcome through ASDA include food security, poverty reduction, agribusiness development, access to markets and efficient use of inputs and agricultural credit.

The overall development and growth of the sector is anchored in two strategic thrusts:

- Increasing productivity, commercialization and competitiveness of agricultural commodities and enterprises and
- Developing and managing key factors of production.

To achieve the aspirations that are set out in vision 2030, transforming smallholder agriculture from subsistence to an innovative, commercially oriented and modern sector is critical. This transformation is predicated on:

- Transforming key institutions in agriculture, livestock, forestry and wildlife to promote agricultural growth
- Increasing productivity of crops, livestock and trees
- Introducing land-use policies for better use of high- and medium-potential lands
- Developing more irrigable areas in arid and semi-arid lands for both crops and livestock
- Improving market access for smallholders through better supply chain management
- Adding value to farm, livestock and forestry products before they reach local, regional and international markets.

"The current strategic mission for the agricultural sector as defined by ASDS is "An innovative, commercially oriented and modern agriculture". This fits in well with VSOs aspiration of an agricultural sector that is increasing, business driven, and that can attract young men and women as a sector with viable commercial opportunities.

It employs such factors of production as land, water and farmer institutions such as cooperatives, marketing associations etc. However, in spite of the importance of the sector, agriculture has for many years been predominantly small scale, rain-fed and poorly mechanized. In addition, institutional support and infrastructure have been inadequate. The development of agribusiness is critical to the commercialization of agriculture and realization of Vision 2030, due to their enormous contribution to employment creation and improvement of the economic status of players along the agricultural value chains. The Producer Business Groups (PBGs) and the wholesale hubs which are highlighted in vision 2030 and principally found in the rural areas can be recognized as "Business Hubs" and are similar to CIGs (Common Interest Groups) in this report.

5.0 Agricultural Sector Components and Potential Opportunities

The agricultural sector is a complex industry consisting of a range of different production systems, scales of production and sub-sectors. In order for VSO Jitolee to identify possible business niches and entry points for youth and women in the sector, it is worth breaking down the key components of the sector.

5.1 Agricultural Systems in Kenya

Rain-fed Agriculture: Kenya's agriculture is predominantly rain-fed. There are two cropping seasons except in the very high-altitude areas. The performance of rain-fed agriculture varies due to the diverse agro-climatic zones. In the humid, high-altitude areas, productivity as well as predictability of a good crop is high. However, the population density in these areas has increased and land has been subdivided into such small sizes that it is becoming uneconomical for farm enterprises. In the medium altitude and moderate-rainfall areas, arable rain-fed farming is moderately suitable. However, there is a relatively high risk of crop failure due to increased frequency of dry spells and an uneven rainfall distribution. Increasing productivity in these areas requires better selection of crops, adoption of improved technologies, and better crop husbandry. A large proportion of the country, accounting for more than 80 per cent, is arid and semi-arid with an annual average rainfall of 400 mm. Droughts are frequent and crops fail in one out of every three seasons. Most of the area is rangeland suitable for ranching and pastoralism. Farm enterprises comprise mixed crops and livestock. While there is ample land, farmers tend to grow crops that are not suitable for this rainfall regime or for the soils. Generally, for rain-fed agriculture, there is sufficient rainfall in the highlands with limited land. In the arid and semi-arid areas, there is more land but low rainfall making engagement of youth in agriculture challenging in both the high and low rainfall areas.

Irrigated agriculture: Kenya is classified as one of the water-deficient countries in the world. Water resources are unevenly distributed in space and time. About 56 per cent of all the country's water resources are in the Lake Victoria basin. Even in the basins, with the exception of the highlands, water availability is scarce. Consequently, the country's irrigation-based farming is still limited. Irrigated agriculture in Kenya is carried out mainly in irrigation schemes and in large-scale irrigation of crops such as rice and coffee. Individual farmers have developed their own systems of irrigation especially for export crops such as coffee and horticulture. Large commercial farms account for 40 per cent of irrigated land, smallholder farmers 42 per cent, and Government-managed schemes 18 per cent. There is enormous potential to expand irrigated agriculture in the country especially for horticultural crops. This could be done by damming surplus water during the rainy seasons in both high rainfall and low rainfall areas and use it for year round intensive cultivation and irrigated agriculture in the two areas respectively.

5.2 Production Scales

Small-Scale Farming: Kenya's agriculture is predominantly small-scale mainly found in the high agricultural potential areas. Production is carried out on farms averaging 0.2–3 ha, mostly on a commercial basis. This small-scale production accounts for 75 per cent of the total agricultural output and 70 per cent of marketed agricultural produce. Small-scale farmers produce over 70 per cent of maize, 65 per cent of coffee, 50 per cent of tea, 80 per cent of milk, 85 per cent of fish, and 70 per cent of beef and related products. However, adoption of improved inputs such as hybrid seed, concentrate feeds, fertilizer, safe use of pesticides and machinery by small-scale farmers is relatively low. There is huge potential to increase productivity in the small holder subsector with adoption of appropriate and modern farming practices.

In the rangelands, the small-scale livestock production system features mainly pastoralists. Livestock herd sizes are considerably large because of communal grazing with low use of purchased inputs like feed, drugs and artificial insemination. Production is mainly for subsistence and cultural reasons rather than market oriented. Although the

necessary information on disease and nutrition management is available, the two remain major constraints to increased livestock productivity in this system.

Medium-Scale Farming: Medium-scale farms range from 3 to 49 ha. Farmers in this category are receptive to technology and practice commercial agriculture by investing in inputs, marketing produce and borrowing credit for farm development. Youth can also adopt a similar model by working together on larger areas of land to maximize on the economy of scale. Small scale communities can also agree on one or two crops only so that they can easily pool produce for easy of marketing.

Large-Scale Farming: Large-scale farming is practiced on farms averaging about 50 ha for crops and 30,000 ha for livestock ranches. The large-scale farming subsector accounts for 30 per cent of marketed agricultural produce, mainly involving growing crops such as tea, coffee, maize and wheat in addition to keeping livestock for commercial purposes. The use of improved technologies and better farm management has resulted in increased productivity per land unit in all categories of farming. There are some large farms in various parts of the country that are not farmed at all. The government and other development agencies should consider either acquiring some of the farms or leasing them from the owners so as to sub-let to youth for efficient farming and employment creation. In such case provision of production information, processing and marketing of produce can be done optimally. An example in the Nakuru-Eldoret region could be leasing like 9,000 acres of land and sub-letting it to 3,000 youth (3 acres per youth) to grow a crop like maize and beans only. In such a case, land preparation could be done jointly, the inputs could be provided on loan and all that the youth invest is their labour and management. This model of farming could be piloted in a few counties by interested agencies.

5.3 Agricultural Sub-sectors

5.3.1 Crops

Food Crops: Food crops are classified into cereals (maize, wheat, sorghum, rice, millet); pulses (beans, pigeon pea, cowpea, chickpea, green grams); and, roots and tubers (sweet potato, irish potato, cassava, arrow root and yam). The main food crops are maize, rice, wheat, sorghum, potato, cassava, vegetables and beans. Maize and beans are the dominant food crops grown in all the counties visited. Apart from Uasin Gishu which grows a lot of maize, no other county is self sufficient in the same. In addition, Kenya imports about 50% of the rice and 33% of the wheat consumed in the country. This are investment opportunities that can be exploited by the youth including establishing predictability of both the production and marketing of the commodities.

Industrial Crops: The main industrial crops in Kenya are tea, coffee, sugar cane, cotton, sunflower, pyrethrum, barley, tobacco, sisal, coconut and bixa, all of which contribute 55 per cent of agricultural exports. Tea is still one of the leading foreign exchange earners in the country. Declines have recently been recorded in several industrial crops, among them pyrethrum and sugar cane. Other commercial crops whose production has remained low despite large unexploited potential are cotton, pyrethrum, oil crops, cashew nut, bixa and sisal. Sufficient investment in the revival of these crops especially cotton can create many job opportunities for the youth in the country right from production of cotton seed, growing of cotton for seed cotton to ginning, spinning and production of garments for local use and export. What appears to lack in these sub-sectors is serious leadership and financial allocation. With proper coordination, even non-governmental development agencies can pick a commodity of their choice and concentrate their efforts on it by developing the whole value chain, engaging the youth appropriately all along.

Horticulture: Products in this industry include cut flowers, vegetables, fruits, nuts, herbs and spices. The value of horticultural exports has been growing at an average of 16 per cent rising from KES 26.6 billion in 2002 to KES 43.3 billion in 2006 and to KES 65.2 billion in 2007. The quantity of horticultural exports fell by 33.7 thousand tones while the value declined by KES 9.0 billion in 2010. This decline in horticulture was partly attributed to interruptions of air traffic to European countries by volcanic eruption in Iceland (GoK, 2011). The youth prefer commodities that generate high and quick returns on a regular basis so that they can have an income the whole year round. Production of high value horticultural crops for local consumption and exports offer enormous opportunities for involving the youth. This could be combined with livestock enterprises that could provide the continuity in income. For examples vegetable growing and layers. The crop could provide an income every three months while the layers generate income on daily basis. With proper and sufficient capacity building, other youth could take on the processing/marketing responsibilities to ensure efficient marketing.

5.3.2 Livestock

The livestock sub-sector contributes to the food and cash needs of farmers, provides employment to about 10 million people, contributes 7 per cent to the national GDP, 17 per cent to AgGDP, and provides 50 per cent of the agricultural labour. Both crop farmers and pastoralists keep livestock for food and income. The livestock industry has a high degree of vertical links with upstream and down-stream industries. It is a significant user of products from feeds, drugs, vaccines and equipment manufacturing industries and is a major provider of raw materials for agro-processing industries. The key livestock subsectors are beef, dairy, sheep, goats, poultry, camel, piggery and emerging livestock like rabbits.

- **Dairy industry:** The country's dairy cattle are estimated at 3.5 million head. Dairy cattle are mainly kept in medium- to high-rainfall areas. The key dairy breeds are Ayrshire, Friesian, Guernsey, Jersey and cross-breeds. According to GoK (2011) the volume of marketed milk increased by 25.5 per cent while the value decreased by 1.3 per cent in the year 2010. This was as a result of the abundant supply of milk which resulted in a reduction in the average price paid to the farmer. Given the small land sizes in the medium to high rainfall areas, dairy farming using the zero grazing technology has enormous opportunities to engage the youth.

