

## Exploiting Job Creation Potential for Youth in the Horticulture Industry in Kenya

Nancy Laibuni, Eldah Onsomu, Violet Nyabaro and Boaz Munga

### Introduction

The agriculture sector contributed 21.2%, the equivalent of US\$ 10.3 billion (2009 constant prices) of the country's GDP in 2019. Of this, the crops sub-sector contributed the lion share of 27.8% or US\$ 7.58 billion. In the crops sub-sector, export horticulture has contributed more than a third of the crops sub-sector's total marketed produce since 2014. In 2019, horticultural activities recorded growth in exported fruits (8.3%) and cut flowers (7.8%) and a decline of 15.2% in volume of vegetables due to unfavourable weather conditions.

In terms of wage employment, the horticulture sub-sector experienced a decline in the share of wage employment in 2018 in comparison to 2001. The slow or declining growth in wage employment in horticulture was attributed to structural changes within the sector. The horticulture sub-sector is characterized by use of more mechanized systems and/or automation in its production process, which may lower demand for wage employment at the firm level in the short-run. It is also established that automation amidst innovation usually spurs sector-wide development and growth in wage and non-wage employment. In horticulture, small-scale producers (mainly self-employed and contributing family workers) have increased over time. It is estimated that small-scale producers accounted for less than 50% of production in 2001 and over 70% of the total production in 2018. This may explain the increased output and exports in horticulture and apparent slack in wage employment.

This policy brief is based on Kenya case study "Industries without smokestacks in Africa: A case study of Kenya (2021), which used a mixed methods approach to assess the scope for horticulture to generate large-scale formal employment opportunities for the youth. The study specifically sought to identify the horticulture industry's contribution to create jobs for the youth, assess the labour skills, particularly

soft and digital skills, requirements of the horticulture industry, and identify constraints to growth of the horticulture industry. The main approaches encompassed a review of sectoral performance with regard to growth and wage employment; and assessment of current and projected levels of jobs and productivity along the value chain using the job structure tool developed by World Bank and complemented by targeted key informant interviews with industry actors. The data sources included Kenya's Social Accounting Matrix (SAM), the World Bank Jobs Group Database, Occupational Network Data (O-NET), and the Kenya Integrated Household Budget Survey (KIHBS) 2015/16 and primary data collected from a skills survey conducted in December 2020.

### Employment Creation Potential in Horticulture: A Case of the Green Beans Value Chain

The green beans (French beans) value chain is used as a case study because green beans are produced all year round, production is labour-intensive and most of the value adding activities are completed within the country. The green bean value chain consists a wide range of actors, including small- and large-scale farmers, traders, pack-houses, canning factories and logistics and freight establishments. Small-scale farmers are the majority and they account for 60% of the total production.

Additionally, the production process for green beans is highly manual, particularly for small farms who commonly use family labour for most of the operations. Medium and large farms have mechanized a significant share of their operations but harvesting is mainly carried out by casual labour and requires an estimated 60 persons per hectare of crop. The majority of these labourers are women. There are two main types of post-harvest handling operations, in which value addition takes place, namely packing of fresh beans and processing of canned beans.

With respect to employment, the small-scale farms are the most important source of wage jobs in the green beans value chain. It was estimated that out of the 58,915 full time equivalent wage jobs generated by the value chain, 49,400 (84%) were in small scale farms. The green beans value chain was estimated to account for at least a quarter of all jobs within the export crops and horticulture sector. About 97% of all the wage jobs are for the unskilled labour force. It is further estimated that 21 per cent of those employed are the youth and that women take up an estimated 50% of all the wage jobs.

There is limited cold chain infrastructure resulting in high post-harvest losses (as high as 42%) along the green bean value chain. Assuming two scenarios where the farm level post-harvest losses reduce by 6% and 10%, respectively, the pack-house and processors will expand their production to handle an additional 15% and 22% of the current capacity. These two scenarios will generate in the first scenario 308 additional skilled jobs and 1,391 low skilled jobs, while in the second scenario 378 skilled jobs and 4,258 unskilled jobs would be generated (Table 1).

