tralac Annual Conference 2022

20 Years

African Value Chains and the Visualisation of the Agricultural VC

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[1]. The broad sectors included in their list were agricultural/agro-processing, textiles and leather, automotive, pharmaceuticals, mobile financial services, and cultural industries.

'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, 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 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.

[1] AfCFTA Secretariat, 2021. *Which value chains?* The Futures Report 2021

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

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, 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-rich[2] 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 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 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

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

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.

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 exports more than four times the value of intermediate agricultural production than do African countries, from value originally generated in Africa. This means developed countries beneficiate 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.

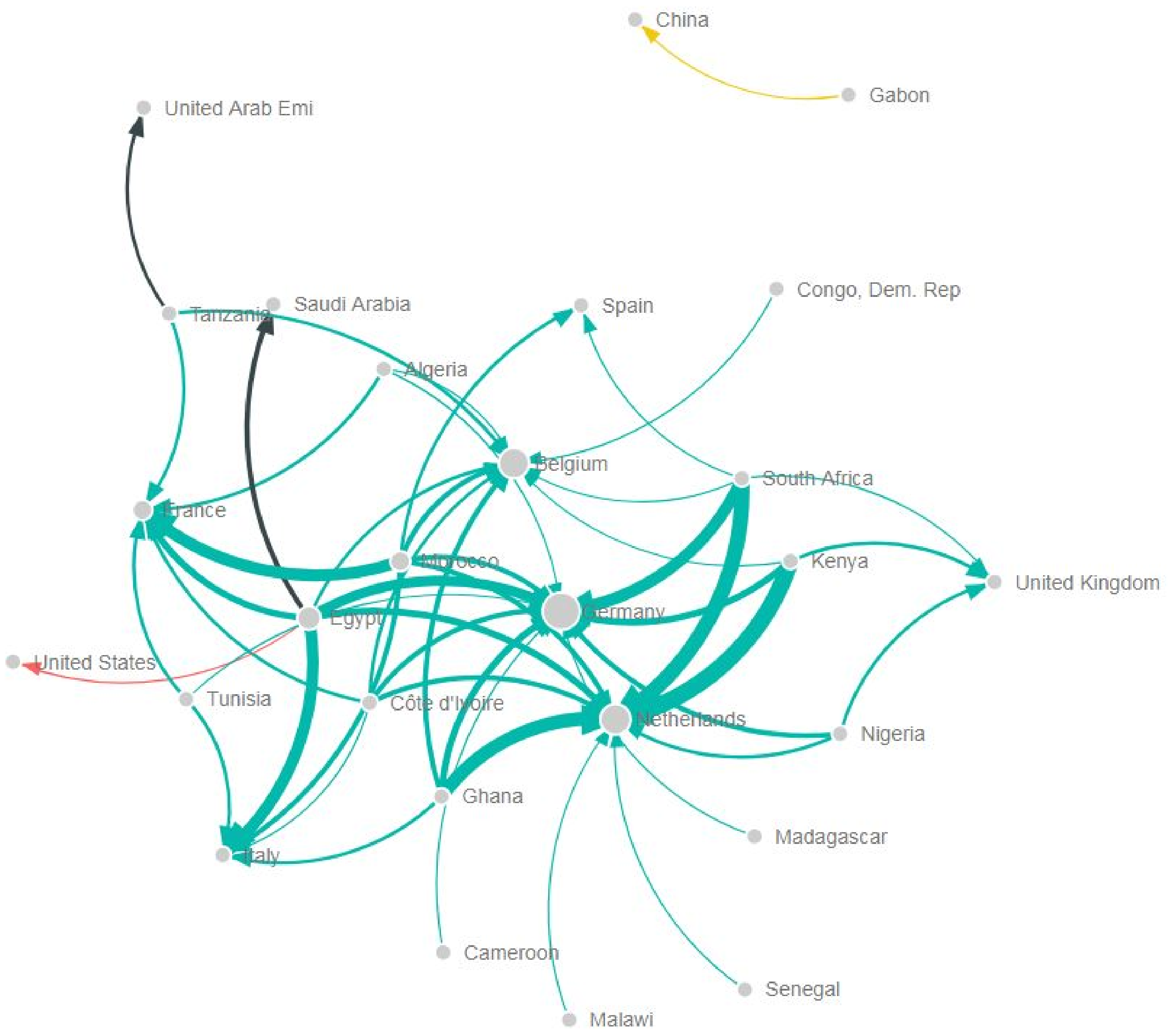
Table 2: Intermediate agricultural production exported by region, from African-originating value (2017, USDm)

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-Eora GVC database (https://worldmrio.com/unctadgvc/)

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.

