

Chapter 8

How Does Participation in International Value Chains Matter to African Farmers?

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Abstract⁶

The traditional understanding is that structural economic transformation takes place across sectors. This chapter instead considers the process as taking place within sectors and induced through engagement with different types of value chains with alternative contracting arrangements. Through pilot studies undertaken in agricultural value chains in Africa, it presents evidence of divergent patterns of structural transformation within sectors, mediated through alternative contractual relations. With a focus on maize, cassava and sorghum in Ghana, Kenya and Zambia, the results help shed light on the specific policies and types of contractual arrangements that can assist in supporting the movement of producers towards higher-value intermediate processes and final outputs, thus enabling higher and more stable incomes. Within this context, the results from the studies suggest a greater focus on strengthening regional value chains, particularly in the agriculture sector.

8.1 Introduction

Trade and participation in international value chains (IVCs)⁷ can play a key role in economic diversification and development. However, traditional views about how to use trade to leverage growth still dominate the policy discourse. Using trade to move from

agricultural production into industrial activities is often seen as the only way of generating trade-led growth and employment—a thinking much in line with traditional views of structural transformation.⁸ However, this chapter takes a more nuanced approach to economic development and focuses on increasing productivity, upgrading and organisational change within sectors. This approach is particularly relevant in an increasingly globalised and specialised world where borders between economic sectors have become growingly blurred and a focus on tasks has become more meaningful.

The objective of this new, exploratory analysis is to invigorate and deepen the discussion about productivity growth and structural upgrading within agriculture in Africa, and the role of regional and international value chains in supporting such structural change. Focusing on maize, cassava and sorghum in Ghana, Kenya and Zambia, the World Bank's Can International Value Chains Drive Transformational Productivity Growth in Africa? project aims to test whether the involvement of farmers in a regional or international value chain supports economic transformation within the agriculture sector. It does so by looking at farmers who are suppliers to IVCs (or who are on a contract, as a possible entry point into IVC arrangements), as well as non-participants and dropouts,⁹ to shed some light on policies that can support farmers to

upgrade to higher-value intermediate processes and final outputs and earn a higher and more stable income.

Analysis in this chapter is based on quantitative and qualitative pilot surveys. As part of the pilot surveys undertaken for the project, a total of 654 farm households, 41 key informants, including processors and brewers, and 8 stakeholders were interviewed in the three countries under examination. As part of the main surveys, a total of 3,935 farmers, 60 aggregators and 56 buyers were interviewed.

8.2 The characteristics of contract farmers, non-participants and dropouts

Results indicate that market conditions are different for the selected crops—maize, cassava and sorghum—across the three countries. While maize in Kenya and Zambia is clearly a well-established and complex value chain, one with significant government investments and that benefits from interest from key stakeholders, the sector remains less developed in Ghana. Cassava and sorghum are emerging value chains, with the potential to be the next frontier crops to mitigate the impacts of climate change. Moreover, cassava can lead to densification of value chains, as it can be used as an input in various products and processes, including, *inter alia*, brewing, metals extraction (copper, gold and cobalt), ethanol production, starch-making and animal stock feed.

The results also show that farmers who are on a contract have seen greater economic transformation, in terms of higher output and

access to cheaper and higher-quality seeds, fertilisers, pesticides and extension services, than farmers who are not on a contract. Contractual farmers have also had more information on markets, crop prices, buyers and new technology.

Often, farmers under contract seem to have better access to inputs and technologies, through either the out-grower company or other external sources. The majority of surveyed contract farmers (about 70 per cent) reported benefits from input cost reductions (an increase in disposable income) as a result of their contractual arrangement. In all countries, contract farmers have received inputs from contract providers or intermediaries. In Kenya, farmers on a contract have had access to better technology and have seen a higher increase in yield and a greater increase in profits compared with farmers not on a contract. In many cases, the distribution of inputs is supplemented by the provision of market information and the dissemination of technical knowledge.

Though indicators are not fully comparable, contract farmers seem to be more satisfied than farmers without a contract with their buyer arrangement (Table 8.1). Maize farmers reported greater benefits than did cassava and sorghum farmers, mainly because of provision of inputs at early stages of production by maize buyers. The reduction in the cost of inputs is attributed to lower marketing, transportation and storage costs. As a result, the maize value chains in Kenya and Zambia seem to be well developed, have significant government investments and benefit from interest from key stakeholders.

