Discoveries in Agriculture and Food Sciences - Vol. 10, No. 3
Publication Date: June 25, 2022
DOI:10.14738/dafs.103.14439.

Dawide, T. A. (2022). Selecting Value Chain in Ethiopia. Discoveries in Agriculture and Food Sciences, 10(3). 11-24.

Selecting Value Chain in Ethiopia

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ABSTRACT

Agribusiness and value chain development (AVCD) features prominently in development programming aimed at stimulating economic growth and increasing the competitiveness of the agricultural sector. And value chain selection is one of an approach that used to develop agribusiness and value chain in emerging economic country. Some of literatures found different criteria and selection process approach to select priority value chains. This study is evaluated and identify priority value chain by using porters' competitive advantage approach with ILO of FAO impact potential value chain selection criteria for sustainable development. And the final analysis suggests that none of crops should be considered "priority" value-chains, since these are highly-ranked respective of how outcomes are weighted to develop agribusiness and value chain of all crops should corporate. Developing inclusive agricultural value chain system development forwarding so.

Keywords: Agribusiness, Value Chain Development, Value Chain Selection, Competitive Potential and Impact Potential

INTRODUCTION

Background of the Study

Agriculture forms only part of Ethiopia's economy, and farming is only one source of income for rural households (FAO, 2020b). According to Growth and Transformation Plan Progress Report, the Ethiopian agricultural sector is characterized by many smallholder farmers which are not integrated into commercial value chains with small land holdings and account for more than 85 percent of agricultural production in the country (Glotko *et al.*, 2018).

Thus, the most effective way to improve the lives of millions in poverty is to support agriculture. Most Ethiopians poor are farmers and those who do not spend much of their income on food. Transforming a country's agriculture sector can create jobs, raise incomes, reduce malnutrition, and kick-start the economy on a path to middle-income growth. In fact, almost every industrialized nation began its economic ascent with an agricultural transformation (Zheng *et al.*, 2017).

Due to this, to improve pro-poor household livelihood, the Ethiopian Agricultural sector currently requires rapid transformation driven by urbanization, globalization, diet diversification, concentration, and expansion of agricultural commodities markets and trade, among other underlying trends (FAO, 2020a). Coping with these changes also requires a broader systems perspective that emphasizes agrifood value chain coordination, value creation, and the institutional setting in which value chains operate (Saarelainen and Severs, 2011). This cannot be done without embracing agribusiness value chain development.

In a broad sense, agribusiness includes processing agricultural commodities, packaging and distributing them as marketable products as well as the related services (supplying fertilizer, seed, and equipment) and, by extension, all agricultural production systems. While the agricultural sector only includes product producing and supplying inputs, in practice, the contractual, institutional, functional, and dependency ties between processing/marketing and production mean that we cannot think of them separately and are very often integrated (Barrett *et al.,* 2001). And the value chain refers to the entire set of activities carried out by different actors in the agriculture sector to move a product from conception to end use and beyond. Design, production, marketing, distribution, and consumption are all included in the value chain (ILO, 2018).

For development practitioners, it is important to understand how value chains and their systems structure and condition of their incomes and working conditions of those involved activities, and their impact on food security and environmental sustainability. Doing this a commodity from production to market enables us to break down highly complex problems along a comprehensible and visual model, the value chain. Value chain selection is an important initial step in value chain

development; it aims to identify the value chain(s) most suitable for upgrading, based on their potential for sustainable development (Cassandra *et al.*, 2021).

As a whole concept while selecting a value chain ensures agribusiness and value chain development; the agribusiness and value chain work directly contribute to transforming agricultural sectors: by strengthening coordination among the actors, creating collaboration between the partners; and enabling inclusive and efficient agricultural and food systems (Benfica and Thurlow, 2019).

Recently, Ethiopian government analysts and policymakers are increasingly deriving to adopt a systems approach to planning and implementing prioritized and identified agricultural activities and value chains of commodities. This means having to consider sector-wide trade-offs between investment and policy options, e.g., the promotion of one value chain may come at the expense of another and so it is the overall effect that is relevant for policy design through selecting a value chain (FDRE, 2020).

Even though, value chain selection is a good strategy for value chain development in different world country perspectives. From our agricultural sectors' development status in Ethiopia, the value chain selection strategies and guidelines can ensure value chain development? So, in this study, we were identified or/and select a value chain in Ethiopian to improve agribusiness value chain development.

Rationale of the Study

Despite the high rates of economic growth recorded over the past 15 years, the Ethiopian economy remains fundamentally agricultural. Structural transformation, understood as the transfer of financial and human resources from the agricultural sector to the industrial sector, modern services, and agricultural modernization, is still incipient (FAO, 2020a).

