

July 2022

# Regulation as a Stimulus

Strategic Trade Facilitation for a Sustainable post-Covid 19 Recovery in Africa



RaaS





Produced by Coriolis Technologies 2022  
on behalf of the UNDP

---

# Foreword

The goal of the research was to assess the challenges for intra-African trade and to construct an understanding and business models of where and how Regulation as a Stimulus (RaaS) might accelerate growth of intra-African trade. RaaS is a series of regulatory measures aimed at accelerating intra-African trade facilitation and trade promotion. Governments can critically offset some of the short-term adjustment costs associated with increased openness thereby relieving businesses from high export costs and hence providing a stimulus to trade and recovery from the Covid 19 pandemic.

The research for it was conducted within core research phase was between August 2021 and October 2021. This limited the scope of the methodologies available to us during the time and, combined with a lack of publicly available and consistent data limits the report a discussion of potential further research rather than a definitive quantification of the impact or scale of RaaS. The findings are derived from:

1. Public discourse analysis covering 600 articles and over 1.1m words across Africa.
2. Documentary and literature search.
3. 35 qualitative semi-structured interviews with key stakeholders and practitioners in trade.
4. Quantitative forecasting of impact of regulatory reform using forecasting methodologies and based on Ease of Doing Business survey data, alongside a survey of 55 international banks and the Coriolis Technologies MultiLateral trade data covering intra-African trade.

The research finds that RaaS could stimulate nearly \$90bn in additional intra-African trade by the end of 2026. This more than doubles intra-African trade on its pre-pandemic levels and increases the share of intra-African trade as a proportion of exports from Africa as a whole to non-African nations from 18.2% in 2019 to around 20.7% by 2026. The costs of trade for some African nations are prohibitively high at over 100% of the revenues gained from trade. The estimates provided here suggest that around \$17.6bn across the continent will be saved as a result of streamlining border and pre-border crossings as a result of RaaS.

To be clear, these figures are aspirational and based on the assumption that costs will fall and trade increase from a shift to paperless trade enabled by legal reform in the next 18 months. They should be seen as a target to enable change and is in itself a strong business case for implementing changes at the earliest opportunity

# Table of contents

<b>Executive Summary</b>	<b>1</b>	<b>The African Continent Free Trade Area and Africa post-pandemic</b>	<b>14</b>
Trade and the economy have been decimated by Covid 19	1	Regulation as a Stimulus as it is used in this paper	15
Since 2018, perception of intra-African trade in the public discourse has become more positive	1	Africa's trade profile	15
The dominant challenge facing intra-African trade is logistics but exclusion, especially of women, has proportionately grown the fastest compared to 2018	2	Perceptions of intra-African trade	20
There are opportunities in linking the digital, logistics and infrastructure agendas together to create single windows and seamless border crossings	2	Summary	24
<b>Five key case studies</b>	<b>3</b>	Transforming trade: five case studies and the consequences for the MTFAIP	25
Regulation as a Stimulus (RaaS) may offer a route to more rapid intra-African trade growth and recovery from the Covid 19 pandemic – the Model Trade Facilitation Acceleration Implementation Plan	3	Summary	25
The biggest effect for exporters across Africa will be a substantial reduction in costs	5	<b>The Model Trade Facilitation Accelerated Implementation Plan</b>	<b>26</b>
As a result of improved trade and lower costs, we additionally estimate some \$500bn in additional revenue to Africa's largest businesses and some 268,000 more jobs, and an increase in trade by 18% in sectors where women tend to be represented.	6	Role of the private sector and investors in MTFAIP	27
Transformative solutions through RaaS are possible. Key ideas from the interviews	6	<b>Assessing the costs of cross border trade</b>	<b>28</b>
<b>RaaS helps both the economy and human development</b>	<b>6</b>	Summary	36
<b>Regulation as a Stimulus</b>	<b>7</b>	<b>RaaS and its impact on trade</b>	<b>36</b>
<b>Introduction</b>	<b>8</b>	Summary: Business revenues and employment	41
Aims and objectives	9	<b>Concluding remarks</b>	<b>42</b>
Research caveats	10	Limitations and further research	43
Report structure	11	<b>Bibliography</b>	<b>44</b>
<b>Research methodology</b>	<b>12</b>	<b>Appendix 1: Technical Methodology – Coriolis Technologies baseline trade forecasting methodology</b>	<b>51</b>
Data sources	12	Forecasting methodology	53
Research questions	12	Setting and data	54
		Literature and Resources	54
		<b>Appendix 2: UNDP framework for Regulation as a Stimulus</b>	<b>60</b>
		<b>Appendix 3: list of stakeholders interviewed for this research</b>	<b>65</b>

