

Profiling the African Agricultural Value Chain: Basic and Gender Dimensions

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ABSTRACT

The AfCFTA Secretariat, in a recent report, identified certain industrial sectors and sub-sectors as potential candidates for value chain development under the AfCFTA agreement. This Trade Brief looks at the broadly-defined agricultural/agro-processing/agri-business sector in Africa, from the perspective of the regional and global value chain dimensions. The intention is to describe the sector by presenting the basic value chain metrics of the sector, including gender-disaggregated employment metrics.

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Profiling the African Agricultural Value Chain: Basic and Gender Dimensions

By John Stuart

Introduction¹

The AfCFTA Secretariat, in a recent report, identified certain industrial sectors and sub-sectors as potential candidates for value chain development under the AfCFTA agreement (AfCFTA Secretariat, 2021). The broad sectors included in their list were agricultural/agro-processing, textiles and leather, automotive, pharmaceuticals, mobile financial services and cultural industries.

This Trade Brief looks at the broadly-defined agricultural/agro-processing/agri-business sector in Africa², from the perspective of the regional and global value chain dimensions. The intention is to present the basic value chain metrics of the sector, including gender-disaggregated employment metrics, as a precursor to several more extensive studies forthcoming from tralac over the next few months.

The broadly-defined African agricultural value chain: basic metrics

‘Value chains’ are flows of value between countries that reflect the addition of value to intermediate products, which are eventually sold as final products by the last country in the value chain. ‘Value chain participation’ refers to the extent to which a country or region participates in cross-border value chains. This can be further broken down into ‘forward’ and ‘backward’ participation, meaning the extent to which value is added to imported intermediate products (backward) and in turn to exported intermediate products (forward). African countries, being overwhelmingly primary goods producers,

¹ This brief is based on a tralac 2022 Annual Conference note, [African Value Chains and the Visualisation of the Agricultural VC](#), distributed at the conference.

² Due to differences in aggregating sectoral industrial data, the sector has been defined as ‘the broadly-defined agricultural/agro-processing/agri-business sector’. The aggregate contains data for agricultural production; agri-business production, defined as ‘economic activities derived from or connected to farm products’ (BBVA, 2022) and agro-processing, defined as ‘the sub-sector of the manufacturing that beneficiates primary materials and intermediate goods from agricultural, fisheries and forestry based sectors’ (DTIC, 2022).

would be expected to be far more forward than backward integrated. Finally, ‘GVC exports’ reflects the component of exports of non-finished products or materials, that become inputs into another country’s production process to produce either further beneficiated GVC exports or final products.

Table 1: Comparing exports, GVC exports, GVC participation for African and other regional aggregates (2015, USDm)

	All Sectors Gross exports	All Sectors GVC exports	GVC/Gross Exports	GVC backward - Agriculture	GVC forward - Agriculture	Backward/ Forward
High income countries	14 501 100	7 451 750	51%	41 805	61 365	68%
Asia (no high inc.)	3 477 524	1 346 460	39%	6 360	17 532	36%
Africa	379 197	159 370	42%	1 893	6 648	28%
Africa, non-resource-rich countries	220 278	90 949	41%	1 693	5 114	33%
Africa, resource-rich countries	158 919	68 421	43%	199	1 534	13%
North Africa	133 754	63 798	48%	324	1 393	23%
Southern Africa	155 578	62 425	40%	777	1 504	52%
West Africa	54 216	19 079	35%	251	1 983	13%
East Africa	18 490	7 322	40%	453	1 171	39%
Central Africa	17 159	6 746	39%	88	597	15%

Source: Author’s calculations based on World Bank (2020), *World Development Report 2020*, GVC Database

Table 1 presents a selection of data on the dimensions of value chain – both gross as well as for the agricultural sector – participation for several regional aggregates. Firstly, high income (developed) countries have a relatively high proportion of GVC exports in total, reflecting their significant participation in value chains across multiple sectors. They also have a high ratio of backward to forward GVC participation in agricultural value chains, meaning they significantly beneficiate less processed agricultural products.

When comparing this with Africa, it is clear that Africa’s value chain participation is not as high as the developed world but slightly exceeds that for non-high income Asian countries. For agricultural value

chains, the extent of Africa's backward participation is less than half that for the developed world and also less than that for non-high income Asian countries. The contrast between non-resource rich African countries and resource-rich³ African countries is also interesting – although they have similar proportions of GVC exports out of gross exports, resource-rich African countries are significantly less backward-linked in the agricultural sector. This suggests that the African countries that are most reliant on agricultural value chains are non-resource rich.