According to (Glotko *et al.*, 2018) comparative perspective SIRPA report, Ethiopia's agricultural value added per worker is the second-lowest (462 USD), while its share of agricultural raw materials exports is the highest (15%). Its data was show that Ethiopia's huge agricultural sector is dominated by low value-added, traditional, and subsistence activities, with a large amount of surplus labor. Likewise, Ethiopia's share of industry value added as a percentage of GDP is the lowest in the group.

In general, the major constraints in the agriculture sector revolve around land use and administration system, access to high-quality inputs and finance, efficient market systems, and research and extension services (Hartrich and Berhanu, 2021). The agricultural sector reform focuses on addressing specific issues prioritized under each of the major constraints. Increasing market-driven agricultural production and productivity and enhancing agricultural value addition and access to domestic and international markets will be required for agriculture to contribute to the structural transformation of the economy (Kiflu, 2021). To support this, the government will closely work with smallholder farmers, cooperatives, and private actors.

In several concepts of agribusiness and value chain management, there are clear indications that agribusiness value chain development has a significant impact to transform the agricultural sector through strengthening agricultural value chain integration among various actors and partners in the agro-chains system (Ejiogu and Akinbode, 2020).

So, developing competitive agribusiness and value chain is crucial for creating a linkage between different actors of agriproducts system from inputs delivery to end consumer user on a table. Agribusiness involves all agricultural business activities from production to consumption, including the supply of agricultural inputs as well as the processing and distribution of agricultural products. In developing countries and emerging economies, agribusiness is one of the main generators of employment and income (Chengappa, 2018).

Even though there is a huge potential for growth of the agribusiness in the country, there are some critical constraints such as weak infrastructure linkage between the producers and processors, limited knowledge on the requirements of processors by the farmers in terms of quality or agronomic practices and fragmented agricultural system which pose a challenge for processors to procure the appropriate quantity and quality of raw materials (Gebeyehu, 2022). In addition to this the Ethiopian value chain studies concentrated on mapping the value chain, identifying actors, distributing value shares, and some market-related concept (Tadesse and Bekele, 2022). The majority of value chain research concentrated on cash crops and some of food crops areas from a commodity standpoint. Almost in all of that research there were no reason why they gave priority to analyses those commodities for their studies; and many of them are fail on selecting entry points, identifying vertical and horizontal integration of value chain actors, value chain upgrading and illustrating of supporting institutions and enabling environments which all are a part of value chain analysis and what is a base to strength agricultural value chain integration (Desalegn, 2021). This are shows that the value chain studies in Ethiopia are still in their infancy. To change this, it requires a policy guideline and research work.

Therefore, to fill these above gaps and for others policy implication because value chain selection is an important initial step in value chain development to develop Ethiopian agribusiness and value chain, we have to identify/select a priority in a value chain.

Research Statement:
Transforming agriculture through developing agribusiness and value chain by identifying priority value chain to improve a livelihood status of smallholder household in Ethiopia.

Objective of the Study
Evaluating and identifying a priority value chain in Ethiopia

RESEARCH METHODOLOGY

Research Design
A quantitative and qualitative approach using the time series data. The quantitative nature of the study was grounded on the need to quantify the data collected from different material through disk review and generalize the findings.

Data Source and Type
The time series data from 2005-2021 was chosen based on the data availability on all variables. It is obvious that secondary data was used to evaluate the value chain priority in Ethiopia. For this reason, various domestic and foreign journals are used for the theoretical parts. Whereas, World Bank national accounts data was accessed for quantitative data.

Data Analysis
In the present study, data analyses were conducted using the Statistical Package of the Social Sciences (SPSS version 22.0) and Stata. Descriptive statistics were used to analyze the objective of the study

Value Chain Selection Approach:
Selecting a value chain or sub-sector on the basis of superficial observation bears the risk of choosing a sector with little competitive and impact potential to develop agribusiness and value chain development in agricultural transformation for this study's objective. For this reason, it is important to base the selection of the value chain on the objectives of the development intervention. We promote that the selected value chain(s) must have the potential to contribute in agribusiness and value chain development to transform agriculture for nation growth. A selection process is required to ensure that the choice is made based on an internal agriculture value chain integration and aims for consensus on value management strategies in agriculture sector. Therefore, this why we adopt porter (1985) value chain competitive advantage with FAO (2020a) impact potential to evaluate priority value chain in Ethiopia. In here we compare a number of value chains based on competitiveness and impact potential of commodities in their value chain. To do so, in step 1: the information gathering and data on potential value chains were collected through desk review; step 2: collected data were analyzed by SPSS and Stata software and drafted for a report with the final selection.

