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Trade impacts of the AfCFTA in Madagascar : an analysis of trade in goods and services

Report

Trade impacts of the AfCFTA in Madagascar

An analysis of trade in goods and services

Linda Calabrese, Derrick Abudu, Yohannes Ayele, Alberto Lemma and Maximiliano Mendez-Parra

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Key messages

As a party to the African Continental Free Trade Area (AfCFTA), Madagascar could see some increases in imports from and exports to African countries. On balance, the increase in exports is likely to offset the increase in imports.

Madagascar is likely to see increased opportunities for trade in services, in particular in transport and logistics (a priority area for the AfCFTA) and tourism. Madagascar could be promoted to other African countries as a tourism destination.

Madagascar's digital trade sector is growing but, if it is to profit from opportunities available under the AfCFTA, the country will need to strengthen its hard and soft infrastructure and decrease costs related to digital services.

Opening up trade and investment could result in an increase in work opportunities that could benefit women and youth and reduce poverty. However, some of these activities (forestry, fisheries) may have negative environmental and climate impacts that need to be addressed at the sector level.

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Acronyms

AfCFTA	African Continental Free Trade Area
AGOA	African Growth and Opportunity Act
BaTiS	Balanced Trade in Services
BPO	business process outsourcing
CAGR	compound annual growth rate
COMESA	Common Market for Southern and Eastern Africa
DCTS	Developing Countries Trading Scheme
EAC	East African Community
EBA	Everything But Arms
EDBM	Economic Development Board of Madagascar
EPA	Economic Partnership Agreement
EU	European Union
FDI	foreign direct investment
GATS	General Agreement on Trade in Services
GDP	gross domestic product
GHG	greenhouse gas
GNI	gross national income
GNIpc	gross national income per capita
GSP	Generalised System of Preferences
ICT	information and communication technology
IMF	International Monetary Fund
INSTAT	Institut national de la statistique
ISDS	investor–state dispute settlement
IT	information technology
ITU	International Telecommunication Union
LDC	least developed country
MFN	most favoured nation
n.e.s.	not elsewhere specified
NTB	non-tariff barrier
OECD	Organisation for Economic Co-operation and Development
PEM	Plan Emérgence Madagascar
PIC2	Pôles Intégrés de Croissance et Corridors
PPP	purchasing power parity
PPP$	purchasing power parity dollars
REC	regional economic community
RoO	rules of origin
SADC	Southern African Development Community
SITC	Standard International Trade Classification
SMEs	small and medium-sized enterprises
TAPED	Trade Agreement Provisions on Electronic-commerce and Data
TMEA	TradeMark East Africa
TRAINS	Trade Analysis Information System
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa

US	United States
USD	US dollars
USITC	United States International Trade Commission
VAT	value-added tax
WDI	World Development Indicators
WITS	World Integrated Trade Solution
WTO	World Trade Organization

Executive summary

The African Continental Free Trade Area (AfCFTA) is a critical instrument for African countries in use in diversifying and transforming their economies. It will reduce barriers between African Union Member States within the aim of increasing intra-African trade in goods and services, and investment.

Madagascar is one of the 54 signatories to the AfCFTA but, at the time of writing, is among the seven countries that have not ratified the Agreement (tralac, 2023a). The country's government and the private sector are considering the implications of joining the free trade area. The purpose of this report is to summarise some of the evidence on possible effects from joining and to indicate how membership could benefit Madagascar.

In the past two decades, Madagascar's trade with other African countries has increased in volume, in terms of both imports and exports, but it has remained relatively stable as a share of total trade. Madagascar trades with many African countries but the majority of its trade is with two partners, South Africa and Mauritius. Madagascar is already part of free trade areas with these countries under the Southern African Development Community (SADC) and the Common Market for Southern and Eastern Africa (COMESA). In trade in services, most of the country's trade is again with South Africa and Mauritius, and to a minor extent with Angola and Egypt, reflecting the importance of trade within SADC and COMESA. The main services exports are transport and travel.

One area of particular interest is digital trade. Madagascar's digital trade is growing, and this is a priority area for the government. However, hard and soft digital infrastructure is still under development, and the high costs of data and devices mean the country still sees a marked digital divide. As a signatory to the AfCFTA, the government of Madagascar has participated in its negotiations on digital trade.

This study conducted a partial equilibrium analysis to assess the potential impacts of joining the AfCFTA on trade in goods. It should be noted that any changes do not affect tariffs on Madagascar's trade with SADC and COMESA countries, which are its major trading partners. The analysis found that:

- The AfCFTA would generate an increase in total Madagascar imports of 0.1%, or around $4.4 million. The corresponding reduction in tariff revenues is estimated at $1.5 million. These changes are dominated by a single product (preserved sardines).
- In terms of exports, the changes will affect only exports to Morocco and Nigeria, which will increase by $3.8 million and $9.7 million, respectively (or 58% and 36% of total trade with these countries). These increases constitute a large expansion of the value exported to these African countries, greater than the expansion of imports generated by the AfCFTA.

- Finally, the changes in exports to just two countries offset completely the expansion in imports generated by the AfCFTA from the whole continent, and it is unlikely there will be any major changes in competitiveness.

Similarly, for trade in services, our analysis suggests that, since most of Madagascar's services trade is with SADC and COMESA countries, major changes in trading patterns are unlikely. We also suggest that the AfCFTA offers an opportunity for Madagascar to expand its exports of tourism services to other African countries.

Specifically on digital trade, the AfCFTA's provisions for digital trade offer an opportunity for Madagascar to integrate more fully into the digital economy. However, this integration will require significant improvements in internet infrastructure, digital literacy and policy frameworks to ensure the benefits of digital trade under the AfCFTA can be fully realised.

Finally, joining the AfCFTA could have social, climate and environment impacts. We assess these as follows:

Poverty

- The AfCFTA could lead to increased imports of, and a subsequent decline in the prices of, some food products, with positive impacts on food security and poverty.
- Lower tariff revenues owing to tariff-free trade may be offset by an increase in VAT and excise on imported goods.
- Increased exports of tuna and of textiles and garments to Morocco, and of leather and wood products to Nigeria, may expand employment, benefiting the poor.
- Boosting transport and tourism services, which provide many employment opportunities, may also contribute to poverty reduction.

Women and youth

- As seen above, the AfCFTA will lead to the expansion of certain sectors, such as fisheries, forestry and textiles. This could provide employment opportunities for the entire population, including youth, for whom access to the labour market is more challenging.
- Women may benefit in particular from the expansion of the manufacturing sector, which employs more women than men.

Environment and climate

Some of the changes brought about by the AfCFTA may have impacts on the climate and the environment. For instance, the forecast negative increase in exports of tuna may increase the negative impact of fisheries on biodiversity; increased exports of wood products may promote further deforestation; and the emissions of the transport sector, which could expand under the AfCFTA, are notoriously hard to abate.

Based on these findings, we offer some recommendations:

- Access the AfCFTA Adjustment Fund, and in particular its Base Fund, to deal with any revenue losses.

- Consider horizontal interventions such as improved trade facilitation and transport infrastructure, with a specific focus on trade with the rest of Africa, to improve the competitiveness of exports and imports.
- Boost exports of tourism services to African countries outside of SADC and COMESA, for example by granting visa-free access to African nationals.
- Consider whether strategic investment from selected African countries can support priority sectors (e.g. South African investment in forestry).
- Improve the productivity of digital trade to boost exports, by strengthening hard digital infrastructure; enhancing digital literacy and skills development; focusing on the implementation of legal frameworks for digital trade; developing policies for affordable connectivity; leveraging the AfCFTA's Protocol on Digital Trade: and fostering innovation and entrepreneurship.

Finally, to mitigate any adverse social and environmental impacts, we recommend the following:

- Support agricultural export diversification with ‘trade plus one’ policies to improve access to electricity for rural households, connectivity, irrigation facilities and links to export markets for small traders, farmers, and small and medium-sized enterprises.
- Provide services that help women manage care responsibilities if they decide to take up additional employment.
- Develop sector-specific policies that address the specific climate challenges caused by expansions of forestry and fisheries.

1 Introduction

The African Continental Free Trade Area (AfCFTA) is a critical instrument for African countries to use to diversify and transform their economies. It will reduce barriers between African Union Member States under the aim of increasing intra-African trade in goods and services, and investment. To achieve this goal, the Agreement[1] covers the reduction of tariffs, the removal of non-tariff barriers (NTBs) and the implementation of trade facilitation measures. It is a comprehensive scheme that also covers non-trade issues such as competition policy, protection of intellectual property rights, investment protection and the development of specific industries that are vital to the strengthening of value chains on the continent.

Madagascar is one of the 54 signatories to the AfCFTA but, as of 2023, is among the seven countries that have not ratified the Agreement (tralac, 2023a). Once it does so, it could have access to a market of 1.3 billion people across 55 countries.

The government and the private sector are considering the implications of joining the free trade area and need additional evidence to help them identify the potential benefits and costs of the AfCFTA, and formulate measures to enhance the former and mitigate the latter.

This report identifies the potential impact of the AfCFTA on trade in goods and services in Madagascar. This entails identifying sectors that are negatively affected but also potential gains and opportunities, in particular in terms of e-commerce but also in other goods and services sectors. Moreover, the report discusses the potential social (poverty, women and youth) and environmental and climate impacts of the AfCFTA. These findings inform the recommendations presented in Section 5, intended to support the government of Madagascar in formulating policies to enhance the benefits and mitigate the costs of the free trade area.

This report is structured as follows. Section 2 looks at Madagascar's current trade context, considering its membership in regional organisations and its pattern of trade in goods and services (in particular e-commerce) with the rest of Africa; it also looks at the tariff structure currently in place. Section 3 looks specifically at the AfCFTA, providing a brief description of its provisions, before giving an analysis of the potential impacts for Madagascar identified through a partial equilibrium model. Section 4 considers the potential impacts of the AfCFTA on poverty, gender, environment and climate in Madagascar. Finally, Section 5 provides policy recommendations on how to make the most of Madagascar's accession to the AfCFTA.

[1] The full text can be accessed here: https://au-afcfta.org/wp-content/uploads/2022/01/Compiled-Annexes-to-the-CFTA-Agreement_E-1.pdf

2 Background on Madagascar's current trade context

2.1 Patterns of trade in goods with African countries

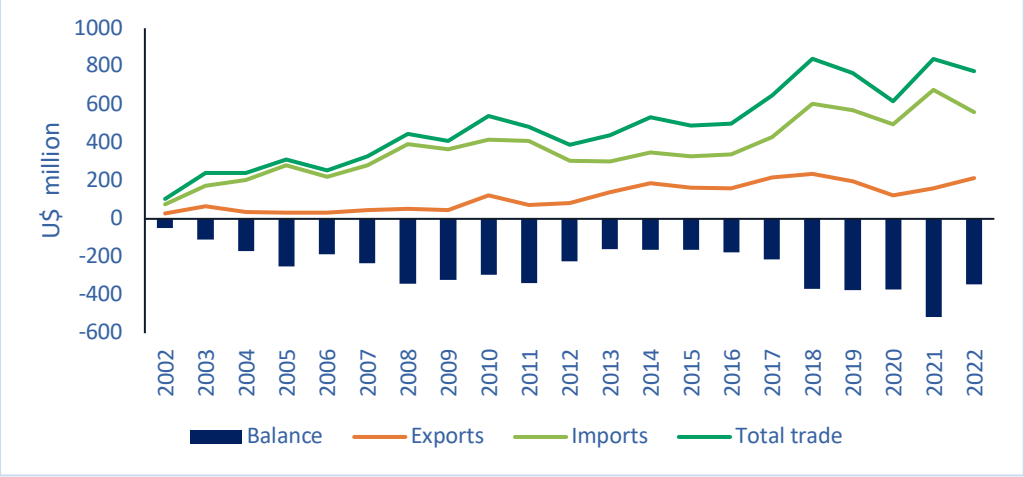
2.1.1 General trends

Over the past two decades, Madagascar has increased its trade with African countries (Figure 1 and 2). The total value of its exports to Africa increased from $28 million in 2002 to $215 million in 2022. The annual average growth rate for exports to Africa during this period stood at 20.6%. In the same period, Madagascar's exports to the rest of the world increased from over $500 million to $3.3 billion. Similarly, Madagascar's total imports from Africa increased from $76 million in 2002 to $559 million in 2022. The annual average growth rate for imports from Africa over the two-decade period was 14%. Meanwhile, imports from the rest of the world increased significantly from over $500 to $4.9 billion. In general, the aggregate trade volume between Madagascar and Africa, considering both exports and imports, increased from $104 million in 2002 to $774 million in 2022.

Madagascar has run a persistent trade deficit with Africa for the past two decades, as Figure 1 shows. The highest trade deficit was in 2021, reaching $515 million.

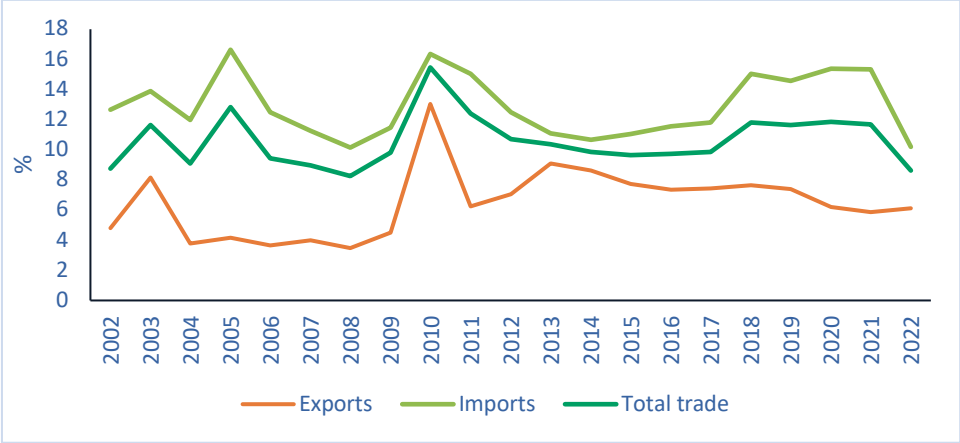
Despite the overall growth in Madagascar's trade with Africa over the past two decades, the proportion of the country's exports as a share of total exports has remained relatively stable, averaging around 6%. Madagascar's imports from Africa have constituted only 13% of its total imports, on average, over the past two decades, and this share has remained relatively constant since the year 2000.

