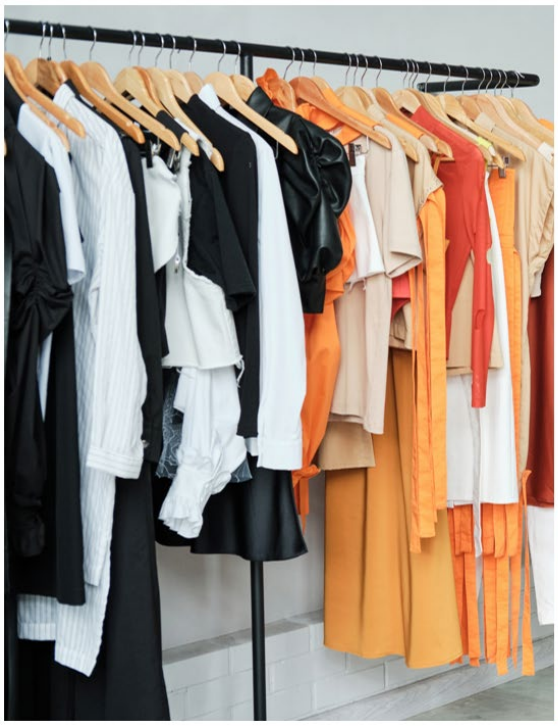
Intra-African value chains: Opportunities and constraints for Tunisian companies



International Trade Centre

TUNISIA EXPORT CEPEX

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Introduction

The African Continental Free Trade Area (AfCFTA) opens up new trade opportunities within a liberalized market encompassing 54 countries and 1.5 billion consumers. In this context, this study identifies opportunities for the strengthening and development of intra-African value chains that could emerge for Tunisia thanks to the elimination of tariffs and the reduction of other frictions or barriers to trade under the AfCFTA.

This report is organized as follows. The first part gives an overview of Tunisia's trade, particularly its commercial relations in Africa. The second part analyzes opportunities for integration into regional value chains with other African countries. These opportunities are identified using a methodology developed by the International Trade Centre (ITC) for this purpose, which is explained in detail at the beginning of the chapter. The third section presents a diagnosis identifying opportunities and constraints in five high-potential value chains: automobiles and trucks, cosmetics, leather footwear and leather products, fishery products and cotton clothing. These value chains were selected by the Ministry of Trade and Export Development from those identified by the quantitative analysis, to reflect Tunisia's trade policy priorities.

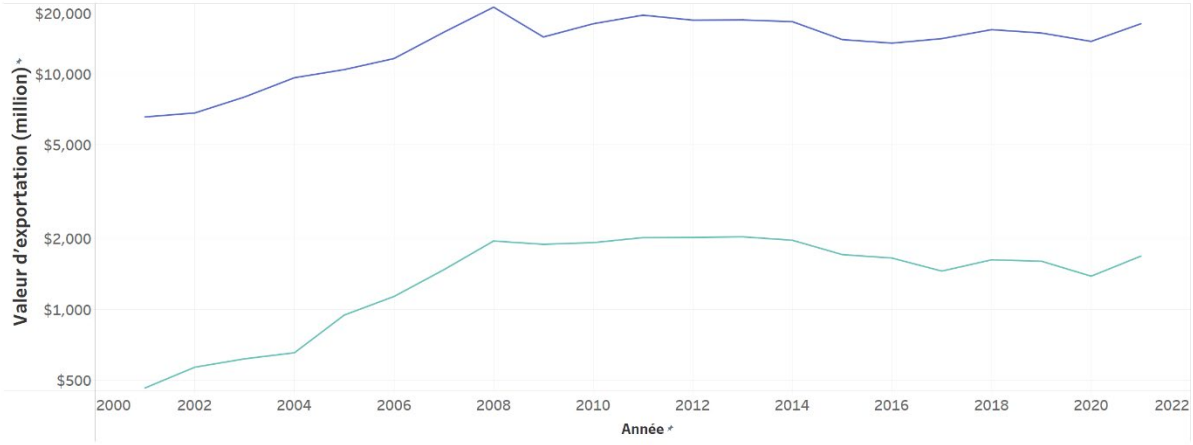
Overview of Tunisian trade

Intra- and extra-regional trade

Tunisia's exports to Africa and the rest of the world have followed a similar trend over the years. Between 2000 and 2008, strong growth was observed. Exports then stagnated for six years, before gradually declining. It can be observed that during the period of stagnation, between 2008 and 2014, exports to its partners in Africa were somewhat more resilient than those to the world.

Since 2000, exports to our partners in Africa have more than tripled, rising from $460 million to $1.6 billion in 2021. Exports to the rest of the world have more than doubled, reaching $16 billion in 2021.

Figure 1: Tunisia's annual exports to Africa and the world (2000-2021)

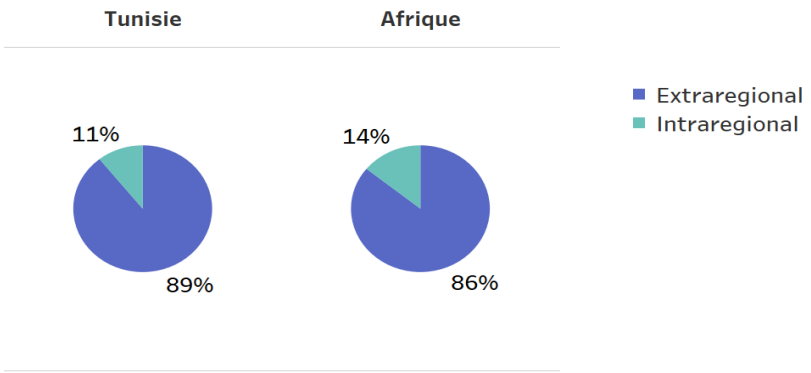


Source: ITC team calculations based on Trade Map data reported by Tunisia.

11% of Tunisia's exports go to Africa and 89% to the rest of the world. On a continental level, the share of intra-African trade is slightly higher, at 14% of African exports. This may seem low in comparison with Europe, for example, where 33% of exports are intra-continental. However, the low level of intra-African trade can be partly explained by the fact that Africa is not a major importer. It accounts for just 3% of world imports. When market size is taken into account, Africa's intra-regional exports are comparable with those of other continents.[1] Similarly, Africa remains a relatively important destination for Tunisian exports in relation to the size of this market.

[1] ITC, UNCTAD (2021*). Unlocking Regional Trade Opportunities in Africa for a more Sustainable and Inclusive Future.* Available at: https://umbraco.exportpotential.intracen.org/media/1255/regionaltradeafrica_20211206.pdf.

Figure 2: Intra-regional trade - Exports from Tunisia and Africa[2]

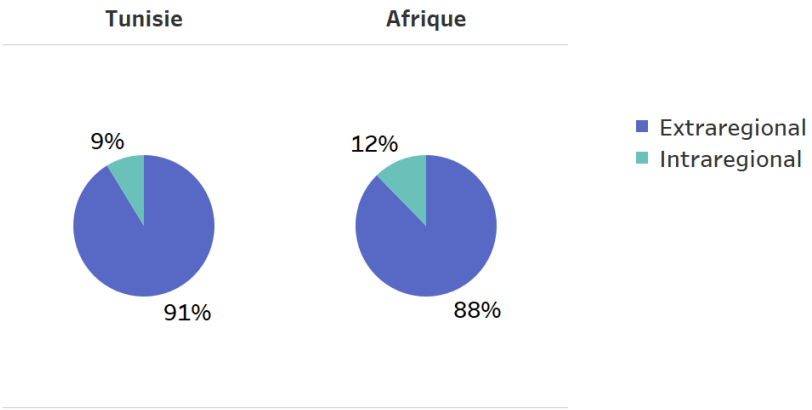


Source: ITC team calculations based on Trade Map data.

The share of Tunisian imports from Africa is slightly smaller. In fact, of Tunisia's $19 billion in imports, only $1.7 comes from Africa, corresponding to around 9%. Tunisia's trade balance with Africa is slightly negative at around $1 million, or 2.6% of total trade with the continent. Intra-African imports account for 12% of the continent's total imports.

Overall, Africa is a significant source of imports and export market for Tunisia, and weighs relatively more in Tunisia's trade relations than in world trade. However, Tunisia is slightly less interconnected with other African countries than the continent average. This is also the case for the share of products that can be used as inputs in value chains that are imported from the continent: it represents 15% of African input imports, compared with 11% of Tunisian input imports. However, this share varies significantly between different value chains, as will be detailed in the second part of this study.