The outcome of the tools is a matrix that scores and weights rank of several value chains in appendix table 1 and 2 are representing competitiveness and impact potential of a crops value chain. The position of each value chain in the matrix is based on a set of criteria; The scoring on each indicator can be done in small groups or by individuals. There are no right or wrong answers: the sets of criteria are meant as discussion tool to make people think about both crops' competitiveness and impact potential because these arts rather than science. The weighing of each criterion is something that can be decided on in mutual agreement and can be discussed as well. Before making an actual decision about which value chain to concentrate on, also pragmatic criteria should be taken into account. The tool can also be used as a monitoring instrument; by scoring the criteria at the beginning of an intervention and at the end of an intervention.

Literature Review Method

A systematic literature review (SLR) is a tool used to manage diverse knowledge and identify research related to a predetermined topic (Page *et al.*, 2021). In this study, SLR is conducted to investigate the effects of effective value chain management practices in agricultural cooperatives. Particularly, cases are searched where the term 'value chain management practices' appeared concurrently in the title, abstract, or keywords of an article. Before conducting the SLR, a review protocol is defined to ensure a transparent and high-quality research process, which are the characteristics that make the literature review systematic (Ahmed, Ahsan, and Abbas, 2016). The review protocol also helps to minimize bias by conducting exhaustive literature searches. This includes three steps: the formulation of the research questions, the definition of the search strategy, and the specification of inclusion and exclusion criteria. This paper uses a preferred reporting item for systematic reviews approach to conduct SLR. Preferred reporting item for systematic reviews is an evidence-based minimum set of items that are used to guide the development process of systematic literature reviews and other meta-analyses (Page *et al.*, 2021).

REVIEW

Agribusiness

Agribusiness treats the different aspects of raising agricultural products as an integrated system. Farmers raise animals and harvest fruits and vegetables with the help of sophisticated harvesting techniques, including the use of GPS to direct operations. Manufacturers develop increasingly efficient machines that can drive themselves. Processing plants determine the best way to clean and package livestock for shipping. While each subset of the industry is unlikely to interact directly with the consumer, each is focused on operating efficiently in order to keep prices reasonable (Oguz *et al.*, 2018).

Agribusiness is the complete value chain in agriculture, from the raw materials and resources necessary to create biological products to distributors and retailers that get products to end consumers. It can be separated into four links: input providers, producers, processors, and other service providers (such as marketers, distributors, etc.). Each link adds value to the output of the previous link until the biological material is consumed or used by the end consumer (Keita, 2013).

Value Chain

A value chain encompasses the flow of products, knowledge and information, finance, payments, and the social capital needed to organize producers and communities (Amukanga *et al.*, 2021). Information is especially important to all value chain actors and flows in two directions: markets inform producers of price, quantity and quality needs, product handling and technology options, while producers inform processors and markets on production quantities, locations, timing and production issues. In a value chain, processors and marketing agents may provide producers with finance, inputs and training in technologies of production(Saarelainen *et al.*, 2011).

Value chains may include a wide range of activities, and an agricultural value chain might include: development and dissemination of plant and animal genetic material, input supply, farmer organization, farm production, post-harvest handling, processing, provision of technologies of production and handling, grading criteria and facilities, cooling and packing technologies, post-harvest local processing, industrial processing, storage, transport, finance, and feedback from markets (Aecid, 2020).

Agricultural Value Chain Development in Ethiopia

Agriculture in developing countries often is characterized by dual value chains operating in parallel for the same product: one informal or traditional, and the other formal or modern. Small holders are frequently involved in informal chains that deliver products to local middlemen and then to small local stores(Stein and Barron, 2017). Formal value chains can deliver the same product, usually in better or more uniform quality, from larger farms or more organized groups of small farmers to more commercial wholesalers and from there to supermarkets or exporters. This duality has been accentuated by the explosive growth of supermarkets in developing countries. It can limit many small producers to markets characterized by low-quality products, and low prices and low returns for them hence a frequent concern is to find ways to integrate small producers into more modern value chains, both domestic and export-oriented (Hartrich *et al.*, 2021).

Although value chains form inter-organizational networks involving producers, processors, distributors, consumers, and civil society stakeholders (Perumal, 2013) a many more research in our country are analysis and evaluate value chain through a sole commodity. May this why our agribusiness/agricultural value chain infancy and an Ethiopian agricultural is still untransformed. The concept of the value chain also highlights the role of the relationships that link these different actors to each other and their stakeholders (Straková *et al.*, 2020). It is the optimization of the management of these interfaces, as well as the optimization of the coherence of strategic activities that leads to a maximization of value creation. In our work, we consider that the value chain selection is not only to identify priority value chain commodity but also to develop inclusive agricultural strategy and policy (Petit *et al.*, 2021). So, selecting value chain can positively derive agricultural value chain stakeholders strive for value chain development system to improve agricultural value chain integration (AVCI). This plays a role in agribusiness value chain development and increase disposable national income by improving individual household welfare.