---

# Executive Summary

## Trade and the economy have been decimated by Covid 19

- The African economy entered its first recession in 25 years according to the World Bank as a result of the Covid 19 pandemic, and 30 million people have been forced into extreme poverty.
- Against this backdrop, intra-African trade has fallen back at a rate of 8.7% each year over the period 2015-2019; African trade values as a whole, measured in current terms, (internal and external trade) is projected to grow by just under 3% annually between 2020 and 2025.
- The decline is due to a high correlation of export revenues to commodity prices, especially oil, which have been lower since the Global Financial Crisis. However, as prices rise, the costs for commodities become higher and the imperative according to the interviews conducted for this work, becomes a move away from commodity dependency. The role of commodities in intra-African trade is potentially distorting the extent to which other sectors are growing, including manufacturing and services according to the literature.<sup>1</sup>
- The discourse analysis (Figure 3 below) suggests that manufacturing and services declining in terms of the numbers of mentions between 2018 and 2021. This may indicate that priority in the public debate shifted over this time from specific sectoral comments towards a more urgent focus on trade facilitation more generally. This may be something for policy focus in the RaaS agenda.

Relatively flat growth in the coming five years will be insufficient to restore intra-African growth to the levels seen before the oil price shocks in 2014, 2015 and 2016.

## Since 2018, perception of intra-African trade in the public discourse has become more positive

- In 2018 just under 60% of public media sources perceived opportunities for intra-African trade, but by October 2021 the figure had grown to 74%.
- Positive perception of opportunities has been growing since 2018.
- As 2021 covers only the first three quarters of the year, this suggests that the recovery from the pandemic is accompanied by positive sentiment towards intra-African trade.

The dominant challenge facing intra-African trade is logistics and infrastructures. Mentions of the exclusion of core groups, especially of women, because of these infrastructure failings has been the fastest growing term compared to 2018

- Terms associated with concerns about logistics grew particularly sharply in 2020, perhaps as a result of the pandemic. They continued to grow into 2021 Year to Date.<sup>2</sup>
- Digital infrastructure is a major concern.
- The exclusion of women from intra-African trade has grown the most in 2021 as a proportion of mentions in 2018 suggesting this is a real area of concern.

There are opportunities in linking the digital, logistics and infrastructure agendas together to create single windows and seamless border crossings.

The case study on inclusion suggested that women are excluded because documentation is too complex and that using digital solutions would make processes quicker and easier to understand. As this group often involved in perishable food sectors and are smaller traders associated with micro or small businesses, this makes them especially vulnerable. Five key case studies were developed from interviews and documentary research are summarised as follows:

---

<sup>1</sup> The correlation between oil prices and African trade is well-documented. See for example:

Rebecca Harding, "Africa: Trade Briefing," Global Trade Review (GTR), August 1, 2018, <https://www.gtreview.com/supplements/gtr-africa-2018/africa-trade-briefing-2>; Rebecca Harding, "Africa: Trade Briefing," Global Trade Review (GTR), August 13, 2019, <https://www.gtreview.com/supplements/gtr-africa-2019/africa-trade-briefing>; Rebecca Harding, "Africa: Trade Briefing," Global Trade Review (GTR) (blog), August 7, 2020, <https://www.gtreview.com/supplements/gtr-africa-2020/africa-trade-briefing-2>; Eddie Norton and Michael Rolfe, "Intra-African Trade: A Priority for Africa" (British Arab Commercial Bank PLC, 2021), <https://www.bacb.co.uk/uploads/files/BACB-WP-Intra-African-Trade.pdf>; Andrew Mold and Samiha Chowdhury, "Why the Extent of Intra-African Trade Is Much Higher than Commonly Believed—and What This Means for the AfCFTA," Brookings (blog), May 19, 2021, <https://www.brookings.edu/blog/africa-in-focus/2021/05/19/why-the-extent-of-intra-african-trade-is-much-higher-than-commonly-believed-and-what-this-means-for-the-afcfta/>.