Figure 3: Intra-regional trade - Imports from Tunisia and Africa



Source: ITC team calculations based on Trade Map data.

[2] The trade data used for Figures 2 to 8 are weighted averages of the years 2016-2020, giving greater weight to more recent years. The underlying trade data, sourced from ITC Trade Map, has undergone extensive processing, including the use of direct and mirror data, to ensure reliability.

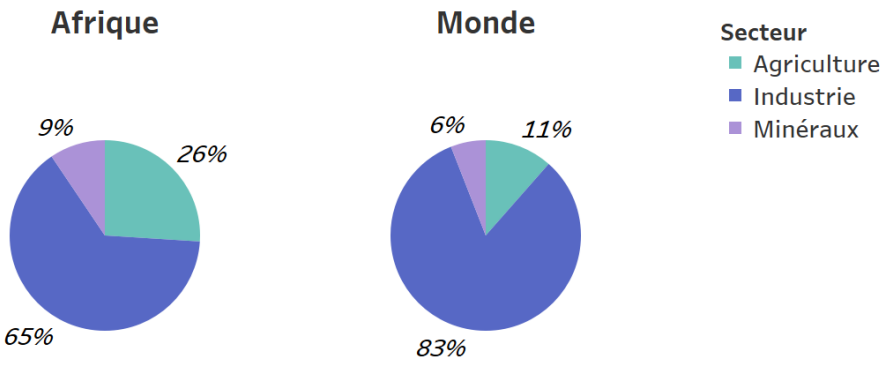
Sectors, products and degree of processing

The breakdown of exports by sector shows that industry accounts for the lion's share of Tunisia's exports to Africa and the rest of the world. However, their percentages differ. 83% of Tunisian exports worldwide come from the industrial sector, compared with 65% for exports to Africa.

In second place are agricultural products. A quarter of Tunisia's exports to Africa come from this sector. It should be noted that a higher proportion of agricultural products are exported to Africa than to the rest of the world. The need for short transport routes for perishable goods could be one of the factors explaining this trend.

Finally, the minerals sector is the least exported, though with a more pronounced export flow to Africa as well.

Figure 4: Tunisian exports by sector

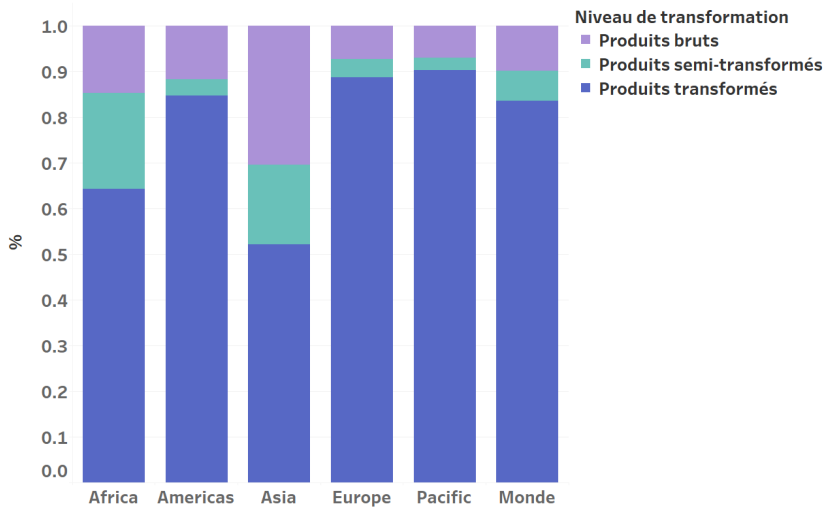


Source: ITC team calculations based on Trade Map data.

These observations are confirmed by analysis according to the level of processing of exported products. Overall, Tunisia exports less processed products to Africa. This contrasts with the overall situation on the African continent, which generally exports a higher proportion of processed products to its own regions than to the rest of the world.[3] Thus, Tunisian exports to most regions of the world are largely dominated by processed products, which account for 83% of its exports. The only exception is exports to Asia, where the share of processed products is 52%, and the share of raw products is even higher than in exports to Africa.

[3] ITC, UNCTAD (2021*). Unlocking Regional Trade Opportunities in Africa for a more Sustainable and Inclusive Future.* Available at: https://umbraco.exportpotential.intracen.org/media/1255/regionaltradeafrica_20211206.pdf .

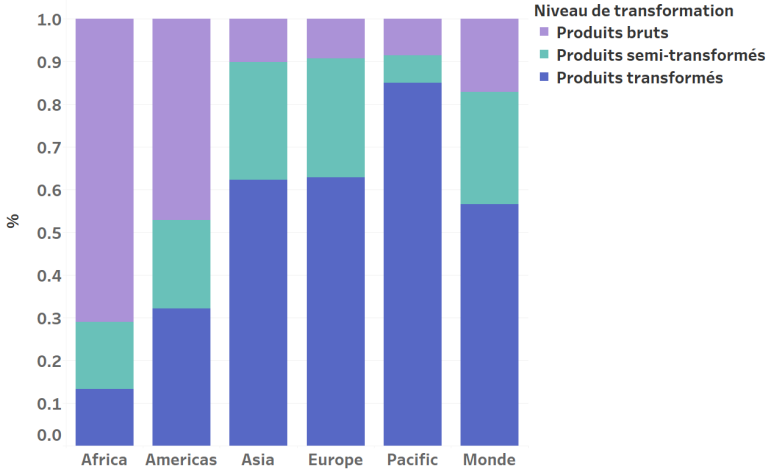
Figure 5: Level of processing of Tunisian exports by region



Source: ITC team calculations based on Trade Map data.

When we look at Tunisian imports by level of processing, we see that on average Tunisia imports products that are less processed than those it exports, with the exception of imports from Asia.

Figure 6: Level of processing of Tunisian imports by region



Source: ITC team calculations based on Trade Map data.

This result can be explained by Tunisia's integration into global value chains. Indeed, regional trade agreements with the European Union and other structural reforms have enabled Tunisia to attract foreign investment and build an industrial sector attractive to exporters. As a result, a large proportion of foreign investors import their raw materials into Tunisia for further processing and re-export. Tunisia could therefore be described as a processing or assembly center, specializing in the final stage of production.[4] Indeed, as will be shown below, the products most exported by Tunisia are those considered final, such as sets of wiring, pants, oil or aircraft parts.

[4] Sammoud and Dhaoui (2019). *The Tunisian Integration into Global Value Chains.* EMNES Working Paper No. 21. Available at: https://emnes.org/publication/the-tunisian-integration-into-global-value-chains-the-role-of-offshore-regime-fdi/

Box 1: Textile and clothing trade and value chains

Africa imports 83% of its clothing from Asia, and only 9% from Africa. Tunisia, on the other hand, supplies only 0.2% of Africa's clothing imports. Tunisia's untapped export potential in clothing and textile products to Africa amounts to $236 million.[5] It could be worthwhile for Tunisia to diversify its clothing export markets, particularly towards Africa.

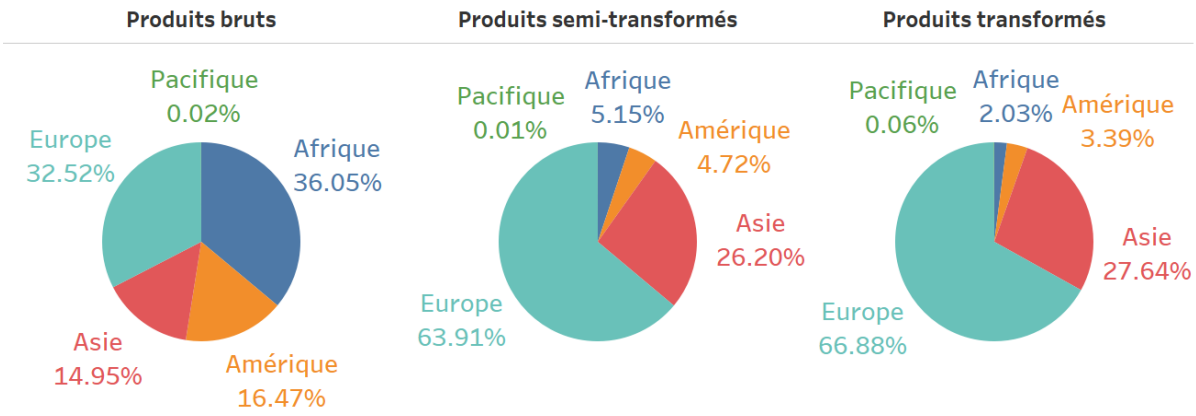
At present, Tunisia sends 91% of its exports to Europe. This is due to the double transformation condition of Europe's rules of origin.[6] Tunisia must use textiles and fabrics from the Euromed region to benefit from duty-free access to the European market. As a result, the majority of fabrics are sent from the EU to Tunisia to be transformed and returned. This makes Tunisia a center for the final stage of product processing, explaining the high rate of imports and exports of processed products to and from Europe. However, some African countries are also part of the Euromed region, namely Egypt, Mauritania, Morocco and Tunisia. The advantage is that these countries can also cumulate their origin in relation to Europe. This means that products originating in country A can be processed and added to products originating in country B. The final product will be considered as originating in country B. As a result, Tunisia could source part of its fabrics from Africa and continue to export finished products to Europe, while benefiting from preferential customs duties. In addition, Tunisia, Morocco and Egypt are part of the Agadir Free Trade Agreement, which guarantees low customs duties for input suppliers too. Tunisia currently imports 70% of its fabrics from the EU, compared with just 3% from Africa and 9% from China. In Africa, Egypt is considered a potential fabric supplier for Tunisia in 3 garment value chains. In fact, Egypt has exported an average of $8 billion worth of fabrics over the past five years.