- **Beef industry:** Nationally, the beef cattle population is estimated at 9 million. The main beef species are East African Zebu, Boran, Sahiwal and cross-breeds. Although most beef is produced from rangelands, dairy cattle culls contribute substantially to the national supply. On average, the country produces 320,000 tonnes of beef worth KES 62.1 billion annually. However, beef production is affected by climate variability and animal diseases. Despite this challenges, observation in high and medium rainfall areas indicate that fatten animals especially exotic or cross breeds to be sold for beef is quite profitable. This is an opportunity youth can consider investing in. However only one or two animals can be kept at any one time because of scarcity of forage.

- **Sheep and goats:** Sheep and goats play a key role in pastoral households' food security and incomes owing to their short-generation intervals, high adaptability and versatile feeding habits. The country has an estimated 13 million goats and 10 million sheep. Annual meat production is estimated at 84,000 tonnes of mutton and chevon worth KES 14 billion.

- **Poultry:** Kenya has an estimated 28 million birds out of which 76 per cent consist of free-ranging indigenous chicken, while 22 per cent are commercial layers and broilers. Other poultry species like duck, turkey, pigeon, ostrich, guinea fowl and quail make up 2.2 per cent and are becoming increasingly important. Annually, the country produces about 20,000 tonnes of poultry meat worth KES 3.5 billion and 1.3 billion eggs worth KES 9.7 billion.

Experience shows that giving youth one chicken, one goat/sheep or one beehive and expecting them to be fully engaged is not beneficial.

- **Pigs:** Pig rearing in the country has become relatively well-established. The country produces an estimated 12,000 tonnes of pig meat worth KES 1.2 billion.

- **Beekeeping** (apiculture) is practised in most parts of Kenya, particularly in the ASALs. In addition to contributing directly to household incomes, bees play an important role in plant pollination. The country produces an estimated 14,600 tonnes of honey and 140 tonnes of beeswax annually, all valued at KES 4.4 billion. Due to the low investment and variable costs involved, beekeeping is becoming increasingly popular in rural areas.

- **Aquaculture:** Demand for fish is rising owing to the growing population and their changing feeding habits. Aquaculture is the only sustainable source of fish and has great potential for growth in Kenya due mainly to the presence of a wide variety of water sources such as rivers, springs, dams, lakes and the Indian Ocean. In addition, most of the land that is suitable for other agricultural activities is also suitable for aquaculture as are swampy and marshy areas, which are unsuitable for crop production. Aquaculture can also be integrated with other production activities such as rice farming, poultry and dairy production to increase production efficiency per unit area. Commercial aquaculture enterprises are increasing. In 2000, production was about 1000 tonnes; in 2006 production had risen to 4250 tonnes, earning the country about KES 1.0 billion. This makes aquaculture the fastest growing production subsector in the country deserving due attention and support.

Given the low capital requirements for investing in sheep, goats, pigs, poultry, and honey production, youth can profitably engage in efficient production of the same. What is required however is to have numbers of animals/beehives in order to achieve reasonable economies of scale. Experience shows that giving youth one chicken, one goat/sheep or one beehive and expecting them to be fully engaged is not beneficial. For youth who want to be serious with agriculture, 10 mature hens with one cock (Ksh. 6,000), 6 goats/sheep (Ksh. 12,000), 5 beehives (Ksh. 15,000), 1 sizeable fish pond per individual etc. could be more realistic. Models of engagement where a group is engaged but production and benefits are at the individual level have proved to be more successful because each youth's benefits are proportional to their input. Joy riders do not survive in such arrangement. The start up capital need not to be a grant. It can all be in loan form repayable within a reasonable time frame as agreed with the beneficiary groups. In a recent study in southern Sudan (Vedaman Consultants Ltd, 2012) 500 households were each given five goats under a livestock restocking project. Four months from the time of receiving the goats, 46% of the goat recipients had an average of 2 kids and getting an average of 1.0 litre of milk per day. Some of them were already selling half of the milk. In another youth project in Teso being implemented by CARPA (CARPA, 2010), 23 youth were each given 4 chicken and one cock. Within six months, one of the orphans had 22 hens, over 30 chicks and was selling eggs on every market day. For the youth who seriously want to progress, the opportunities are numerous.

5.4 Agricultural Services in Kenya

Research: Agricultural training and research is a crucial component in the development of the agriculture sector. It provides knowledge and skills that are necessary for enhanced and efficient production and management of the sector. The agricultural research system in Kenya currently consists of public and private research institutions established under different legal and institutional frameworks. The Kenya Agricultural Research Institute (KARI), the Kenya Forestry Research Institute [KEFRI], the Kenya Marine and Fisheries Research Institute and the Kenya Industrial Research and Development Institute [KIRDI] are parastatal research institutions. Others include the Coffee Research Foundation, the Tea Research Foundation of Kenya, the Kenya Sugar Research Foundation, and the Kenya Seed Company (KSC). The National Irrigation Board [NIB] established under the State Corporations Act (Cap 446) has a research

division that undertakes research on irrigation technologies and practices. Non-governmental research institutions identified included CIMMYT (the international centre for research in maize and wheat), Horticultural Council, Monsanto, Sygenta, Pesticides and Agricultural Resource Centre (PARC).

Agricultural Training: According to the Economic Survey of 2011 on training, it is observed that overall; there was a 28.2 per cent drop in the total number of students studying agricultural courses between 2009 and 2010. Out of the four public universities offering degree level agricultural courses, three registered sharp declines in their enrolment. The total number of trainees taking agriculture courses at Egerton University decreased from 3,101 in 2009 to 2,017 students in 2010. Similarly Moi University recorded a decline from 1,437 to 821 students taking agriculture courses over the same period while Jomo Kenyatta University of Agriculture and Technology had a reduction of 230 students. Contrary to these trends, University of Nairobi had a slight increase in enrolment of 11%, with the total number pursuing agriculture courses rising from 1,306 in 2009 to 1,450 in 2010. As observed in previous years, the majority of degree level agriculture trainees are male, comprising 66, 59 and 52% of the total enrolment in 2010, 2009 and 2008 review period respectively.

Marketing: Access to markets is critical to increasing agricultural productivity and commercialization of enterprises so that farming is perceived as a business.

5.5 Challenges of the sector

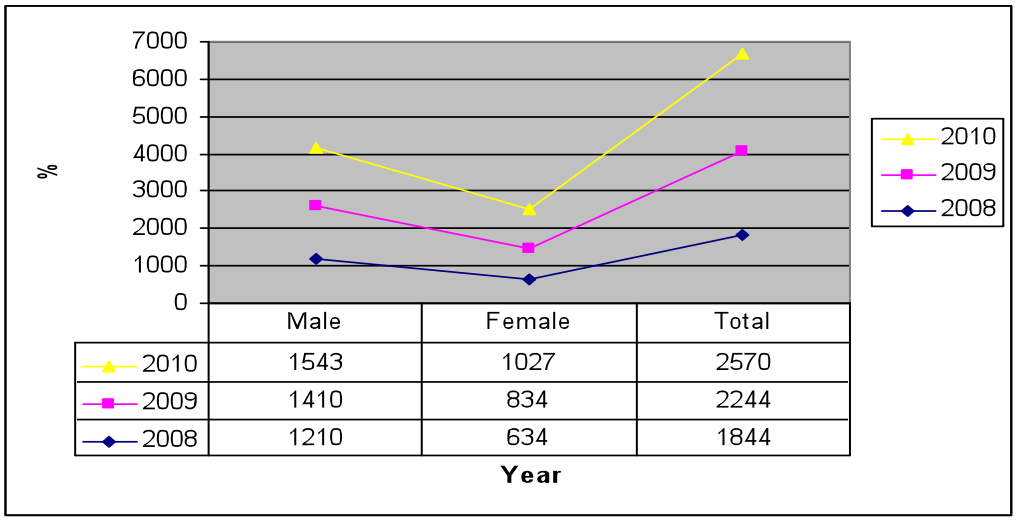
Information from various government policy documents and reports from various stakeholders indicate numerous challenges within the agricultural sector. They include farm level challenges and policy level challenges.

5.5.1 Farm level challenges

Credit: Access to bank credit by farmers is still a major challenge despite the fact that Kenya has a relatively well-developed banking system. Risks associated with agribusiness coupled with complicated land laws and tenure systems that limit the use of land as collateral make financing agriculture unattractive to the formal banking industry.

Inadequate infrastructure: By infrastructure here we refer to a variety of hardware investments that are often beyond the capacity of a single small holder farmer, often needed public sector investments, or a package of incentives for the private sector to

Figure 4: Diploma Level Agriculture Training Enrolment



Source: Economic Survey, 2011

provide. They include rural roads, electricity, cold storage facilities, irrigation and water storage and processing technologies. The absence of these types of infrastructure services reduces the farmers' ability to increase production, reduce risks and compete effectively in the market.

Low value addition: A characteristic feature of Kenya's agriculture is the dominance of primary production. There is little on-farm and off-farm processing of agricultural produce, or efforts to improve the quality and shelf life of produce. This translates to low prices, fewer job opportunities and eventually low incomes for farmers and loss of a substantial part of their income to intermediaries and processors. The situation is more hopeless when dealing with perishable produce such as milk and horticultural products. Vision 2030 has identified value addition as key to driving economic growth.

Distorted markets and poor value chain development: Marketing of agricultural produce and products within the country is carried out by the private sector either as formal marketing companies or as brokers. Generally, marketing chains for the different commodities are long, not transparent and consist of many players making them inefficient, slow and unresponsive to needs of the producer and the growing market. There have been attempts to develop marketing information systems but the use of this is stifled by inability of small holders to develop joint marketing that can circumvent brokerage.

Low absorption of modern technology. Although Kenya has a well-developed agricultural research system, use of modern science and technology in agricultural production is still limited. Inadequate research–extension–farmer linkages to facilitate demand-driven research and increased use of improved technologies continue to constrain efforts to increase agricultural productivity.

Despite the high potential of ICTs in improving small-scale agriculture in Africa, there are low usage patterns and anecdotal adoption. Cell phone is ubiquitous in rural areas. Their usage in the sector is incidental and generic as they are not necessarily customized for any specific sectoral need.

Web based resources could offer a wide range of customized applications to the youth and women in the sector. However, use is constrained by high costs of available technologies, inadequate infrastructure and ICT skills, poor and expensive connectivity, language barriers, low bandwidth, inadequate and inadequate customization to the needs of small holder farmers.