<sup>2</sup> Year-to-Date is the months in 2021 to the time of writing, end October 2021.

## Business environment

The manufacturing sector 11.2% and services 48.9% of GDP value-added in Africa<sup>3</sup> suggests two things: first, manufacturing activity is still at lower end of supply chains and hence not adding as much to GDP value added. The mentions in discourse analysis have been consistent since 2018, although they have become less important as a proportion of all mentions suggesting that transformation of the business environment is becoming more of an issue than the sectors themselves. Key mentions emerging in terms of encouraging economic transformation through diversification away from commodities and creating more jobs through wider access to trade.

Inclusion: key issue in the business environment. For example, there has been a 306% increase in mentions of women in connection with words associated with empowerment through business, trade and innovation since 2018.

Key issues highlighted from the interviews include:

- Visa costs and restrictions harm intra-African trade, particularly for trading MSMEs.
- Fewer women traders know about trading regulations, which causes a reluctance to formalise their trade, putting them at risk of exploitation and even sexual abuse.
- Due to a lack of relevant information, goods and services are imported by African countries from outside the continent when goods of similar quality and prices could be sourced from other African countries.
- Lack of sufficient deliberate policies to support and protect MSMEs and women traders harm their ability to trade.

## Before the border

There was a 303% increase in references to border crossings during 2020 which suggests it became more important during the pandemic. The discourse analysis highlighted issues around promoting efficiency, expanding integration at regional and continent-wide level, and strengthening regional and continent-wide value chains.

Key issues highlighted from the interviews include:

- Different trade regimes and conflicting industry and product standards confuse traders and deter intra-African trade.

- No space that allows for pre-border electronic payments online.
- A lack of digital certifications and documentation causes delays and costs to traders.
- Difficult to access crucial information such as documentation needed, licensing fees, road fees, and REC rules. There isn't one space that provides all needed information or up-to-date communication on any sudden changes (such as borders closing or halts/bans on certain imports); this was exacerbated by COVID-19.
- Complex trade regimes are a barrier for SMEs and women trade enterprises.

## At the border

Divergent trade policy and non-tariff measures are some of the most significant barriers to trade across the region. More than this, unexpected and prohibitive trading charges at the border, often from informal trade costs associated with the illegal payments to get through the bureaucracy quickly were highlighted as being particularly severe. For some countries these costs amount to more than the revenues received from trade, a comment that has been highlighted in the analysis of costs in Figure 6 below.

Key issues highlighted from the interviews include:

- Different countries having different regulations makes border-crossing confusing, complex, costly, and slower.
- Making payments is complicated as countries use different currencies and traders can't pre-pay or pay electronically.
- Implementation of regulations and procedures varies across border officials.
- Taking samples from too many products and traders slows down border crossing.
- Using multiple and out-of-date systems and paper documentation causes delays and makes it impossible to track and report real-time trade and statistics.
- Issues such as delays and unannounced regulation changes were made worse by COVID-19.

<sup>3</sup> "Manufacturing, Value Added (% of GDP) - Sub-Saharan Africa | Data," The World Bank, accessed January 7, 2022, <https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=ZG>.

## Infrastructure and logistics

There was a 321% increase in references to infrastructure and logistics over past 4 years in the 600 media sources covered. The key themes that came through were largely negative: poor road and rail links, red tape, and excessive border bureaucracy. However, there was some cautious optimism about long term outlook. There was a clear trend in the discourse analysis suggesting that this was an “all or nothing” change – if one Head of State made the change, then others would follow quickly creating a multiplier effect.

Alongside this, digital infrastructure references increased by 685% between 2018 and 2021 with single windows seen as a way of simplifying information flows and document processing. However, the discourse analysis showed clear limits to the role of technology because of access to technology, potential for language barriers and low literacy rates.