Figure 1 Madagascar's aggregate trade with Africa



Source: Authors' calculations using data from WITS

Figure 2 Madagascar's trade with Africa as a share of total trade



Source: Authors' calculations using data from WITS

2.1.2 Madagascar's trading partners

In 2022, Madagascar had 42 export trading partners in Africa. However, within this, a few countries dominate . South Africa, Mauritius, Kenya and Ethiopia are the top markets for Madagascar's exports, with South Africa, Mauritius and Egypt the top import markets. Detailed figures are provided in Table 1, and a full list in Appendix 3.

Table 1 Madagascar's main trading partners in Africa, 2022

	Exports (US$ million)	Exports (share of exports to Africa)		Imports (US$ million)	Imports (share of imports from Africa)
South Africa	111	51.8%	South Africa	268.4	48%
Mauritius	38.4	17.8%	Mauritius	153	27.4%
Kenya	13.4	6.2%	Egypt	78	14%
Ethiopia	11.4	5.3%			

Source: Authors' calculations using data from WITS

This analysis indicates that Madagascar's trade activities are heavily concentrated in a small number of countries, and thus lack diversification. This makes Madagascar's trade vulnerable to any disruptions occurring in these specific nations, in particular South Africa. The AfCFTA presents Madagascar with the chance to broaden its range of export destinations and import sources, thus reducing its exposure to shocks.

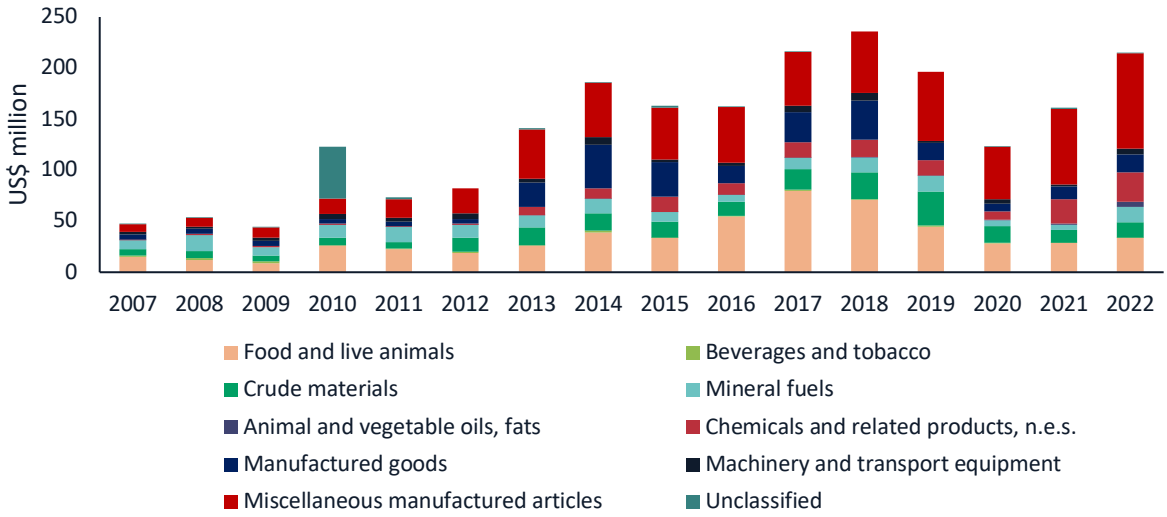
2.1.3 Sectors and product traded

Madagascar's exports to Africa are concentrated in a few key sectors and products (see Figures 3 and 4). At the sector level, miscellaneous manufactured articles (almost exclusively articles of apparel and clothing) account for 43.5% of Madagascar's exports to Africa. The next top export sectors are food and live animals (15.6%) and chemicals (13.3%). Together, these three sectors account for nearly 72% of Madagascar's exports to Africa (see Figure 3).

Madagascar's imports from Africa are also concentrated in a few key sectors and products. In 2022, manufactured goods and mineral fuels accounted for 27.7% and 25.6% of Madagascar's imports from Africa, respectively. The next top import sector is food and live animals (14.9%). Together, these three sectors make up 68% of

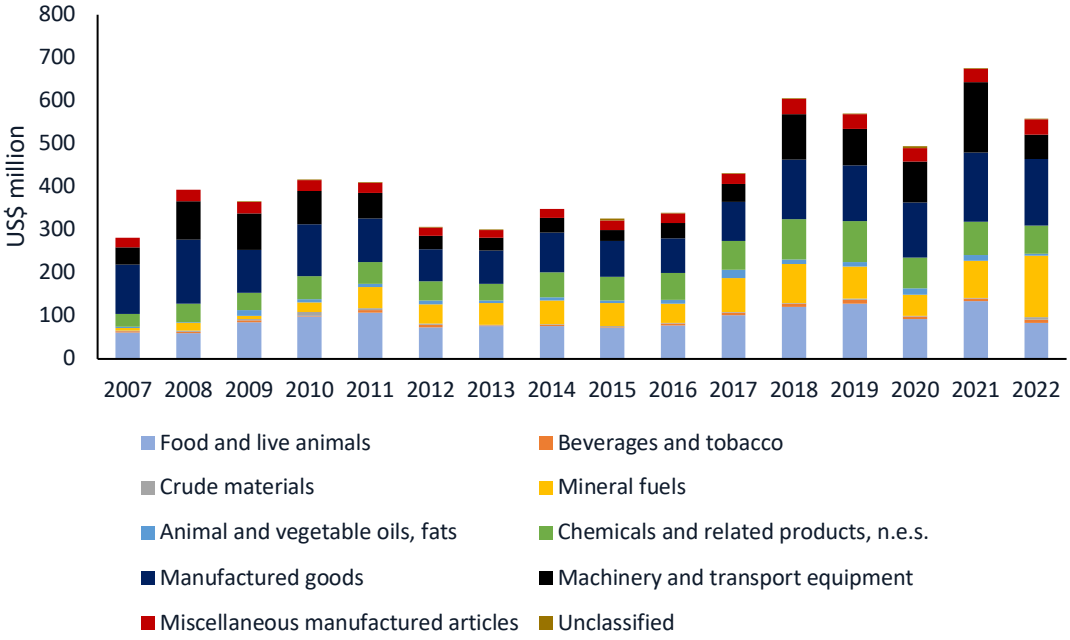
Madagascar's imports from Africa. The share of the sectors has been consistent over the past decade (see Figure 4). Appendix 4 describes imports and exports by product.

Figure 3 Madagascar's exports to Africa by broad SITC sector



Source: Authors' calculations using data from WITS

Figure 4 Madagascar's imports from Africa by broad SITC sector



Source: Authors' calculations using data from WITS

2.2 Tariff structure

As of 2022, Madagascar maintains a simple tariff structure, with an average applied import tariff rate of 11.8%. Agricultural goods incur a relatively higher average tariff rate of 14.8% (Table 2).

Table 2 Madagascar's import tariffs, 2022

Summary	Total	Agricultural products	Non-agricultural products
Simple average final bound	27.4	30.0	25.3
Most favoured nation applied			
Simple average	11.8	14.8	11.3
Trade-weighted average	8.3	6.5	8.8

Source: WTO

Looking at broad product groups, fish and fish products have high applied tariff rates, at 19.7%, followed by beverages and tobacco, at 19.4%. For non-agricultural goods, the category with the highest tariffs in Madagascar is clothing products, subject to an average tariff of 19.9%. Appendix 5 provides details on tariffs on main imports.

Madagascar imposes tariffs of above 10% on average on the other AfCFTA countries. Importantly, Madagascar, being a member of regional agreements such as the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC), benefits from tariff exemptions in its exports to fellow member states like South Africa, provided these exports adhere to rules of origin requirements. When considering Madagascar's many trade partners in Africa, we can see that applied tariffs vary considerably. South Africa, a significant export destination partner of Madagascar, maintains a most favoured nation (MFN) applied tariff of 7.6%. Morocco and Kenya levy tariffs of 14% each. Ethiopia imposes a tariff of 17%. Sudan imposes a higher tariff but accounts for just 0.3% of trade. Appendix 5 provides details for other countries.

2.3 Madagascar's membership of regional economic communities

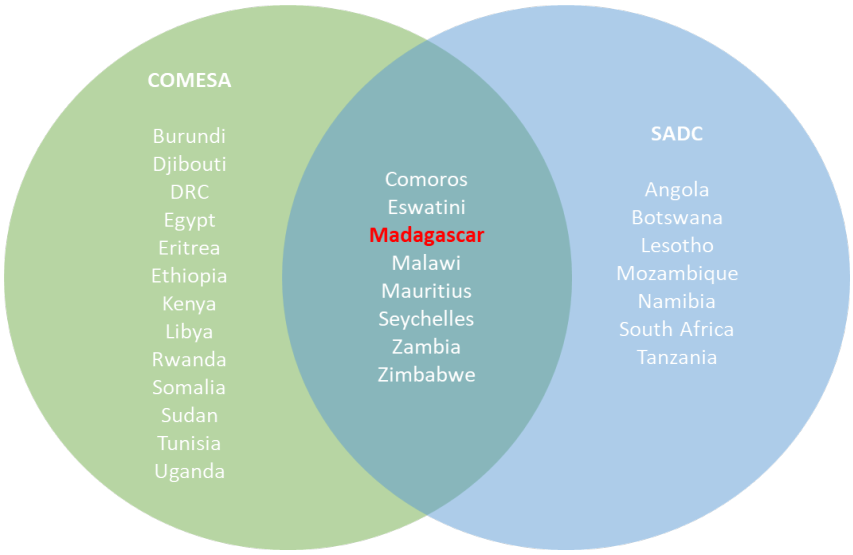
Madagascar participates in various regional economic communities (RECs). Within the Africa regional context, Madagascar has been a member of the COMESA free trade area since 2000. COMESA, as a regional organisation for East Africa comprising 21 member states, facilitates economic cooperation and integration, with a population of over 520 million and total trade in goods worth $235 billion. COMESA provides tariff-free access among member states. Figures 6 and 7 show Madagascar's exports to and imports from COMESA and non-COMESA African countries over the past two decades. The share of exports going to COMESA countries has been substantial but is declining. In 2022, only 34% of Madagascar's exports to Africa went to COMESA member states, down from 59% in 2009. Madagascar's imports from COMESA member states are substantial, amounting to 48% of its African imports in 2022.

Additionally, Madagascar joined SADC in 2005. Membership of SADC provides Madagascar with substantial commercial advantages, offering access to a market boasting over 200 million consumers and preferential tariff treatment among its member states. In 2022, 77% of Madagascar's exports went to SADC countries, even though this had declined compared with 89% in 2002 and 81% in 2009. Similarly, the share of Madagascar's imports from SADC member states declined from 85% in 2002 and 88% in 2009 to 79% in 2022.

An important thing to note is that there is an overlap between COMESA and SADC memberships, as Figure 5 shows. Figure 5 illustrates that, in addition to Madagascar, seven countries are members of both COMESA and SADC. Because of this, it is useful to provide an overview of Madagascar's trade with both COMESA and SADC, vis-à-vis that with the rest of Africa. Madagascar's exports to COMESA and SADC

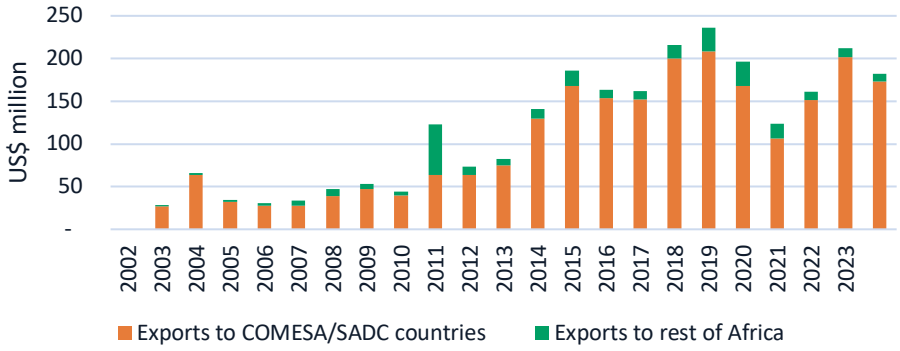
averaged $105 million/year in 2002–2023, equivalent to 89% of Madagascar's total trade with Africa (Figure 6). Similarly, Madagascar's imports from COMESA and SADC averaged $382 million/year in 2002–2023, equivalent to 98% of Madagascar's total imports from Africa (Figure 7).

Figure 5 Overlapping COMESA and SADC memberships



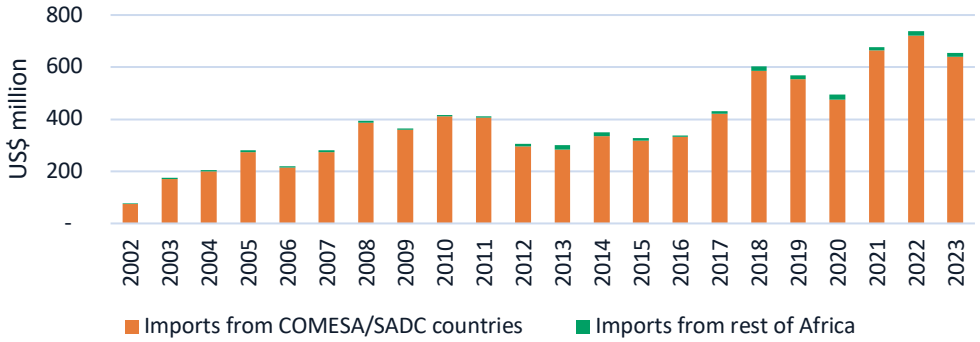
Source: Authors

Figure 6 Madagascar's exports to COMESA and SADC vis-à-vis exports to the rest of Africa



Source: Authors' calculations using data from WITS

Figure 7 Madagascar's imports from COMESA and SADC vis-à-vis imports from the rest of Africa

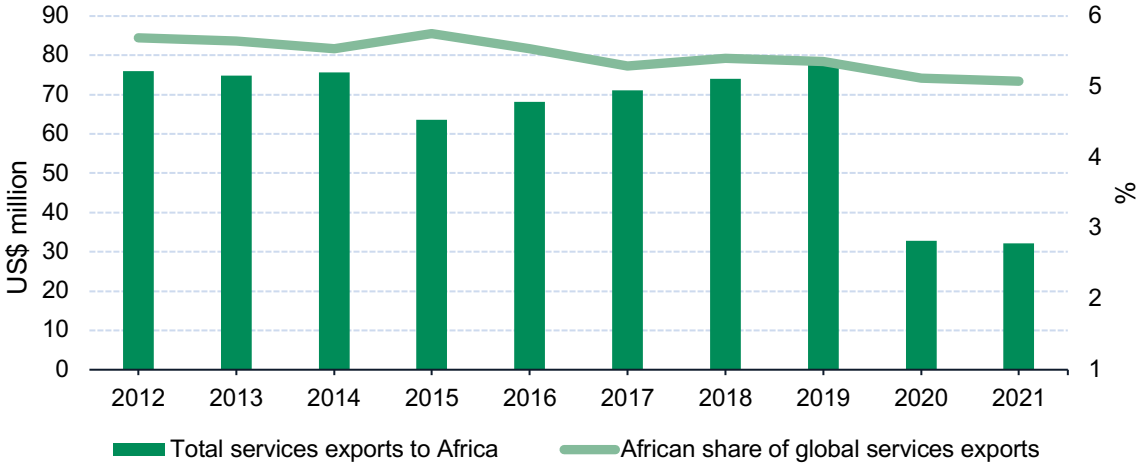


Source: Authors' calculations using data from WITS

2.4 Patterns of trade in services with African countries

Madagascar's services exports to Africa increased marginally from $76 million in 2012 to $79 million in 2019. However, services exports have plummeted since 2019, primarily because of restrictions imposed to control the COVID-19 pandemic. They were at $32 million in 2021, reflecting a 58% decline since 2012. The export stagnation and subsequent plummeting post-COVID led to the country's already small African share of its total services exports declining from 6% in 2012 to 5% in 2021.