IDRC and other development partners could work together to produce an inventory of ongoing initiates with links to the specific organisations implementing the initiatives. This could provide help in the sharing of ideas, innovations and lessons learned by the respective initiatives. Likewise, IDRC and other development partners could promote ICT initiatives that target women and other disadvantaged groups such as the youth (Munyua, 2007).

Reduced effectiveness of extension services. The effectiveness of extension services declined over the last two decades due to the use of inappropriate methods and a sharp reduction in operational budgets and human resources in the sector ministries. In particular, livestock extension in ASALs has been underfinanced. While much has been achieved in the last 5 years, inadequate financial and human resources continue to constrain the sector.

Pre- and post-harvest crop losses. There have been high levels of waste due to pre- and post-harvest losses occasioned by pests and diseases, and lack of proper handling and storage facilities. Smallholder farmers are unable to control pests and diseases due mainly to lack of information.

High cost and increased adulteration of key inputs. The cost of key inputs such as seed, pesticides, fertilizer, drugs and vaccines is high for resource-poor farmers. Such high costs lead to low application and adulteration of inputs.

Low and declining soil fertility. The rising population density has contributed to the subdivision of land to uneconomically small units. In addition, the reduction of fallow periods and continuous cultivation has led to rapid depletion of soil nutrients, declining yields and environmental degradation in many parts of the country.

HIV/AIDS prevalence: The pandemic in Sub-Saharan Africa and has had very adverse effects on agricultural production. Findings indicate that it has led to loss of family labour, change in farming systems, and reduced agricultural production. It is emerging as one of the greatest threats to human health and productivity. Income earned by farmers is eroded by expenditures on medication for suffering family members and funeral expenses, which are comparatively quite high. HIV/AIDS has caused some family members to sell available assets such as livestock to raise money to spend on illnesses. It also calls for care by other members of the family, which further limits labour and working capital on agricultural activities. The gender dimension of it is that women tend to be more vulnerable to the disease and are mostly the caregivers.

5.5.2 Policy level challenges

Inappropriate legal and regulatory framework. While much has been achieved in the last few years, an outdated and fragmented legal and regulatory framework still remains a challenge to development in the agricultural sector.

Multiple taxes. As they transport or market their farm produce, farmers have been subjected to multiple taxes from local authorities and Government departments. This has contributed to reduced net farm income and created distortions in marketing structures without necessarily improving the services that these authorities are supposed to deliver.

Limited capital and access to affordable credit. Farming is considered highly risky by the formal banking sector, thus it gives farming little attention. Without credit farmers are not able to sufficiently invest in Agriculture. In a significant number of cases, farmers divert credit given as input materials or even cash making provision of the same not effective.

Inadequate budgetary allocation. Insufficient budgetary allocation to the agricultural sector is a key constraint. In the 2003 under the Maputo Declaration, African Heads of State committed to allocate 10 per cent of their annual budgets to the agricultural sector. Kenya has not yet achieved this target; by 2008, the sector was receiving 4.5 per cent of the budget. This insufficient allocation has reduced human resources and service delivery by Government institutions.

5.6 Key Opportunities for growth of business in Agriculture

There are many existing and emerging opportunities that can be exploited to build a robust agricultural sector.

Existing, new and expanding markets: Rapid urbanization in Kenya and integration into regional and international markets and already existing markets provide an opportunity to gear agriculture into an accelerated commercial direction. For example, Kenya imports about 33% of the wheat and over 50% of the rice used in the country (Economic review of Agriculture, 2006). Local investment in the cereal sector to reduce importation is an opportunity that can be exploited. In 2003 intra COMESA trade in maize was only 4% implying that 96% was sourced from outside COMESA. In the same year, Intra COMESA trade for cotton and cotton products was only 7% with 93% being sourced from non-COMESA countries. This shows an absence of regional cotton supply chain and value addition. For milk, intra COMESA trade was only 9%. The region had very low per capita consumption. Only 20% of the milk produced was processed and processing plants operated below capacity at only 50%. In 2006 only 7% of the horticultural produce in Kenya was exported and 93% was marketed locally, this can be improved to increase the horticultural exports. Due to the diverse agro-ecology, the country can produce a wide range of temperate, tropical and subtropical products. Large and expanding markets

for traditional products like maize and other cereals, beef and dairy products, tea, coffee and pyrethrum exist. Global demand for horticultural products, and emerging livestock such as ostrich, guinea fowl, crocodile, frogs and butterflies, gum arabic, and emerging crops such as assorted resins and essential oils, and aloe remain under-exploited. Vast opportunities are opening up in the production of bio-fuels from sugar cane, maize, millet, sorghum, jatropha and other oil-bearing seeds.

Abundant human resources: Primary, secondary and post-secondary education has expanded and produces thousands of graduates each year. This resource can be used to change the face of agriculture if young people, from primary to university level, are to be attracted to agriculture as a career. The human resource can be used in training and research to develop new and relevant technologies, and to create and expand agribusinesses.

Potential for increasing production. Not much effort has been put into increasing production of traditional commodities in Kenya. Agricultural productivity can be increased in multiples through better use of unused land in traditional farming areas, and through irrigated agriculture. This could include creating special schemes for youth to hire land for high value farming. The vast livestock potential in the arid and semi-arid areas that cover 80 per cent of the country remains untapped as does the fisheries potential of the exclusive economic zone in the Indian Ocean, and of fish farming in the highlands and ASALs.

Potential for increasing yields: Yields of crops and livestock are far below their optimum. Yields of maize, sugar and dairy are one-tenth of global potential. Tripling national average yields of major crop and livestock production systems in the country is easily achievable.

Value addition: Value addition includes processing, branding, quality certification and accreditation, as well as farm-level quality improvements that the market values. It is estimated that 91 per cent of total agricultural exports are in raw or semi-processed form. Thus, the country loses billions in earnings by not adding value to its produce. Potential for adding value to products such as tea, coffee, pyrethrum, hides and skins, milk and beef, fruits and vegetables remains largely untapped. A change in strategy to locate agro-industries in rural India is reported to have increased the rural per capita income significantly. This is an idea Kenya can borrow and run with.

6.0 Youth, Women and Unemployment in Kenya

Though women and the youth constitute distinct demographic groups, for the purposes of this report we consider high levels of unemployment experienced by both groups as a common denominator. Kenya's constitution defines youth as all individuals in the republic who are between 18 and 35 years. Currently, 78.31% of Kenyans are below 34 years old. It is estimated that 64% of unemployed persons in Kenya are youth. 1.5% of the unemployed youth have formal education beyond secondary school level and the remaining over 92% have no vocational or professional skills training and the majority are found in rural Kenya [UNDP: 1999 Kenya Human Development Report]. Due to inadequate employment and livelihood opportunities in rural areas the tendency is that they migrate to urban centres to look for such opportunities.

It is envisaged that Kenya will experience a demographic shift/transition due to changing patterns in fertility, mortality and population growth as well as socioeconomic factors. As the 0-14 age group matures into teenage-hood and young adulthood, and as many women continue to give birth later, space their children more or give birth to fewer children, the bulge will shift to the 15-34 year olds meaning that Kenya will transition from a 'child-rich' phase/child bulge to a 'young adult' / youth bulge population [Njonjo, K.S, 2010]. Youth statistics currently show the following facts: Over two and half million youth in Kenya are out of work. The most frequent explanations of the causes of youth unemployment in Kenya include slow or declining economic growth, rapid population growth, poor dissemination of labour market information, skills mismatch, structural reforms, and high costs of labour.

From a gender point of view, the disaggregation of unemployment rates by gender reveals that in both 1998/1999 and 2005/2006 employment survey that the unemployment rate for female youths was higher than that of males. The overall unemployment rate among females was 14.3 percent compared to 11.2 percent among males.

> If effectively managed, this "youth bulge" could become one of Africa's drivers of economic growth, delivering significant demographic benefits—as it did in some of the Asian tiger economies. It was Churchill who said, "The pessimist sees difficulty in every opportunity. The optimist sees the opportunity in every difficulty." Which do you want to be?
>
> **Quoted from:** Njonjo K.S [2010]: Youth Fact Book Infinite Possibility or Definite Disaster? Institute of Economic Affairs

Youth and Women Factors in Agriculture

There are emerging success stories of changing attitudes among young men and women on undertaking agriculture as a business. This is illustrated in the newspaper cuttings in Annex 5 However to accelerate this transformation, there is need to address some structural and attitudinal factors that hold back participation of youth and women in agriculture. We summarize some of them below.

- **The negative effects of school-to-work transition.** The school curricula have generally tended to alienate the youth from careers in agriculture, and as a result the negative effects of the youth study-to-work transition have been more extensive in the agricultural sector than in any other sector.

- **Agriculture as undertaking of last resort:** Majority of the youth consider agricultural work to be for 'those who have not gone to school'. Moreover, many youths who grew up in the villages have an experience of the long hours that go into traditional agriculture without a commensurate return. They may therefore believe their future lies with a different career that is financially more rewarding and can be found in the urban area. There is need to demonstrate the changing face of agriculture, the increasing demand for non-traditional commodities, new and emerging local and international markets, and the possibility to introduce technological and management innovations in the sector.

- **Access to land:** Access to productive land is an impediment for both the youth and women in agriculture. Traditional systems bestow land ownership to family heads, invariably the senior male of a household. Key is a fundamental resource to agriculture, and unless business models that allow alternative ways of using land are developed, youth and women's growth in this sector will continue to be inhibited.

- **Farming Groups Model:** Unlike male youth, women youth and women generally seem to be comfortable in approaching agricultural activities collectively in solving their problems.

7.0 Field Study Findings

7.1 Socio-Economic Profiles of Respondents

Of the total number of interviews conducted, there were more male respondents [54.8%] than women [45.2%] (Figure 5). In education, (32.7%) had completed secondary school while (17.6%) had completed primary. It was also found that (6.5%) had attained University level of education and only (3.4%) had no formal education. Regional comparison in education shows that Nakuru had the highest number of those having University degrees accounting for (69.6%). In terms of tertiary/college level of education attainment, Eldoret led with (20.4%). Loitoktok was found to have the highest cases of those without formal education (58.3%) (Figure 6).