RESULT AND DISCUSSIONS

Selecting Value chain in Ethiopia

Value chain selection is the process of prioritizing industries based on their value chains beneficiary through its selection criteria including their potential for growth and competitiveness, impact, and contribution to other development objectives such as poverty reduction, youth and women's empowerment, food security or natural resource management and etc. The selection process is inherently subjective, and there is always a danger of selecting a value chain for the wrong reasons. The goal of the selection process in a value chain is to minimize subjectivity (Benfica and Thurlow, 2019).

Value chain selection is a process that is sequenced in a variety of ways, it can take a several times (weeks) to complete, and can employ a single tool or a combination of tools. The approach taken are vary according to the selection criteria preferred, the number of value chains considered, the accessibility of primary and secondary data sources, and the time and resources available (USAID, 2020). In this study the purpose of the value chain selection process is to transform agriculture through developing agribusiness value chain in Ethiopia.

So, in here, after analyzing different criteria and selection process approach to select priority value chains we examine the objectives by using porters competitive advantage approach with FOA impact potential value chain selection criteria for sustainable development.

Evaluating Alternative Value-Chains:

Competitiveness Potential:

The significant and sustainable increases in income and employment occur as a result of growth in an industry. As such, the potential for competitiveness i.e the ability to achieve and maintain a competitive edge over market rivals through an optimal combination of efficiency, product differentiation and access to new or niche markets that will often be the most important criterion in value chain selection (GIZ, 2021). When measuring competitiveness, it is important to remember that value chains and their end markets are dynamic, and that some possible value chains may not exist--or may be nascent--at the time of the analysis. While there are various tools and frameworks for measuring competitiveness, because the process is still more of an art than a science in this study to measure commodities competitiveness we use value of exported agricultural and gender/youth inclusiveness of product (ILO, 2018). Which means the crops that have large export value and highly included women/youth in its sectors have large global market share and its business enabling environment, with regards to infrastructure, policy and the socio-economic environment.

From the indexed table below, it is clear that agriculture has a lot to improve when it comes to exporting. Though above 90 percent of agriculture products are domestic product the cash crops (coffee and khat) value chain were included in the top-4 list in both exercises. Like the Ethiopian context, this is believed to be mainly due to the wide range of agricultural options in the country for cash crops, and the respective comparative perception each expert has with regard to the potential of each crops value chain. Especially khat has ranked on-1 and its scored 58 percent of gender and youth inclusion and its exported value is 25.7 percent.

Impact Potential:

It is important that the selection of value chains leads to a crop that has the desired impact on the small-scale enterprise, farmers, and pro-poor household. As stated in the competitiveness criterion above, significant, sustainable increases in income and employment occur as a result of economic growth. Developing agribusiness leads to transform agriculture with high rates of small-scale participation and employment will impact; that is, **reduce** poverty and growth national industries more than transforming agriculture. Assessing potential impact at the household and agribusiness level is key to understanding ways to increase or optimize value chain analysis with integrated agricultural value chain. Another aspect of impact is the multiplier effect of growth in a particular industry (Cassandra *et al*, 2021). Determining how and where marginal increases in industry revenue are invested in the local and national economy is an important element of impact. Therefore, in this study the author to examine a crops value chain impact potential, we assess their potential in employment, income generation, pro-poor household participation, agricultural production growth effects, poverty reduction and food security.

From the estimated semi-PGEs for each scenario. Expanding maize production reduces the national poverty headcount rate by 0.51 percentage points for every one percent increase in agricultural GDP, making maize a "pro-poor" value-chain. However, pulse/oilseeds and cash crops have the largest PGEs – growth in these value-chains is most effective at reducing national poverty. These products also have strong linkages to rural poverty reduction. Note that value-chain PGEs are often larger than the baseline's overall PGE, implying that agricultural growth is more pro-poor than nonagricultural growth. Rural PGEs also tend to be larger than national PGEs, indicating that, as expected, agricultural growth favors the rural poor.

Headcount rates focus on people living just below the poverty line, whereas poverty gaps measure how far poor households are from the poverty line. Poverty gaps therefore better reflect the conditions of the poorest of the poor. These households may have different consumption patterns and asset endowments than the less poor, such as limited access to land, and so we do not expect value-chains to be equally effective at reducing poverty headcounts and gaps. In indexed table 1, for example, cereals are more effective at reducing the poverty gap than the poverty headcount rate (relative to other value-chains), indicating that poorest households benefit more from cereals expansion than do households closer to the poverty line. Nevertheless, the results indicate that pulse and cash crops have large poverty gap elasticities, indicating that their expansion benefits the poorest population more than do other value-chains.