The broadly-defined African agricultural value chain: regional destinations of African agricultural value

The lower part of Table 1 presents the same data for five African geographic regions, ranked by the value of GVC exports. Although Southern Africa's exports are the highest value of all the regions, North Africa's GVC exports are a greater and so their proportion of GVC exports to total exports is higher. By contrast, for the agricultural sector, North Africa's GVC participation is less than that for Southern Africa, both absolutely and in terms of the balance between backward and forward participation. East Africa, a region known for its important agricultural output, is second in terms of GVC participation in agriculture but in absolute terms, is eclipsed by West Africa and North Africa.

Data such as that presented in Table 1 is valuable and provides important insights on the dimensions of value chain involvement. This data is aggregated from multi-region input-output (MRIO) data, which maps country to country value flows by sector. For example, for the agricultural sector, the MRIO data allows one to construct a matrix showing the value of intermediate production exported by a country (exporting country) that is sourced from each 'originating' country.

³ 'Resource-rich' refers to countries with significant endowments of natural resources such as fuel products (oil & gas), crude minerals & metals and precious minerals & metals.

Table 2: Intermediate agricultural production exported by region, from African-originating value (2017, USDm)

Region	Value exported	Proportion of Total
Africa	2 099	16.8%
Developed	9 215	73.7%
Developing (non-Africa)	1 196	9.6%

Source: Author’s calculations based on UNCTAD (2022) (UNCTAD-Eora GVC database)

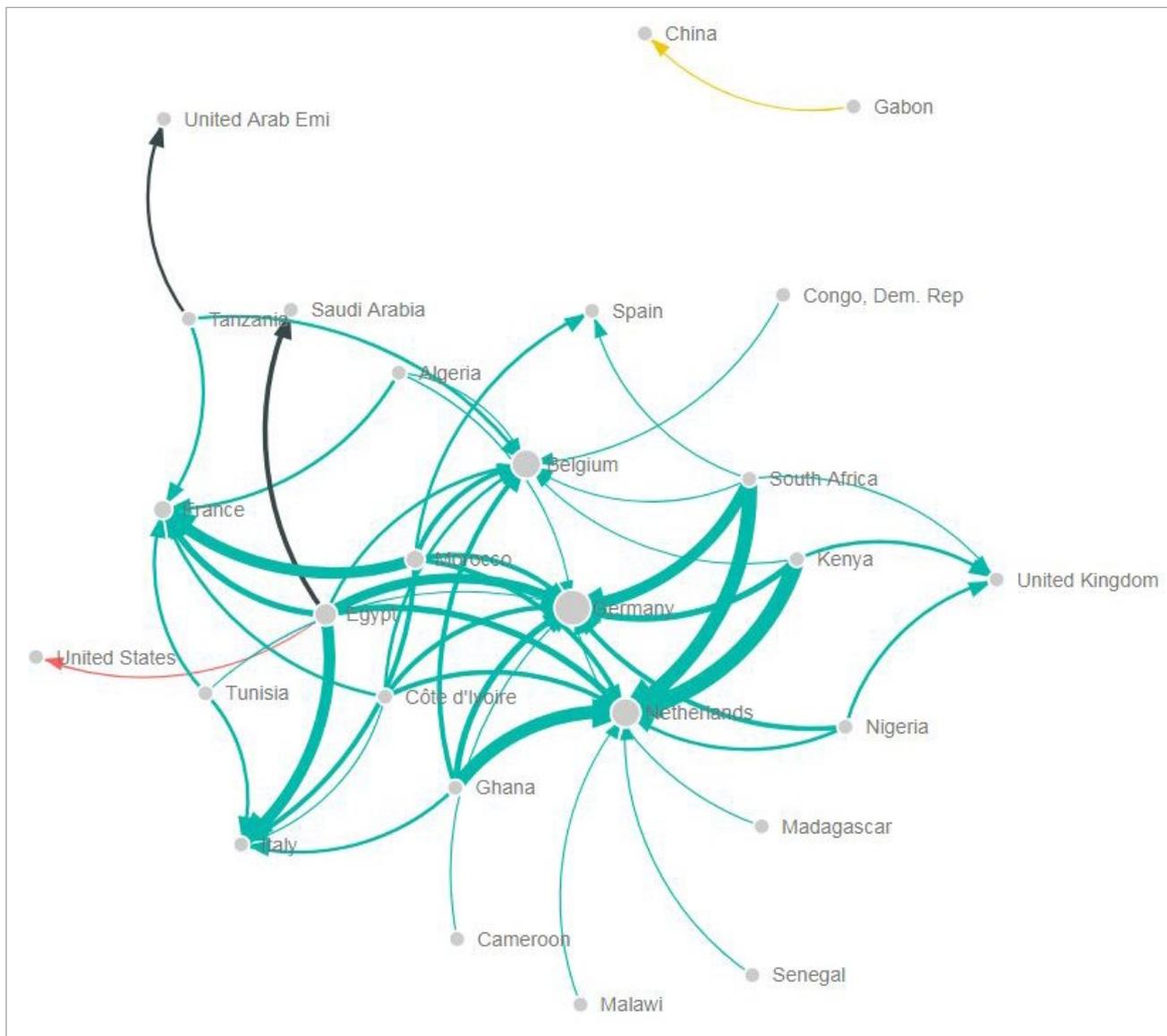
Table 2 shows the value of intermediate exports of agricultural production exported by Africa, developed countries and other developing countries, that originates from African countries. As can be seen, developed countries export more than four times the value of intermediate agricultural production than do African countries, from value originally generated in Africa. This means developed countries benefit African agricultural production to a far greater extent than Africa itself does. This implies there is potential for African countries to move up the ‘value chain’ in agricultural production.