In order to tap other sources of textile supply in Africa, Tunisia should diversify its exports outside Europe and forge links with potential new partners in Africa and elsewhere.[7]

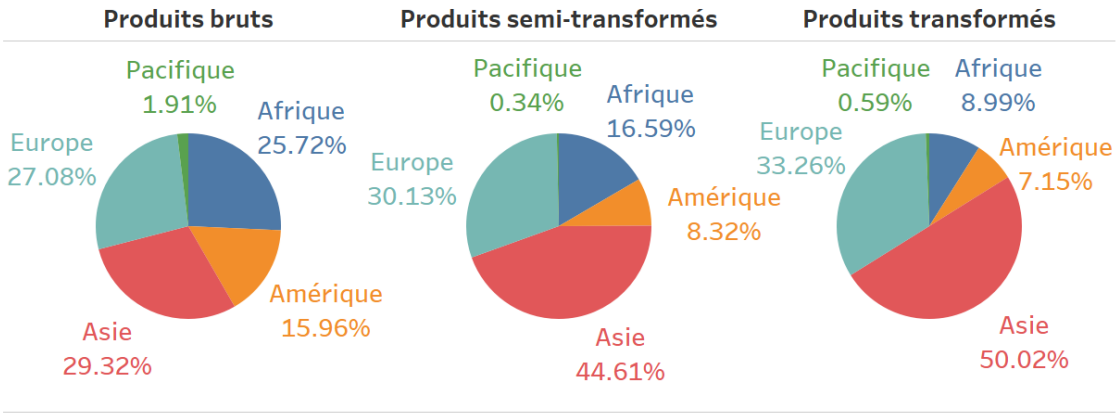
[5] Export Potential Map (2022).
[6] MacMap (2022).
[7] Grumiller et al (2018). *Strategies for sustainable upgrading in global value chains: The Tunisian textile and apparel sector.* ÖFSE Policy Note, No 27/2018. Available at: https://www.oefse.at/fileadmin/content/Downloads/Publikationen/Policynote/PN27_Tunisian-textile-apparel-sector.pdf.

Figure 7: Import regions by processing level

Imports from Tunisia



Imports from Africa



Source: ITC team calculations based on Trade Map data.

The two charts below show the products in chapter[8] of the Harmonized Commodity Description and Coding System (HS) that account for more than 5% of Tunisia's exports.

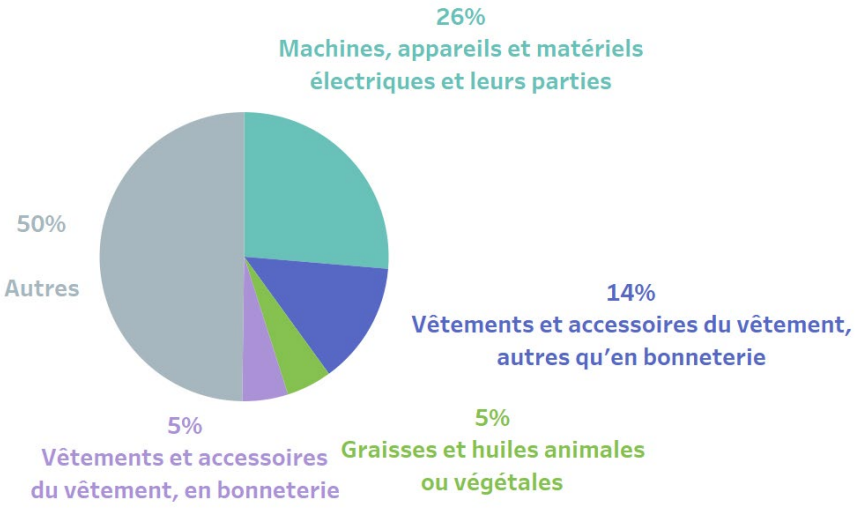
Three types of product together account for half of Tunisia's exports. The first is machinery, appliances and electrical equipment. These products make up a quarter of Tunisia's exports to the world. Next come clothing and accessories. First, "other than knitwear", with 14% of exports, then "knitwear" with 5% of exports. Finally, in third place are animal and vegetable fats and oils, which are also important products in Tunisian exports to Africa.

Despite the apparent concentration in the HS chapter, Tunisia is one of the African countries with the most diversified exports to the world, on a par with South Africa and Kenya according to the Herfindahl-Hirschmann index. This is thanks to the diversity of products exported, of which the different chapters are composed. In terms of HS position (four digits), the most important product

[8] The Harmonized System is a nomenclature structure comprising two-digit chapters subdivided into four-digit headings and five- and six-digit subheadings.

(wires and cables for electrical purposes) accounts for 13% of total exports. The other most exported products each account for 5% or less of total exports.

Figure 7: Tunisia's exports to the world by Harmonized System (HS) chapter



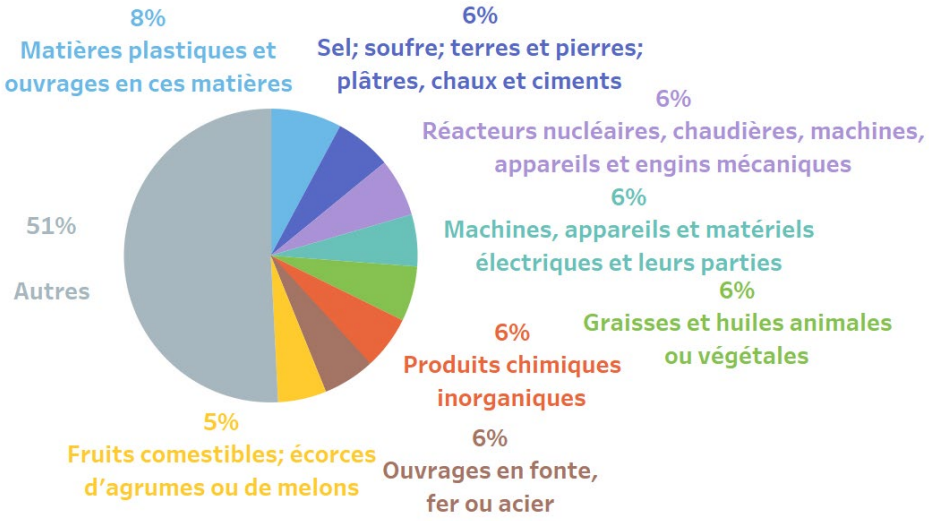
Source: ITC team calculations based on Trade Map data.

Tunisia's exports to Africa are even more diversified than those to the rest of the world. In terms of HS position (four digits), no product exceeds 5% of total exports. The Herfindahl-Hirschmann index confirms this: on the African continent, only Kenya occupies a higher position in the ranking.

The leading Tunisian export to Africa is plastic and plastic products. Next come materials such as salt, sulfur, earth, stone, plaster, lime and cement, which account for 7% of exports to Africa. Five products share third place, two of which are also among the world's most exported products. These are electrical machinery and animal and vegetable fats and oils, which account for as many of the top exports to Africa as to the rest of the world. Articles made from metals such as cast iron and steel account for 6% of exports. The same percentage is observed for inorganic chemicals and nuclear reactors, boilers, machinery and mechanical appliances. Finally, edible fruits such as citrus peel and melons are the only food industry products to top the ranking, accounting for 5% of exports.