The reports estimate the dietary-diversity-growth elasticities (DDGE), which show how effective value chains are at diversifying the dietary patterns of household groups. Diversity is measured by food expenditures across five major food crops (see index). Cereals and vegetables are already the dominant food crops, so expanding their supply reduces dietary diversity by increasing availability and reducing prices. Coffee and khat do not produce foods, and so expanding their production does not directly affect food availability and diets. Instead, these value-chains affect food access by raising 12.5 incomes, thereby indirectly affecting diets. In Overall, the value-chains that are most effective at promoting dietary diversity among poor

rural households are fruits, vegetables, honey and milk/dairy. Note that fruits include nuts and other tree crops.

As a report the growth and employment effects of expanding agricultural production in different value-chains. Although the scenarios are labeled by the names of the value-chains in which productivity growth originates, it does not imply that all GDP and employment growth occurs only within these value chains. Increasing maize productivity, for example, may allow farmers to diversify production by reallocating resources to other crops and activities, including nonfarm enterprises. Increasing value-chain workers' incomes also allows their households to purchase products from other sectors or value-chains, thereby generating economy-wide spillovers. The indexed table1 reports GDP growth and employment elasticities for the total economy and for the AFS only. The former is an indicator of (agribusiness development) agriculture-led development, whereas the latter is an indicator of agricultural transformation.

Agricultural activities with downstream processing generate larger growth multiplier effects within the AFS. Cattle and cash crops, for example, supply downstream meat processing and khat-curing activities. Cattle's AFS growth elasticity of 1.58 implies that a one percent increase in agricultural GDP driven by cattle productivity increases AFS GDP by 1.58 percent. However, livestock and meat processing tend to be more capital-intensive activities, at least compared to other value-chains, and so cattle is one of the least effective value-chains at creating jobs outside of agriculture. Cash crops has an AFS employment elasticity of 0.92, implying that a one percent increase in agricultural GDP driven by productivity gains for these crops causes AFS employment to increase by 0.92 percent. Overall, the value-chains with the largest AFS growth effects are cattle, milk/diary, and cash crops, whereas the largest AFS employment elasticities are for coffee, khat, maize and sorghum. Differences between the rankings of growth and employment effects indicates a trade-off between the absolute number of jobs created and the "quality" or labor productivity of these jobs. Expanding cattle production creates few jobs, but GDP per worker in these jobs is high. The report also shows how growth effects may differ when considering the whole economy, rather than just the AFS. Sorghum, for example, is one of the least effective value-chains at generating AFS growth, but it is more effective at generating economy-wide growth. This is because there is relatively little downstream processing of sorghum within the AFS, but it is an important income source for many farmers. Raising these farmers' incomes generates demand for non-AFS products. Sorghum also directly benefits consumers, and not just sorghum producers. For these reasons, sorghum's economy-wide growth multiplier effect is larger, relative to other value-chains, than its AFS growth effect. That being said, the Ethiopian agrarian economy is dominated by the AFS, implying that whatever is beneficial for the AFS tends to also be beneficial for value chain development which is beneficial to transform agriculture and the broader economy.

CONCLUSION AND RECOMMENDATION

The purpose of this study was to evaluate and identify priorate value chain for agribusiness and value chain development and no single value-chain is most effective at achieving all policy objectives. The result shows the ten highest ranked value-chains across three selected outcomes: (1) reducing the rural poverty headcount rate; (2) diversifying poor rural

households' diets; and (3) promoting AFS GDP growth. Four products are in the top ten on all three indicators: Coffee, fruits/tree crops, pulses, and khat. Sorghum/millet, teff, and wheat/barley are effective at reducing poverty and generating growth, but they narrow diets, rather than diversify them. Vegetables and oilseeds diversify diets and reduce rural poverty, but have more limited growth effects. Cattle, milk/dairy, and poultry promote growth and diversify diets, but are less effective at raising poor households' consumption either directly as a supplier of food or indirectly as a source of income. Of these value-chains, those with one of the ten strongest employment effects are marked with an asterisk.

Therefore, a portfolio of value-chains is needed to achieve all policy objectives that does not convey value chains' relative strengths across outcome indicators. For example, vegetables are far more effective at diversifying diets than most other value-chains. Such a strong nutrition effect might outweigh concerns about vegetables' weaker growth effect. One approach to evaluating these kinds of trade-offs is to combine growth, poverty, and nutrition outcomes into a weighted or composite indicator. The final analysis suggests that none of crops should be considered "priority" value-chains, since these are highly-ranked respective of how outcomes are weighted to develop agribusiness and value chain of all crops should corporate. Developing inclusive agricultural value chain system development forwarding so.