Figure 5: Gender Distribution

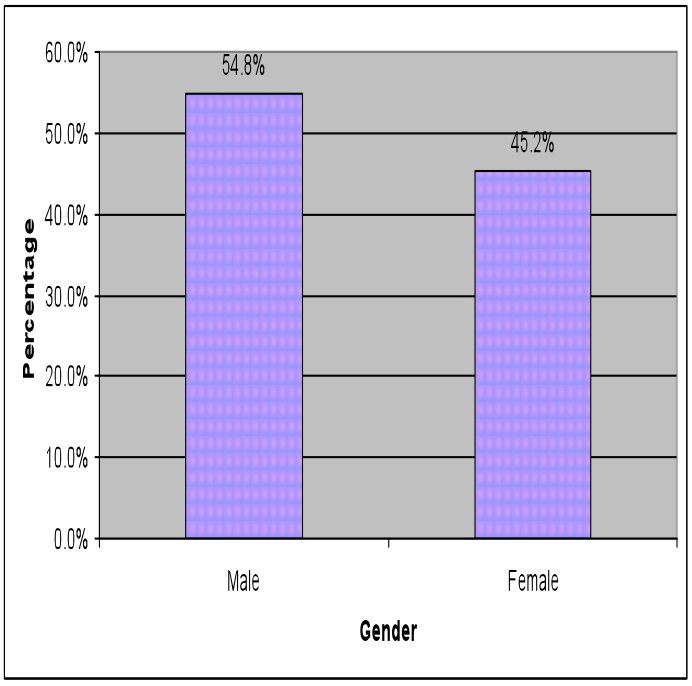
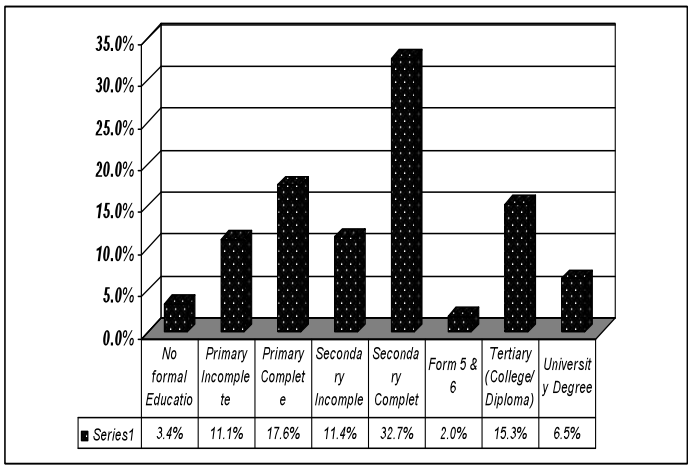


Figure 6: Education profile



Age distribution of respondents

Age distribution of those interviewed ranged from 16 to 60 years. The advanced ages were within the category of women respondents. The overall mean age of the respondents was 28.3 years and the modal age 24 years. 90.8% of the sample was below the age of 35 years. Those who are above the youthful age of 35 years accounted for less than 10% as shown in Table 1.

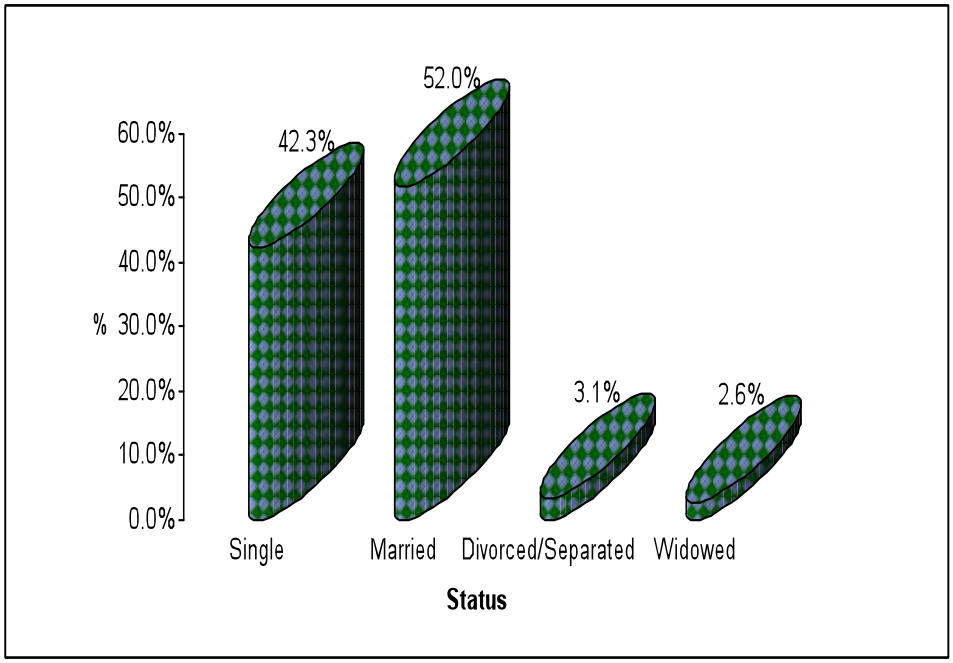
Table 1: Age Distribution

Age in Category	Frequency	Valid Percent	Cumulative Percent
Below 20 years	29	8.3	8.3
20-25	101	28.9	37.2
26-30	114	32.7	69.9
31-35	73	20.9	90.8
36-40	14	4.0	94.8
41-45	5	1.4	96.3
46-50	7	2.0	98.3
Above 50 Years	6	1.7	100.0
Total	**349**	**100.0**	

Marital status

Findings indicate that majority of those interviewed were married (52%), a sizeable percentage (42.3%) were single, divorced/separated cases accounting for (3.1%) and widowed accounting for (2.6%) as shown in Figure 7.

Figure 7: Marital status



7.2 Employment and Incomes

Respondents were found to be employed in both formal and informal sectors. The informal sector employed a majority (75.3%) of the respondents, while formal sector employed up to 24.7%. As shown in Figure 8, 57.4% of those in the informal sector were engaged in agriculture with the balance found in informal non-agriculture sector. Up to 81.6% of those employed in the formal sector were engaged in non-agricultural activities, while 18.4% were in formal agricultural activities.

Figure 8: Employment

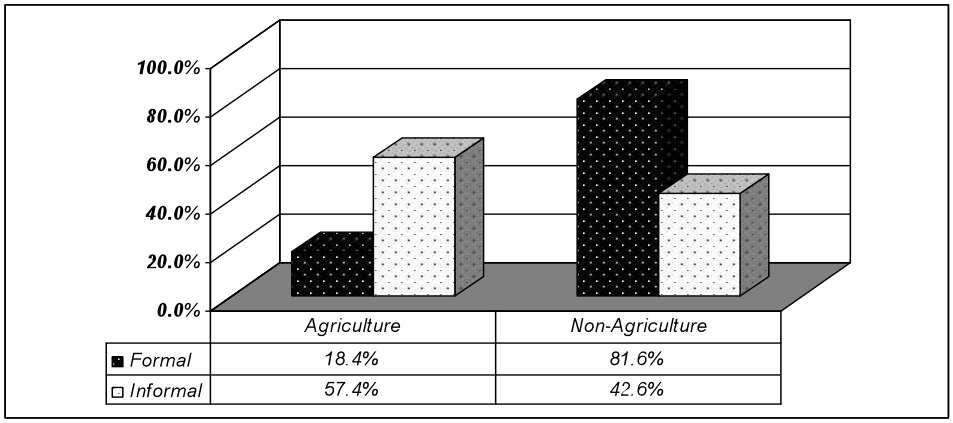


Table 2: Income Levels

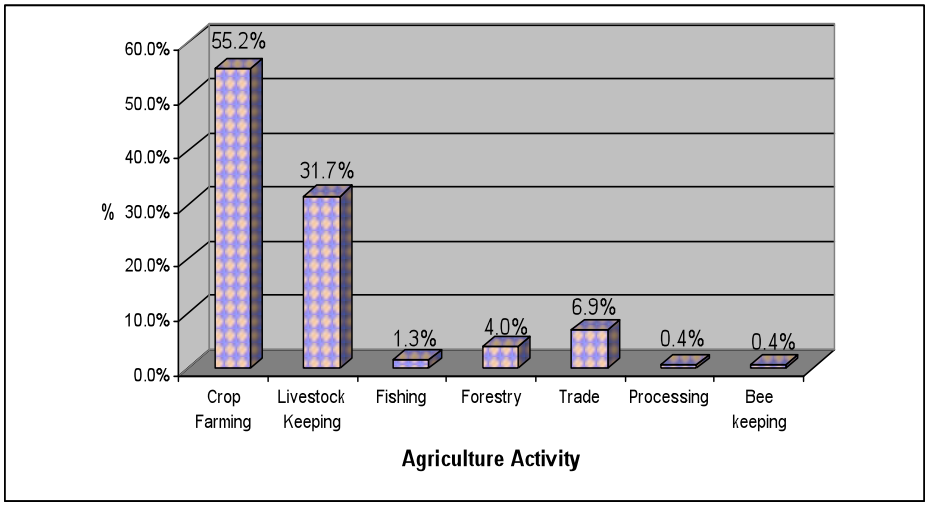
Monthly Income in Kshs	Frequency	Valid Percent
Less than 5000	150	42.6
5000-9999	74	21.0
10000-14999	39	11.1
15000-19999	21	6.0
20000-24999	8	2.3
25000-29999	6	1.7
30000-34999	5	1.4
35000-39999	2	0.6
40000-49999	2	0.6
50000 and above	5	1.4
Not Earning Income	40	11.4
Total	**352**	**100.0**

Findings indicate that majority of the respondents were earning less than Kshs. 10,000 per month, with (42.6%) earning less than Kshs. 5000 per month. Only a few (1.4%) were earning more than Kshs. 50,000 per month as shown in Table 2. It was also noted that (84%) of those earning less than Kshs. 5,000 were in the informal sector and that (50.6%) were engaged in agriculture.

7.3 Profile of Agricultural Activities Undertaken in Study Zones

Findings indicate that a majority - 84.7% - of the respondents were engaged in agriculture either as source of income or at the subsistence level. Majority of them (55.2%) were engaged in crop farming and (31.7%) were in livestock keeping as shown in Figure 5. The annual income ranged from Kshs. 300 to 150,000, with mean annual income of Kshs. 60,359. The contribution of agriculture to the annual incomes of the respondents ranged from 1% to 100%. Respondents indicated

Figure 9: Type of Agriculture Activity Engaged in



that for them to be happy with agricultural earnings, they would need to earn between Kshs. 48,000 to Kshs. 1,200,000 per annum or an equivalent of Kshs. 4,000 to 100,000 per month.