Figure 8 Services exports to Africa (volume and share of total exports)



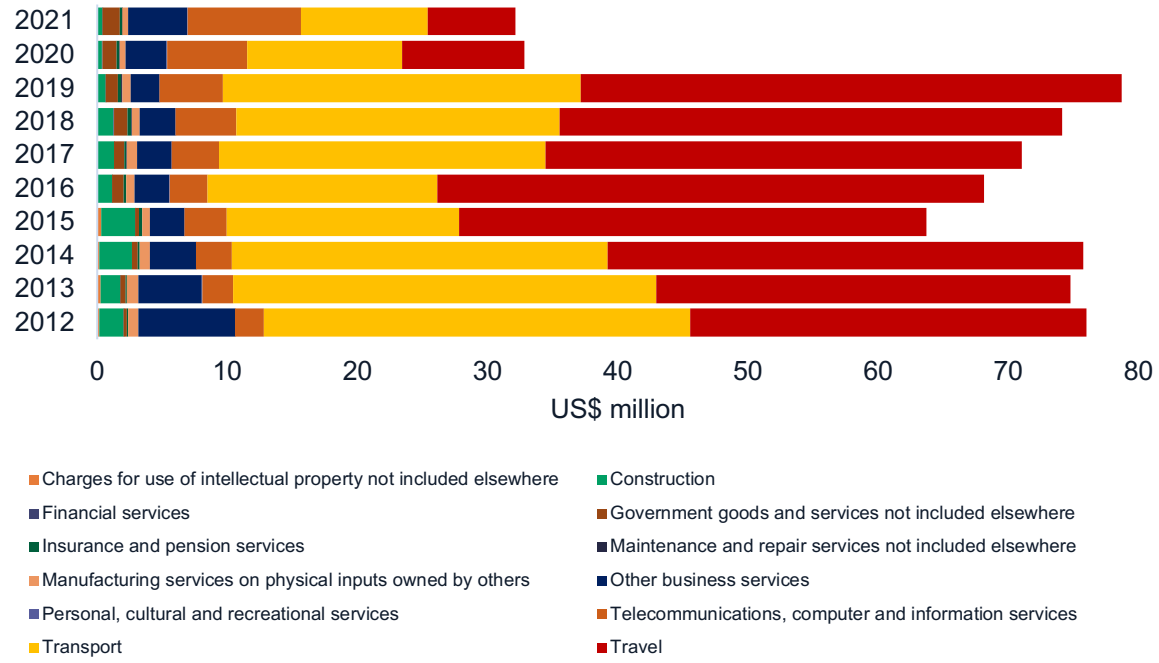
Source: Authors' calculations using data from OECD and WTO BaTiS

Madagascar's services exports are concentrated in a few sectors. In general, services exports can be classified as:

- **traditional services** – transport; travel; maintenance and repair services
- **knowledge-intensive services** – manufacturing; construction; insurance and pension services; financial services; telecommunications, computers and information services; personal, cultural and recreational services; charges for use of intellectual property; other business services
- **non-market services** – government goods and services

Of the three categories of services, the highly knowledge-intensive ones have relatively high linkages with other sectors of the economy. Transport and tourism services yield other benefits, in particular with regard to their employment creation potential. In Madagascar, on average, traditional services such as transport and tourism dominate. These services accounted for 84% of Madagascar's exports to Africa from 2012 to 2019 before their share dropped to 51% in 2021. Nonetheless, impressively, financial services and telecommunications and computer and information services witnessed compound annual growth rates (CAGRs) of 36% and 15%, respectively, in the period under review. With the potential to ease regulatory requirements and immigration policies, the AfCFTA Protocol on Trade in Services could be a conduit for Madagascar to increase its exports of services, especially knowledge-intensive services, to African markets.

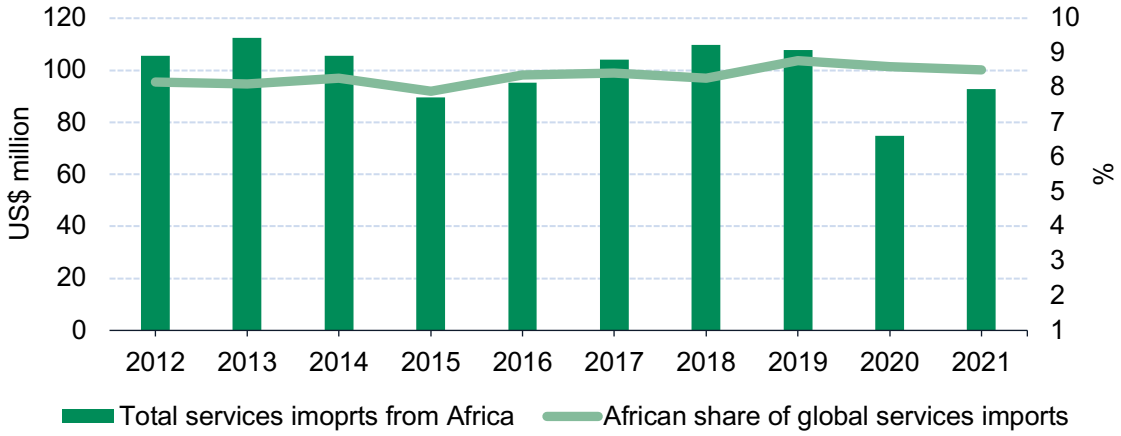
Figure 9 Sectoral breakdown of services exports to Africa



Source: Authors' calculations using data from OECD and WTO BaTiS

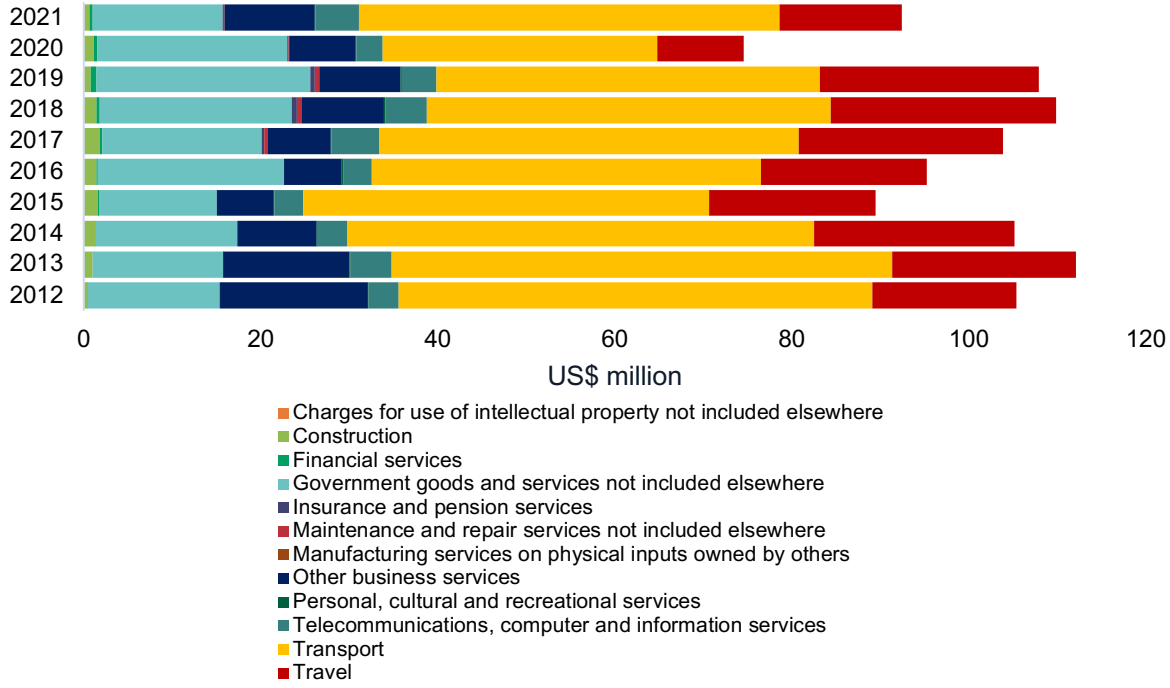
Madagascar's imports from Africa, which have been consistently higher than its exports, were effectively unchanged from 2012 ($106 million) to 2019 ($108 million) before declining to $93 million in 2021. As for Madagascar's African export share, imports from Africa pale compared with its total imports. On average, Africa accounted for 8% of Madagascan imports of services in 2012–2021. Additionally, at the sectoral level, traditional services dominated Madagascar's imports from the African continent.

Figure 10 Total services imports from Africa and global share



Source: Authors' calculations using data from OECD and WTO BaTiS

Figure 11 Sectoral breakdown of services imports from Africa



Source: Authors' calculations using data from OECD and WTO BaTiS

Regarding services trade partners, countries in the Southern African region (South Africa, Mauritius and Angola) are the leading destinations for Madagascar's services exports in Africa. This partly reflects the trade benefits associated with the country's membership of COMESA and SADC, to which South Africa, Mauritius and Angola also belong. Both COMESA and SADC have made efforts to liberalise trade in services. The COMESA Regulations on Trade in Services were established in 2009 but work here is still ongoing, as not all countries have identified sectors to be liberalised first. The SADC Protocol on Trade in Services, which entered into force in January 2022, sets out general trade rules governing trade in services among the member states, and prioritises communication, construction, energy, financial, tourism and transport services for trade liberalisation.

Overall, at least 75% of Madagascan services exports to Africa have been destined for 10 countries on the continent. As for exports, the leading three importing countries from Africa for Madagascar's services are Mauritius, Egypt and South Africa, which all belong to COMESA; the remaining top import sources are spread across the continent. Appendix 6 provides a detailed breakdown.

Regarding its commitments under the General Agreement on Trade in Services (GATS), Madagascar is still in the early stages of commitments and has sought to expand those in professional, communication, financial and tourism services. The government has identified these sectors, together with transport, as priority sectors, and it has planned to develop schedules of specific commitments to conform with the GATS. Before 2015, apart from in professional and business services, even without commitments under the GATS, restrictions on foreign participation in or competition for tourism, transport and financial services were eased (WTO, 2015).

2.5 Focus on digital: infrastructure and e-commerce

2.5.1 Digital penetration and literacy

The government of Madagascar wants to promote the digital sector as an engine of growth for the economy. It has included information and communication technology (ICT) at the centre of the Initiative Emérgence Madagascar, its development strategy, published in 2018. This has ICT as one of its six priority sectors. In line with this, the Plan Emérgence Madagascar (PEM) 2019–2023 looks at the creation of a dynamic ICT sector that can support the creation of more than 20,000 private jobs and the development of human capital through digital technologies.

Madagascar's ICT landscape presents a peculiar picture. The island nation reported 5.9 million internet users at the start of 2023, translating to an internet penetration rate of 19.7% (Kemp, 2023). This figure, while significant, falls below the more substantial rates observed in the rest of sub-Saharan Africa, which had a penetration rate of 43% in terms of unique mobile subscribers and 25% in terms of mobile internet users in 2023 (GSMA, 2023). Key barriers to the adoption of mobile health interventions in Madagascar include limited phone ownership and low digital literacy (Lacroze et al., 2023).

Furthermore, the broader context of literacy in Madagascar also presents challenges. With 75% of its population living below the poverty line, the country faces significant challenges in its education system. The literacy rate stands at 65%, placing Madagascar at 182 out of 194 countries globally. The integration of digital technologies in education is seen as vital to reversing educational decline (Oyebamiji, 2021).

2.5.2 Hard and soft digital infrastructure

Madagascar is well served in terms of international connectivity, with three operational submarine cables and three landing stations (and a fourth planned). However, the middle mile, which is the core network of the country, managed mainly by Telma, the incumbent operator, has only around 10,000 km of fibre cables. As a result, the backbone network of the country is still costly, partly because of Telma's monopoly in this sector for a long time and its current dominant position (World Bank, 2023b).

Regarding the last mile, only 67% of the population had access to a 4G mobile signal in 2022. Infrastructure deployment and maintenance in rural areas is expensive, and lower incomes and weak consumer demand make the investment less profitable, and thus less appealing, for private operators. Significant financial investments are needed to improve connectivity in rural and remote areas (World Bank, 2023b).

In addition to the gap in coverage, there remains a significant gap in usage even among those who are covered. In particular, 72% of those who can access broadband (15.5 million people) do not do so. This is because of the cost of services and devices, as well as low incomes, for most of the population.

The cost of mobile internet in connectivity is a barrier to widespread adoption of internet services. Madagascar's position in terms of mobile data pricing is notable. It ranks 106th globally, with an average cost of 1GB of mobile data at $1.12. Given that many people in the country have a low income, this cost is high for them, contributing to the digital divide.