The broadly-defined African agricultural value chain: visualising GVC trade flows

The country-to-country flows underlying the aggregate data in Table 2 have much to reveal about the trade patterns in intermediate agricultural production. The most important of these are mapped in the following two figures. Figure 1 shows the main flows of African-originating value to all countries and Figure 2 shows the main flows of African-originating value to other African countries.

The arrows in the figures are weighted by value flow magnitude and are colour-coded. In Figure 1, green arrows are to European countries, black arrows are to the Middle East, red arrows are to North America and yellow arrows to East Asia and the Pacific. In Figure 2, the arrows reflect the existence or not, of common preferential trade area (PTA) memberships. Green arrows are between SADC members, black arrows are between ECOWAS members, yellow arrows are between members of the EAC, and red arrows reflect flows between countries that are not members of these three PTAs.

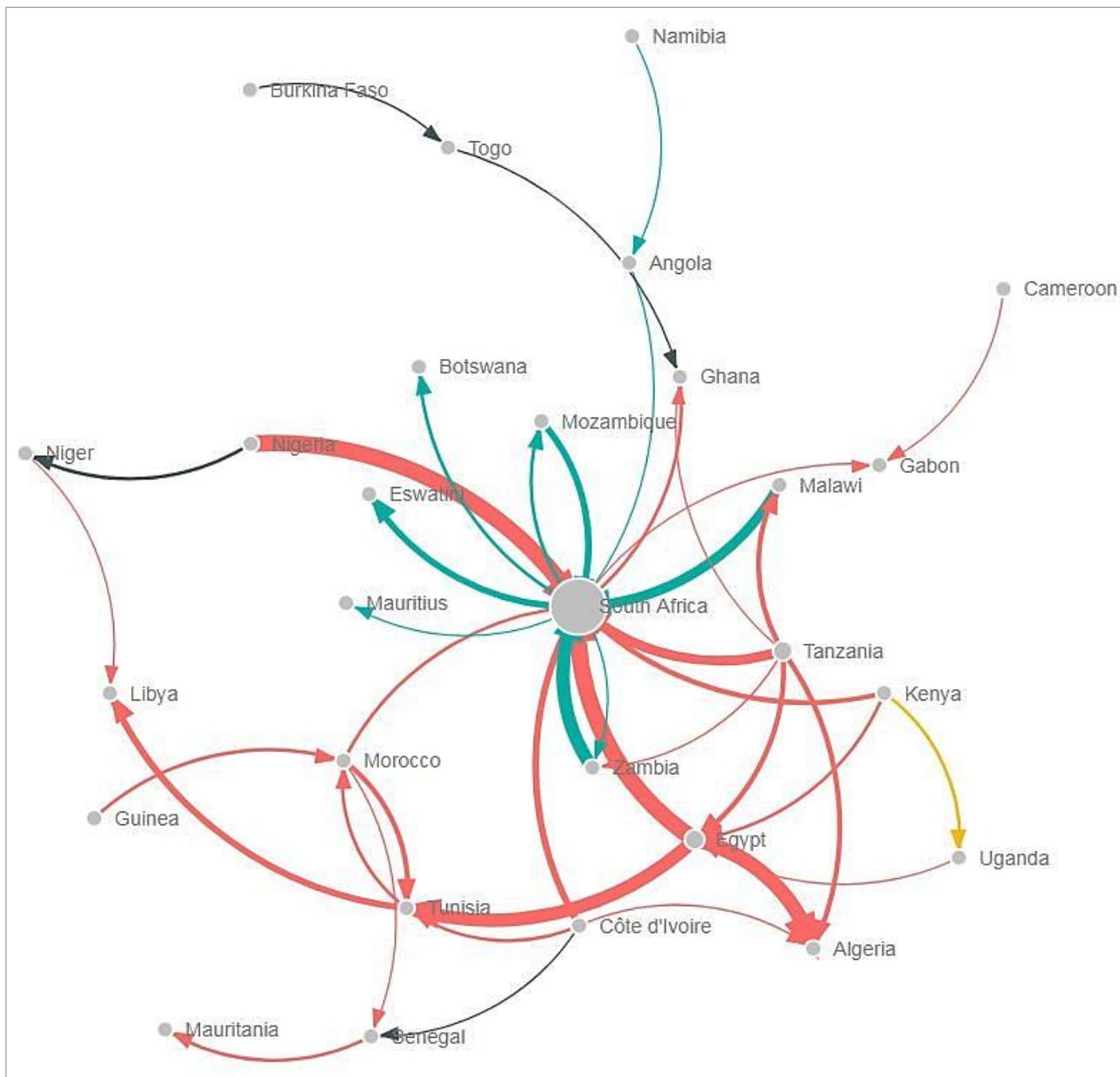
Figure 1: Main flows of intermediate agricultural production: Africa to all countries (2017)