From the earning discussions highlighted earlier, most of the respondents engaging in agriculture (71.7%) are not happy with their agricultural earnings. The reasons given for dissatisfaction with agriculture in order of importance were:

- Long wait to get income and recover expenses
- Unpredictable weather especially in the arid and semi-arid areas
- Limited Government support in terms of extension services, capacity building and produce marketing with produce marketing being the most limiting (could be good to know what areas lack support)
- Low returns on investments as producers have very little say on the pricing of their produce. The middlemen collude to oppress the producers
- Lack of inputs due to high costs of obtaining them and some times they are not even available (was there reference to high costs of inputs)
- Uneconomical land sizes that are to small to effectively engage the farmers
- Poor knowledge of modern farming methods as extension workers are too few to reach all the farmers

Crop farming was ranked higher than livestock keeping, at 51.9% and 28.2% respectively [Figure 9]. This reflects the fact that most of the study areas fell within areas where crop farming is primary to livestock keeping. Favourite crops still remained the traditional staples such as maize, beans, potatoes and wheat accounting for (27.9%). However there was a notable reference to non-traditional crops such as snow

peas, and horticulture in green houses. Fishing was the least acknowledged agricultural activity (40.6%), followed by forestry (20.6%). This would probably reflect a lack of knowledge and or understanding of the opportunities available within these two sub-sectors.

7.4 Commodity Marketing

As would be expected, trading in agricultural commodities is common in all the areas, though on a small scale. Trading in cereals is common across board (36.4%) followed by selling vegetables, tree seedlings (10.5%) and dairy products (6.8%). The trading is largely localised mostly happening at the farm gate (31.3%), local markets (9.7%) and brokers (4%).

The expressed marketing challenges are interlinked; price fluctuations (34.8%), transportation (20.6%) as a result of poor road infrastructure, competition in the same commodity range (10.3%) and lack of markets (4%). The proposed solutions include: Links to other markets (32.1%), forming marketing groups (23.4%), improved transportation (13.8%0) and products diversification (17.2%).

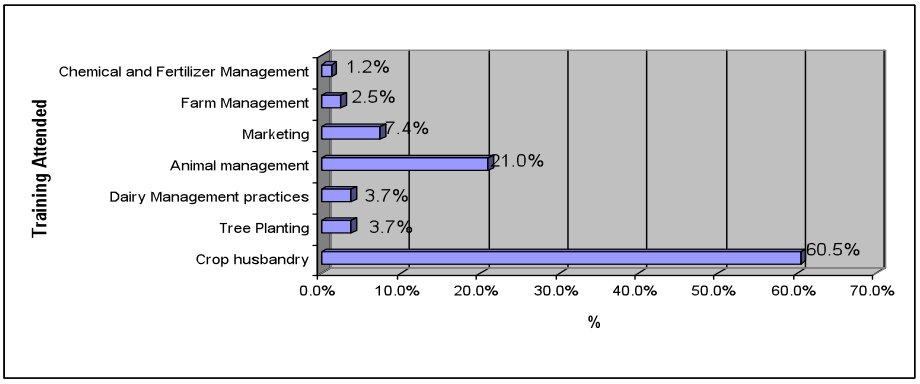
were from youth and women groups involved in agriculture. As shown in Figure 10, crop husbandry was the most attended course (60.5%) followed by animal management at (21%). Most indicated that they had supported themselves to attend the agricultural training (61.3%), while those supported by Government and NGOs stood at 20.4% and 14.6% respectively. When asked the kind of training they require to be effective in agriculture, all the groups indicated that they are more interested in short-term courses of one to two weeks only. Long trainings have a negative effect on the agricultural productivity of the youth. If a training course is long, it can be split into several modules and be implemented at some acceptable intervals.

Youth polytechnic Training:

Three heads of youth polytechnics were interviewed on the programmes they offer and their view on demand for agricultural programmes. The polytechnics interviewed were:

- Kiranga Youth Polytechnic
- Baraka Youth Poytechnic
- Kithoka Youth Polytechnic

Figure 10: Agriculture Training Attended



7.5 Agricultural Knowledge andYouth Polytechnics

A sizeable percentage (33.7%) of those interviewed indicated that they have attended an agricultural related training. This is not surprising considering that a substantial number of the respondents

In the 3 Youth Polytechnics it was found that agriculture and agribusiness courses were constrained by low demand for the course and or lack of instructors. In Kiranga Youth Polytechnic, agriculture is offered as a common course to all as a way of encouraging interest among the youth. The courses offered in Kiranga cover among others,

tomato production, bee production, tissue culture banana and poultry keeping. In Baraka Youth Polytechnic, agribusinesses are not offered due to lack of an instructor. However, students are involved in the school farm. In Kithoka Youth Polytechnic, a new syllabus has introduced agriculture but they lack an instructor for the course.

Staff of two Farmers Training Centres (FTCs) were also interviewed and they indicated that there is very high demand for their agricultural programmes. This implies that the traditional trends where agriculture training is held at the Farmers Training Centres (FTCs) is what majority of the people know. The Youth Polytechnics offer courses in Auto wiring, Auto mechanic, leather work technology, welding/black smith, appropriate carpentry and joinery, plumbing and water supply, tailoring and dress making (Fashon design and garment making, home economics and knitting, electrical wiring, hair dressing and beauty therapy, masonary (building technology), information communication technology (computer) and agribusiness.

ICT was reported to have high demand hence this could be one course that could be offered as the initial stage of building capacity of youth in the rural areas to exploit ICT for agriculture. This is especially given in the context of the categorical statement by youth that they do not want long term agricultural training courses. However, the team perceived that if their was a ready job market for agricultural graduates, the demand for agricultural courses could be too high for the available capacity.

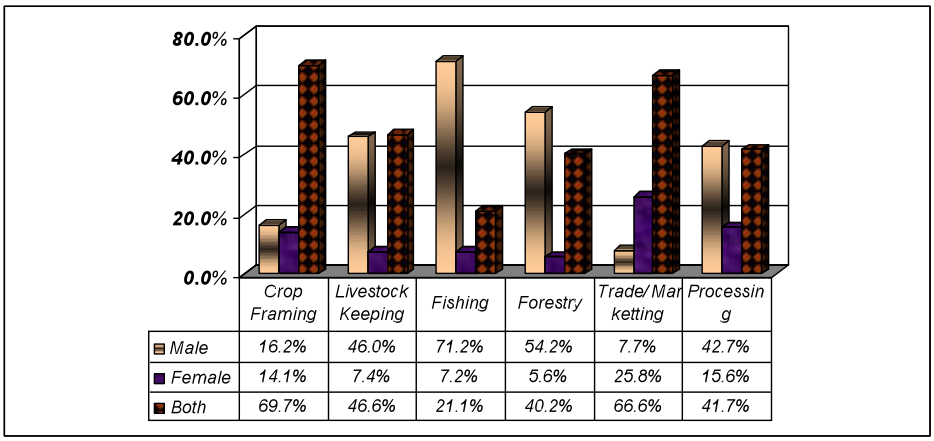
Thus, four approaches would seem appropriate in order to build up Youth Polytechnics as one of the platforms for re-branding agriculture and promoting entry of youth into agri-business. One would be to integrate an ICT function into agriculture training. The second is to develop a pilot scheme with a limited number of Youth Polytechnics where a package of incentives can be concentrated in order to encourage youth participation. Such incentives would include [a] ensuring availability of instructors [b] introducing and advertising innovative training packages in value addition, agricultural business management, market research, use of ICTs etc. The third would be to create a network of supported Youth Polytechnics that collaborate and compete amongst themselves to develop good practice/fields of excellence in youth and agricultural development and the fourth could be to promote formation of companies in production, processing and marketing agricultural produce that could employ the youth formerly, paying them a regular salary just like any other formal jobs.

7.6 Participation in agriculture by men, women and the disabled

Surprisingly, it was found out that apart from fishing, forestry and livestock keeping women are as active in the sector as men are as shown in Figure 7. From the interviews, their involvement is not just as providers of family labour, but also in trading of the produce. On the face of it, this could be reflective of shifting patterns of economic relations in rural areas where women are increasingly becoming breadwinners. However, without a close examination of how income from farming is controlled at the household level, it is difficult to conclude that women are equally in charge of the proceeds of agriculture as men are.

Results from the focus group discussions indicate the same. From the 27 youth groups interviewed, the number of men per group ranged from 3 to 20 with an average of 9 while for the youthful women, the range was 4 to 18 with an average of 8 (Annex 2). Of the women groups that participated in the focus group discussion, eight had no men in their groups while six had men ranging from 3 to 10 (Annex 3). According to the key informants who were mainly government extension officers, more males were participating in agriculture than women. For example the Gender Officer for Kakamega East District gave a ratio of 70% male versus 30% females while his counter part the District Youth Officer estimated a ratio of 5:2 for male and females respectively. This translates to 71% and 29% respectively. However, other Officers disputed the ratios saying that women could be participating more than men but the men are more visible. Women have settled into agriculture, they don't complain much and do not go around looking for help so they remain invisible.