Table 8.1 Happy or not? Satisfaction with current buyer arrangements

	Ghana		Kenya		Zambia	
Proportion of farmers (%)	Non-contract	Contract	Non-contract	Contract	Non-contract	Contract
Happy (to very happy) with current scheme	58.8	82.0	85.2	79.2	67.3	88.7

Table 8.2 Channels for economic transformation through participation in contracts (% of farmers on a contract reporting specific benefits)

Channels for economic transformation	Ghana	Kenya	Zambia
Access to cheaper inputs	80.6	53.5	48.6
Information on how to produce	87.7	74.4	49.3
Transportation/transactional cost reduction	87.8	76.5	46.0
Access to new and better technology	83.3	60.6	24.0
Access to new crops	81.3	57.5	43.7
Increased crop yield	91.0	79.2	62.3
Access to markets and less risk	93.1	92.7	72.1
Fixing crop price	89.1	81.7	61.9
Increase in profits from crop sales	91.5	79.9	67.4
Connecting with buyers	87.6	72.6	66.5

Farmers on a contract reported many benefits from being part of a contract. These include better and more information on how to produce, a reduction in transport costs, access to newer crops, an increase in profits and better ability to connect with potential buyers (Table 8.2 provides concrete examples).

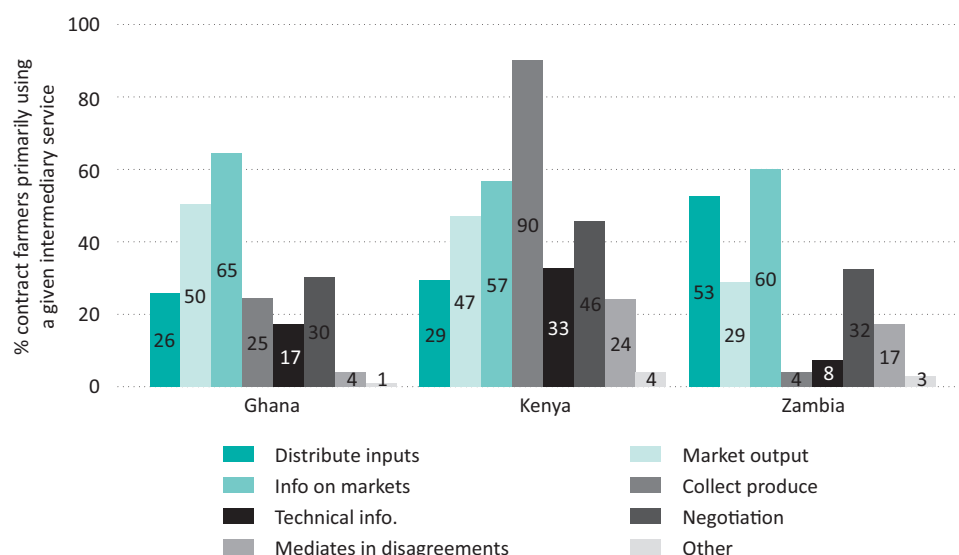
Farmers also benefit from a variety of services from contract providers. While ‘information on markets’ is the top service contract farmers in Ghana and Zambia receive, ‘collecting produce’

dominates the services inputs supplied to Kenyan farmers (Figure 8.1).

The income and output gains reaped by farmers on informal contracts often exceed the support received by those on formal contracts (Figure 8.2).

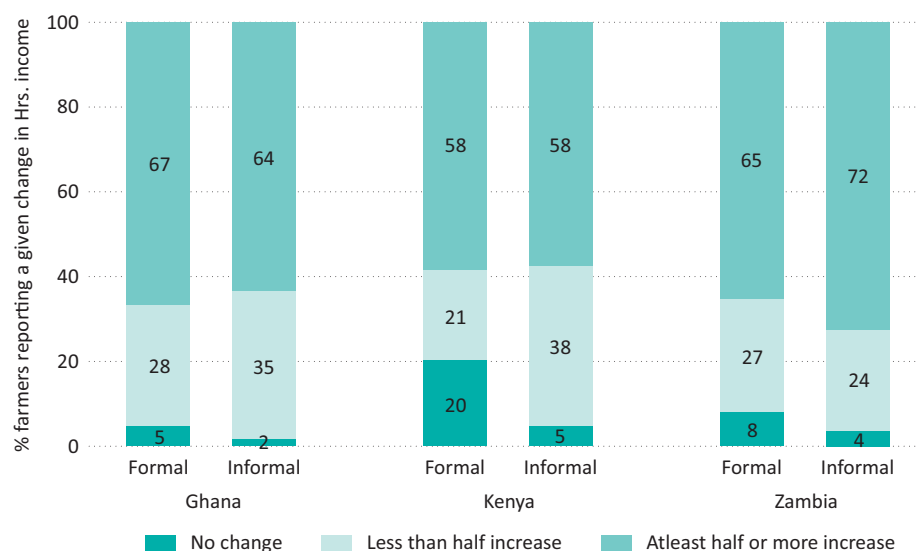
Similarly, support received by farmers on informal contracts is often more substantive than that received by farmers on formal contracts (Figure 8.3).