Reference

Aecid, C. (2020) 'Value Chain Analysis and Development of Intervention Plan in Three Woredas of the Arsi Zone', (September).

Ahmed, M.A., Ahsan, I. and Abbas, M. (2016) 'Systematic literature review: Ingenious software project management while narrowing the impact aspect', *Proceedings of the 2016 Research in Adaptive and Convergent Systems, RACS 2016*, pp. 165–168. Available at: https://doi.org/10.1145/2987386.2987422.

Amukanga, M. and Otuya, W. (2021) 'Information Communication Technology on Supply Chain Management Performance -A Critical Literature Review Information Communication Technology on Supply Chain Management Performance - A Critical Literature Review', *IOSR Journal of Business and Management (IOSR-JBM*, 23(1, January), pp. 21–25. Available at: https://doi.org/10.9790/487X-2301012125.

Benfica, R.S. and Thurlow, J. (2019) 'Identifying Priority Value-chains in Ethiopia', *SSRN Electronic Journal* [Preprint], (December). Available at: https://doi.org/10.2139/ssrn.3305040.

Cassandra Walker, Laura DeMatteis, and A.L. (2021) *Selecting value chains for sustainable food value chain development*. Rome: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS.

Chengappa, P.G. (2018) 'Development of agriculture value chains as a strategy for enhancing farmers' income', *Agricultural Economics Research Review*, 31(1), p. 1. Available at: https://doi.org/10.5958/0974-0279.2018.00001.0.

Desalegn, W. (2021) 'Value chain analysis of vegetables (onion, tomato, potato) in Ethiopia: A review', *International Journal of Agricultural Science and Food Technology*, 7, pp. 108–113. Available at: https://doi.org/10.17352/2455-815x.000096.

Ejiogu, L.C. and Akinbode, S.O. (2020) 'Value chains for empowerment and stronger agricultural sector in sub-Saharan Africa', *Journal of Sustainable Development in Africa*, 22(3), pp. 118–136. Available at: http://www.jsd-africa.com/Jsda/2020 V22 No 3 Fall/PDF/Value Chains for Empowerment and Stronger Agricultural Sector in Sub-Saharan Africa_Chuks Ejiogu.pdf https://www.cabdirect.org/cabdirect/abstract/20210029979.

FAO (2020a) 'ENHANCING THE DEVELOPMENT OF THE AGRO-INDUSTRY SECTOR IN ETHIOPIA WHAT DID THE PROJECT DO ?'

FAO (2020b) *Ten years of the Ethiopian Agricultural Transformation Agency. An FAO evaluation of the Agency's impact on agricultural growth and poverty reduction*.

FDRE (2020) 'a_Homegrown_Economic_Reform_Agenda-_a_Pathway_To_Prosperity_-_Public_Version_-_March_2020-', (March).

Gebeyehu, W. (2022) 'What is New in Ethiopia ' s New Industrial Policy : Policy Direction and Sectoral Priorities :', p. 37.

GIZ (2021) 'Working Towards Employment-Generating Growth of Companies in the Agro-food Industry in Ethiopia', *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH* [Preprint].

Glotko, A. V. *et al.* (2018) 'Development of integration processes in the agro-industrial complex of the Russian regions', *European Research Studies Journal*, 21(Special Issue 3), pp. 3–15. Available at: https://doi.org/10.35808/ersj/1356.

Hartrich, S. and Berhanu, A. (2021) 'Transforming Ethiopia's agro-processing sector to promote more and better jobs Market systems analyses of fruits and vegetables, poultry, and edible oils sectors', (June). Available at: www.ilo.org/publns.

ILO (2018) *Value Chain Development*, *International Food Policy Research Institute*. Available at: http://gssp.ifpri.info/food-crop-value-chain-development-2/.

Keita, D. (2013) 'Agriculture Transformation Through Commodities Value Chains Development Dougou KEITA , Manager , AfDB'.

Kiflu, G. (2021) 'Ethiopia and the Global Value Chains (GVCs): Learnings from China', (November).

Oguz, A. *et al.* (2018) 'Information and communications technologies as an enabler of supply chain integration', *Americas Conference on Information Systems 2018: Digital Disruption, AMCIS 2018* [Preprint].

Page, M.J. *et al.* (2021) 'The PRISMA 2020 statement: An updated guideline for reporting systematic reviews', *The BMJ*, 372. Available at: https://doi.org/10.1136/bmj.n71.

Perumal, P.K. (2013) 'Study on effective value chain management of Public and Private Schools ; Empirical case study from South India', 481(August), pp. 1–69.