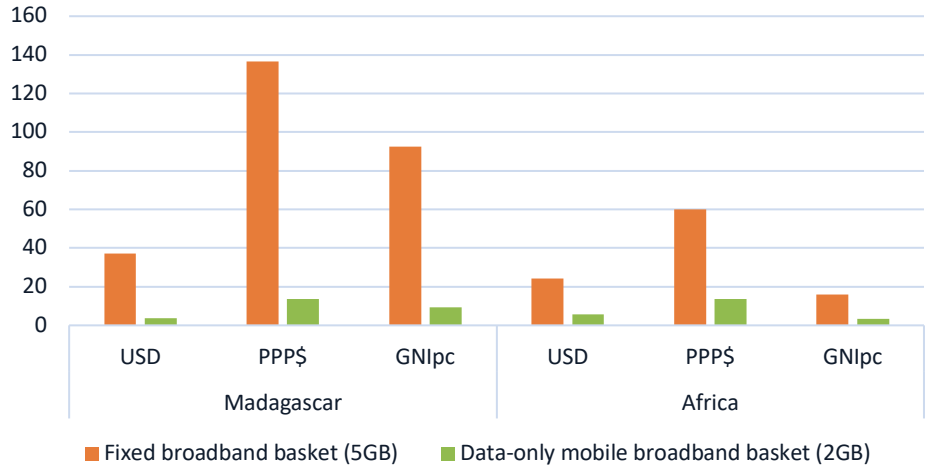
Figure 12 presents a comparison between the costs of fixed broadband (5GB) and data-only mobile broadband (2GB) for Madagascar and the entirety of Africa in three different price metrics: US dollars (USD), purchasing power parity dollars (PPP$) and as a percentage of gross national income per capita (GNIpc).

In Madagascar, the cost for fixed broadband (5GB) is notably higher than that for data-only mobile broadband (2GB) across all three metrics. When measured in USD, the fixed broadband cost is around four times higher than the mobile broadband cost. The disparity is even greater when comparing the costs in PPP$, with fixed broadband costing more than six times the price of mobile broadband. The difference is most stark when looking at the cost as a percentage of GNIpc, where fixed broadband takes up nearly the entire GNIpc while mobile broadband is only a fraction of it.

For Africa as a whole, the pattern is similar, although the relative costs are lower. The fixed broadband cost in USD and PPP$ remains higher than the mobile broadband cost but the difference is less pronounced than in Madagascar. However, when comparing costs as a percentage of GNIpc, the difference becomes more noticeable, with fixed broadband requiring a significantly larger portion of the average income compared with mobile broadband.

Overall, the chart illustrates that accessing internet in Madagascar is more expensive than in the rest of the African continent; and that in Madagascar, and to a lesser extent in Africa overall, fixed broadband is considerably more expensive than mobile broadband, both in absolute terms and relative to income.

Figure 12 Comparison of internet costs, Madagascar and Africa, 2022



Source: ITU ICT Price Baskets dataset

Another challenge is the cost of devices. The World Bank estimates that the cheapest smartphone costs 87% of the average monthly income. As a result, only around a third of households in Madagascar have a mobile phone, and less than 40% of these phones are smartphones. The high cost of devices is influenced by the imposition of high taxes and duties on ICT equipment (World Bank, 2023b). Overall, while factors such as low income, demographics and limited coverage contribute to Madagascar's underperformance in absolute terms, the main reason for its shortcomings compared with similar countries in the region is the lack of affordability. While this is a result of low incomes, policy also plays a part. Promoting competition in the sector and reducing taxes on devices and data, for instance, could contribute to reducing prices and improving affordability.

In terms of soft digital infrastructure, the government of Madagascar is committed to improving the policy and regulatory environment for digital activities. To this end, it has put in place several pieces of legislation and regulations, including laws on telecommunications and ICT, electronic transactions, electronic signatures, cybersecurity, protection of personal data and digital currency. However, these laws lack implementation, which hinders the development of the digital sector in the country (Astove Conseil, 2022).

2.5.3 Digital commerce

E-commerce is a growing sector in Madagascar. As of 2023, the e-commerce market in Madagascar is projected to achieve a significant value, estimated at around $89 million. Predictions suggest a steady CAGR of 7.9% over the period from 2023 to 2027, pointing towards a projected market volume of $120.8 million by 2027.

The growth of the sector is part of a broader trend across Africa, driven by factors such as increased internet and smartphone penetration; the availability of affordable data packages; and a young, tech-savvy population. The African e-commerce market reached $241.6 billion in 2022 and is expected to reach $567.6 billion by 2028, growing at a CAGR of 15.3% in 2023–2028 (IMARC Group, 2023), reaching an overall faster growth than that of Madagascar.

Madagascar's e-commerce market, while growing, is smaller than some of the leading African nations (see Appendix 7 for a discussion on the e-commerce market in other African countries). However, there is a noticeable disconnect between customer needs and expectations and the current operational approaches of e-commerce businesses in Madagascar. This gap is potentially attributable to various factors, including the quality of products, pricing, delivery services and customer support (Rapanoel et al., 2020). In the future, if more individuals in Madagascar gain internet access, the volume of online shopping could escalate, making e-commerce a notable component of the nation's retail trade (Smyrnova, 2021).

To promote the e-commerce sector, the government has created the Steering Committee for the Development of Electronic Commerce. Nevertheless, a certain number of obstacles remain in terms of enabling a real boom in e-commerce, including those related to infrastructure; structuring of the environment and e-commerce players in particular to facilitate last-mile delivery; or even the democratisation of means (Astove Conseil, 2022).

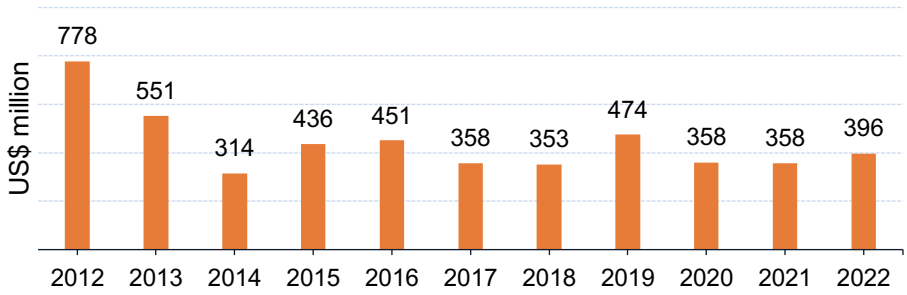
2.5.4 Other trade agreements with digital provisions

Lastly, it should be noted that Madagascar is part of a number of trade agreements, some of which include provisions related to digital trade. The Trade Agreement Provisions on Electronic-commerce and Data (TAPED) indicates that Madagascar is part of two such agreements: the SADC–COMESA–EAC (East African Community) Tripartite Free Trade Area and the Interim Economic Partnership Agreement between the European Community and Eastern and Southern Africa States (Interim EPA) (Burri et al., nd). These agreements have limited provisions on digital trade. For instance, the Tripartite Free Trade Area refers to electronic data processing systems to be used for trade facilitation.

2.6 Investment to and from other African countries

Madagascar’s overall net foreign direct investment (FDI) inflows declined over 2012–2022, reflecting a drop from $778 million to $396 million. In previous decades, the country’s natural resources, chiefly nickel, cobalt and agribusiness goods like seafood and vanilla, were crucial attractive factors for natural resources foreign investors. However, the country has seen a change in sectoral attractiveness from resource-seeking to efficiency investments. In particular, according to the World Bank (2020), Madagascar’s IT and business process outsourcing (BPO) sectors have seen a rise in FDI inflows, contributing to a rapid increase in the exports of these services.

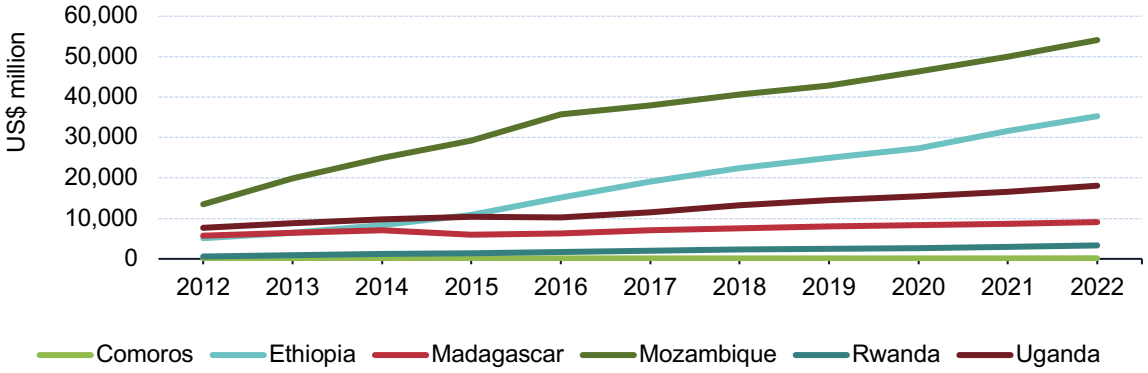
Figure 13 Value of net FDI inflows



Source: Authors’ calculations using UNCTAD FDI data

Madagascar's FDI stock rose by a CAGR of 5% to reach $9.09 billion in 2022. Putting Madagascar's CAGR of FDI stock into context, apart from Comoros (5%), it is lower than that of some of its peers – Ethiopia (21%), Mozambique (15%), Rwanda (19%) and Uganda (9%). Nonetheless, Madagascar still has vast potential to increase net inflows of services FDI to grow its FDI stock. In particular, the country's download speed, featuring in the global top 25, affordable labour fluent in French and natural resources (World Bank Group, 2020) can be leveraged more to attract increasing values of FDI and numbers of investors into the services sector, especially IT and BPO.

Figure 14 Value of FDI stock: Madagascar and peer countries



Source: Authors' calculations using UNCTAD FDI data

It should be noted that few African countries invest in Madagascar. Up until at least 2014, Mauritius was the largest foreign investor in Madagascar in terms of FDI inflows but no other African country was among the top 10 investors (INSTAT, 2015). In 2019, China became the main foreign investor in terms of number of enterprises created, and Mauritius was the fourth – but, again, no other African nation featured in the top 10 (EDBM, 2019).[2]

[2] It should be noted that the two figures used to compare foreign investment inflows in 2014 and 2019 refer to different units: FDI inflows for 2014 and number of enterprises created in 2019. While these are not immediately comparable, they offer a sense of the magnitude of foreign investment in the country.

3 How will the AfCFTA affect Madagascar's trade?

3.1 Brief description of the AfCFTA's provisions

The creation of a free trade area under the AfCFTA Agreement requires removing barriers to trade, investment and movement of people among African countries. This means not only reducing or eliminating tariffs and regulatory restrictions but also addressing trade facilitation and services, sanitary standards and technical barriers to trade, intellectual property and competition, and so on.

To this end, signatory countries (including Madagascar) have negotiated or are negotiating a series of protocols to define how the AfCFTA will work in practice. These have been divided into phases, and their progress in April 2024 is as follows:

- Phase I (negotiations on tariffs completed but rules of origin (RoO) have not yet been agreed – more on this below): These negotiations produced the AfCFTA Agreement and the Protocol on Trade in Goods, the Protocol on Trade in Services and the Protocol on Rules and Procedures on the Settlement of Disputes. These legal instruments have already entered into force for the countries that have ratified the Agreement.
- Phase II (negotiations completed): These negotiations covered the Protocol on Investment, the Protocol on Intellectual Property Rights and the Protocol on Competition Policy. These protocols will enter into force when 22 countries ratify them.
- Phase III (negotiations completed): These negotiations covered the Protocol on Digital Trade and the Protocol on Women in Trade and Youth in Trade.

Under the AfCFTA Agreement, countries are required to phase out tariffs on 90% of goods within five years (or 10 years, in the case of least developed countries – LDCs – like Madagascar) of ratifying the Agreement. Countries can indicate a set of products (up to 7% of tariff lines) to be phased out in a 10-year period (13 years for LDCs), and a set of excluded products (up to 3% of tariff lines) that will maintain tariff protection.

Member states are negotiating RoO, a set of criteria to establish what goods either were wholly obtained in a member state or have undergone substantial transformation and can thus benefit from preferential treatment within the AfCFTA (Annexes 5 and 6 of the Protocol). Currently, RoO have been negotiated and agreed upon for around 88% of tariff lines. The 12% of tariff lines that remain outstanding include textiles and clothing, which is particularly important for Madagascar, as well as automotives (Elsley, 2023).

In addition, to participate in trade in goods under the AfCFTA rules, member states are required to adopt customs tariff nomenclatures in conformity with the Harmonised System of Preferences, and a valuation system based on principles of non-discrimination, transparency and uniformity. They are also urged to eliminate NTBs, following the provisions of the Protocol on Trade in Goods, in particular by establishing a reporting, monitoring and elimination mechanism for NTBs.

Regarding trade in services, the Protocol aims to gradually eliminate restrictions. It requires countries to provide national treatment, market access and other commitments under each of the subsectors of a services sector and each of the four modes of supply.[3] The commitments come in the form of two categories – 'unbound' and 'none' – or in between limitations that apply to a subsector or sector. Limitations can be based on number of foreign suppliers, employment of local personnel, value of transactions or legal status of the firm/individual. Countries can also apply horizontal limitations across sectors.

To this end, countries have not made any new services liberalisation commitments other than those already committed to under the WTO's GATS or existing trade agreements. However, the Protocol aims to apply the GATS-plus approach; that is, members will need to offer more access under the AfCFTA to other members than they have under the GATS to other World Trade Organization (WTO) members. This will take some time, as it requires new liberalisation commitments to be legislated domestically before they can be used.

Overall, the Protocol on Trade in Services seeks to enhance continental market access for services providers but it is contingent on countries making specific commitments in each of the services sectors by 2022. Five services sectors were prioritised by the Secretariat – namely, business services, communications, financial services, tourism and travel, and transport services. Seven additional sectors[4] were optional for countries, based on requests (tralac, 2020).