Figure 8.1 Usage of intermediary services by contract farmers (%)



Source: Author's calculations based on survey responses

Figure 8.2 Changes in income by contract type (%)



Source: Author's calculations based on survey responses

It is important to note here that being part of a contract does not necessarily mean that the farmer is part of a value chain. However, it would be safe to say that being part of a contract brings the farmer 'close' to the value chain. Therefore, being part of a contract is often

an essential but not sufficient criterion for a farmer to be part of a value chain. In terms of farmers under contract, about 50 to 60 per cent of interviewed farmers in Ghana and Zambia knew that they participated in value chains,¹⁰ whereas the majority of interviewed farmers

Figure 8.3 Support received by farmers by type of contract (%)



Source: Author's calculations based on survey responses

in Kenya had no knowledge about the usage of their crops. Farmers are often unaware of the final destination of their output beyond their first buyer. This is primarily because the farmer is mostly concerned about being remunerated for the output sold, regardless of whether s/he is on a contract or is part of a value chain. Even if farmers know that the buyer may export their product, they are not necessarily aware of whether *their* product is being exported; even if they know it is being exported then they may not know in *what* amount. This is because a buyer usually purchases from multiple farmers and may export either all of the product or part of it.

8.3 Participation in value chains

Based on these preliminary results, does participation in value chains really matter to farmers? In general, farmers on a contract with knowledge about their participation in value chains tend to lead in terms of upgrading and labour productivity. Most value chains in agriculture in Africa are domestic or regional in nature, rather than global. This suggests that addressing integration at the regional level is critical. Our current efforts focus on linking farmers to aggregators and buyers through an empirical framework. Our surveys reveal that the main contractors have been processors and traders—specifically the milling companies or the food reserve agencies, seed companies and breweries.

Explanations received from Zambian non-contract farmers highlight two key issues: lack of knowledge of any buyers and lack of trust in engaging with intermediaries. Conditions of price discovery are worse for most non-contract farmers. Buyers' lack of knowledge also includes that related to spot buyers.

Crops produced under contract are mainly sold to contractors or their intermediaries. Most farmers participate in a domestic value chain, with products rarely traded across borders. However, some of the value chains stretch across

borders, as some of the processor's products reach markets outside the country of production.

- For example, maize produced in Zambia is sold to Democratic Republic of Congo (DRC), Kenya, Malawi and Zimbabwe through the various players in the chain. In addition to being exported as raw grains, maize is sold in processed form, for example as mealie meal, non-alcoholic drinks and breakfast cereals, which are the outputs of national maize value chains.
- Cassava produced in Zambia is sold in neighbouring DRC and is used in the copper mining sector in the form of high-quality cassava flour (HQCF) (85 per cent starch), thus fitting into regional value chains. Encouraged by the government of Zambia, there are also efforts to use HQCF in the brewing industry to make cassava-based beer.
- Cassava produced in Ghana is used in the brewing (dough) and food (fresh or processed) sectors, as well as in manufacturing (HQCF, as a starch source), with some of the starch being exported.
- Kenya is largely a net importer of maize and gets some of it from Tanzania and Uganda. Kenya largely consumes what it produces, but there is transportation from areas of surplus to deficit areas. This function is facilitated by some of the large wholesalers, aggregators and processors, especially millers.

In addition, the following key findings regarding specialisation, various forms of upgrading and productivity of farmers participating in contracts and value chains emerged from the full surveys:

- **Specialisation:**¹¹ Of the cohort of farmers who have moved towards specialisation, a very large share in Ghana and Zambia belong to the group who are on contracts and also know they are on value chains

(although this could be because farmers in Ghana and Zambia tend to be on a contract and to know they are in a value chain). This pattern is not observed in Kenya, perhaps because of a lack of information on the part of the farmers with regard to participation in value chains or a potential sample bias.