The findings also reveal that there is a decline in skill pool as a result of declining attraction of agricultural and related courses in institutions of higher learning and middle level colleges. Given the two scenarios, expansion in production will attract the youth because of the advances that have been made in technology and innovation in the value chain. Therefore, it can be assumed that all factors remain the same except the level of skill, which is adjusted to account for reduced post-harvest losses.

Further, a skill decomposition of the horticulture sector by level of education was conducted. High skilled jobs are defined as those performed by workers with complete tertiary education. Skilled jobs are those performed by employees with secondary education while low skilled jobs are those performed by employees with only primary education or lower.

The findings reveal that the horticulture sub-sector has a potential to absorb relatively high proportion of workers with moderate to low level skills. In spite of this, agro-processing and horticulture were also found to have the largest share of low-skilled waged employment at 76% and 66%, respectively.

### Key Constraints to Growth and Employment Creation Potential of the Horticulture Sub-sector

However, the potential for growth of the horticulture sub-sector is constrained by a number of emerging and prevailing issues. The key constraints relate to the drivers of industrial location, including investment climate and exports. The overall approach to the analysis of sector specific constraints applied a value chain mapping complemented by targeted interviews with industry key informants. The World Bank Enterprise Survey for Kenya 2018 also provided useful data.

Poor road infrastructure is a major constraint facing the smallholder farmers, especially the quality of road infrastructure but more specifically from farm level to the pack-houses and/or canning factories and markets. The feeder roads are of poor quality and farmers lack cold chain facilities. These twin challenges have been a major cause of the large post-harvest losses in the horticultural value chain. It is estimated that 42% of output of green beans is lost due to poor road infrastructure (feeder roads to farms) and lack of cold chain infrastructure .

A related constraint is the relatively high transport costs and inadequate options for transport. Kenya's inland transport costs are one of the highest, and transportation represents a significant portion of the export cost of horticulture. Recent studies and key informants observed that the country has not fully leveraged on the option of maritime transport, which presents a great opportunity to boost its competitiveness. Exporters face long transportation days to the market for maritime transport, which

**Table 1: Breakdown of job creation potential by node, type and scenario**

Node	Scenario 1		Scenario 2	
	25% post-harvest reduction		50% post-harvest reduction	
	High skill	Low skill	High skill	Low skill
Small holder –Farms	1,494	47,906	1,494	47,906
Medium and Large farms	155	5,165	155	5,165
Traders		1,678		2,517
Pack-houses	117	3,778	176	5,667
Processors	8	277	12	416
Logistics and freight	15		23	0
<b>Total</b>	<b>1,789</b>	<b>58,804</b>	<b>1,859</b>	<b>61,671</b>

is attributed to lack of a dedicated investment in maritime lines to main target markets and the many administrative processes for this form of transport.

Competition restrictions in input markets within the sector and the entire agricultural sector has been identified as a major constraining factor. Both the fertilizer and the seeds markets are dominated by large state agencies, a structure that may perpetuate anti-competitive practices resulting in high input costs. There is also the challenge linked to the wide digital divide between urban and rural areas. This is a constraint since commercial activities are becoming more and more dependent on internet connectivity, yet the primary activities in horticulture tend to take place outside urban centres where connectivity may be poor and if available, it is costly to producers.

Overall, horticulture has major constraints related to skills supply (or skill pool) and its quality. On the supply of technical skills pool, there is a general decline in the number of students registered in agricultural related courses. There are skills gaps observed in farm technology, marketing and soil and plant science. It is projected that unless there are specific interventions, the number of qualified experts will decline. In addition, the available graduates are observed to have inadequate skills levels due to, among other factors, inadequate experiential learning in educational institutions.