What emerges from this initial analysis is the prominence of industrial goods, such as electrical machinery, lime and cement. Next, in the agri-food industry, animal and vegetable oils and edible fruits stand out. Finally, clothing is exported mainly outside Africa.

Figure 8: Tunisia's exports to Africa by Harmonized System (HS) chapter



Source: ITC team calculations based on Trade Map data.

Intra-African value chains and opportunities

Methodology

African value chains presenting development opportunities for Tunisia are identified using a new methodology developed by ITC. As a first step, over 400 global value chains are constructed. Each is made up of an output and one or more inputs that contribute in a certain proportion to the production of the output. Trade data are then used to identify the value chains presenting development opportunities for a specific country or region. These two steps are explained in detail below.

Building global value chains

The ITC's approach to building global value chains, which lays the foundations for identifying both feasible and promising value chains, begins by categorizing the 5,353 products in the HS classification at subheading level. They are defined as finished products (outputs) if they are processed and non-intermediate goods, and as inputs in all other cases. Information on the level of processing comes from the WTO's classification of products by level of processing. Data on intermediate goods are taken from the OECD's end-use classification.

Sector-level input-output tables for the USA, Mexico and the Philippines provide the starting point for identifying the links between finished products (outputs) and inputs.[9] Firstly, the tables are expanded at product level. Figure 2 illustrates how this expansion works with four hypothetical sectors, two input sectors (I1 and I2), two finished product sectors (O1 and O2) and their corresponding products. The first step in the expansion is to assign the technical coefficients of their respective sectors to the finished products. The technical coefficient represents the input requirement per unit of output. The second expansion step repeats this procedure for the inputs.[10] At this stage, all inputs from one sector are considered as potential inputs for all finished products in the sector to which they contribute. For example, frozen beef and pork carcasses are in the same finished product sector, while beef and pork animals are in the same input sector. Indeed, matrix expansion alone would imply that pigs are considered an input for frozen beef carcasses.

Secondly, erroneous links between finished products and inputs are removed when a correct link is identified using one of three approaches: word matching in product descriptions, information on links between finished products and inputs from the rules of origin of over 70 trade agreements and non-preferential regimes, and manual corrections. In the example cited above, the correspondence between the words "bovine" and "bovine" animals allows us to conclude that bovine animals are used to produce bovine carcasses (whereas porcine animals are not).

Thirdly, the technical coefficients are reallocated to the inputs corresponding to each output. "Bovine" therefore receives the full technical coefficient for frozen bovine carcasses, and "porcine" obtains the full technical coefficient for frozen porcine carcasses. This redistribution provides a more accurate

[9] The input-output tables for these three countries are among the most detailed available, and therefore enable the production process to be represented at a more disaggregated level than would be possible with the table for Tunisia. Combining the three makes it possible to bridge differences in economic structure and obtain a more global representation of input-output relations. The analysis assumes that the proportions of inputs required for production in Tunisia are close to those of the average of these three countries, which is justified by the fact that it only takes into account goods (and not other factors of production such as capital or labor).

[10] Note that technical coefficients at sub-sector level are not precisely represented in Figure 4, as their reaggregation would not give the same result as the original sector technical coefficient.

representation of the share of each input in the production of the output. Finally, the technical coefficients of the three input-output tables are aggregated and weighted by the output's market share in each country.

Figure 1: Expansion of input-output tables to products based on the Harmonized System

	O1	O2
I1	c_{s11}	c_{s12}
I2	c_{s21}	c_{s22}

→

	O1			O2	
	O11	O12	O13	O21	O22
I1	c_{s11}	c_{s11}	c_{s11}	c_{s12}	c_{s12}
I2	c_{s21}	c_{s21}	c_{s21}	c_{s22}	c_{s22}

→

		O1			O2	
		O11	O12	O13	O21	O22
I1	I11	c_{s11}	c_{s11}	c_{s11}	c_{s12}	c_{s12}
	I12	c_{s11}	c_{s11}	c_{s11}	c_{s12}	c_{s12}
I2	I21	c_{s21}	c_{s21}	c_{s21}	c_{s22}	c_{s22}
	I22	c_{s21}	c_{s21}	c_{s21}	c_{s22}	c_{s22}
	I23	c_{s21}	c_{s21}	c_{s21}	c_{s22}	c_{s22}

Note: the I1 input sector corresponds to products I11 and I12, while the I2 input sector corresponds to products I21, I22 and I23. For finished products, O1 corresponds to products O11, O12 and O13, while O2 corresponds to products O21 and O22.

Similar finished products are then aggregated to create a single value chain, again using matching word techniques, HS heading level and additional information including, among others, the World Customs Organization (WCO) classification of medical products. In the case of the garment sector, finished products and inputs are grouped into value chains according to their main material: cotton garments, wool garments, etc...

The result is over 400 global value chains identified with all finished products, their corresponding inputs, and technical coefficients that capture the relative importance of each input in the production of each output.

It should be stressed that this methodology identifies immediate inputs, i.e. only those used in the last stage of production of the output in question. For example, in the case of cotton garments, immediate inputs include cotton fabric and yarn, but not raw cotton.

Selection of promising African value chains for Tunisia

Among the global value chains identified, the methodology selects those that are promising for the integration of regional value chains between Tunisia and other African countries. It identifies the strengths of Tunisia and potential partners in Africa, using international trade data linked to the value chains defined above.

Value chains for products

A value chain is considered feasible if Tunisia and its potential partners in Africa together have the capacity to produce a significant proportion of the necessary inputs as well as the output. The analysis focuses on potential synergies by identifying situations in which one country can produce the output of a value chain and its partner can contribute one or more inputs that the producer of the finished product lacks.

Output

To determine whether a country can produce the output of a value chain, two criteria are considered:

- Comparative advantage revealed
- Export potential

Revealed comparative advantage (RCA) compares the proportion of a product in a country's exports with the proportion of the same product in world exports. If a product represents a larger share of a country's exports than of world exports, then the measure takes on a value greater than 1, and the country is said to have a revealed comparative advantage in the export of that product. To ensure the consistency of potential supply, the RCA is calculated here using a weighted average of exports between 2016 and 2020[11] , and retains only those products that have been exported continuously over the last three years. If Tunisia or one of its partners has a comparative advantage greater than 1 in a product, then they will be considered as suppliers of that output.

The export potential indicator identifies export potential values, for each exporter of a given product or market, based on an economic model that combines the exporter's supply, the target market's demand, market access conditions and bilateral relations between the two countries. It is considered that a value chain can reach a significant economic size, if a country (in this case, Tunisia or its partner) has a global export potential of at least $10 million for an output. In this case, this country will be considered as the supplier of the output.

In short, a country is considered an output supplier if it has either a comparative advantage greater than 1, or an export potential greater than $10 million for that output.

Inputs

Balance of trade and **export potential** are used to determine whether a country can supply one or more inputs to a value chain. The trade balance is the difference between a country's exports and its imports. A positive trade balance implies that a country's exports of a good are higher than its imports. To be considered an input supplier, Tunisia or its partner must have a positive trade balance of at least 20% of its total trade in the same product. In addition, Tunisia or its partner must have an export potential of more than$ 500,000 of the distinct inputs it supplies.

Synergies between partners

Synergies exist when each country in a pair can provide the other with something it lacks in a specific value chain. This is the case when

a) One country is a supplier of finished products. The other country cannot supply the output, but it can supply one or more inputs that the output supplier cannot supply itself and which represent at least 20% of the total inputs required, or
b) Both countries are suppliers of finished products, and each can provide inputs that the other does not possess, representing at least 20% of the required inputs.

This analysis therefore focuses on situations where synergies exist, and where regional value chains are not only feasible but also enable countries to produce goods that they could not produce themselves.

For example, Tunisia has a comparative advantage in the export of cotton garments, with an export potential in excess of $10 million. However, it does not produce the main inputs for this value chain. Burkina Faso, Mozambique and Zimbabwe have a positive trade balance of over 20% for cotton yarn, one of the main inputs for cotton garments, but they have no comparative advantage or significant export potential for the final product. Consequently, there synergies between Tunisia and these countries in the production of cotton garments that the partners can exploit in an African value chain.

[11] Weighting gives greater weight to more recent data.

Value chains for new products

In addition to value chains based on products that Tunisia already exports with a comparative advantage or in large quantities, the country can also develop new value chains based on inputs available in Africa.

To identify this type of opportunity, the criteria for outputs are modified: Tunisia is considered capable of developing a comparative advantage in finished products if the poorest country with a comparative advantage in exporting these goods has a GDP per capita lower than that which Tunisia is expected to achieve within 5 years.