Key issues highlighted from the interviews include:

- Infrastructural inequities disadvantage women: border-crossing is significantly more difficult and dangerous for women traders, particularly due to their lack of childcare facilities and pedestrian lanes, bad lighting, poor sanitation, and inadequate lodgings.
- Out-of-date systems and a lack of technology slows down procedures, affects accuracy, and muddies data on traffic and flow. It may also be because of incomplete and inadequate implementation of IT Solutions for Trade such as the Automated Systems of Customs Data (ASYCUDA) and inconsistent National Single Windows.
- Safety is overlooked: overloading trucks in order to reduce costs creates a significant degradation of roads over time and makes vehicles unsafe.
- Lack of inter-connectivity due to poor intra-regional infrastructure.

## Access to finance

Applications for trade are more frequently rejected by banks in Africa and the financing gap has widened in Africa during the Covid 19 pandemic.<sup>4</sup> This is due to the perceived risks of trade finance, the size of the informal economy and the number of small businesses without audited accounts.

Key issues highlighted from the interviews include:

- Credit analytics is a challenge as SMEs typically do not have audited financial statements or formal books, but use spreadsheets with accounts (payables/receivables and cashflow), which require external validation.
- Banks are more frequently declining SME applications, from a 20% rejection rate in 2013 up to 40% in 2019. This figure could have potentially deteriorated further due to the COVID-19 pandemic, derailing the growth of SMEs who are the backbone of trade in African economies.
- Women face many challenges to access trade finance and insurance products compared to the typical micro or small business for a variety of reasons. They often lack traditional collateral (land) and are therefore seen as riskier borrowers. Financial institutions also lack understanding of women's businesses and lack tailored products and services for women traders that support their nature of trade and needs.
- Know Your Customer (KYC) is a major stumbling block across Africa as it is very difficult to validate IDs, which require verifiable addresses. Businesses and people don't necessarily routinely have ID cards or registration numbers.

## Regulation as a Stimulus (RaaS) may offer a route to more rapid intra-African trade growth and recovery from the Covid 19 pandemic – the Model Trade Facilitation Acceleration Implementation Plan (MTFAIP)

Current projections for trade suggest that an annual compounded growth rate of 2.8% to 2026 will be insufficient to restore intra-African trade to pre-pandemic levels, yet this has to be a priority in order to reduce regional imbalances, move people from poverty to employment, create decent work and gender equality and to use digital innovation to improve access to economic, social, health and climate opportunities.<sup>5</sup> Enabling greater intra-African trade is the core focus of the AfCFTA<sup>6</sup> with a particular focus on women and inclusion made possible through greater trade between African nations.<sup>7</sup>

4 African Development Bank Group, “Trade Finance in Africa: Trends Over the Past Decade and Opportunities Ahead - Policy Research Document 3,” Text (African Development Bank, September 18, 2020), <https://www.afdb.org/en/documents/trade-finance-africa-trends-over-past-decade-and-opportunities-ahead>.

5 David Luke, “Why Trade Matters for African Development,” Africa at LSE (blog), July 27, 2020, <https://blogs.lse.ac.uk/africaatlse/2020/07/27/why-trade-matters-for-african-development/>.

6 African Union, “African Continental Free Trade Area (AfCFTA) | African Union,” African Union, accessed January 6, 2022, <https://au.int/cfta>.

7 “The Futures Report: Making the AfCFTA Work for Women and Youth” (AfCFTA Secretariat and UNDP), accessed January 6, 2022, <https://afcfta.au.int/en/documents/2020-12-02/futures-report-making-afcfta-work-women-and-youth>.