The Protocol on Trade in Services is based on the principle of reciprocity, such that the negotiations are being conducted on a request–offer basis. To this end, countries' offers can be challenged by other parties in the form of additional liberalisation requests. It also leaves room for bilateral negotiations (or negotiations under the auspices of a REC) on service liberalisation that can make special commitments for select member states under the AfCFTA. Enforcement of the commitments will be carried out by the Committee on Trade in Services and be supplemented by regulatory cooperation between state parties, which can facilitate overall services trade under the Agreement (tralac, 2020). The resultant regulatory frameworks will be based on best practices from RECs and other regional agreements in the world.

The Protocol on Investment includes a provision on non-discrimination against AfCFTA investors vis-à-vis local firms, the right to establishment, market opening, investor–state dispute settlement (ISDS) mechanisms, and expropriation or nationalisation rules, among others. AfCFTA countries have, however, raised concerns about the inclusion of traditional ISDS rules, which put the state under

[3] There are four modes of supply: cross-border, consumption abroad, commercial presence and presence of natural persons.
[4] Construction, education, health and social, recreational and cultural, distribution, environment and other services.

tremendous pressure, are costly and mostly favour multinational corporations (Trade Unions and Trade in Africa, 2021).

A sector of priority for the government of Madagascar – digital trade and e-commerce – forms the object of the Protocol on Digital Trade, agreed upon in early 2024. This aims to promote the emergence of African-owned e-commerce platforms at the national, regional and continental levels. It is critical to boosting intra-African trade. It covers, among others, the definition of digital trade, the framework based on existing national policies, rules inhibiting access, data localisation provisions, market intelligence, cybersecurity, consumer protection and privacy, payment systems, marketing rules, digital identities, return of goods and a list of prohibited goods.

Member states have also agreed to make detailed commitments on liberalising services in five sectors: transport, tourism, financial services, telecommunications and business services. At the time of writing, Madagascar has already put forward its commitments to liberalise the first four sectors; it is currently undertaking consultations on its offer on business services.

In summary, as a signatory country, Madagascar takes part in the ongoing negotiations, such as those on digital trade and RoO. Moreover, the government can submit a list of sensitive and excluded products, and a schedule of commitments for the liberalisation of business services.

3.2 Analysis of the AfCFTA's impact on Madagascar's trade using a partial equilibrium model

This section aims to capture the impact that participating in the AfCFTA will have on Madagascar's trade. The impact is assessed by running a partial equilibrium model that describes the import behaviour of Madagascar and its African partners (see Appendix 8 for a description of the model).

3.2.1 Impacts on goods imports and tariff revenues

In the case of imports, the analysis captures the impact of the complete elimination of Madagascar's duties applied to AfCFTA countries (excluding COMESA and SADC partners). Therefore, this provides an accurate representation of how the AfCFTA will affect Madagascar's imports.

This assumes that Madagascar eliminates its duties applied to imports from other African countries in all products. The products excluded from liberalisation, which are part of the schedule submitted as part of the goods negotiations, have not been considered. In this sense, the calculations presented here overestimate the actual and true impact of the AfCFTA.

Our model suggests that the AfCFTA would generate an increase in total Madagascar imports of 0.1%, or around $4.4 million yearly once the agreement is fully implemented. This is achieved by Madagascar increasing its imports from African sources (excluding COMESA and SADC members) by 0.8% and decreasing its imports from other sources by 0.01%, a reorientation effect of $424,000.

The reduction of duties applied on imports from other African countries would generate a reduction in the tariff revenue of $1.5 million. This implies a reduction of 0.4% of the

total national tariff revenue raised by Madagascar.[5] In welfare terms, the Agreement will generate a net positive effect of $136 million associated with the fact that consumers (and firms) will benefit from cheaper imports of goods.

Table 10 in Appendix 9 shows the top 20 products in terms of reduction in import change and tariff revenue change. A single product, prepared or preserved sardines (160413), accounts for nearly 30% of the impact on imports. It also accounts for a similar share in the tariff revenue change. This suggests Madagascar could reduce substantially the impact of the AfCFTA on both imports and tariff revenue by excluding this product from liberalisation.

However, it is important to highlight the implications in terms of poverty that excluding food products may have in the portions of the population with the lowest income. Allowing this product to be included in the liberalisation schedule may have a positive impact on poverty.

Moreover, it should be noted that our results differ from those of a study conducted under the PIC2 project (Pôles Intégrés de Croissance et Corridors), which identifies cotton as the product that could potentially see imports increase under the AfCFTA (Astove Conseil, 2022). This studies relied on a different methodology, which accounts for these different results.

3.2.2 Impacts on exports

The partial equilibrium model calculates imports. While in the case of Madagascar's imports this implies running the model once and, consequently, it captures the import side completely, for its exports it implies running the model individually for each of the non-COMESA and non-SADC African partners as importers. This is particularly cumbersome given the number of partners as well as the different RECs on the continent.

Our analysis calculates the import behaviour of some of the key Madagascar export destinations. We have analysed the impact on two key partners (Morocco and Nigeria) that account for the largest share of Madagascar's exports. As highlighted, for the rest of the African countries, either trade is already duty-free because they are members of either COMESA (e.g. Egypt, Kenya, Ethiopia) or SADC (South Africa) or it is marginal in terms of values. Therefore, the impact of the AfCFTA on Madagascar's exports can be assessed by focusing on these two countries. It should be noted that another study, carried out under the PIC2 project, identifies Morocco but not Nigeria as an export market that can see growth under the AfCFTA (Astove Conseil, 2022). Again, this study relies on a different methodology, which accounts for these different results.

As in the case of imports, we have not considered the products on each of the respective exclusion lists in each of the countries in question. Therefore, in this sense, the analysis may overestimate the impact on Madagascar's exports.

Exports by Madagascar to Morocco and Nigeria will increase by 58% and 36%, or $3.8 million and $9.7 million, respectively. These are significant increases and constitute a large expansion of the value exported to these African countries, and one larger than the expansion of imports generated by the AfCFTA.

[5] The analysis takes into consideration the existing preferential access by COMESA and SADC members into Madagascar but does not capture other exceptions to the tariff treatment, such as temporary and other special regimes.

Exports to Morocco are particularly explained by a significant expansion of the exports of tuna (160414), of almost 128%. Moreover, although it is spread across multiple tariff lines, there is also an expansion in the exports of garments. More details are provided in Table 11 in Appendix 9. The expansion in garment exports is in line with the PIC2 study (Astove Conseil, 2022).

Exports to Nigeria are explained primarily by the increase in the exports of pre-tanned bovine leather (410422) and untreated coniferous wood (440320). The products presented in Table 12 in Appendix 9**Error! Reference source not found.** account for the total list of products exported to Nigeria.

In summary, the impacts on the exports to just two countries offset completely the expansion in the imports generated by the AfCFTA in the whole continent.

Finally, it should be noted that the study conducted under the PIC2 project identifies spices as a key export to be developed under the AfCFTA (Astove Conseil, 2022). The methodology used in our study does not identify spices as a key export product.

3.3 Assessing potential trade diversion, trade creation and competitiveness losses

The results of the partial equilibrium model, presented in Section 3.2, show that joining the AfCFTA will have a limited impact for Madagascar in relation to trade. This is because most of Madagascar's trade within Africa is with COMESA and SADC members, with which the country already has free trade agreements. Therefore, introducing the AfCFTA will not generate large changes. Other possible explanations could relate to the geographic distance of Madagascar from other markets, or a lack of complementarities in the economies of Madagascar and other African countries, or challenges with transport and logistics, which mean Madagascar is poorly connected to the rest of the continent.

In terms of imports, we have estimated that Madagascar will see its intra-African imports increase by 0.08% while imports from other sources will decrease by 0.01%. Exports to Madagascar's main African markets outside of SADC and COMESA, Morocco and Nigeria, will increase by $3.8 million and $9.7 million, respectively. These are significant increases and constitute a large expansion of the value exported to these African countries, and one larger than the expansion of imports generated by the AfCFTA.

Given these limited impacts, and the fact that exports are likely to increase more than imports, Madagascar is unlikely to lose competitiveness by joining the AfCFTA. Quite the opposite: the country will be able to export more to some of its existing trading partners.

3.4 Potential impacts on trade in services with a focus on e-commerce

Regarding trade in services, Section 2 noted that Madagascar is participating in the negotiations, and has already made offers for transport, tourism, communications and financial services, while consulting on its offer on business services. In this area, the opportunities for Madagascar depend on what the other countries in the AfCFTA offer in terms of liberalising their services sectors. Section 2 showed that Madagascar mostly exports transport and tourism services to other African countries. If the other

countries were to open these sectors, this would be an opportunity for Malagasy firms to provide their services to the larger African market.

The tourism sector in particular could benefit from the AfCFTA. The majority of tourists in Madagascar are not from Africa (with the exception of travellers from nearby Mauritius, Comoros and South Africa, who are likely to be business and work tourists). Most leisure tourists come from Europe, mainly France (the largest group, with 24% of total tourists in 2017), Italy, Germany and the UK, but also China (Ministry of Tourism, 2018). It seems there is an opportunity to expand tourism from other African countries under the AfCFTA.

The Protocol on Digital Trade presents significant opportunities for the African continent. It aims to achieve this by eliminating barriers to digital trade; establishing harmonised rules, principles and standards for digital trade; and promoting interoperability of frameworks and systems (tralac, 2023b). Key aspects of the Protocol include ensuring African businesses can freely access and operate in other African countries' digital economies, with obligations not to impose customs duties on electronic transmissions and to provide fair treatment to digital products from other African economies. The Protocol aims to promote open digital markets and address potential barriers to market access, such as forced use and location of computing facilities or forced transfer or disclosure of source code (ibid.).

Cross-border data transfers, essential for increasing services trade, especially in digitally intensive sectors, are also a focus of the Protocol. This requires complementing data transfer with the protection of personal information and data. Moreover, the Protocol seeks to enhance safeguards for consumer and business trust in digital trade, including protection from cyberattacks and deceptive commercial activities (tralac, 2023b).

The Protocol could reduce bureaucratic obstacles and costs, making trade cheaper, faster and more secure. This includes not discriminating between digital and paper-based transactions and documents. Additionally, it aims to ensure digital payments are affordable, real time, safe, inclusive and responsible, along with promoting mutual recognition and interoperability of electronic trade documents, authentication, signatures, digital payments, certificates, identities, data transfers and digital infrastructure. Finally, the Protocol emphasises the importance of affordable, accessible and reliable digital infrastructure (tralac, 2023b).

Joining a trading bloc often leads to harmonised trade policies, reduced trade barriers and enhanced market access among member states. This harmonisation can significantly ease the process of digital trade, as businesses find it easier to comply with regulations and access broader markets. The cumulative effect of these changes is an increase in the volume of digital trade among member states. Such an increase in digital trade volume also has broader economic implications. It can lead to enhanced economic growth, job creation and innovation in the digital sector. It can also contribute to more efficient global supply chains and increased competitiveness of businesses in the global market.

30mpro'The AfCFTA aims to create a single market for goods and services, liberalise markets and enhance competitiveness in the global market (ITU, nd). Its Protocol on Digital Trade could provide a framework for aligning domestic and regional policies.

This might involve adapting to best practices in global bilateral agreements and addressing challenges such as logistical issues and limited internet penetration (ibid.).

For Madagascar, joining the AfCFTA and aligning with its Protocol on Digital Trade could mean several things. First, it may necessitate the development of policies that manage and govern data effectively, contributing to the growth of the digital economy under the AfCFTA framework. Additionally, Madagascar could benefit from the proposed Protocol, which is expected to address issues including cybersecurity, consumer protection and empowering youth and women in digital trade (ITU, nd).

Given Madagascar's current situation in digital trade development, adoption of AfCFTA provisions could accelerate its integration into the digital economy. This could lead to an enhanced digital commerce sector, leveraging the country's growing internet access and mobile device usage. However, the success of such integration would depend on the effective implementation of policies that address existing challenges in digital literacy, internet penetration and the alignment of e-commerce business operations with customer needs and market demands (Rapanoel et al., 2020).

In summary, the AfCFTA's provisions for digital trade offer an opportunity for Madagascar to integrate more fully into the digital economy. However, this integration requires significant improvements in internet infrastructure, digital literacy and policy frameworks to ensure the benefits of digital trade under AfCFTA can be fully realised in the Malagasy context.

4 Social and environmental impacts of the AfCFTA

4.1 Impacts on poverty

As Madagascar is a country with high incidence of poverty (80% of the population living under the $2.15 poverty line in 2022) (World Bank, 2023a), poverty reduction is a priority.

Trade has been recognised as an engine for growth and poverty reduction. Trade liberalisation can improve livelihoods and reduce poverty through the following channels (Winters et al., 2004; World Bank, 2018):

- Trade spurs **economic growth** and leads to macroeconomic stability. This affects the distribution of income and can reduce associated inequalities, as well as raise the standard of living.
- It affects **relative prices.** Since the poor are both consumers and producers, trade can reduce the price of what the poor consume and increase the price of what they sell. It can increase access to the materials, markets, inputs and technology that raise productivity. Relative prices can also affect wages and employment.
- It may increase foreign exchange reserves and **government revenue,** which can support better and inclusive policies. Trade liberalisation reduces tariffs, which may lead to a decline in customs revenues, but, by increasing trade and stimulating production, it may lead to an increase in the collection of other taxes, such as excise duties, consumption or VAT on imports.

However, not all people living in poverty are affected equally by, and benefit equally from, trade; *this depends on where they live, what they consume, what they produce, their gender, their skill level and where they work*. It also depends on whether trade increases import competition through improved market access.

Trade alone cannot end poverty. It must be supported by direct policy actions that redistribute the gains from trade. These may include:

- lowering costs for goods and services that are critical to poverty reduction
- promoting production (i.e. increasing the variety and quantity of goods produced in the country, and that can be traded)
- raising investment in public infrastructure
- supporting those who ‘lose out’ from increased trade competition
- improving the education and skill level (including digital skills) of the poor, especially women

- connecting small and medium-sized enterprises (SMEs) to markets
- improving access to finance and resources at low costs and developing safety nets in the event of price volatility.

A specific mention in terms of trade and poverty needs to be made about trade in agricultural goods. Madagascar has a large share of the population employed in agriculture (74% of total labour; WDI). Therefore, the agriculture sector is key to poverty reduction. Trade in commodities and agricultural goods, two categories produced by rural households, is susceptible to price- and weather-related volatility (Andriamparany et al., 2021; Celio et al., 2023). This leaves the poor vulnerable to price fluctuations, which can be addressed by diversifying exports (chiefly in terms of products but also of markets).