Source: Author’s construction based on UNCTAD (2022) data

The first figure clearly shows the importance of the trade of agricultural value with European countries. A few European countries – Germany, the Netherlands, France, Italy and Belgium dominate the extra-African agricultural value chain flows. The main exporters of agricultural value from Africa are South Africa, Egypt, Kenya, Côte d’Ivoire, Morocco, Ghana and Nigeria.

Figure 2: Main flows of intermediate agricultural production: Africa to other African countries (2017)



Source: Author's construction based on UNCTAD (2022) data

Interestingly, in the case of intra-African agricultural value chain trade (which is less than 20% of extra-African agricultural value chain trade), most value flows do not happen within the main PTAs of SADC, the EAC and ECOWAS. South Africa is significant in that it absorbs large value flows from Nigeria and Egypt, while the latter is primarily an originator of value flowing to, besides South Africa, Algeria and

Tunisia. In the case of South Africa, there are also reciprocal flows with SADC members Mozambique and Zambia, while in North Africa, Morocco and Tunisia also show reciprocal flows.

The broadly-defined African agricultural value chain: gendered participation

Gendered employment data is available for the broad definition of the sector, i.e., agro-processing and agri-business: comprising food & beverages, tobacco, and wood (excluding furniture). A few aggregates of this data are presented below in Table 3⁴.

Table 3: Gender employment dimensions: Africa Agro-processing and agri-business sector

Row Labels	Employees	Female employees	Female proportion	Output (USDm)
East Africa	1 229 276	97 422	7.9%	98 519
North Africa	2 872 669	70 092	2.4%	219 605
Southern Africa	1 625 871	18 837	1.2%	268 016
West Africa	154 291	981	0.6%	14 433
Africa	5 882 107	187 332	3.2%	600 574

Source: Author's calculations based on UNIDO (2022) data

The data shows that, the region with the highest female participation in the sector, East Africa, is only the third highest in terms of gross output. According to Table 1, East Africa's backward participation is also quite high for Africa, exceeding that for North, West and Central Africa by some margin.

On other hand, female participation rates for the other regional aggregates are low and suggest that intervention is needed in order to address this imbalance. It is likely that female participation in subsistence agriculture is much higher, reflecting a low value participation for female citizens in these regions. This can be addressed by targeted action addressing such factors as education/training, availability of finance, business and trade support and input & equipment supply chain expansion.

⁴ Note that these aggregates are based on a set of African countries for which data is available are not necessarily representative of all 54 African countries. The aggregate for West Africa in particular, is missing that of the largest regional economy – Nigeria.

Conclusion

Agriculturally-based exports are Africa's third largest export category, after fuels products and minerals. Africa's backward-linked GVC trade is about 3% of the global total, whereas its forward-linked GVC trade is more than double this, at about 7.5% of the global total. In addition, non-resource rich African countries are the main players in African agricultural value chains, both forward and backward.

The data also tells us that female participation in the agro-processing and agri-business sector is least in West Africa, compared with other African regions⁵. Southern Africa, which makes the largest contribution to gross sectoral output as well as GVC exports out of all the other African regions, has a relatively low rate of female participation. These metrics suggest that not only should policy focus on encouraging value chain upgrading in the sector, but that female participation should be considered too. This relates to capacitation, business support, investment, and the raising of awareness of market opportunities. One caveat however: when job creation is considered as an important goal of value chain development, labour-intensive production methods become preferable to those that focus primarily on upgrading to higher value-added production as fast as possible (see also ADB, 2021).

The value flow figures presented above are an important data tool in addition to the analysis of GVC exports and GVC participation, with value for policy formulation. For example, AfCFTA policy makers can easily identify which countries are already established 'originators' and 'absorbers' of intermediate value – both within the continent and more broadly. These can serve as a starting point and a resource when it comes to planning and skills transfer. In future years, under the AfCFTA, the lowering of trade barriers and the extension of preferences across the continent will further improve the prospect for the development and deepening of value chains and progression 'up' the value chain.

⁵ Note that some data is missing from the aggregates drawn on here, for example that for Central African countries.

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