For inputs, the criteria remain unchanged: a partner must have a positive trade balance of at least 20% in order to be considered as an input supplier, and must have an export potential of more than$ 500,000 of the inputs it supplies. Once again, the analysis focuses on relationships with synergies, identifying relationships in which Tunisia can develop a comparative advantage in output and the partner can contribute inputs that Tunisia does not have.

Value chains are retained if, in addition :

- They are not already part of established product value chains
- They are not in the food industry [12]
- The partner who could supply the inputs has not already developed a comparative advantage in exporting the output.
- African countries can contribute at least 30% of inputs (according to the criteria specified above)

Value chain rankings

Established products

To to rank the value chains, a composite indicator was constructed using six quantitative variables comprising different aspects to be taken into account for value chain development, such as demand, supply or ease of trade. A rank is assigned to each variable, then the ranks are added together to create the composite indicator. The variables used are as follows:

- Tunisia's projected import demand[13] for output
- Africa's projected import demand for output
- The comparative advantage of the countries supplying the selected inputs
- The comparative advantage of countries supplying the selected outputs
- Input tariff reductions between input suppliers and output suppliers possible under the African Continental Free Trade Area (AfCFTA)[14]
- The world's export potential in output

[12] For agri-food products, the GDP per capita criterion is less suitable for measuring the possibility of developing a comparative advantage, as comparative advantage in these products more often depends on locally available inputs and, consequently, climatic conditions.

[13] Projected import demand reflects a country's/region's expected imports of the output over the next five years, taking into current imports, expected population and GDP per capita growth, and tariff conditions.

[14] The expected input tariff reductions under FTAA between input suppliers and output suppliers have been calculated assuming that, under FTAA, tariffs between African countries would be zero. The difference between expected tariffs under FTAA and current tariffs per input is then aggregated by group of input and output suppliers weighted by their export potential under FTAA. Finally, inputs are aggregated at the output level using standardized technical coefficients.

New products

In the case of new products, value chains are ranked using the same composite indicator method. The variables making up the indicator are identical, with the exception of two, which are not taken into consideration: the comparative advantage of the countries supplying the selected inputs, and the comparative advantage of the countries supplying the selected outputs. Indeed, the current comparative advantage of the country and its partners is not a determining criterion of their ability to develop a value chain in the future. These two variables are therefore not considered in the ranking of value chains for new products.

Results

The analysis suggests 28 established product value chains in which Tunisia could collaborate with African partners, and 12 new product value chains that Tunisia could develop with them.

Value chains for established products

The 28 established product value chains are present in 16 different sub-sectors, the most important of which is apparel, with 5 value chains. This is followed by the food and paper sub-sectors, with 3 and 2 value chains respectively. In 21 of these value chains, Tunisia would produce the outputs, while in the other 7, it would supply inputs to the production of another African country. The inputs that Tunisia could supply in these value chains are very varied. They include agricultural and piscicultural products such as grapes and shrimps, as well as manufactured goods such as body parts and inorganic chemicals. The same applies to the inputs it should source from its African partners, ranging from milk and sugar to electrical appliances.

In half of these value chains, there is only one promising collaboration link with an African partner, while others offer the possibility of creating synergies with up to 11 African countries. This is particularly true of value chains linked to leather (footwear and other products), an input that many African countries could supply. The partner with the greatest number of value chain integration opportunities is South Africa (14 value chains), followed by Zimbabwe (8), Egypt (7) and Uganda (7).

However, the links created with the various partners extend across all regions of Africa. The region with the highest number of value chains is Southern Africa (20), followed by East Africa (13). North Africa is in third place, with 9 value chains. Finally, West Africa is in penultimate position (7), ahead of Central Africa (1).

Synergies between Tunisia and its immediate neighbors are relatively limited. It can export two finished products, footwear and leather goods, to which Algeria and Libya can contribute hides and skins.[15] With Morocco, promising links exist only in one value chain: prepared or preserved shrimps and gambas, products in which Morocco has a comparative advantage and to which Tunisia could contribute with inputs (fresh or frozen shrimps and gambas). This is partly explained by the similarity between Tunisian and Moroccan exports. Indeed, Morocco is the African country with the most similar exports to Tunisia, with a similarity index of 39.[16] Among North African countries, Egypt is the partner with which Tunisia has the most opportunities for collaboration (7 value chains), despite relatively

[15] These two countries may contribute to other value chains as well, however these value chains were not included in the analysis because the percentage of inputs contributed by them would be below 20%.

[16] The similarity index compares the export composition of two countries, using the share of a product in the country's exports. If the two countries have an identical distribution of exported products, the index will take a value of 100 (J. Finger & M. Kreinin (1979). *A Measure of "Export Similarity" and Its Possible Uses.* The Economic Journal. Vol. 89, no. 356. Available at: https://www.jstor.org/stable/2231506?seq=1 (06/06/2022))

similar exports (index of 24). Tunisia must therefore look to other regions of Africa to fully exploit the opportunities offered by the ZECLAf.

Among these 28 value chains, those with the greatest import demand in the world, Africa and Tunisia are trucks, medical/surgical equipment and consumables, and cotton garments. The value chains with the greatest possible tariff reductions under the FTAA (all above 20%) are fruit juices, notebooks and other stationery, hair preparations, fish preparations and bread and pastries. It should be noted that, for value chains for which Tunisia supplies the finished product, customs duties on input imports will depend exclusively on Tunisian tariff concessions under the FTAA.

All in all, the untapped export potential in the 21 African value chains whose outputs Tunisia produces amounts to over $1.5 billion, 16% of which ($238 million) in Africa. More than a third of the untapped export potential ($547 million) is found in cotton garments, and almost as much in footwear and other leather products ($423 million). In medical/surgical equipment and consumables, another important product, untapped export potential amounts to $136 million. In a recent analysis, the ITC and the International Labour Organization (ILO) calculated the number of additional jobs that Tunisia could create if it fully realized its export potential.[17] Among the African value chains in which Tunisia produces outputs[18] , job creation if Tunisia's export potential were fully realized would be by far greatest in the cotton clothing sector (38,200), followed by footwear with rubber/plastic/leather soles and leather uppers (21,500). In third place would be medical/surgical equipment and consumables (9,400).

The share of inputs that Tunisia currently imports from Africa varies significantly between the value chains whose output it produces. With a simple average of 3%, it is highest in certain agri-food value chains, such as fish preparations or preserves, sauce preparations & prepared sauces, with 20% to 21% respectively. In manufactured products, however, it is 5% or less. For value chains to which Tunisia would supply inputs, the share of inputs imported from Africa by output suppliers is 15% on average (mainly explained by the 63% of inputs imported by Kenya in the production of fruit and vegetable juices, the highest value among the value chains studied).

Table 1: Overview of established product value chains

Value chain	Rank	Tunisia supplies the finished product	Partner countries	Main inputs supplied	Tariff reductions possible under the ZLECAf	Projected African demand for finished products ($m)	Share of inputs sourced in Africa by output
Trucks	1	No	South Africa	Car body parts, car seats	-18%	8'319	3%
Filtering machines and equipment	2	Yes	South Africa	Steel sections	-5%	1'889	2%
Medical/surgical equipment and consumables	3	Yes	South Africa	Base and precious metals	-2%	3'446	1%
Cotton apparel	4	Yes	Mozambique, Zimbabwe	Cotton thread	-10%	7'734	1%
Centrifuges including centrifugal dryers	5	Yes	Lesotho	Electrical appliances	-19%	1'572	1%

[17] Details of the methodology employed are described in ITC (2018). *Turning export potential into employment: A case study for Jordan*. ITC, Geneva. Available at: https://umbraco.exportpotential.intracen.org/media/1127/turning-export-potential-into-employment_jordan_low-res.pdf .

[18] For value chains in which Tunisia would supply inputs, it is not possible to calculate a comparable number, as this depends on the share of inputs that producers of the final product would source from Tunisia.