Figure 11: Gender of those taking Leading Role



	Crop Framing	Livestock Keeping	Fishing	Forestry	Trade/Marketting	Processing
Male	16.2%	46.0%	71.2%	54.2%	7.7%	42.7%
Female	14.1%	7.4%	7.2%	5.6%	25.8%	15.6%
Both	69.7%	46.6%	21.1%	40.2%	66.6%	41.7%

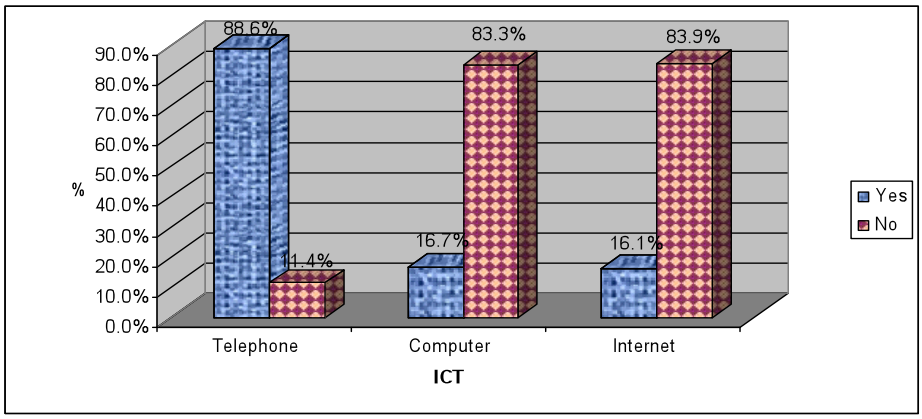
The disabled: The team was informed that the Ministry of Gender and Social Development is responsible for affairs of the disabled. If there are any groups for disabled persons, they register with this Ministry. In Migori, there is one group Known as Kubiaru Disability Group, based in Kehancha division, Bukira South Location. The group grows water melon and maize and it is also involved in Fish farming. It has a membership of about 50 including 30 male and 20 female, 21 members are youth. The Ministry of Gender and Social Services often gives them training and some of their members who are severely disabled benefit from funds for disabled persons in Kenya. Their fish is marketed locally and maize sold to NCPB. In Kajiado, there was one youth group of the deaf registered with the district youth office as well as the gender office and they have been allocated a grant to create awareness on HIV/ AIDS among the disabled people. In Loitoktok, the Gender Officer has registered less than 10 groups of the disabled persons. Overall, the key informants (gender and youth officers) reported that they are encouraging communities to bring out the disabled in order to benefit from the Disability Fund that is provided by the Government. They indicated that where disabled persons are able to work, they are supported accordingly. For example, those who can do physical work are encouraged to join the Kazi Kwa Vijana (KKV) Programme. For those who are not able to work e.g. those who are bed ridden, or mentally sick etc., their guardians are given grants to take care of them. In Kakamega East District the Gender Officer indicated that his office allocates about 15% of their funding for youth projects and 10% for the disabled.

7.7 ICT application in Agriculture

Mobile telephones have been a useful tool for routine communication in rural areas. They were found to be the most used form of Information Communication Technology by 88.6% of the respondents. The main use for telephone in this context were given as communication with clients (53.1%), contacting agricultural officers (19.3%) and for money transfers (5.7%). Use of computers for information storage and communication through internet was found to be at 16.7% and 16.1% respectively for computer and internet as shown in Figure 12. Reasons for not using computer was given as lack of operational skills (42.2%) and unavailability of computers and connectivity services (35.1%). It could be of great help if use of ICT such as telephone can be enhanced in relation to getting market and pricing information, given that most of the youth have formal education and can manoeuvre most of the ICTs including accessing internet using mobile phones.

There are some good examples of how mobile phones can be used in support of agricultural development and marketing. Kephis for example has come up with a programme where a code is used to access information electronically on appropriate

Figure 12: ICT Usage



crop variaties for particular regions of the country. A farmer therefore just needs to know the numbers to dial and their appropriate variety will show up. In marketing Kenya Agricultural Commodity Exchange (KACE) also has a marketing system where a farmer or trader use a certain code to access what information they want on the products in high demanded in different regions and the approximate prices. However, the is a major gap in linking the rural communities to this information systems.

When asked how the use of ICT could be exploited for enhancement of the agricultural sector, all the youth groups indicated that they required training in ICT, access to computers and internet services. For them to benefit from ICT, the relevant line ministries e.g. agriculture, livestock, fisheries, forestry and other development agencies should collaboratively post well packaged technical information in both English and Kiswahili, on their websites so that the youth can down load and use without having to travel long distances to look for information. Most of the women groups indicated that they may not be able to use computers directly but their educated youth could get the relevant information and share with them. A number of groups proposed having ICT centres run by some youth groups as businesses to ease management of the same.

They proposed three models. The first is to have a centralised resource centre at the divisional headquarters for every administrative division. Have about five to ten computers at this centre managed by a committee drawn from officials of the active youth groups in the division. The centre could also be used for training youth in computer use in the division. In the second model

Every active group should contribute 50% of the money required to purchase a complete set of computer, printer and scanner. The other 50% should be provided by the government or a development partner or both government and development partner sharing the cost. In this model, every group that wishes to have a computer will have it. Group members who have trained in ICT will teach the others under their own agreed terms. The one group computer will be managed by the group committee. Under this arrangement, each division will have as many computers as the number of active groups. The third model proposed that one able group should be provided with a loan of 5 to 10 computers on loan. They would then run a computer centre at the divisional headquarters as their own business and pay off the loan fully.

7.8 Interventions that can make agriculture more attractive to youth

A total of 27 youth and 15 women groups were requested to indicate interventions that could make agriculture more attractive to youth for livelihoods/ income. The results by both the youth and women groups converged on two key interventions that include short term trainings at 82% and 80% and affordable loans at 68% and 27% respectively. The youth groups added emphasis on the fact that they

Table 3: Interventions that can make agriculture more attractive to youth

Preferred Intervention	Youth Groups		Women Groups	
	Frequency (n = 22)	Proportion (%)	Frequency (n= 15)	Proportion (%)
Short Term Training – (1-2 weeks)	18	82	12	80
Affordable loans from govt. and other supporters	15	68	4	27
Subsidy on inputs	7	32	-	
Ready market and delivery centres for agricultural produce	1	5	2	13
Promote enterprises that bring quick money	-	-	2	13
Establish more agricultural factories to employ youth	-	-	1	7
Establish agricultural information resource centres in administrative Locations	2	9	-	-

were not interested in long term training. Other interventions were as indicated in Table 3 below with subsidy on farm inputs being given more weight. Both women and youth groups argued that if the youth had sufficient knowledge on profitable agricultural enterprises, with adequate and affordable funding to enable them hire land and additional labour and purchase equipment like water pumps, spray pumps, fertilizers, pesticides, fungicides and animal feeds, they could not go any where else looking for employment. In addition, many of the groups expressed the need to have water for irrigation so that agriculture can employ them the whole year round. The groups expressed the need to organize agriculture in such a way that youth could deliver their farm produce at definite sites and get some regular income like monthly or every two weeks the way it is done for example in the tea sub-sector.

7.9 Summary of preferred enterprises in the nine zones studied

The most popular and preferred agricultural enterprises for development in the different zones are as indicated in Table 4. The choice of enterprises depend on climatic suitability, level of demand and the potential returns. Horticultural crops, poultry and the staple foods were the most preferred in all the zones, with horticultural crops requiring irrigation to ensure all year round production hence income and the staple crops requiring more land to ensure significant returns. The detailed group by group requirements are in Annex 1.

7.10 A Snapshot of agriculture support organisations in the field

The study tried to gauge awareness of the existence of programmes supporting agriculture in the study areas. Majority (56.6%) indicated that they were not

Table 4: Preferred Agricultural Enterprises for Youth and Women in nine counties

Zone	Preferred Agricultural Enterprises for Youth	Preferred Agricultural Enterprises for Women
Loitoktok	Maize, tomatoes growing and processing into tomatoe sauce and paste, irish potatoes, beans, tree seedlings for sale, water melon, napier grass for sale, zero grazing, milk processing, maize milling,	Maize, beans, zero grazing cows, milk processing, maize milling, rearing layers, tree seedlings for sale, sunflower growing and oil production from sunflower.
Migori	Poultry rearing, horticulture, fish farming,	Maize, beans, vegetables, millet, sorghum, poultry, dairy
Kwale	Tree seedlings, greenhouse technology, vegetables, fruit processing	Irish potatoes, pepper, Vegetables, maize, cowpeas, local poultry, fruit processing.
Kakamega	Vegetables, indigenous poultry, zero grazing cows for milk, passion fruits, pig farming, maize for food	Vegetables, sweet potatoes, poultry, zero grazing dairy, groundnuts, fish farming, maize, renting of tea, fruit bananas.
Eldoret	Green house vegetables, maize, wheat growing, dairy, rabbit keeping, irish potatoes, poultry, bee keeping, fish farming	Irish potatoes, vegetables, trade in cereals, dairy, forestry, horticulture, processing.
Kitui	Maize, poultry, vegetables, bee keeping, fish farming, dairy goats, fruits, dairy.	Tree seedlings, vegetables, maize, greenhouse, poultry, mangoe factory,
Muranga	Poultry, dairy cows, fish farming, mangoe processing, cassava processing, bananas, French beans, mushrooms	Dairy goat and cows, banana farming, mangoe farming, water melon, tomatoes.
Nakuru	Fish farming, tree seedlings, Greenhouse, rabbits farming	Maize and beans, wheat farming, dairy cows, dairy factories.
Meru	Crop farming, greenhouse Fruits, vegetables and dairy cows keeping	Dairy cows, vegetable and fruits farming and agro-processing

aware of any agriculture oriented programmes in their areas. Other areas had one or two programmes supported by either the government, NGOs or financial institutions like the commercial banks. A summary of agricultural support organisations at the national level are as identified in Annex 6. The general impression is that there is no harmonised/ coordinated approach to supporting women and youth groups. The Youth Development Fund and the Women Enterprise Fund are an attempt to provide structured support, however, many groups have not had any significant support from these funds. Some have not even heard about the funds. The youth groups with active projects reported to be benefiting while those that were just beginning their project activities complained of the funding allocation being too small to make any difference. For example, one group reported that Ksh. 50,000 for 16 youths is too little while another indicated that their first loan of Ksh. 50,000 paid for chicks but could not purchase feeds for the chicks leading to a complete failure of the project.

The development agencies interviewed indicated that where they have implemented projects with youth, projects have been successful however, the funding level is usually so low that they reach just a few. Its like a drop in the ocean and this explains the invisibility by the groups that were interviewed. The Kenya Commercial Bank officer reported that the youth who have been courageous to take loans have been very successful. The majority have invested in livestock enterprises and have repaid successfully. Many youth however are reluctant as they are not ready to take risks.

The Ministry of Agriculture and Livestock Officers indicated that overall, they have low funding. For most of their projects, they depend on development partners funding. Development agencies come with their priorities. The Ministry therefore has no specific funding set aside for youth and women. For a while, the government has not been hiring new extension officers therefore the few they have may not have the capacity to reach all the farmers. Their overall suggestion from the interviewed officers was that youth and women should be engaged in agriculture as a business and not doing it as a hobby or employment of the last resort. They are in agreement that ICT can make a lot of difference and they are willing to collaborate with other development agencies and the youth to avail technical information on the internet.

Based on the case above where a youth group of 16 members was given a loan of Ksh. 50,000 and they could not complete the project because the funding was very low, the officers felt a reduction in the number of youth per group could yield better results while the youth themselves indicated that the support should start at a higher level like Ksh. 100,000 and only serious youth should be funded.