Potential trade facilitation measures over the next 18 months are summarised by measured that can be addressed on an Africa wide basis, at regional level and at a country level in the form of an action plan. The key message is that actors must collaborate coherently around RaaS to ensure its full potential

Regulatory measures	Who	What
Digital	AfCFTA, Regions and nations	Support structures and regulations to enable greater use of digital systems digitisation.
	AfCFTA	Single window platform framework
	Regions	Regional agreements on digital, rules of origin and compliance standards
	Nations	Legislation to enable digital IDs.
Financial	AfCFTA, Regions and nations	Regulatory framework and implementation to widen financial access and enable cross-border financial flows.
	AfCFTA	Enabling framework increasing financial access and integrated support platform to continent wide initiatives and support frameworks.
	Regions	Agreements on cross-border capital flows and charging/discounting ceilings.
		Regulatory approval of digital accountancy software.
	Nations	Legislation to allow self-validation by businesses of financial forecasting.
		Regulatory approval of digital accountancy software.
		Regulations for liquidity and capital charge ceilings.
Infrastructural	AfCFTA, Regions and nations	Frameworks and support structures to allow cross border trade and reduce costs.
	AfCFTA	Guidelines, framework and platforms for ease of cross-border movement of professionals.
	Regions	Agreements on internal movement of professionals.
	Nations	Legislation to approve free visas for work purposes enabling labour mobility across region.
Enabling frameworks	AfCFTA, Regions and nations	Enabling framework for freedom of movement of goods and services across borders - platform based "single window" across continent.
	AfCFTA	Continent wide acceptance of digital documents.
	Regions	Regional agreements to support digital documents.
	Nations	Legislation to mandate digital documents at ports and logistics hubs.

Inclusion	AfCFTA, Regions and nations	Enabling frameworks for excluded groups, especially women and informal economy.
	AfCFTA	Incentives and grants to enable women and informal economy actors into formal economy through access to finance, training and skills.
	Regions	Agreement on policies to support excluded groups and social enterprises as well as informal actors.
	Nations	Legislation to enable quotas for access to finance for excluded groups.
		Legislation to allow protection for informal businesses as they move into formal economy.
		Legislation to require registration and legal identifiers.

**Table 1**

**Source: Interviews and documentary research**

### Role of investors

Investors can aid this process by engaging with RaaS and the MTFaip through specific mechanisms that would include but not be limited to:

1. Investment or co-investment to support national and regional digital infrastructures, especially around the requirements of Single Windows customs platforms and enabling on digital IDs
2. Investment or co-investment to support Africa's emerging services and fintech sectors, including in e-commerce, through dedicated equity schemes specifically focused on international businesses
3. Investment or co-investment to support funding ladders for Africa's excluded groups, such as women traders. This would be a funding escalator programme from micro-investment through to full scale venture capital
4. Development of structures to enable acceptance of and investment in invoice finance and credit insurance across the continent
5. Investment in digital accounting software platforms to enable SME self-assessment of financial performance
6. Project finance for pan-African trade infrastructure projects with guarantees for local employment and supply-chains, with the potential to widen this to other initiatives with clear FDI incentives such as Special Economic areas or Free Zones associated with ports. These are underdeveloped across Africa but offer tax incentives to investment: Free Zones, for example created \$1.2m in inward trade in 2020, while special economic zones in

Southern Africa created as much as \$197m in export potential in the same year.<sup>8</sup>

7. Cooperation and co-investment or guarantees alongside government grants or loans for infrastructure and small business development

### Impact

If these measures to improve trade were introduced by the end of 2022 with full investor engagement, then we estimate that there would be an estimated uplift in trade of between \$77bn - \$90bn. To put this in perspective, this is a potential additional contribution from trade to the GDP of the African continent of between 3% and 3.5%. It comprises of:

- \$40bn in additional trade finance from digital trade – this includes measures to improvement regulatory framework of trade by approving digital IDs and enabling digital documentation in trade finance.
- \$37bn in additional trade from cost reductions associated with streamlined border crossings. This includes measures to create single windows, simplify customs procedures and speed up processes at border crossings. Costs savings come from addressing the issues of prohibitive informal costs of trade.
- \$12bn in additional trade in new areas of services and manufacturing and improved access to trade by excluded groups (particularly women traders). The additional trade comes from measures to protect informal businesses, enabling them to engage in the formal economy, and the incentives and grants that enable women in particular to access training for trade and to simplify processes at borders to that produce does not spoil as a result of cross border delays and complexity.