- **Product upgrading:**¹² Of the universe of farmers who have upgraded their planting materials in the hope of improving the quality of their product, a very large share in Ghana and Zambia belong to the group who are on contracts and also know they are on value chains. In the case of Kenya, this pattern is not as strong, perhaps because of a lack of information on the part of the farmers or our sample bias.
- **Process upgrading:**¹³ Being on a contract as well as knowledge about participation in value chains seem to be strongly driving the large share of farmers improving their planting techniques. This is also true for Kenya, where 30 per cent of farmers reporting an improvement in their planting techniques were on a contract and knew about their participation in value chains, compared with 11 per cent who were not on a contract and also did not know they were part of a value chain.
- **Functional upgrading:**¹⁴ In the case of Ghana and Zambia, being on a contract and knowledge about participation in value chains are associated with high incidence of farmers undertaking new tasks. Kenya differs in this regard, although the share is still higher relative to those who are not on a contract and also do not know about their participation in value chains.
- **Output:** The average output of maize and sorghum in the three surveyed countries is higher for farmers on a contract and those who knew about their participation in value chains relative to those who were not on a contract and were also not aware

of their participation in value chains. However, simply being on a contract could be enough to drive higher crop output (e.g. maize average output per farmer in Kenya).

- **Labour productivity:**¹⁵ Average output per worker in the surveyed countries for maize and sorghum is higher for contractual farmers with information on their participation in value chains relative to those who are not on a contract and also are not aware of their participation in value chains, as well as those who are on a contract but unaware of their participation in value chains.

8.4 Conclusion and way forward

At this stage, we would emphasise two points. It is important to understand the impact of government policies on the emergence of all examined value chains. For example, in Kenya, the National Cereals and Produce Board and the Food Reserve Agency play a dual role on behalf of the government in terms of managing price stabilising and strategic food reserves. They have a tendency to distort market prices and competition through quotas or taxes, deterring investors from entering the market and developing value chains. In deciding on future policies in the agriculture sector, it is important for countries to recognise that domestic food security, better-integrated IVCs and export growth are not mutually exclusive or even opposing objectives, and could actually be complementary in an improved policy environment.

Results emerging from the aggregator surveys suggest that most value chains in agriculture in Africa are domestic or at best regional, rather than global. This suggests that addressing integration at the regional level is more critical in improving agricultural productivity in Africa. Exploiting the variation in outcomes across farmers, our econometric analysis is

now beginning to uncover the linkages of participation in value chains with enhanced economic opportunities and structural transformation. Such an analysis provides a sound background for opening and influencing the dialogue on regional trade policies.

Notes

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- 6 This chapter summarises the preliminary findings of the World Bank project Can International Value Chains Drive Transformational Productivity Growth in Africa? These findings are based on the pilot and the main surveys conducted in 2015/16 in Ghana, Kenya and Zambia. The authors thank Paul Brenton and Carmine Soprano for valuable comments on earlier drafts. Jamie Macleod provided excellent inputs.
- 7 Different studies have defined what a value chain is differently. In our study, a farmer is part of a value chain if s/he sells output to a buyer who adds value.
- 8 This project adopts a broader interpretation of structural transformation, unlike traditional views that emphasise the reallocation of production factors or resources between sectors. The traditional view considers structural change as fundamentally dependent on modifications in the relative importance of different sectors over time, as measured by their share of output or employment. However, recent literature on structural transformation stresses the role that productivity growth within sectors can play and the potential emerging from moving factors of production between firms within sectors.
- 9 A farmer who was on a contract in an earlier period but is without a contract in the current period.
- 10 Farmers know that their crop ends up in a value chain.
- 11 Specialisation/diversification: number of crops produced by a farmer for the current period and for the previous period. The difference in the number of crops grown in the current period less the previous period is used to measure the change in crop production pattern. A positive difference indicates diversification, whereas a negative difference shows specialisation, and no change is measured with a zero difference.
- 12 Product upgrading in farm production can be measured through the changes in the quality of planting materials, particularly seeds. A move from a local/traditional variety to an improved or hybrid variety is defined as product upgrading.
- 13 Process upgrading in farm production can be measured through changes in the quality of planting techniques. A move from traditional/broadcasting techniques to better-recommended techniques such as line planting is defined as process upgrading.
- 14 Functional upgrading in farm production can be measured through farmers diversifying into new and higher-value added tasks such as food processing, crop marketing and so on.
- 15 Labour productivity is measured as the output of the given crop per worker for single crop growers only, as it is difficult for farmers with multiple crops to assign labour to specific plots/crops.