The Forest sector had many registered groups. For example, Kitui had 300 registered tree nurseries. What is required for them to increase their incomes is to have planned production and creating visibility for the groups through the website and other forms of networking.

8.0 Bottlenecks to youth participation in agriculture

The following were listed as the key bottlenecks impeding youth participation in agriculture:

- Stiff competition with the same commodities. Everyone seems to produce the same commodities at the same time leading to oversupply at peak times and therefore low returns and extreme scarcity at other times.
- Lack of post harvest and value addition technologies – agro-industries in the farming areas
- Lack of investment capital that is tailored to the needs and peculiar risks of the sector
- Lack of access to land/uneconomic units that erode economies of scale
- Unpredictable weather patterns and lack of appropriate technologies and infrastructure to overcome natural risk factors.
- Attitude towards agriculture as the last port of call after all other opportunities have failed.
- Forming groups to purely access funds such as Government Youth and Women Funds instead of focusing on sustainable group activities

9.0 Potential points of interventions

There is need to inject a number of innovations in agriculture in order to accelerate its transformation from a non-economic, traditional means of livelihood, to a profitable vibrant sector that can attract new ideas and energies that are represented by the youth.

- **Re-brand agriculture:** There is need to address the deep seated belief that agriculture and rural areas are for those who cannot make a livelihood anywhere else. Agriculture needs to be rebranded as the new unexplored frontier for growth in business opportunities. There exist new emerging markets for high quality produce due to urbanisation, expansion of the middle class, regional integration, and the niche international markets. Concerted efforts to market these opportunities are required from the Ministry of Agriculture and such bodies as Horticultural Exporters Association [HCDA], the Fresh Produce Exporters Association of Kenya [FPEAK] to market these emerging opportunities.

- **Develop innovative financial packages:** There is need to incentivize entrepreneurs in agriculture by developing financial packages that are tailored to the diverse conditions of the sector. The diversities include varied regional endowments, scales of production, types of product lines, different risks etc. The government and other financial institutions, NGOs etc. need to develop a variety of guarantee schemes that would underwrite the risks involved in such packages. The funds should also be sufficient for the enterprises of choice. For example, if the enterprise is dairy farming, the youth farmer should be supported to have enough dairy animals e.g. two to four to occupy him/her as a full time employment with sufficient income generated on a regular basis. If the enterprise is poultry, the youth should be supported with a minimum of like one hundred birds – the principle is that whatever enterprise or combination of enterprises, the support should be sufficient to engage the youth as a fulltime employment and not a hobby. There should also be provisions for the services that go with dairy and poultry farming like veterinary and feeds supply. At the same time there should be organized collection/delivery of milk/meat/eggs. Another youth group or youth company could also take the business of collecting, processing the milk and marketing the products. Serious youth

groups could even convert to Ltd. Companies so as to do real agricultural business. The trend of giving youth two chicken and one cow to 20 youth and expecting them to be self employed should be discouraged at all costs.

- **Value addition.** There is need for partnerships to take agriculture to the next level through value addition. Currently there is little on-farm and off-farm processing of agricultural produce both for small holder and large scale agriculture. Post harvest value addition through processing, branding, quality enhancement and shelf life improvements would lead to higher prices, new jobs and eventually increased aggregate incomes in rural areas.

  Currently IFAD is supporting groups in Migori by providing them with cassava chipper and drier to prolong the lifespan of harvested cassava and increasing its market value. This could be taken a step higher by increasing production and processing volumes since the animal feeds industry can use cassava as raw material for the manufacture of animal feeds. In countries that do farming as a business like Switzerland, there are milk processing factories almost similar to the tea factory pattern in Kenya. Different areas of the country could be designated for different agricultural enterprises and processing factories constructed in such areas to provide market out lets for the producing communities. In addition, there should be limited enterprises at most three in any given area to ensure sufficient volumes for processing or even marketing as fresh produce.

- **Development of value chains:** There is need to improve the performance of value chains in Kenya if they have to deliver reasonable returns to all the actors in the agricultural sector. Currently value chains for the different commodities are long, not transparent and consist of many players making them inefficient, slow and unresponsive to the needs of the producers. The common problem in value chains includes lack of direct market access by producers, low farm gate prices and high transportation and other transaction costs. There are many value chains emerging across a range of products mainly in Muranga, Meru, Eldoret, Loitoktok and Meru. Majority of these are linked to medium and large scale producers of high value products destined for urban markets. Value chains for small holders are fragmented and mainly based on contract farming which is often skewed against the small scale producers. A comprehensive approach to value chains for various commodities should be a challenge that each County Government should be persuaded to undertake in partnerships involving the youth and the private sector.

- **Application of modern technologies both in production and management of agriculture as a business.** The apparent disconnect between agricultural research system and farm operations needs to be addressed. Research could be organized in such a way that the units responsible for a particular commodity is linked to the other institutions that are involved in the particular commodity so that information can flow direct from research to utilization through the internet and mobile phones. This has implications on the researchers also. It means they also have to be trained on how to package their research findings for the end user and post it into the appropriate communication channel for users to access. Another challenge for county governments is to ensure promotion of research–extension–farmer linkages to facilitate demand-driven research and increased use of improved technologies continues to constrain efforts to increase agricultural productivity. Optimizing on rainfed agriculture and investing heavily in irrigation and other water harvesting technologies holds the key to increased productivity especially in the low rainfall Counties. Counties could pick commodities in which they have competitive advantage over others and create trade relations with neighbouring/relevant Counties. For example, an Irish potatoe rich County could have planned formal trade with a maize/rice/wheat rich County.

Table 5: Reccomended Agricultural Enterprises for Youth and Women in nine counties

SUMMARY OVERVIEW OF RECOMMENDATIONS	
Specialise in specific components of the value chain	**Promote three types of activities:** • Optimal production, • Processing • Marketing Some groups should specialize on production of appropriate products, others on processing and still others on marketing depending on their comparative advantages. This calls for thorough training for each of the three categories of groups so that they can perform efficiently and effectively. Women should be trained separately from the youth in order to move at their pace. The youth are likely to be faster than the women. However, women tend to be more confident than the youth because of their long term experience.
Financing	Develop partnership programmes with financing institutions to ensure that finances are available for investment. These institutions should be the ones to manage the finances i.e. give loans and recover the same from the beneficiaries. Special interest rates e.g. 5% or below should be negotiated so that the youth and women can get reasonable returns. This could work well if the money is given out to a micro-finance institution either by government and or development partners for on-lending to youth. The loans or businesses should be insured to minimize the risk. Such packages are already available with Equity Bank for cereals and dairy based enterprises. The finances should be availed equally for the different group categories i.e. production, processing and marketing. As a guide, the minimum for dairy farming should be Ksh. 50,000; for indigenous poultry Ksh. 25,000; for vegetable growing Ksh. 10,000; Tree nursery Ksh. 25,000; Maize growing (1 acre) Ksh.17,000 per youth or woman.

SPECIFIC RECOMMENDATIONS PER ZONE		
Zone	**Recommended Agricultural Enterprises for Youth**	**Recommended Agricultural Enterprises for Women**
1.0 KAKAMEGA	1.1a In both the sugarcane and tea zones of Kakamega County, promote dairy farming using zero grazing technology and a minimum of one mature cow per youth (Ksh. 50,000) and not sixteen youth for one cow. This will guarantee commitment because of the ownership and also ensure fair returns per beneficiary. For the youth to manage the animals appropriately, they have to be sufficiently trained in dairy farming. The Ministry of Livestock, The Dairy Institute in Naivasha and the Dairy Board are the	1.1b Promote growing of maize and ensure a minimum of one acre per woman. This requires an investment of about Ksh. 17,000. Properly done, this could translate to over 20 bags of maize and 3 bags of beans per year which is equivalent to Ksh. 80,000 at current market price or approximately Ksh. 6,700 per month.

potential collaborators in this activity. Once a critical mass of youth have dairy cattle e.g. 50-100 head of cattle producing milk, milk collection and processing centres (Mini-dairy processing centres) should be established. This can be done in collaboration with the Ministry of Industry and Kenya Industrial Research and Development Institute (KIRDI). This will ensure continuity and new self funded producers will get into the business. The producers should also organize themselves to do their own marketing in order to lock out middlemen and marketing cartels. The loan of Ksh. 50,000 could be repaid over a period of 24-30 months.

1.2a

Promote rearing of indigenous chicken starting with a minimum flock of 50 chickens. This is an investment of approximately Ksh. 25,000 per youth. The purpose of starting with such a number is to ensure that the youth is occupied throughout the year (full time employment) and can get a monthly income of over Ksh. 8,000 or Ksh. 2,000 per week (selling approximately 4 chickens per week @ approximately Ksh. 500 per chicken) especially on market days. The minimum loan per youth therefore should be about Ksh. 25,000 for the poultry projects. This could be repaid over a period of 12-15 months. Once a reasonable number of groups/individuals have invested in the production, collection centres and or a poultry slaughter house could be established to facilitate organized trade and ensure a reliable market outlet for producers.

1.3a

Promote growing of leafy indigenous and exotic vegetables among the youth with a minimum of 0.5 acres per individual. Land could be hired jointly but each youth should have his/her own portion. Where irrigation is possible, this could mean harvesting about an eighth of an acre per week. This can in turn give returns of approximately Ksh. 2,000 per week or Ksh. 8,000 per month.

1.2b

Facilitated opening of a maize buying and selling centres in strategic locations in the county. Train marketing groups to buy from producers and sell to consumers. This should include importing from other counties like Nandi and Tranzoia. Provide initial capital where necessary and provide a minimum of Ksh. 30,000 per youth involved in buying and selling of cereals. AGRA and Equity Bank have financial products for actors in the cereals value chain. This should be explored for on lending to youth.

1.3b

Promote vegetable growing just as explained under the youth groups.

2.0 LOITOKTOK

2.1a
Facilitate investment in a tomatoe sauce and paste factory in Loitoktok town. This requires substantial financial investment. The money is available in the banks, but the processing youth need to be trained sufficiently in the processing technology and financial management before they take any loan. According to very rough estimates from KIRDI, for a tomatoe processing factory, they will require a palper (Ksh. 150,000 – 1,000,000) depending on the desired capacity), a pasteurizer (Ksh. 400,000) and other smaller equipments (estimated at Ksh. 300,000). This translates to an estimate of about Ksh. 1 – 2 million depending of the preferred capacity. Such a machine will ensure a ready market outlet for the producers and may stimulate increased production hence increased jobs for the youth. VSO could link up with the Ministry of Industry to develop detailed business plans for such a project.