---

### **The biggest effect for exporters across Africa will be a substantial reduction in costs**

- Costs as a share of trade will fall significantly because of reduction in compliance costs at borders, documentary costs, transportation costs and most of all, a reduction in informal economy costs. (Figure 6)
- For some economies, like DR Congo and Gambia, these costs are currently more than or close to 100% of the revenues received from trade. This makes trade untenable for exporters from those countries.
- Many interviews focused on these extreme costs and pointed out the large hurdles to exporters that it represented.
- The potential for cost reductions is up to 95% for some countries (Figure 7) or \$17.6bn in business costs.

As a result of improved trade and lower costs, we additionally estimate some \$500bn in additional revenue to Africa's largest businesses and some 268,000 more jobs, and an increase in trade by 18% in sectors where women tend to be represented.

These figures are derived from estimates for company turnover taken from turnover and employment data in the Bureau van Dijk Orbis database for all African companies and weighted for the size distribution of African businesses. Over 200,000 businesses, or 5% of all the businesses listed in the Orbis database were used as a basis for this calculation. The approach is limited by the availability of data for turnover and employment in the Orbis database. The projections were derived from trend data for the turnover and employment over the past 10 years for these businesses.

### **Transformative solutions through RaaS are possible. Key ideas from the interviews**

- AfCFTA, the economic regions and nation states can work together on Regulation as a Stimulus to provide the right framework including freedom of movement and experience sharing.
- As identified in Figure 4, nation states and Heads of State in particular need to prioritise and regulate for:
  - Digital IDs,
  - Single windows,
  - Free movement of professionals across borders within Africa,
  - Cost ceilings on loans and export or import guarantees to enable trade finance,
  - Enabling digital technologies, particularly blockchain.

- Regulation through engagement with Heads of State was seen in case study interviews as the key to moving quickly since it is proportionately cheaper compared to large scale investment in infrastructure.

### **RaaS helps both the economy and human development**

- Enabling cross-border flows of professionals.
- Expanding access to finance for women, youth, and smaller enterprises. Women and younger people are disproportionately represented in smaller organisations so this is a measure that would specifically support these groups.
- Creating jobs through enhanced business revenues.
- Improving border infrastructures to make them safer and to support marginalised groups.
- Reducing barriers to exporting and enhancing public service delivery through digitisation.
- Lifting people out of poverty.

In summary, RaaS enables the resilience of African exporters to develop at an individual level protecting intra-African trade, individuals and communities against future shocks. The support in the public discourse is there, and the economic case is compelling. The framework is there at a continental level through AfCFTA – now it needs the Heads of State to work with the AfCFTA and the economic regions to release this potential.



December 2021

---

# Regulation as a Stimulus



---

# Introduction

The goal of this report is to assess the current challenges for intra-African trade, including in the aftermath of the Covid 19 pandemic. It looks at intra-African trade growth between 2015 and 2019 and at the prospects for intra-African trade in the coming years if nothing changes and, more importantly, if the full effects of the African Continent Free Trade Area (AfCFTA)'s trade facilitation measures come into force. It is indicated that intra-African trade has fallen back at an annualised rate of 8.5% a year since 2015<sup>8</sup>. The current trend growth projections for African trade if nothing changes suggests annualised growth of just 2.8% from 2021 to 2026. This will be insufficient to address the imperative for urgent and targeted growth to aid post-pandemic recovery.

The principle purpose of the report is to examine the novel concept of Regulation as a Stimulus (RaaS) as a means of accelerating the growth of intra-African trade. RaaS is defined for the purposes of this report as “a series of policy and regulatory measures aimed at accelerating intra-African trade facilitation and trade promotion”. In other words, governments can critically offset some of the short-term adjustment costs associated with increased openness thereby relieving businesses from high export costs and hence providing a stimulus to trade and recovery from the Covid 19 pandemic.

As a policy tool RaaS is powerful because it covers an approach to regulation as a whole system rather than taking selected regulations. In particular its value-added contribution lies as follows:

- It empowers Heads of State to work with their national stakeholders and regional economic groupings within the framework provided by the AfCFTA to enhance trade, create growth and employment opportunities and reduce poverty in a

way that is appropriate to their countries.