Bread, pastries	6	No	Ethiopia	Cereals, oatmeal, fats	-21%	1'541	24%
Shoes with rubber/plastic/leather soles and leather uppers	7	Yes	Egypt, Kenya, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe	Goat/pig/reptile skins, prepared leather from cattle/equine animals	-18%	1'347	1%
Leather goods (reconstituted)	8	Yes	Egypt, Ethiopia, Kenya, Mali, Namibia, Nigeria, Senegal, South Africa, Sudan, Uganda, Zimbabwe	Goat/pig/reptile skins, prepared leather from cattle/equine animals	-20%	331	1%
Household/sanitary paper	8	Yes	South Africa, Uganda	Wood pulp	-16%	2'066	4%
Textile products	9	Yes	Lesotho, Mozambique, Zimbabwe	Cotton thread	-10%	1'337	1%
Preparations for use on hair	10	Yes	South Africa, Kenya	Packaging, hydrocarbons	-22%	844	3%
Notebooks, diaries, binders & similar stationery items	11	Yes	Uganda	Paper labels	-24%	507	2%
Clothing made of wool/fine animal hair	12	Yes	Mauritius, South Africa	Wool, wool yarn	-2%	317	1%
Sauce mixes & prepared sauces	13	Yes	Uganda, Zimbabwe, Egypt, Eswatini	Milk, sugar	-17%	1'029	20%
Tanks, cisterns, iron or steel containers	14	Yes	South Africa	Stainless steel flat-rolled products	-11%	1'303	2%
Soap, incl. medical products	14	No	Ivory Coast, Egypt, Kenya, South Africa, Tanzania, Uganda	Inorganic chemicals	-1%	1'698	6%
Prepared or preserved fish, including caviar and roe	15	Yes	Gambia, Guinea, Mauritania, Namibia, Nigeria, Senegal, South Africa, Sudan, Uganda, Zimbabwe	Fish	-22%	247	21%
Leather shoes, soles and uppers	16	Yes	Egypt, Ethiopia, Kenya, Mali, Namibia, Nigeria, Senegal, South Africa, Sudan, Uganda, Zimbabwe	Goat/pig/reptile skins, prepared leather from cattle/equine animals	-20%	201	1%
Travel products, bags and similar containers with leather outer surfaces	16	Yes	Tanzania	Cotton fabrics	-15%	263	1%
Clothing accessories, knitted/crocheted or braided	17	Yes	Lesotho, Mozambique, Zimbabwe	Cotton thread	-10%	757	1%
Artificial fiber clothing	18	Yes	Senegal	Artificial thread	-13%	80	1%
Fruit or vegetable juice, unfermented	18	No	Kenya	Grapes	-25%	517	63%
Bottles and other glass containers	19	Yes	South Africa	Hydrocarbon	0%	779	5%
Soups & broths & their preparations	20	No	Ivory Coast, Egypt, Cameroon, Nigeria	Cereals	-13%	637	5%

Textile floor and wall coverings	21	No	Egypt	Textile rope	0%	21	0%
Cotton home accessories	22	Yes	Lesotho, Mozambique, Zimbabwe	Cotton thread	-12%	477	2%
Shrimps and prawns, prepared or preserved	23	No	Morocco	Shrimps, prawns	0%	21	1%
Silk clothing	24	Yes	South Africa	Silk thread, silk fabrics	-10%	42	0%

Value chains for new products

The 12 new product value chains are identified in 6 different sub-sectors, the most important of which are metal products (3 value chains) and machinery and electricity (3 value chains). By definition, Tunisia is the output producer in all these value chains. Various African countries provide the inputs.

Most value chains are made up of items made from metals (precious metals, base metals, steel, aluminum and others). These metals also form the basis of more complex value chains such as orthopedic appliances, converters and certain machines and tools. The inputs for these value chains would most often be supplied by South Africa, which is the country with which Tunisia has the most opportunity to cooperate in order to create value chains for new products (10).

In addition to metal-based products, opportunities exist in value chains using wood (doors, windows and other items), which Tunisia could source from many African countries.

Among these new product value chains, those with the greatest possible input tariff reductions under the FTAA are hand and power tools (11%), followed by air heaters and hot air distributors (8%). Once again, the tariffs that Tunisian producers will have to pay to import the necessary inputs will depend on Tunisia's tariff concessions under the FTAA.

The share of inputs for these value chains that Tunisia imports from Africa is currently low, with a simple average of 1.8%. It is slightly higher in inputs for wood-based products, where it exceeds 3%.

Table 2: Overview of value chains for new products

Value chain	Rank	Partner countries	Main inputs supplied	Tariff reductions possible under the ZLECAf	Projected African demand for finished products ($m)	Share of inputs sourced in Africa by Tunisia
Hand and power tools	1	South Africa	Flat-rolled products in stainless steel, ferroalloys	-11%	1'106	2%
Metalworking machinery	2	South Africa	Platinum, stainless steel flat-rolled products	-6%	710	2%
Orthopedic and other appliances	3	South Africa	Platinum, gold, silver	-2%	901	1%
Static converters	4	South Africa	Platinum, gold, silver	0%	2'038	1%
Precious metal articles and jewelry	5	South Africa	Silver, platinum, gold	-2%	1'267	0%
Doors, windows and their wooden frames	6	Angola, Benin, Cameroon, Central African Republic, Congo, Congo DRC, Ivory Coast, Egypt, Equatorial Guinea, Eswatini, Gabon, Gambia, Liberia, Mali, Mozambique,	Raw wood, kerosene, sawn wood	-4%	227	3%

		Nigeria, Sierra Leone, Tanzania				
Iron or steel baths, sinks and similar toilet furniture	7	South Africa, Zambia	Ferroalloys	-3%	287	1%
Metal rolling mills	8	South Africa	Platinum, stainless steel flat-rolled products	-6%	101	3%
Basic metal goods and jewelry	9	South Africa	Platinum, silver, gold, base metals	-8%	213	1%
Air heaters and hot air distributors	10	South Africa	Flat-rolled products in stainless steel, ferroalloys	-8%	18	2%
Wooden items	10	Angola, Cameroon, Central African Republic, Congo, Congo DRC, Equatorial Guinea, Gabon, Gambia, Guinea, Liberia, Mali, Mozambique, Nigeria, Sierra Leone, South Africa, South Sudan, Tanzania, Togo, Zambia, Zimbabwe	Rough lumber	-6%	36	3%
Aluminium sanitaryware	11	Morocco	Twisted aluminum wire	0%	8	1%

Discussion of the results

In the vast majority of established product value chains (21 out of 28), Tunisia would produce outputs with inputs from other African countries, which is in line with its position in global value chains.

Numerous opportunities developing intra-African links exist in value chains that form part of Tunisia's traditional export products. This is particularly true of textile products, which account for a large share of Tunisian exports and for which various African countries could provide inputs. Opportunities for collaboration with Egypt could prove particularly interesting, given that the main markets for Tunisian textile exports are in Europe, and that Tunisia enjoys free access as long as the textiles used originate from the Euromed region (of which Egypt is a part). Other opportunities are varied, including food products, machinery and electricity, as well as other sectors.

In addition to more traditional export sectors, there are opportunities to develop intra-African value chains for new products. Tunisia could source the inputs available in various African countries and, given its level of economic development, develop a comparative advantage in the final products. This type of opportunity exists above all in products made from various metals, available in several African countries, as well as those made from wood.

It should be stressed that these results are the product of a purely quantitative analysis that is limited to the last stage of production, i.e. only the immediate inputs as they appear in the input-output tables. The analysis cannot therefore take into account all the factors relevant to the development of value chains with Africa, which include other economic, political, social and environmental factors. For this reason, it needs to be supplemented by qualitative analyses and interviews with stakeholders, which will be the subject of the next section of this report. This section focuses on five promising value chains among those identified by the quantitative approach: cars and trucks, cosmetics, leather shoes and leather products, fish products and cotton clothing. These value chains were selected by the Ministry of Trade and Export Development to reflect Tunisia's trade policy priorities.

Opportunities and constraints : The voice of the private sector in Tunisia's high-potential value chains

ITC conducted interviews in 5 high-potential value chains in Tunisia

The study of Tunisia's value chains has identified 5 high-potential value chains that Tunisia can develop by drawing on its local resources or on inputs already available on the African continent.

On this basis, ITC carried out a diagnostic study to identify existing opportunities and constraints, based on nearly 150 company interviews. To devise strategies for developing these value chains, it is essential to understand the obstacles to intra-regional trade.

The main products in these 5 promising value chains include the following:

Automobiles and trucks: coils, inductors, carbon door inserts, plastic injection, plastic parts, fuel filters, automotive wiring, shock absorbers, mechanically-operated cable, twin-tube telescopic shock absorbers, truck protrusions, steering wheel parts, sprinklers.

Cosmetics: body/face soap, oils extracted from oilseeds (almonds, prickly pear, black cumin), moisturizing cream, face mask, anti-aging cream, shampoo, prickly pear vinegar, detergents, make-up.