2.2a
Promote rearing of dairy cows through zero grazing as discussed for Kakamega.

2.3a
Train production groups

2.4a
Train processing groups

2.5a
Train marketing groups
Youth can perform well in all the three components with the more educated groups/individuals taking on more of the processing and marketing activities.

2.1b
Maize milling factory: Maize milling is a project that could be effectively implemented by the women through their groups. They could contribute shares/take loans for shares as individuals and not as a group so that each member is aware of their value, responsibilities and expectations in the project. The Chinese Millers supply mills for sifted maize flour depening on the desired capacity.

2.2b
Previous studies have indicated that men tend to take over animals, especially cattle reared by women. This study therefore recommends that women should invest more in poultry – where they will have more say than dairy cattle.

2.3b
Train production groups

2.4b
Train processing groups

2.5b
Train marketing groups
Women groups are likely to perform better in production and processing than marketing. They should therefore be supported to invest appropriately.

3.0 MIGORI

3.1a
Train youth in appropriate and optimal production practices for the preferred specific crops since they are already engaged in agricultural production activities.

3.2a
Promote diversification of agricultural products by having at least 2-3 enterprises per group so that if one fails, the group will not loose completely e.g. watermelons, dairy cows and cereals by one youth group.

3.3a
Encourage zero grazing for milk production due to diminishing land sizes and favourable climatic conditions (Especially in the Kuria part of Migori County). This should be implemented as discussed for Kakamega.

3.4a
The youth groups should be encouraged to engage in Para-extension services such as treating animals, spraying vegetables and livestock and organizing marketing of agricultural produce. It may be better for each group to identify what it can do best then specialize in it.

3.5a
Avail loans and grants to support already existing youth groups such as Kubiaru Disability Group in Kehancha who have running projects

3.6a
Provide training in ICT for the promising youth groups to use in the different components of agriculture.

3.1b
Train women groups on value addition/agro- processing, of agricultural products such as sweet potatoes and cassava. Cassava in particular could be used in processing of animal feeds for livestock. Again as mentioned earlier, the processing group could be different from the producing and marketing groups.

3.2b
Facilitate establishment of small-scale irrigation facilities to enhance diverse production of vegetables through out the year.

3.3b
Train women in cooperative formation and operation to enable them pool produce and access wider markets as a result of the increased volume of produce. SACCO formation could also help them save their incomes and also take loans.

4.1a

Tree planting has many opportunities for youth in Kwale. Raising tree seedlings therefore is an enterprise than can be developed for regular income generation. The main requirements are training the youth on collection of quality seed, matching seasons and producing quality and desired seedlings. Contract production of seedlings has potential and could be more rewarding. Seedlings take long to attain the transplanting size. They should therefore be combined by other shorterm enterprises such as vegetable growing. The main costs in raising seedlings are purchase of polythene tubes, soil and labour. This could be implemented in collaboration with the Kenya Forest Service.

4.2a

Promote vegetable growing using greenhouse technology: The green house technology in very popular among the youth however, its adoption should be allowed only after proper training on its establishment and management. In addition, there is need to have organized market for the produce. A number of youth should be trained to specialize in construction of green houses at a fee so that it is done properly.

4.3a

Promote fruit processing: This has a long chain that can create many jobs for youth. It starts with raising of fruit seedlings. Fruit seedlings have a very high market demand. Although seedlings take long in the nursery (approximately one year), each grafted seedling costs between Ksh.100 - 150. For 1,000 seedlings, an income of 100,000 can be expected per year. Establishing one acre of a fruits orchard costs approximately Ksh. 100,000. This can be done in stages of e.g. one half acre per year. The fruits take about three years to give the first returns. Taking of loans to establish fruits orchards will require a different source of income for repaying the loan e.g. vegetable growing. Having a fruit

4.1b

Promote growing of Irish potatoes for especially the urban market. Each woman should be encouraged to grow at least one acre. If loans are required a minimum of Ksh. 10,000 per acre could be invested for reasonable returns.

4.2b

Vegetables, pepper, cowpeas: This can be implemented as discussed in 1.3a.

4.3b

Local poultry: This can be implemented as discussed in 1.3a.

4.4b

Fruit processing: This can be implemented just as discussed in 4.3a.

	processing factory will increase the demand for fruits, leading to increased establishment of fruits orchards. As mentioned earlier, there is need to have specialization in production of fruit seedlings, production of the fruits, processing of the fruits, marketing of fresh fruits and marketing of the juice. Different groups should specialize in the component in which they have a comparative advantage.	
5.0 UASIN GISHU COUNTY (ELDORET)	5.1a Capacity building in Agri-business for all farmers to treat farming as a business. 5.2a Train youth in marketing of agricultural products such as rabbits, fish and honey so that they can employ themselves as marketers 5.3a Promote diversification of agricultural production to include other horticultural products to maize and beans. 5.4a Facilitate irrigation projects to support vegetable growing through out the year. 5.5a Train youth in ICT for agricultural production and marketing to enhance the trade 5.6a Train youth to provide para-extension services to farmers at a fee as a way of creating employment.	5.1b Train women in marketing of agricultural products. 5.2b Encorage formation of SACCOs to enable them to be more competitive since the women groups are already vibrant. 5.3b Promote diversification of agricultural produce from cereals alone to include e.g. horticultural crops. 5.4b Increase financial support to upscale production.

6.0 MERU	6.1a Dairy cows 6.2a Vegetables 6.3a Poultry 6.4a Fruits such as mangoe and pawpatts	6.1b Irish potatoes 6.2b Vegetables 6.3b Maize and beans 6.4b Fruits
7.0 KITUI	**Promote the following enterprises for youth:** 7.1a Maize growing, 7.1a Poultry rearing, 7.3a Vegetables growing, 7.4a Dairy cows for milk production 7.5a Encourage bee keeping for honey production. For bee keeping a minimum of 10 hives (Ksh. 40,000) per youth is recommended. At an estimated yield of 60 kgs. per hive per year and at a price of Ksh. 200 per kg. A total of Ksh. 120,000 can be expected equivalent to about Ksh. 10,000 per month.	**Promote the following enterprises for women:** 7.1b. Tree seedlings, 7.2b Vegetables, 7.3b Maize growing, 7.4b Greenhouse, 7.5b Poultry

	7.6a Promote dairy goats for milk production. An estimate of four dairy goats per/youth is recommended. At an estimated price of Ksh. 10,000 per goat, this translates to and investment cost of about Ksh. 40,000 per youth. 7.7a. Mangoe fruits seedlings production and marketing.	7.6b Mangoe juice processing factory All the enterprises 6.1b to 6.6b should be promoted as discussed in earlier different relevant components.
8.0 MURANGA	8.1a Poultry, 8.2a Dairy cows, 8.3a Fish farming, 8.4a Mangoe processing, 8.5a Cassava processing, 8.6a Bananas growing (Fruits) 8.7a French beans (Vegetables) 8.8a Mushrooms (Vegetables)	8.1b Dairy goat 8.2b Dairy Cows, 8.3b Banana farming, 8.4b Mangoe farming, 8.5b Water melon (Fruits), 8.6b Tomatoes (Vegetables)

9.0 NAKURU

The enterprises preferred by youth in Nakuru are:

9.1a
Fish farming,

9.2a
Tree seedlings,

9.3a
Greenhouse,

9.4a
Rabbits farming: This could be compared to indigenous poultry as discussed for Kakmega above.

9.5a
Promote green house technology for vegetable growing in areas of Rongai and Njoro

9.6a
Provide training in ICT to support those affected/infected with HIV/AIDS

9.1b
Maize and beans,

9.2b
Vegetable growing

9.3b
Train women in marketing of wheat and irish potatoes.

9.4b
Dairy cows for milk.

9.5b
Establish dairy factories for processing milk of milk.

9.6b
Train on marketing cooperatives and SACCO formation to facilitate pooling of produce and saving of income.

References

Nyoro J. K. (2004). National and Regional Markets. In Proceedings of the 6th ICA Regional Workshop on Agricultural Marketing held at the Cooperative College of Kenya – Nairobi, 29th November – 1st December 2004. International Cooperative Alliance Regional Office for Africa,

Government of Kenya. (2004). Strategy for Revitilization of Agriculture 2005-2015. Government Printers, Nairobi, Kenya

Government of Kenya. (2010). The Agricultural Sector Development Strategy 2010 – 2020. Government Printers, Nairobi, Kenya.

Government of Kenya. (2010b). Statistical Abstract 2010. Government Printer. Nairobi, Kenya.

Government of Kenya. (2010). Agricultural Sector Development Strategy. Government Printer, Nairobi, Kenya.

Government of Kenya. (2011). Economic Survey 2011. Kenya National Bureau of Statistics, Nairobi, Kenya.

Government of Kenya (2006). Economic Review of Agriculture 2006, Government Printers, Nairobi, Kenya.

Government of Kenya. (2007). Kenya Vision 2030: A Globally Competitive and Prosperous Kenya, Government Printers. Nairobi, Kenya.

Government of Kenya. (2005). The Forest Policy for Kenya. The Government Printer, Nairobi, Kenya.

Government of Kenya. (1999). Environment Management and Coordination Act, Government Printer, Nairobi, Kenya.

Government of Kenya. (2000). National Gender and Development Policy. Government Printers, Nairobi, Kenya.

Munyua, H (2007) ICTs and small-scale agriculture in Africa: a scoping study

Njonjo, K.S. (2010). Youth Fact Book, Infinite Possibility or Definite Disaster? Institute of Economic Affairs, Nairobi, Kenya.

United Nations Development Programme (1999). Kenya Human Development Report

Annex 1: Images of Youth and Agriculture

STRATEGY

Research on your market before you invest in farming

BY CHARLES WOKABI

Thursday March 3 2011 DAILY NATION

1.5m

'THERE IS NO VENTURE THAT CAN GIVE AS GOOD RETURNS AS AGRICULTURE. I AM READY TO REMAIN A FARMER FOR THE REST OF MY LIFE.'

Ms Ann Nyaga, 27

DAILY NATION Thursday March 3 2011

ANN NYAGA, 27, BIOMEDICAL SCIENCE GRADUATE

DAILY NATION Thursday March 3 2011

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