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

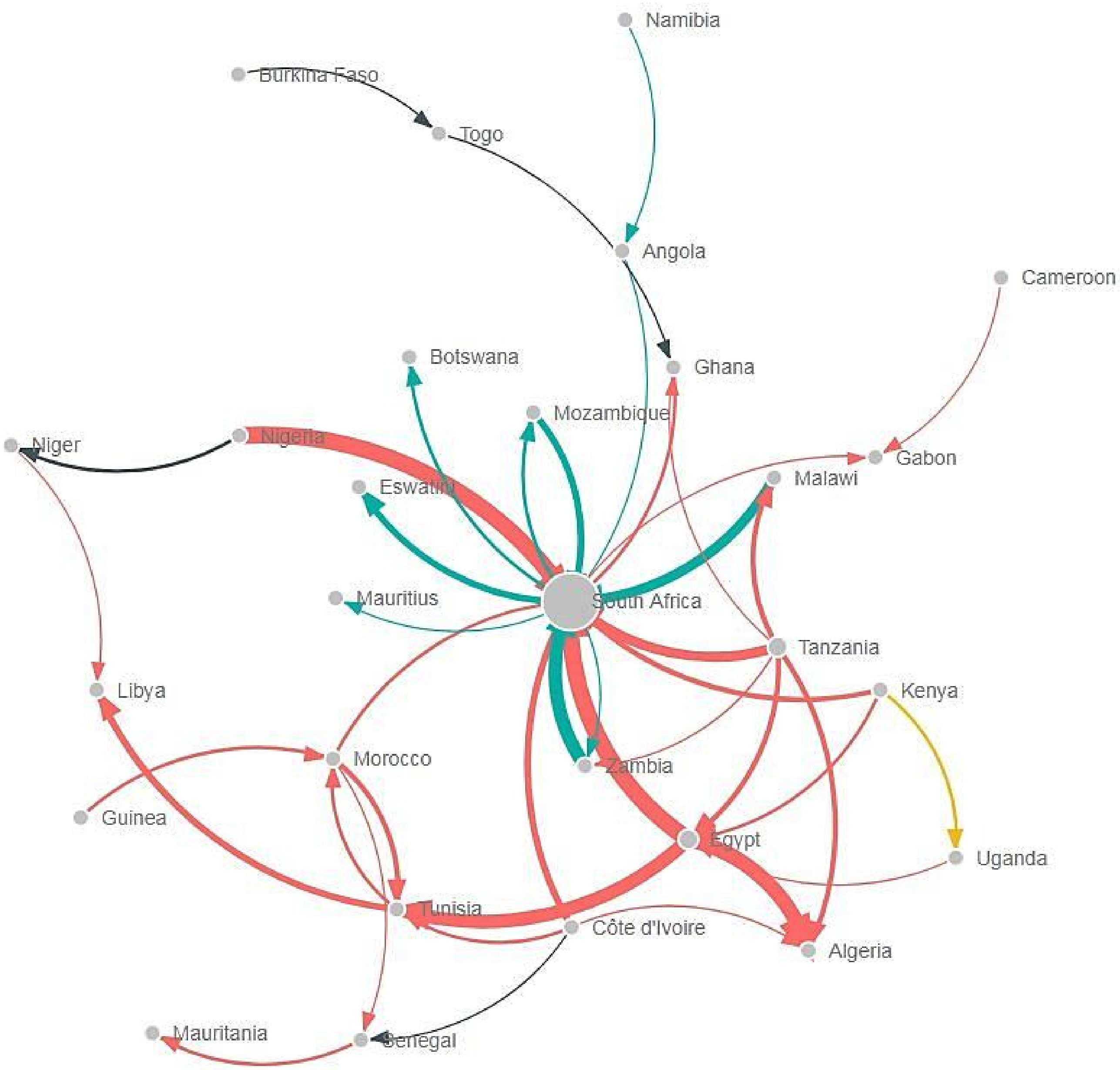


Source: Author's construction based on UNCTAD-Eora GVC database (https://worldmrio.com/unctadgvc/)

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.

The first figure shows clearly 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-Eora GVC database (https://worldmrio.com/unctadgvc/)

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.

These value flow figures are an important data tool in addition to the analysis of GVC exports and GVC participation, with value for policy formulation. For example, AfCFTA policymakers 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.

- - -

tralac gratefully acknowledges the support of its Development Partners