Petit, G. *et al.* (2021) 'Facilitating aligned co-decisions for more sustainable food value chains', *Sustainability (Switzerland)*, 13(12), pp. 1–16. Available at: https://doi.org/10.3390/su13126551.

Saarelainen, E. and Severs, M. (2011) 'Value Chain Development: Combining Value chain development and local economic development', (Vcd), pp. 1–7. Available at: http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---ifp_seed/documents/publication/wcms_182600.pdf.

Stein, C. and Barron, J. (2017) 'Mapping actors along value chains: integrating visual network research and participatory statistics into value chain analysis', *Mapping actors along value chains: integrating visual network research and participatory statistics into value chain analysis* [Preprint]. Available at: https://doi.org/10.5337/2017.216.

Straková, J. *et al.* (2020) 'Use of the value chain in the process of generating a sustainable business strategy on the example of manufacturing and industrial enterprises in the Czech Republic', *Sustainability (Switzerland)*,

12(4), pp. 1–15. Available at: https://doi.org/10.3390/su12041520.

Tadesse, B. and Bekele, K. (2022) 'Scope of vegetable and root crops value chain in Ethiopia', *Journal of Agriculture and Food Research*, 10(September), p. 100402. Available at: https://doi.org/10.1016/j.jafr.2022.100402.

USAID (2020) 'Feed the Future Ethiopia Value Chain Activity Partnering with the Agricultural Growth Program', 2020(December).

Zheng, Y. *et al.* (2017) 'Development and Industrialization in Ethiopia: Reflections from China's Experience', *Fudan SIRPA Think Tank Report Series*, (November), pp. 1–31.

Appendix

Table 1: Agricultural production indicators score and weights

				Pro-poor household income and Consumption	Poverty Growth Elasticity			Dietary-diversity Growth Elasticity			Gender and Youth Inclusion %		Values of Major Export Items		Economywide growth and Employment Linkage			
		Volume of Production in Million Metric Toner	Pro-poor Farmers participatory	Pro-poor household income and Consumption	NPH	RPH	NPG	AH	RH	PRH	F	Y	V	%Sh	T/Gge	AFS/Gge	T/Ee	AFS/Ee
Cereal Crops	Maize	9.57	8.7	4.05	-0.53	-0.56	-0.12	-0.5	-0.8	-1.4	25	41	0	0	0.44	0.87	0.11	0.1
	Sorghum	4.6	6.52	3.1	-0.45	-0.48	-0.11	-0.54	-0.83	-1.25	21	36	0	0	0.42	0.87	0.05	0.05
	Barley/Wheat	4.6	6.52	5.2	-0.4	-0.44	-0.1	-0.58	-0.91	-1.23	29	39	0	0	0.37	0.85	-0.21	-0.21
	Teff	0.8	2.1	0.2	-0.36	-0.46	-0.52	-0.66	-0.86	-0.92	23	46	0	0	0.43	0.85	0.15	0.14
	Pulse	2.6	0.8	1.2	-0.57	-0.6	-0.61	0.62	0.82	0.89	19	24	233.8	6.5	0.39	0.8	-0.12	-0.14
Total Average		4.434	4.928	2.75	-0.512	-0.578	-0.272	-0.332	-0.516	0.782	23.4	37.2	46.76	1.3	0.41	0.848	-0.004	-0.012
Vegetable Crops	Onion	3.89	0.7	0.4	-0.39	-0.76	-1.2	0.45	0.34	0.67	37	39	17.9	0.11	0.32	0.64	-0.19	-0.13
	Tomato	6.4	0.6	2.3	1.89	2.47	2.57	0.51	0.91	0.98	38	42	14.1	0.04	0.27	0.71	-0.95	-1.01
	Potato	8.59	0.5	2.56	-0.57	-0.82	-1.8	0.64	0.44	0.57	41	54	15.3	0.07	0.35	0.76	-0.17	-0.15
	Pepper	16.83	0.5	4.45	1.77	3.25	2.23	0.71	0.85	0.91	45	37	19.4	0.23	0.29	0.18	-0.87	-0.17
		8.9275	0.575	2	0.675	1.05	0.45	0.5775	0.653	0.785	40.25	43	16.67	0.1125	0.3075	0.5725	-0.545	-0.365
Cash Crops	Coffee	0.5	4.2	0.02	-0.37	-0.39	-0.78	-0.02	-0.04	-0.07	27	31	909.4	25.1	0.54	0.94	0.91	1
	Chat	3.14	11.45	0.23	-0.47	-0.59	-0.17	-0.01	-0.02	-0.04	57	67	1102.5	26.3	0.74	0.89	0.97	1
		1.82	7.825	0.125	-0.72	-0.82	-0.95	-0.015	-0.03	-0.015	42	49	1005.95	25.7	0.64	0.915	0.94	1
Animals	Dairy	6.5	13	2.23	-0.07	-0.06	0.05	0.99	1.09	1.29	48	38	15	0.3	0.4	0.94	-0.27	-0.33
	Cattle	3.1	13	0.01	0.77	1.01	0.29	-2.17	-1.88	-0.24	16	35	12.8	0.4	0.62	1.58	-2.58	-3.04
	S/Ruminant	3.3	11	0.02	-0.04	-0.08	0.01	-0.74	-0.56	0.08	24	45	16.2	0.5	0.34	0.78	-0.18	-0.15
	Beef/Meat	0.4	13	0.01	0.57	0.91	0.27	-0.64	-0.45	0.07	29	40	75.3	2.1	0.32	0.28	-1.28	-1.19
	Poultry	10.4	7	2.35	-0.04	0.02	0.04	-0.8	-0.62	0.18	49	31	0	0	0.42	0.86	-0.1	-0.15
	Honey	48	1.12	0.022	0.27	0.61	0.13	0.79	1.27	1.195	14	26	45.8	1.7	0.24	0.52	-0.16	-0.13
		11.95	9.69	0.77	0.234	0.401	0.131	-0.418	-0.192	0.149	30	35.83	27.51	0.83	0.39	0.83	-0.76	-0.832
Fruits and Tree Crops		3.81	6	2.3	-0.36	-0.38	-0.07	2.1	2.37	2.16	33	47	470.6	13	0.41	0.86	0.02	0.01