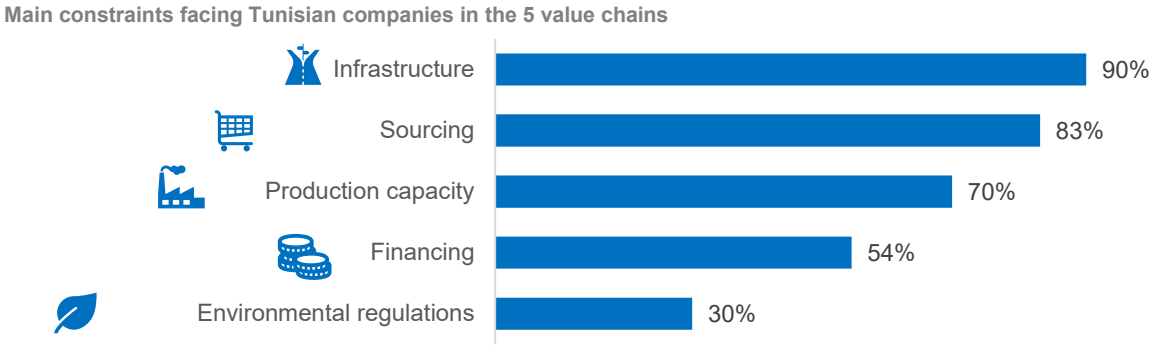
Leather shoes and leather products: shoe uppers, leather shoes, wallets, satchels, bags, cowhide leather

Fish products: tinned sardines, tuna, salted anchovy fillet, lobster, frozen shrimp, fresh bass, fresh squid, frozen cuttlefish, frozen octopus, frozen crab, down jackets, blouses, pants.

Cotton clothing: cotton sweaters, labels, jeans, skirts, t-shirts, towels, dresses, shirts, parkas.

Main obstacles facing Tunisian companies

The cost of electricity, the shortage of raw materials and the lack of skilled labor are holding back Tunisian companies.



Electricity costs and customs procedures restrict producers' activities

Businesses are faced with electricity costs that are too high for their operations. Added to this is the instability of the power grid, which not only causes deterioration in the machines used by companies, but also slows down production.

The second problem is the complexity of customs procedures and the obsolescence of port infrastructure (Port of Radès). Congestion at ports and airports, as well as administrative difficulties, force companies to modify their sourcing strategies to mitigate risks.

Supply is conditioned by a shortage of raw materials

In terms of supply, the main challenge for Tunisian companies is the unavailability of inputs and the increase in packaging costs (+40%). They are also confronted with the heterogeneity of product quality and sanitary control times, which are generally around ten days for laboratory analyses.

Unstable workforce and unfair competition penalize Tunisian companies

> There's a supply volume problem. For deodorant bottles and packaging, lead times are too long. We always need to over-consume, to plan for the future, because volumes are unstable and this impacts the company's cash flow. This problem is often found in the containers
>
> **Producer of deodorants and essential oils**

The lack of qualified technicians and know-how is one of the major challenges facing producers of cotton garments, leather footwear and leather products, as well as the car and truck industry. Added to this is the problem of worker absenteeism, which particularly affects the cotton garment sector.

This lack is due to a disconnect between the training provided by universities, training centers and schools to future workers and companies' requirements for skills and know-how in the private sector.

There's a real problem in terms of attracting workers to the automotive sector, with companies unable to retain technicians with a link to the trade and finding it difficult to replace them.

> We still have a shortage of manpower, and we have a major problem with worker absenteeism (the absenteeism rate can be as high as 10%). What's more, the lack of know-how is also a problem, with public training centers failing to adapt their training to technological developments
>
> **Producer of denim clothing**

Obtaining credit and bank guarantees hampers companies' long-term projects

Access to credit is difficult for companies, and the delays associated with obtaining credit prevent them from anticipating research and development projects or building up stocks of raw materials to cope with possible crises.

Banks lend mainly on a short-term basis and do not encourage long-term investment projects, as the sectors concerned are perceived as fragile. The bank guarantees required force banks to forego the possibility of borrowing for longer-term projects in the same way.

Waste management organization slows down sustainability processes in Tunisian companies

Problems with the waste management framework are slowing down the process of compliance with sustainability standards. Companies need **technological and technical support to set up a more environmentally-friendly system and production chain**. There are few companies specializing in industrial waste collection and recycling.

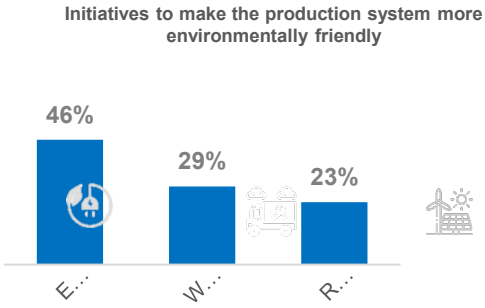
Setting up organized waste processing circuits is a major need. The companies recommend setting up recycling units or approved waste recycling companies in each of Tunisia's governorates to support Tunisian companies.

The lack of support for companies in their waste or wastewater treatment processes makes compliance with local or target market environmental regulations tedious and, above all, costly

Nearly 80% of Tunisian companies have taken initiatives to make their production processes more environmentally friendly, partly in response to infrastructural constraints such as the cost of electricity or unexpected power cuts.

These initiatives are part of companies' drive to meet the demands of their customers, whose concern for the environment is growing all the time. More than half of all companies are faced with consumers who are more aware of the environmental impact of their production.

> There's a big problem with waste management. I find that the laws in force are out of step with reality, and even inapplicable in some cases. They require waste to be treated, whereas on the ground, there are no real companies with expertise in the treatment of all types of waste. To remedy these shortcomings, we have set up an environmental watch unit and are currently studying solutions for energy management
>
> **Leather briefcase manufacturer**

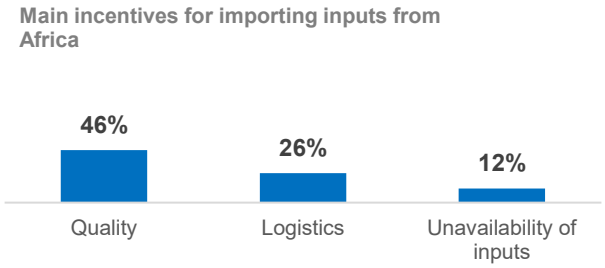


Limited use and knowledge of tariff preferences

More than two-thirds of companies make no use of existing preferences with countries on the continent, and their knowledge of trade agreements remains limited.

Less than 15% of companies source from Africa

Supply from the African continent remains limited (13%) due to logistical problems, and the volume and quality of these products not adapted to the demand of Tunisian companies.



> We can't find the quality we need to source from African countries. We didn't like our experience with Egypt because of instability of input quality. For Morocco, we can find the quality we want, but there are too many non-tariff barriers and restrictions.
>
> **Cotton yarn producer**

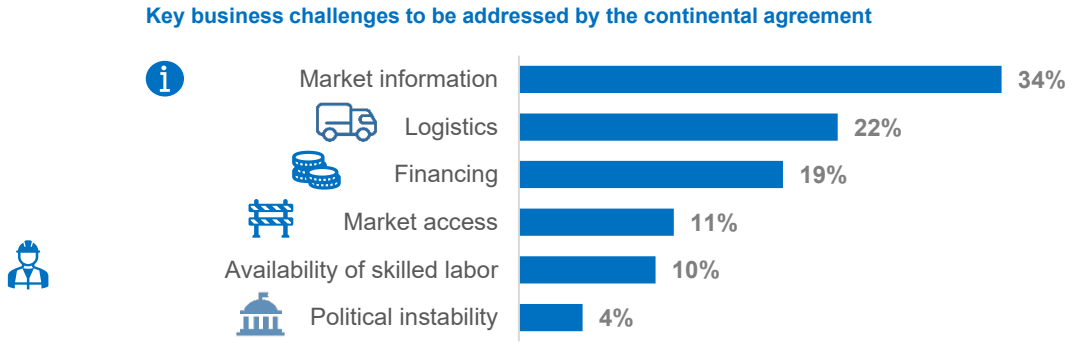
Logistical constraints and a lack of information on the continent's markets are holding back Tunisian companies in their development.

Less than one company in five (19%) exports to Africa, and they make very little use of the preferences offered by the various existing agreements with other African countries.

Existing logistical limitations prevent companies from accessing certain markets or even setting up operations there to expand their production.

Similarly, there is a lack of communication and transparency of information on inputs produced in Africa, and little visibility at trade fairs to showcase the continent's products.