Under the AfCFTA, Madagascar's exporters will have tariff-free access to a large African market. Increased sales of traditional exports, as well as re-exports[6] of consumer and capital goods, will lead to growth in gross domestic product (GDP). Evidence suggests that re-exports have a multiplier effect on ancillary services such as transport, logistics, packaging and storage and thus contribute to their growth – in addition to spurring overall economic growth (Prakash and Chand, 2022; Prohorovs, 2023). Re-exports are often underestimated – and yet they can contribute to increased benefits from integration.

The partial equilibrium analysis conducted in Section 3 suggests that, upon entering the AfCFTA, Madagascar will import more from other African countries. The main item to see an increase in imports would be sardines (prepared or preserved). This would amount to a corresponding loss of tariff revenues of around $1.5 million. Sardines being a food item, this increased import could benefit the poor, who will be able to buy sardines at a lower price. On the other hand, the loss of tariff revenues may mean that the government has less finance to allocate to services, thus penalising the poor.

The analysis also shows that the AfCFTA is likely to increase Madagascar's exports of tuna and of textiles and garments to Morocco and of leather and wood products to Nigeria. As these sectors expand, employment may also grow, benefiting the poor.

Joining the AfCFTA will also allow Madagascar to boost its services trade, in particular the export of transport and tourism services. These sectors employ many workers, including those with lower incomes, and therefore their expansion may have a positive impact on poverty reduction.

4.2 Impacts on women and youth

The impacts of the AfCFTA on gender shed light on the impact of the free trade area on the Malagasy economy and society.

Trade liberalisation can have implications for women and youth. Trade can create jobs and business opportunities, allowing them to increase their income. An expansion of trade and production can allow young people to enter the labour market, which is a way to exit poverty (Fox and Gandhi, 2021). Women's empowerment is associated

[6] Re-exports are exports of foreign goods in the same state as previously imported; they are to be included in a country's exports. Madagascar re-exports goods such as machinery, packaging, and textile and clothing-related goods to the United Arab Emirates, France, China, Mauritius and other countries.

with better nutrition and education outcomes for children, which can lead to higher productivity and poverty reduction in the long term (Abreha and Zereyesus, 2021).

The AfCFTA has the potential to increase women's participation in trade, which could contribute to a rise in continental GDP by 40%. The Agreement can help address challenges facing women and reduce gender disparities. At present, women-led SMEs account for 60% of Africa's GDP and generate more than 450 million jobs (UNECA et al., 2022).

Madagascar has high participation of women in the labour market. In 2022, almost 84% of women aged 15+ were either working or in search of employment (WDI). But women's working conditions are generally worse than those of men, with higher unemployment rates, higher presence in the informal sector (21% of the female workforce vs 16% of the male workforce) and a lower share among wage workers (13% of the male workforce vs 8% of the female workforce) (INSTAT, 2013). Overall, women occupy the most vulnerable and least remunerated jobs (ibid.). In 2021, women were employed in agriculture less often than men (over 71% of women vs 76% of men) but more often in industry and services (WDI). Moreover, in 2012, women made up the majority (62.4%) of workers in Madagascar's special economic zones at all wage and skills levels (ibid.).

Madagascar has a young population: half of the Malagasy people are younger than 20. Youth also face a difficult economic situation: those between 20 and 24 years of age are overrepresented among the unemployed and the underemployed. Youth, in particular those with more years of education, face the biggest challenges in entering the labour market (INSTAT, 2013).

The AfCFTA could bring about changes for women and youth, which depend largely on the industries affected. For instance, the manufacturing sector, of which garment production is a prominent part, employs more women than men in Madagascar (Muller and Kalle, 2023). Therefore, an expansion of the sector as a result of an increase in exports of clothing to Nigeria could benefit women. Conversely, more men than women work in agriculture, fisheries and transport (ibid.). An expansion of these sectors is likely to exacerbate gender inequality. Youth are likely to be employed in all sectors, thus an expansion of the economy is likely to provide more job opportunities, lowering entry barriers to the labour market.

4.3 Impacts on climate and the environment

Madagascar is one of the low-income countries most vulnerable to climate change. The vulnerability comes from extreme weather, sea level rise and agricultural productivity losses (Wheeler, 2011). Moreover, Madagascar is rich in biodiversity, which is important not only per se but also for sectors such as tourism.

Africa accounts for less than 4% of total greenhouse gas (GHG) emissions but stands to be affected negatively by climate change (Mold, 2022). The AfCFTA may have mixed impacts on Africa's emissions. On the one hand, boosting trade is likely to increase GHG emissions; on the other hand, trading within Africa could shorten supply chains, making trade less damaging to the climate. Similarly, on the one hand, African integration is expected to boost industrialisation, which may increase emissions (Coulibaly et al., 2022); it will also provide the continent with an opportunity to

challenge the threats posed by climate change by shifting domestic production away from mining activity and dependence on commodities (Songwe and Adam, 2023).

Madagascar is a relatively small emitter, accounting for 0.1% of global GHG emissions. However, compared with countries at similar levels of development, it has higher emissions per capita, owing to deforestation. Of the historical GHG emissions, 81% come from two sectors: agriculture (39%) and land use, land use change and forestry (42%). As such, land degradation and deforestation are major challenges for Madagascar, caused and exacerbated by small-scale agriculture, energy production (firewood and charcoal), illicit logging, mining and livestock practices that further deplete the country's forest resources (IMF, 2022). All these challenges could further affect the agriculture sector, already affected by declining productivity (productivity per worker has already fallen by $95 per worker over the past 20 years; ibid.).

Some of the changes brought about by the AfCFTA may have a negative impact on the climate and the environment. For instance, the forecast increased in exports of tuna may increase the negative impact of fisheries on biodiversity; increased exports of wood products may promote further deforestation; and the transport sector, which could expand under the AfCFTA, is notoriously hard to abate.

The government of Madagascar Is taking several steps to combat climate change:

- A landmark agreement with the World Bank: Madagascar's Ministry of Environment and Sustainable Development has signed a landmark agreement with the World Bank's Forest Carbon Partnership Facility, unlocking up to $50 million to reduce carbon emissions from deforestation and forest degradation between 2020 and 2024. This agreement will help alleviate poverty among forest-dependent communities, while reducing carbon emissions.
- Regreening the island: The Agreement will allow Madagascar to sustainably finance its current policy of regreening the island and the restoration of forest landscapes. The current programme builds on the country's integrated agriculture landscape approach, which aims to address the direct and indirect causes of deforestation and degradation and protect important watersheds.
- Conservation measures: Proposed measures using conservation in Madagascar include expanding protected areas and generating income by selling carbon offsets for reducing emissions from deforestation and forest degradation.

The initiative to include a climate-conscious economic transformation agenda under the AfCFTA will help Madagascar reduce GHG emissions and adapt to the impacts of climate change.

5 Policy recommendations

5.1 Trade and investment

The analysis presented in this study shows that the increase in Madagascar's trade with the rest of Africa will be limited, given that the country's main trading partners within Africa are SADC and COMESA countries, with which it is already in free trade agreements. This is in line with the results of other studies (e.g. see Astove Conseil, 2022).

In terms of **imports,** the increases of imports from African countries are unlikely to be very high, except for a specific food product (preserved sardines, 160413). Should the government wish to keep the domestic fisheries industry protected, it could include this product on the sensitive lists. This would also protect tariff revenues. However, as this is a food product, increasing imports may lower its price, improving food security.

Should the government allow the import of this product, it should be noted that the projected **revenue loss** may be offset by other revenues, for example VAT and excise on imported goods. The AfCFTA Adjustment Fund, set up by Afreximbank and the AfCFTA Secretariat to support the transition to the new trade regime, can also contribute to addressing tariff revenue loss. Under the Adjustment Fund, the Base Fund is specifically mandated to address tariff revenue losses by using contributions from AfCFTA state parties as well as grants and technical assistance.

In terms of **exports,** the AfCFTA may promote the export of certain products – namely, tuna and garments to Morocco and leather and wood products to Nigeria. This is certainly desirable and would strengthen Madagascar's position in these industries. To further improve the competitiveness of these products, Madagascar should consider horizontal interventions such as improved trade facilitation and transport infrastructure.

In terms of trade in **services,** Madagascar could expand its exports to Africa countries. While knowledge-intensive services are likely to yield the highest benefits, in the short to medium term Madagascar is likely to expand its exports of traditional services such as transport and tourism. The transport and logistics value chain is important to boost trade in the AfCFTA, and it is one of the sectors prioritised within the free trade area, and one where Madagascar could benefit from continental initiatives.

Regarding **tourism,** Madagascar is a destination of global fame, but it does not attract many African tourists. This is an underexplored sector that not many countries are considering under the AfCFTA, and could therefore become a valuable niche for Madagascar. Among the potential measures, Madagascar could explore granting visa-free access to all African nationals (only some countries are so entitled at the moment) and promote its tourism sector in other African countries.

Regarding investment, Section 2 noted that there is very limited African **investment** into Madagascar except for from Mauritius. Mauritian capital has been pivotal in developing the Malagasy garment sector (Balchin and Calabrese, 2019), which is now one of the sectors likely to expand under the AfCFTA. Learning from this story, the government could try to assess whether investment from other African markets could support specific sectors of interest (e.g. South African investment in forestry, as the country has developed forestry for paper and wood industry; see Calabrese, 2021).

5.2 Recommendations for digital trade and e-commerce development

While Madagasca''s e-commerce sector is experiencing rapid growth and shows great promise, there is a critical need for businesses in this space to adapt and align their operations more effectively with customer needs and expectations.

The surge in e-commerce underlines the urgent need for a tailored legal framework that specifically governs online trading activities. Such a framework is vital for addressing a range of emerging issues pertinent to the digital marketplace, including consumer protection, data privacy, cybersecurity and the complexities surrounding digital payment systems.

Looking ahead, as Madagascar continues to advance its internet infrastructure and digital capabilities, the e-commerce sector is poised for further expansion. This growth brings with it the responsibility for all involved parties to foster a well-regulated digital marketplace. Such an environment not only supports technological innovation and economic growth but also ensures consumer protection and overall market stability.

Given the current digital landscape and e-commerce sector in Madagascar, the country’s integration into the AfCFTA presents both opportunities and challenges. To maximise the benefits and mitigate the risks associated with this integration, especially in the digital trade sector, the following policy recommendations can be considered:

- **Strengthening hard digital infrastructure:** Madagascar’s internet penetration rate is below the sub-Saharan African and continental averages. To enhance digital trade, it is essential to invest in and expand digital infrastructure. Development partners such as the World Bank are already active in this space.
- **Enhancing digital literacy and skills development:** Given the challenges in digital literacy and the low literacy rate, Madagascar should focus on educational reforms and programmes to improve digital literacy across all age groups.
- **Adapting legal frameworks for digital trade:** To sustain the growth of the e-commerce sector, Madagascar needs to develop and implement a legal framework tailored to digital trade. This framework should address consumer protection, data privacy, cybersecurity and digital payment systems. This work has already started, and the government needs to prioritise implementation.
- **Developing policies for affordable connectivity:** Efforts should be made to make digital connectivity more accessible to a broader segment of the population. This includes keeping connection costs low by encouraging competition among service providers and reducing the costs of devices, for example by reducing tariffs on the lower-cost handsets.

- **Leveraging the Protocol on Digital Trade:** Madagascar is already engaging in the negotiations on the AfCFTA's Protocol on Digital Trade. Participating in the continental market will help the country integrate into the digital economy of the continent, enabling businesses to access larger markets.
- **Fostering innovation and entrepreneurship:** Encourage innovation and entrepreneurship in the digital sector by providing support to start-ups and small businesses engaged in digital trade. This could involve financial incentives, tax breaks and access to funding.

5.3 Recommendations on how to mitigate adverse social and environmental impacts

Regarding **poverty,** Section 4.1 noted how the AfCFTA is likely to have a small positive impact in Madagascar. Increased imports of food products, combined with increased exports of agricultural products and of services in sectors that employ the poor, are likely to positively affect the lower-income segment of the population.

Specifically, regarding **agriculture,** export diversification under the AfCFTA framework can lower volatility and help poorer communities build resilience to shocks. This can be supplemented with 'trade plus one' policies to improve access to electricity for rural households, connectivity, irrigation facilities and links to exporting markets for small traders, farmers and SMEs.

One potential challenge is related to a **reduction in tariff revenues.** These revenues are currently used (among others) to provide services to the poor, including health care and education. A reduction in tariff revenues may, therefore, lead in the short term to negative outcomes for the poor. However, these may be offset by the increase in other revenues (such as excise and VAT) as well as in the employment and income opportunities created by the growth of exports.

Regarding **women and youth,** the considerations for these vulnerable groups are the same as those above. The expansion in exports could generate growth in sectors that would then create work opportunities for women and youth. For women in particular, increased exports of textiles and clothing may contribute to economic empowerment, as women are often employed in this sector.

However, it should be noted that increased work opportunities may not necessarily benefit women. Taking up employment may lead to an increase in income but may also be unsustainable for women with **care responsibilities.** In particular, factory employment in manufacturing, with its strict and regulated schedule, may be unfeasible or very challenging for women with young children or the elderly to take care of. Therefore, an expansion of job opportunities for women should be accompanied by a similar expansion in support in their care responsibilities, through the provision of services that help them manage their work and care commitments.

Finally, regarding **environment and climate** impacts, the sectors that the AfCFTA could promote could all have negative environmental and climate outcomes. This is particularly true for sectors such as forestry, which may contribute to deforestation, or transport, which is a hard-to-abate sector. The government should develop sector-specific policies that address the specific climate challenges facing these sectors.

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Appendix 1 Review of existing studies on the impacts of the AfCFTA on Madagascar

Existing studies suggest that joining the AfCFTA may have a positive impact on the Malagasy economy. Continent-level studies find that the real income gains from eliminating trade barriers with other African countries could be between 1% and 2% of GDP for Madagascar (Afreximbank, 2018; World Bank, 2020); and eliminating barriers to trade and investment could lead to increases in GDP of up to 5% (Echandi et al., 2022).