Another emerging challenge for small scale producers relates to non-tariff trade barriers that are dynamic in nature. A specific example is the consumer driven standards such as the European Good Agricultural Practice (EuroGAP) and the Kenya Good Agricultural Practice (KenyaGAP), and producers usually find themselves playing catch up with evolving standards. This is aggravated by limited access to technical information by producers, and government extension service which does not have adequate resources and personnel to meet the needs of small-scale farmers producing vegetables for export.

There is also limited branding of export products, yet there are opportunities to leverage on fair trade certification and emphasize the role of small farmers and particularly women in the production of the products. There is room to expand markets in setting up promotion events or advertising campaigns, and consolidation of different shipments.

### Implications for Policy and Recommendations

The overall goal of the policy brief was to identify the potential of the horticulture sub sector to create jobs for the youth. The implications for policy include;

- (i) Non-tariff trade barriers (NTTBs) which tend to be dynamic, thus making it difficult for value chain actors to meet them. Examples are consumer

driven standards including the European Good Agricultural Practice (EuroGAP) and maximum pesticide residue levels. There is therefore need to have continuous skills transfer and support to local producers by State and Non-State Actors, to enable value chain actors leverage on consumer-driven standards to facilitate market access.

- (ii) The sector has a declining skills pool as a result of declining attraction of agricultural and related courses (to students) in institutions of higher learning and middle level colleges (including food science, agricultural engineering). This has led to inadequate skills levels, especially among small scale producers leading to large share of substandard output. The situation has been further worsened by youth's aversion of agriculture in general and agricultural-related activities. Using innovative technology, there is need to transform the agricultural sector and position it as an attractive industry with multiple entry points for the youth. Advocacy initiatives by the private sector and development partners can be used to reel in the youth into processing and value addition stages of the value chain. Further, redesign of the agricultural curricula is needed to make it more attractive to the youth, and enable them play a major role in nurturing of the necessary skills in agriculture.
- (iii) Interventions to expand employment creation potential of the sub-sector need to pay special attention to skills development to ensure that workers access continuous learning opportunities to enhance quality standards along the horticulture value chain. This can be undertaken by both State and Non-State Actors.
- (iv) The horticulture sector experiences higher post-harvest losses due to poor feeder roads and inadequate cold chain infrastructure. Therefore, investments in cold chain infrastructure such as "cold" collection centres and pack houses will play a critical role in reduction of post-harvest losses. This can be achieved through combined and harmonized efforts from both the National and County Governments. Rehabilitation and improvement of rural feeder roads by the County Governments will improve accessibility to markets by farmers at the shortest time possible.

### Endnotes

1. European Commission (2018), Green beans value chain analysis in Kenya. February, 1–6.
2. Kleih, U., Basset-Mens, C., Allen, C. and Edewa, A. (2018), Green beans value chain in Kenya.

3. Page, J. (2019), Framing paper II: Industries without smokestacks - Firms characteristics and constraints to growth. Washington DC: Brookings Institution.
4. RSA (2015), Study of the mapping of distributors of fruits and vegetables in Kenya; and Kleih, U., Basset-Mens, C., Allen, C., and Edewa, A. (2018). Green Beans Value Chain in Kenya.

### **About KIPPRA Policy Briefs**

KIPPRA Policy Briefs are aimed at a wide dissemination of the Institute's policy research findings. The findings are expected to stimulate discussion and also build capacity in the public policy making process in Kenya.

KIPPRA acknowledges generous support from various partners who have continued to support the Institute's activities over the years.

### **For More Information Contact:**

Kenya Institute for Public Policy Research and Analysis  
Bishops Road, Bishops Garden Towers  
P.O. Box 56445-00200, Nairobi  
Tel: 2719933/4, Cell: 0736712724, 0724256078  
Email: [admin@kippra.or.ke](mailto:admin@kippra.or.ke)  
Website: <http://www.kippra.org>  
Twitter: [@kippra.kenya](https://twitter.com/kippra.kenya)