Poverty Growth Elasticity
National poverty headcount (NPH)
Rural poverty headcount (RPH)
National poverty gap (NPG)

Dietary-diversity Growth Elasticity
All households (AH)
Rural households (RH)
Poor rural households (PRH)

Gender and Youth Inclusion
Female (F)
Youth (Y)
Values of Major Export Items
Value(V)
Percentage Share (%Sh)

Economywide growth and Employment Linkage
(GGE) GDP growth elasticity (Total/T and Agriculture-food system (AFS) only)
(EE) Employment elasticity (Total and Agriculture-food system (AFS) only)

Table 2:Agricultural production indicators score rank

Agricultural Crop Category	Agricultural Crops Type	The volume of Production in Million Metric Toner	Pro-poor Farmers participatory	Pro-poor household income and Consumption	Poverty Growth Elasticity			Dietary-diversity Growth Elasticity			Gender and Youth Inclusion %		Values of Major Export Items		Economywide growth and Employment Linkage			
															GGE		EE	
					NPH	RPH	NPG	AH	RH	PRH	F	Y	V	%Sh	T/Gge	AFS/Gge	T/Ee	AFS/Ee
Cereal Crops (1)	Maize (6)	1	4	4	3	5	4	12	14	18	11	8	14	14	3	5	4	4
	Sorghum (7)	7	6	5	5	6	5	13	15	17	14	10	14	14	6	5	5	5
	Barley/Wheat (8)	7	6	2	6	7	6	14	17	16	9	9	14	14	9	9	13	14
	Teff (9)	13	10	11	1	1	3	5	16	15	13	5	14	14	5	9	3	3
	Pulse (10)	12	12	1	2	4	6	7	6	6	15	15	4	4	6	11	8	9
Vegetable Crops (2)	Onion (11)	9	13	9	7	3	2	9	7	7	6	9	8	8	12	15	12	7
	Tomato (12)	6	14	8	16	16	17	8	4	4	7	6	12	12	13	14	16	16
	Potato (13)	4	15	6	2	2	1	6	8	8	5	2	11	11	10	13	10	10
	Pepper (14)	3	16	3	15	16	16	4	5	5	4	9	7	7	12	18	15	13
Cash Crops (3)	Coffee (15)	14	8	13	9	8	7	11	10	13	10	12	2	2	4	2	2	1
	Chat (16)	11	2	10	4	3	9	10	9	12	1	1	1	1	1	4	1	1
Animals (4)	Dairy (17)	5	1	8	10	11	12	2	3	2	3	9	10	10	8	2	14	15
	Cattle (18)	12	1	14	14	15	15	17	18	14	16	11	13	13	2	1	18	18
	S/Ruminant (19)	9	3	13	11	10	11	16	12	10	12	4	9	9	11	12	11	10
	Beef/Meat (20)	16	1	15	13	14	14	15	11	11	9	8	5	5	12	17	17	17
	Poultry (21)	2	9	7	11	12	10	16	13	9	2	13	14	14	5	7	7	10
	Honey (22)	15	11	12	12	13	13	3	2	3	17	14	6	6	14	16	9	7
Fruits and Tree Crops (5)		8	7	8	8	9	8	1	1	1	8	3	3	3	7	7	6	6