Tunisian companies are ready to benefit from the synergies that the FTAA can generate



For many companies, optimism depends on the degree of involvement of the Tunisian government in resolving the logistical, administrative and bureaucratic problems that block business activity.

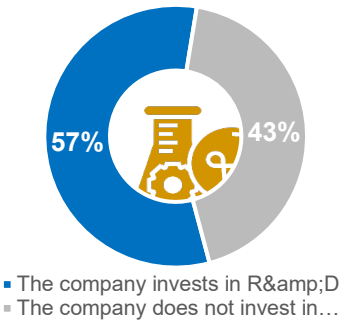
The African Continental Free Trade Area (AfCFTA) will certainly remove trade barriers, but this must be accompanied by market studies to detect opportunities and take full advantage of the possibilities offered by the agreement, both in terms of supply and sales.

> We don't sell in Africa, because the lack of logistics and the lack of direct lines make export operations difficult, so even though we've found customers, we don't manage to materialize and export because the cost of logistics and transport are high.
>
> **Make-up manufacturer**

However, over 20% of companies are skeptical about the usefulness and operation of such an agreement between African countries, due to constraints such as slow customs procedures, corruption, transport and the informal market.

Technical support to invest in research and development is essential

More than half of all Tunisian companies invest in research and development, but technical support is still needed. In cosmetics, fish products and cotton clothing, Tunisian companies are **present at every link in the value chain**.

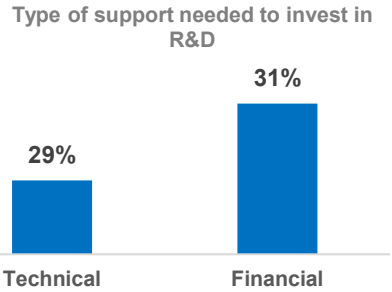


Companies positioned in the value chain for cars and trucks, leather shoes or cotton garments, on the other hand, are **concentrated on a specific segment of the value chain**.

They take advantage of Tunisia's strategic geographical position to integrate into more global value chains by occupying specific positions in these chains.

Between **2% and 4% of company sales are devoted to research and development.**

> We invest in R&D to develop our brand, we invest in research and the creation of new models. We need technical support, we need administrative facilities with government agencies that offer technical research support for young brand creators
>
> **Producer of shoe uppers**



The fish products and cosmetics sectors are more focused on **developing new products** to conquer new markets or adapt to consumer needs. Other companies **innovate to meet customer requirements**, notably in the leather footwear sector.

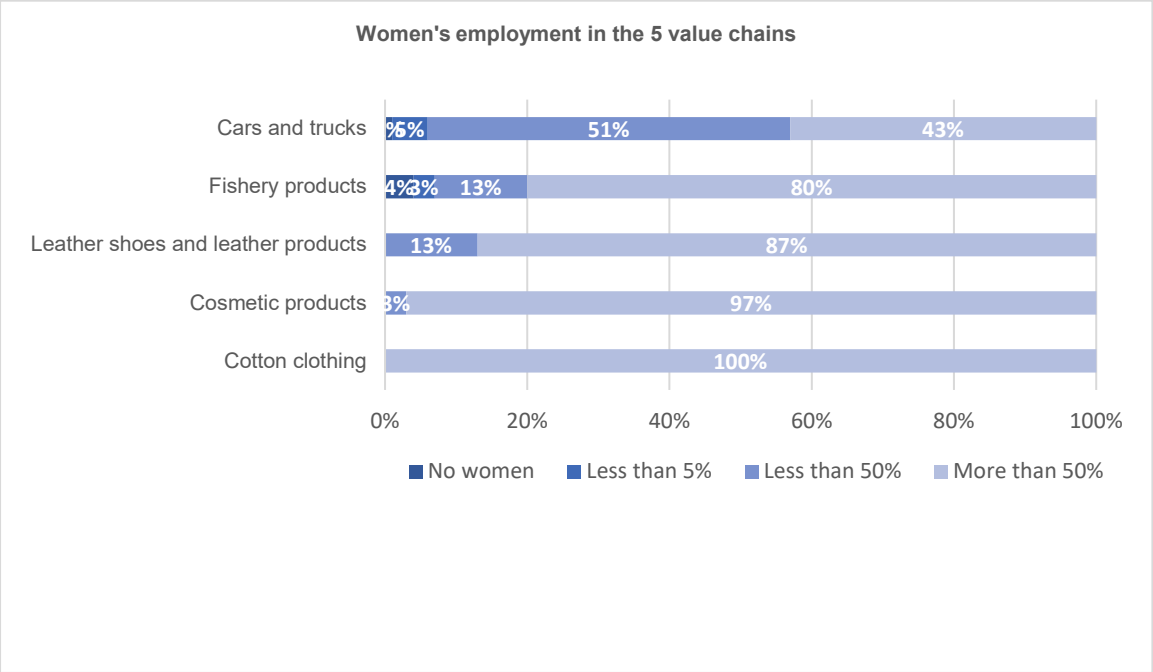
Almost a third of companies in all these sectors need **financial and technical support to carry out more research and development**. Such support would enable companies to access new markets on a continental scale, with a product offering better adapted to market demand.

Women's management and ownership of businesses remains limited

Women are an essential link in the employment chain, but companies are still in the minority when it comes to female ownership. In most sectors, women account for over 80% of employees, with the exception of the car and truck sector (43%).

Nearly a third of companies are owned and/or managed by women.

Access to managerial positions is more difficult, with companies still overwhelmingly owned by women.



Cross-functional recommendations

1. Facilitate access to international trade fairs to increase the visibility of Tunisian companies on foreign markets, particularly in Africa.

2. Set up industrial waste collection and treatment units in each of Tunisia's directorates to support hazardous waste management.

3. Improve coordination between trade facilitation institutions and universities to involve them in research projects, and adapt the curricula of training centers and universities to match market needs in terms of skills and knowledge of technological developments. For example, by strengthening projects on the traceability of fishery products carried out by the Institut National des Sciences et Techniques de la Mer (INSTM).

4. Set up a national platform by sector to connect Tunisian companies with African suppliers and potential customers, in order to facilitate market prospection for Tunisian companies.

Key findings and specific recommendations

Key findings	Specific recommendations
Cars and Trucks	
1. **Lack of steel suppliers** on the continent who manufacture or have the same standards as Tunisia.	Implement special quotas on imported used cars, a regulatory framework to protect ourselves. Regulate the used car market by limiting the age of cars entering the African market.
2. Companies are faced with a **problem of retention**, as technicians working in certain trades, such as plastic injection molding or foundry work, are difficult to retain. **3.** There is a problem with the organization of **hazardous waste collection and treatment**.	
Leather shoes and leather products	
1. Nearly two-thirds of producers of leather footwear or leather products do not source from Africa, and **less than 5% of companies export to Africa.**	Encourage the production of local brands and work to improve the image of local industry on both local and foreign markets.
Cosmetic products	
1. **Counterfeit products bring low-cost competition** with no real control over the origin of these products, which can be harmful to consumer health. **2.** Companies struggle to find the packaging, bottles and chemical components they need from African suppliers. **3.** Adapting to consumer preferences in other countries is one of the keys to the development of the Tunisian cosmetics industry. **4.** The main obstacle to using e-commerce to market Tunisian cosmetics **is the problem of payment terms**: companies cannot benefit from the payment guarantees offered by online payment systems, which reassure consumers.	Helping Tunisian companies develop a range of cosmetics better suited to preferences on the African continent.
Fishery products	
1. Law no. 2009-17 of March 16, 2009, which introduces a **tax on organic rest periods**, affects the competitiveness of companies and their ability to manage short-term liquidity. **2.** **The absence of a solid waste landfill** in the port of Sfax poses a significant environmental risk for businesses and society. The main landfill in the city of Sfax is 500 m from the factories located in the fishing port.	Set up a solid waste landfill in the port of Sfax to help Tunisian companies process and collect waste and avoid environmental risks.
Cotton clothing	
1. **There is insufficient availability of manpower** (83%). Young Tunisians no longer find this sector attractive in the long term, preferring to work in other sectors that offer relatively higher salaries, such as tourism or aeronautics. **2.** **Standards for industrial wastewater discharge** are rigorous and complex, making them difficult to apply. Companies have vast stocks of fabrics to sell, as the prices charged by ONAS (Office National d'Assainissement) are high.	Align the curricula of training centers and universities with the requirements of companies in the textile sector, which are facing a shortage of skilled labor.