Currently, Madagascar imposes tariffs of above 10% on average on the other AfCFTA countries. Eliminating tariffs imposed on other African countries would result in an increase in intra-African exports of 1 percentage point (from 9% to 10% of total exports) in 2035. There will be a higher increase in imports from Africa, which will go from 10% of total imports to an estimated 18% in 2035 (Echandi et al., 2022). An earlier study focusing specifically on East Africa suggests very different outcomes – that Madagascar is going to see an increase in its trade with African countries (+47% for exports and +25% for imports) but not a reduction in its import prices from Africa and, contrary to the previously cited works, no GDP growth as a result of accessing the AfCFTA (UNECA and TMEA, 2020).

Moreover, a study on Madagascar suggests that some gains can be made in the exports of textiles and clothing and of spices, and in the import of cotton, in particular from countries in West Africa with which Madagascar does not currently have any preferential trade agreement, but also of finished goods for domestic consumption (Astove Conseil, 2022).

Impacts that will follow the trade changes will be in terms of job creation (an increase of 1.8% of total labour, with positive gains concentrated in agriculture and textiles, and job losses in the chemical products sector); in wages, with an estimated 6.4% increase in the wage bill, benefiting unskilled workers in particular; and in inward FDI, estimated to increase between 60% and 80% (while outward FDI may see very little change) (Echandi et al., 2022).

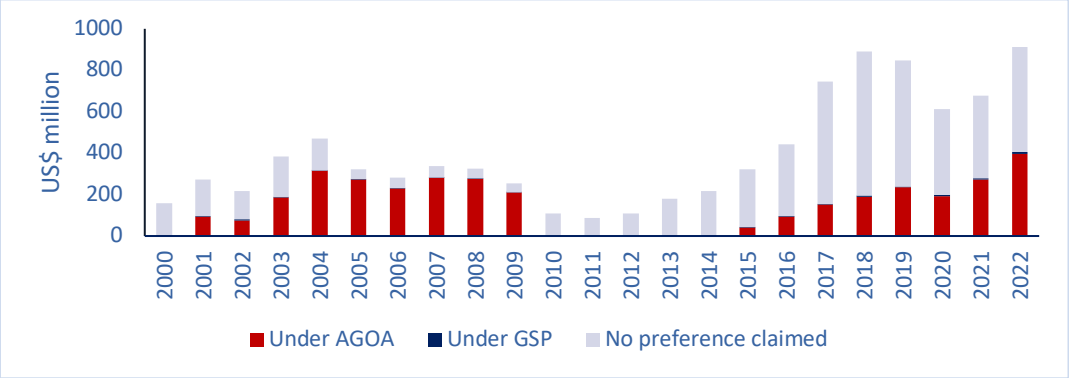
Appendix 2 Market access

Internationally, Madagascar has preferential tariff access through the African Growth and Opportunity Act (AGOA), the Generalised System of Preferences (GSP), Everything But Arms (EBA) and the Developing Countries Trading Scheme (DCTS).

In 2000, Madagascar gained duty-free access to the US market under AGOA. AGOA allows qualifying African countries to export nearly 7,000 products to the US without paying import duties. Madagascar then failed to comply with AGOA's requirements, which resulted in the suspension of its duty-free access in 2010. It was reinstated in 2015. Currently, when Madagascar exports to the US, approximately 46% of tariff lines qualify for duty-free treatment under either AGOA or the GSP. Another 39% of tariff lines benefit from duty-free access under the U''s general MFN tariff. Finally, 12% of tariff lines receive duty-free benefits under AGO''s provisions for textiles and apparel. Only 3% of tariff lines are subject to standard US import duties. However, this does not guarantee zero tariffs, as certain requirements must be met to qualify for preferential tariff treatment such as RoO.

Figure 15 shows Madagascar's exports to the US under specific tariff schemes.

Figure 15 Madagascar's exports to the US under AGOA and other schemes



Source: USITC

The GSP offers tariff reductions for a wider range of products for selected countries. Madagascar has GSP access to the US, the EU, Australia, Japan and Switzerland.

EBA removes tariffs and quotas for all imports of goods (except arms and ammunition) coming into the EU from LDCs. For example, in 2021, Madagascar exported $978 million to the EU, of which $797 million was eligible. Of this, $36 million used the GSP, which means that only 4.5% of the eligible exports entered the EU duty-free. The other $732 million entered under other preference schemes, for a utilisation rate of 91.7%.

In 2021, Madagascar exported £20.1 million worth of goods to the UK, all eligible for DCTS treatment. However, preferences were applied to only £15.9 million worth of goods (79.1% of the total) while the rest did not claim preferences.[7]

[7] UN Comtrade data through the DCTS Visualisation Tool, accessed 23 January 2024: https://public.tableau.com/app/profile/developing.countries.trading.scheme/viz/DCTSVisualisationTool/Dash_Disclaimer

Appendix 3 Trade in goods with African partners

Regarding Madagascar's trade with other African countries, Tables 3 and 4 show the main partners for exports and imports. The figures indicate that this trade is highly concentrated with a small number of countries.

Madagascar exports a diversified basket of goods to African countries. Considering the top four export markets, the main exports to South Africa are knitted and woven items of clothing and metals; the main exports to Mauritius are coffee and tea, wood and cotton; the main exports to Kenya are essential oils, sugar and miscellaneous food products; and the main export to Ethiopia is oil.

Table 3 Madagascar's main export destinations in Africa (US$ million)

	2018	2019	2020	2021	2022
South Africa	101.0	85.7	57.0	90.1	111.5
Mauritius	63.5	40.8	17.9	27.6	38.4
Kenya	16.1	17.6	12.3	9.0	13.4
Ethiopia	3.4	4.2	1.7	2.1	11.4
Tanzania	3.4	2.5	1.3	5.0	7.6
Comoros	9.6	7.9	8.6	6.8	6.8
Seychelles	3.9	2.4	1.8	2.3	3.3
Zimbabwe	0.3	0.5	1.2	1.3	2.9
Morocco	25.1	26.7	13.6	5.9	2.7
Egypt	1.3	0.6	1.1	2.1	2.4
Ghana	0.1	0.1	0.2	0.4	1.8
Malawi	0.0	0.1	0.1	0.7	1.8
Algeria	0.2	0.2	0.8	1.3	1.7
Rest of Africa	7.8	6.9	6.1	6.6	9.5
Total	**235.8**	**196.2**	**123.7**	**161.2**	**215.2**

Source: Authors' calculations using data from WITS

Similarly to exports, imports from African partners are quite diversified. Looking at the three main import sources, Madagascar imports mainly coal, vehicles and industrial machinery from South Africa; fabrics, industrial machinery and cotton from Mauritius; and flour, paper, and oils and fats from Egypt.

Table 4 Madagascar's main import sources in Africa (US$ million)

	2018	2019	2020	2021	2022
South Africa	268.8	209.2	157.0	235.5	268.4
Mauritius	166.5	171.2	155.3	243.8	152.9
Egypt	103.3	107.3	111.9	113.7	78.4
Tunisia	2.3	3.3	11.0	12.0	9.9
Kenya	9.1	6.6	4.9	5.1	9.1
Morocco	15.4	12.7	14.9	7.9	7.2
Ethiopia	0.1	0.2	0.2	1.3	6.2
Zimbabwe	0.0	0.0	0.0	0.0	5.5
Eswatini	1.9	0.9	0.7	1.4	4.1
DRC	0.1	0.2	0.0	0.8	3.4
Seychelles	6.6	22.6	9.8	16.4	2.5
Tanzania	15.7	13.5	8.7	13.6	2.1
Uganda	1.3	1.1	0.0	0.1	1.9
Mozambique	9.3	17.7	13.6	13.2	1.6
Malawi	0.0	0.0	0.2	0.5	1.4
Zambia	0.2	0.2	0.0	0.0	1.3
Côte ''Ivoire	0.2	0.1	0.8	1.3	1.2
Rest of Africa	3.1	2.4	5.7	10.0	1.4
Total	**603.9**	**569.3**	**494.7**	**676.6**	**558.6**

Source: Authors' calculations using data from WITS

Appendix 4 Trade in goods by product

Looking at trade in goods with African countries and disaggregating this by product (see Table 5), cotton T-shirts were the leading export item to Africa in 2022, contributing 11.4% to Madagascar's exports to Africa. Ammonium sulphate fertilisers follow closely, at 10.5%, while vanilla, petroleum oils, oils from bituminous minerals (non-crude) and cotton jerseys each account for 6% of the total export value to Africa. Collectively, these six products constitute 40% of Madagascar's exports to Africa. This indicates the country's reliance on a limited range of export items and its vulnerability to market price fluctuations of selected products.

Table 5 Madagascar's top export products to Africa (US$ million)

HS6	Name	2018	2019	2020	2021	2022
610910	T-shirts, singlets and other vests of cotton, knitted or crocheted	10	13	15	22	25
310221	Ammonium sulphate	12	10	3	17	23
271019	Petroleum oils and oils obtained from bituminous minerals, not crude	14	15	5	4	14
090500	Vanilla beans	46	23	6	12	13
611020	Jerseys, pullovers, cardigans, waistcoats and similar articles of cotton, knitted or crocheted	5	8	8	11	13
810520	Cobalt, mattes, intermediates	31	11	4	6	8
620342	Trousers, bib and brace overalls, breeches and shorts of cotton, not knitted or crocheted	6	5	5	5	7
610510	Men's or boys' shirts of cotton, knitted or crocheted	3	3	2	4	7
330129	Essential oils: other	4	4	5	5	5
620520	Men's or boys' shirts of cotton, not knitted or crocheted	8	13	4	4	5
90700	Cloves (whole fruit, cloves and stems)	1	1	1	1	5
150710	Crude oil, whether or not degummed	0	0	0	1	5
610342	Men's or boys' trousers, bib and brace overalls, breeches and shorts of cotton, knitted or crocheted	1	1	2	2	4
520100	Cotton not carded or combed	1	3	1	3	4
611030	Jerseys, pullovers, cardigans, waistcoats and similar articles of manmade fibres	3	3	2	2	4
610462	Wome''s or girl'' trousers, overalls, breeches and shorts of cotton, knitted or crocheted	0	0	1	4	4
440710	Coniferous wood, sawn or chipped	4	4	4	4	3
250100	Salt (including table salt and denatured)	1	1	1	2	3
210690	Food preparations, n.e.s.	4	3	4	2	3
880212	Helicopters of an unladen weight exceeding 2,000 kg	0	0	0	0	3
610831	Women's or girls' nightdresses and pyjamas of cotton, knitted or crochet	1	1	2	2	3
530590	Coconut, abaca, ramie: other	2	3	3	2	2
	Rest of products	77	71	47	45	53

Source: Authors' calculations using data from WITS

Looking at detailed product level, Table 6 reports the top imported products, which are bituminous coal (9%), knitted fabrics (7%) and motor vehicles (3%).

Table 6 Madagascar's top import products from Africa (US$ million)

HS6	Name	2018	2019	2020	2021	2022
270112	Bituminous coal	47	43	18	62	126
600622	Knitted or crocheted fabrics of cotton (dyed)	13	16	32	46	47
870421	Motor vehicles, not exceeding 5 tonnes	13	12	9	18	17
271019	Petroleum oils and oils obtained from bituminous minerals, not crude	34	21	21	13	16
230990	Dog or cat food, other than put up for retail sale, used in animal feeding	1	2	2	10	15
170111	Raw cane sugar	1	0	0	0	14
110100	Wheat or meslin flour	40	47	39	42	13
220710	Undenatured ethyl alcohol	24	24	14	9	12
392330	Carboys, bottles, flasks and similar	8	10	6	7	11
510610	Yarn of wool or animal hair, containing 85% or more by weight of wool	9	8	6	9	10
600632	Dyed knitted or crocheted fabrics of synthetic fibres	1	3	2	4	7
701090	Carboys, bottles, flasks, jars, pots, vials	10	6	1	2	7
190219	Pasta, uncooked and not stuffed or otherwise prepared	16	8	8	11	7
481840	Sanitary towels and tampons, napkins and napkin liners	3	5	6	6	7
731700	Nails, tacks, drawing pins, corrugated nails	4	4	6	6	6
520849	Woven fabrics of cotton, 85% or more of cotton	17	17	16	13	6
390210	Polypropylene	9	6	5	5	6
252329	Portland cement, etc.: other	5	5	7	8	5
	Rest of products	349	329	291	403	225

Source: Authors' calculations using data from WITS

Appendix 5 Detailed import tariffs

Table 7 Madagascar import tariffs by product group, 2022 (%)

	MFN applied duties			Imports	
Product group	**Average**	**Duty-free**	**Max.**	**Share**	**Duty-free**
Animal products	18.4	8.0	20	0.1	61.6
Dairy products	18.6	0	20	0.5	8.5
Fruit, vegetables, plants	17.9	0.6	20	0.4	0
Coffee, tea	18.0	0	20	0.1	0
Cereals & preparations	12.2	15.7	20	11.5	68.6
Oilseeds, fats & oils	9.3	7.4	20	4.8	0.0
Sugars & confectionery	11.8	0	20	2.2	0
Beverages & tobacco	19.4	0	20	0.5	0
Cotton	6.5	0	10	0.0	0
Other agricultural products	9.6	12.9	20	1.2	86.5
Fish & fish products	19.7	0.7	20	0.8	1.2
Minerals & metals	11.0	3.6	20	12.8	7.6
Petroleum	6.4	27.8	20	13.8	96.3
Chemicals	7.3	7.8	20	11.3	41.0
Wood, paper, etc.	12.6	3.1	20	3.0	4.2
Textiles	15.5	2.5	20	14.4	10.0
Clothing	19.9	0	20	1.0	0
Leather, footwear, etc.	13.2	2.2	20	1.5	3.4
Non-electrical machinery	6.6	8.3	20	7.9	9.8
Electrical machinery	10.6	5.1	20	5.0	25.7
Transport equipment	10.2	10.7	20	5.0	18.5
Manufactures, n.e.s.	12.1	10.4	20	2.4	36.5

Source: WTO

Table 8 shows the average applied tariffs imposed by Madagascar's key export partners. South Africa, a significant export destination partner of Madagascar, maintains an MFN applied tariff of 7.6%. Morocco and Kenya levy tariffs of 14% each. Ethiopia imposes a tariff of 17%. Sudan imposes a higher tariff but accounts for just 0.3%. Importantly, Madagascar, being a member of regional agreements such as COMESA and SADC, benefits from tariff exemptions in its exports to fellow member states like South Africa and Kenya, provided they adhere to RoO requirements.

Table 8 MFN tariffs on Madagascar exports for its major trading partners

Country	Exports		MFN applied (%)		
	($ '000s)	(%)	Agricultural products	Non-agricultural products	Total
South Africa	89,066	47.7	8.7	7.4	7.6
Mauritius	37,663	20.2	1.6	0.7	0.8
Morocco	14,771	7.9	29.2	11.6	14.0
Kenya	13,692	7.3	24.5	12.7	14.3
Comoros	7,954	4.3	14.3	4.6	5.8
Ethiopia	4,551	2.4	22.5	16.1	17.0
Tanzania	3,966	2.1	26.0	12.0	13.9
Seychelles	2,746	1.5	7.4	1.7	2.5
Mozambique	2,174	1.2	14.0	9.7	10.3
Egypt	1,499	0.8			
Zimbabwe	1,236	0.7	27.0	16.5	18.0
Algeria	851	0.5	23.7	18.1	18.9
Sudan	603	0.3	30.7	20.2	21.6
Uganda	548	0.3	28.0	16.9	18.4
Malawi	542	0.3	17.4	11.3	12.2
Ghana	529	0.3	15.9	11.4	12.0
Nigeria	466	0.2	15.9	11.4	12.0
Tunisia	374	0.2	30.3	17.8	19.5
Senegal	363	0.2	0.1	0.0	0.0
Rwanda	343	0.2	24.1	11.4	13.2
Sierra Leone	340	0.2	15.9	11.4	12.0
Côte d'Ivoire	308	0.2	15.8	11.5	12.1
Chad	305	0.2	22.4	17.4	18.1

Source: WTO

Appendix 6 Trade in services with African countries

Table 9 Top trade partners, trade in services, 2019–2021

Exports (US$ million)			
	2019	**2020**	**2021**
South Africa	15.79	6.64	7.19
Mauritius	9.17	3.30	3.24
Angola	8.00	3.04	3.05
Nigeria	7.45	3.28	2.97
Algeria	6.04	2.51	2.37
Morocco	5.38	2.26	1.70
Kenya	3.76	1.69	1.39
Côte d'Ivoire	3.28	1.51	1.43
Democratic Republic of the Congo	1.86	0.82	0.79
Seychelles	1.80	0.62	0.88
Total of the top 10 countries	60.7	25.1	24.1
As a % of the total	77.2%	76.3%	75.0%
Total Africa services exports	78.7	32.8	32.1
Imports (US$ million)			
Mauritius	26.23	17.44	21.56
Egypt	21.43	15.52	21.45
South Africa	14.14	9.04	11.66
Morocco	6.92	4.76	5.12
Seychelles	6.00	3.29	6.19
Liberia	4.55	3.27	4.05
Tanzania	3.20	1.42	1.68
Kenya	3.19	1.54	1.61
Tunisia	2.97	3.55	4.44
Comoros	2.21	1.15	0.28
Total of the top 10 countries	90.8	61.0	78.0
As a % of the total	84.3%	81.4%	84.0%
Total Africa services imports	108	75	93

Source: Authors using data from OECD and WTO BaTiS

Appendix 7 Overview of e-commerce in major African markets

When considering the e-commerce market in Madagascar within the context of the AfCFTA, it is important to understand the situation of other African countries. We consider in particular the main markets (Olenrewaju, 2023):

- Nigeria has a significantly larger e-commerce user base, with 90.9 million e-commerce users. The Nigerian e-commerce market is expected to grow at a CAGR of 12.24% from 2022 to 2027, driven by advanced infrastructure, high internet penetration and a growing number of card-based payment systems.
- Egypt has 55.7 million e-commerce users, and this number is growing rapidly. The country's e-commerce revenue is predicted to reach about $7,909.9 million by the end of 2023 and to grow at a CAGR of 14.7% to reach approximately $13,677.5 million by 2027.
- Kenya has 22.6 million e-commerce users and is known for its active e-commerce systems. The Kenyan e-commerce market is expected to increase to an approximate volume of $2 billion by 2024.
- South Africa has 27.4 million e-commerce users. The market saw a 66% increase between 2019 and 2020, reaching over $1.8 billion.
- Morocco, with 14.7 million e-commerce users, has seen a significant shift in online commercial activities, especially since the COVID-19 pandemic.

Appendix 8 Partial equilibrium model

This research uses partial equilibrium analysis to assess the impact of the AfCFTA on trade (exports and imports) and tariff revenue. In contrast with general equilibrium, where all markets clear consistently and simultaneously, in a partial equilibrium model markets are balanced independently. This implies that, for example, the impact of a tariff reduction in the market of wheat will be limited to that market. There will not be any impact on a substitutable product and/or in the market for the factors used in its production (e.g. labour).

The advantage of partial equilibrium lies in its simplicity, the level of disaggregation and the accessibility of the data needed. Its simplicity gives a great sense of intuition to its results, which facilitates its interpretation. Moreover, from the operation point of view, a partial equilibrium model requires little and widely accessible data.

A partial equilibrium model can be run with highly disaggregated data at the tariff line level. As a result, it is possible to differentiate results between varieties of products and avoid making inferences from very general results about the effects on the products that effectively matter – as would be the case in general equilibrium analysis. This allows results to be obtained that have concrete practical implications for policy-making.

The data required to perform the analysis is simple and readily available. To run a simple import demand partial equilibrium model, it is only necessary to access data on trade by partner, tariffs and elasticities. Such data is widely available to any analyst and, more importantly, the results obtained can be easily related to actual figures.

We used the SMART model (Laird and Yeats, 1986), which is available from the World Bank's World Integrated Trade Solution (WITS). This partial equilibrium model characterises the import behaviour of a country, allowing researchers to simulate the impact of reducing the tariff applied on the product imported from a particular source.

The demand structure of the model uses a nested approach. At the top, consumers demand a composite product comprising a combination of import sources. This composite follows a standard demand function whose sensibility is governed by an import demand elasticity.

The integration of the composite product follows the imperfect substitutability between sources approach (Armington, 1969). This approach avoids corner solutions and implies that a reduction in tariff from country A will not decrease to zero the imports from other sources but will reduce them based on the level of substitutability assumed.

As this is a demand-driven model, supply adjusts based on a predefined elasticity of supply of imports. A highly elastic supply function will tend to generate pure quantity adjustment. On the contrary, in the case of an inelastic function, prices, rather than quantity imported, will tend to adjust. Finally, exports are derived by simulating the imports of partners.

In this particular exercise, we used Comtrade data, tariffs from the Trade Analysis Information System (TRAINS) (Ghodsi et al., 2016) and import demand elasticities at the tariff line level. The SMART model does not allow researchers to differentiate between different elasticities of substitution and supply elasticities. For this exercise, we adopted a simple approach assuming a slightly higher substitution (e.g. 1.5) and a fully elastic supply function (99).

We assumed that Madagascar reduced all its tariffs across all AfCFTA member states and left unchanged its MFN tariffs for the rest of its partners (in this case, aggregated into one group). However, baseline tariffs took into consideration existent trade agreements such as COMESA and SADC. Therefore, there was no reduction of tariffs on the imports from South Africa, for example, as these were already zero.

Therefore, a trade and revenue effect was only expected whenever there was positive trade with an AfCFTA partner, and the tariff applied was non-zero. Of course, when the MFN tariff was already zero, there was no simulation to make.

Madagascar imports will change as a result of two effects. First, the reduction of the tariffs from other AfCFTA partners generates a reorientation of imports in favour of the members of the Agreement. The elasticity of substitution determines the degree through which this substitution is made. Second, total Madagascar imports grow because the tariff reduction has reduced the general price of imported products. The difference between these two effects is considered trade creation and welfare-enhancing.

The impact on Madagascar exports is captured by simulating the effect of the tariff reduction generated by the AfCFTA in Malagasy export partners. In this sense, Malagasy exports grow as a result of the reduction of the import duty applied by its partner on the imports from Madagascar (and other AfCFTA partners). The model assumes a perfectly elastic supply function in Nigeria. This approach involves simulating each export partner separately.

Appendix 9 Results of the partial equilibrium model

Table 10 Impacts on imports and tariff revenue, top 20 affected products (US$ '000s)

HS code	Product description	Imports	Import change	Import change (%)	Tariff revenue	Change in tariff revenue	Change in tariff revenue (%)
160413	Prepared or preserved sardines, sardinella, brisling or sprats	2,757	1,679	60.9	516	-490	-95.0
900912	Electrostatic photo-copying apparatus	1,887	300	15.9	132	-132	-100.0
090111	Coffee, not roasted or decaffeinated	2,081	279	13.4	84	-75	-89.0
691010	Ceramic sinks, wash basins etc.	1,315	260	19.8	262	-19	-7.3
330499	Beauty, make-up, skin-care (including suntan), n.e.s.	2,184	251	11.5	412	-160	-38.9
621010	Garments, made-up of fabrics of felts and non-wovens	1,359	169	12.4	271	-57	-20.9
841869	Refrigerating or freezing equipment n.e.s.	708	152	21.5	77	-39	-50.2
761290	Aluminium casks, drums, cans and boxes, <300L, lined or heated	2,421	147	6.1	436	-51	-11.8
854449	Insulated electric conductors	12,375	124	1.0	839	-46	-5.5
481910	Cartons, boxes and cases of corrugated paper	6,697	83	1.2	319	-29	-9.0
854290	Parts of electronic integrated circuits and microassemblies	3,722	70	1.9	256	-17	-6.7
870431	Gas powered trucks with a GVW not exceeding	3,039	58	1.9	182	-16	-8.8
970110	Paintings, drawings and pastels executed by hand	1,472	56	3.8	183	-25	-13.6
940510	Chandeliers & other electric ceiling or wall lighting fittings	1,302	41	3.1	202	-15	-7.5
870323	Automobiles with reciprocating piston engine	11,700	35	0.3	1903	-13	-0.7
681310	Asbestos brake linings and pads	454	29	6.4	82	-18	-21.6
071339	Dried beans, shelled, n.e.s.	303	28	9.2	61	-11	-18.6
392590	Builders' ware of plastics, n.e.s.	1,345	28	2.1	263	-20	-7.5
853669	Electrical plugs and sockets, for a voltage not >1.000V	1,299	27	2.1	128	-19	-14.6
320910	Paints and varnishes based on acrylic or vinyl polymers	1,235	25	2.0	105	-7	-6.8
	Rest of products	*5,381,003*	*526*	*0.0*	*420,889*	*-256*	*-0.1*
Total		**5,440,657**	**4,367**	**0.1**	**427,604**	**-1,515**	**-0.4**

Source: Authors based on partial equilibrium results

Table 11 Impacts on exports of Madagascar to Morocco by product, top 20 products (US$ '000s)

HS code	Product description	Exports	Change in exports	Change in exports (%)
160414	Prepared or preserved tuna, skipjack and bonito	1,659.8	2,127.5	128.2
530599	Processed ramie, etc., n.e.s.; tow, noils and waste	3,421.7	519.2	15.2
090700	Cloves (whole fruit, cloves and stems)	511.2	380.5	74.4
090500	Vanilla	126.0	107.1	85.0
460210	Basketwork, wickerwork and other articles of vegetable materials	35.6	95.0	267.0
611010	Jerseys, pullovers, etc., of wool or fine animal hair, knitted or crocheted	43.4	93.0	214.2
611020	Jerseys, pullovers, etc., of cotton, knitted or crocheted	40.8	85.7	209.8
091099	Spices, mixtures of two of same heading	137.1	43.2	31.5
620520	Men's or boys' shirts of cotton	15.9	35.9	226.7
620630	Women's or girls' blouses, shirts, etc. of cotton	16.4	34.4	209.3
160520	Shrimps and prawns, prepared or preserved	17.8	30.8	173.4
620610	Women's or girls' blouses, shirts, etc. of silk	14.2	30.6	215.2
620442	Dresses of cotton	9.3	18.9	202.5
330129	Essential oils (including concretes and absolutes)	10.2	17.8	175.0
140190	Vegetable materials for plaiting (excluding bamboo)	300.3	15.4	5.1
611030	Jerseys, pullovers, etc. of man-made fibres, knitted or crocheted	6.0	12.5	209.3
620640	Women's or girls' blouses, shirts, etc. of man-made fibres, knitted or crocheted	5.6	11.7	210.4
611090	Jerseys, pullovers, etc. of other textiles, knitted or crocheted	4.9	11.0	222.3
620449	Dresses of other textiles, n.e.s.	4.6	9.6	210.7
620462	Women's or girls' trousers, breeches, etc, of cotton	4.7	9.5	203.1
	Rest of products	**217.4**	**160.3**	**73.7**
Total		**6,603.0**	**3,849.6**	**58.3**

Source: Authors based on partial equilibrium analysis

Table 12 Impacts on exports of Madagascar to Nigeria by product (US$ '000s)

HS code	Product description	Exports	Change in exports	Change in exports (%)
410422	Bovine leather, non-vegetable pre-tanned (excluding 4108 4109)	15,575.1	6,502.7	41.8
440320	Untreated coniferous wood in the rough	9,570.4	2,243.9	23.4
071339	Dried beans, shelled, n.e.s.	1,235.6	829.5	67.1
410390	Other hides and skins, fresh or preserved	485.0	112.0	23.1
482090	Blotting pads, book covers and other articles o	20.9	26.3	125.4
852390	Prepared unrecorded media for sound recording	6.0	5.1	85.8
610910	T-shirts, singlets and other vests of cotton	0.9	0.9	104.0
560750	Twine, cordage, ropes and cables of synthetic fibres	1.3	0.5	41.7
843790	Machines, parts for cleaning/sorting seed/grain	2.0	0.5	24.0
842199	Machinery, parts for filtering or purifying liquids or gases	1.5	0.4	27.3
842139	Machinery; for filtering or purifying gases, other than intake air filters for internal combustion engines	1.2	0.3	27.6
732399	Iron or steel, table, kitchen or other household articles and parts thereof	0.5	0.3	64.2
842191	Centrifuges and parts thereof	0.8	0.2	27.4
330129	Essential oils (including concretes and absolutes)	0.4	0.2	48.5
870892	Mufflers and exhaust pipes for motor vehicles	0.2	0.1	53.8
610120	Men's or boys' coats, etc. of cotton, knitted or crocheted	0.1	0.1	80.0
Total		**26,901.9**	**9,723.2**	**36.1**

Source: Authors based on partial equilibrium analysis