- It is relatively cost efficient with potential for bigger impact: it involves legal reform at a national level which can be facilitated by existing regulatory structures at a continental level through the AfCFTA and the Regional Economic Communities (RECs).
- It creates synergies between the key players in intra-African trade: it is the mechanism by which Heads of State can connect enabling trade regulations at their national level with legal structures that exist as the implementation of the AfCFTA gathers pace. As such, RaaS is enabling and can provide a short-term action that is effective as an alternative to expensive and longer-term large-scale capital investment. In the current climate of high indebtedness, this means that it is an attractive tool of trade facilitation.
- It provides a short term bridge at a national level to bigger intra-regional or intra-Continental infrastructure projects which are expensive to implement but which would be pre-requisites of some trade facilitation measures (for example paperless trade or physical infrastructure).
- It is the mechanism for creating long-term growth through intra-African trade while providing a short and medium term framework for recovery from the Covid pandemic.

This last point on the expense of trade facilitation measures is arguably the key to establishing why RaaS may be successful. The costs of implementation of trade facilitation measures are argued to be outweighed by the resultant benefits in the literature. However, the costs of WTO implementation are likely to vary between countries and have differing effects as standards and procedures around their implementation are likely to differ as well.<sup>9</sup> To stress, and as mentioned above, RaaS itself is a low-cost and nationally focused approach to trade facilitation more broadly that provided advantages for the Head of State in terms of impactful, targeted and effective leadership, creates synergies between structures at a national, regional and continental

---

<sup>8</sup> This is based on a Compound Annualised Growth Rate calculation covering trade values between 2015 and 2019. By definition, this smooths out any volatility and gives an illustrative and simplified picture of the trend rather than an actual picture of year-on-year changes.

<sup>9</sup> See for example: Yann Duval, “Cost and Benefits of Implementing Trade Facilitation Measures under Negotiations at the WTO: An Exploratory Survey, ARTNeT Working Paper Series, No. 3” (Bangkok: Asia-Pacific Research and Training Network on Trade (ARTNeT), January 2006), <https://www.econstor.eu/bitstream/10419/178361/1/awp-03.pdf>; Evdokia Moisé, “The Costs and Challenges of Implementing Trade Facilitation Measures” (Paris: OECD, May 15, 2013), <https://doi.org/10.1787/5k46hzqxt8jh-en>; Yann Duval, Chorthip Utoktham, and Alexey Kravchenko, “Impact of Implementation of Digital Trade Facilitation on Trade Costs, ARTNeT Working Paper Series, No. 174” (Bangkok: Asia-Pacific Research and Training Network on Trade (ARTNeT), 2018), <https://www.econstor.eu/bitstream/10419/177771/1/AWP174.pdf>. ARTNeT Working Paper Series, No. 3 [ARTNeT Working Paper Series, No. 3] (Bangkok: Asia-Pacific Research and Training Network on Trade (ARTNeT)

---

level, and can in itself reduce costs and streamline processes. However, it would be a mistake to see it as a substitute for trade facilitation more broadly – rather, it should be seen as a necessary but not alone sufficient first step towards comprehensive trade facilitation because it is a low cost and low risk entry point for policy makers.

Indeed, what is clear from the research conducted for this report is that the level of economic growth across Africa to mitigate the socio-economic effects of the pandemic will rely heavily on intra-African trade facilitation with a focus on recovery from the pandemic in the short and medium term. This in itself will reduce dependency on supply chains outside of Africa and integrate African businesses into global supply chains. This will have an effect on jobs and revenues to business which are evident from the quantitative analysis conducted as part of this research which suggests that intra-African trade alone could increase as a share of African external trade by around 2.5% by 2026.

There are four ways in which the research for this report offers new insight:

1. It uses discourse analysis to understand the underlying public support for regulatory reform in key areas. This provides corroborative support to the cases and interviews conducted and, because it covers some 600 media outlets, it is representative of public narrative around trade facilitation.
2. It estimates the costs associated with current weaknesses in the intra-African trade system. This is done from Ease of Doing business data and the author's calculations and associated directly with trade and trade costs for a container with a value of \$25,000. While this may be somewhat bigger than the shipments for smaller businesses, it nevertheless gives a stylised view of where the costs of trade arise.
3. It provides a quantitative impact of regulatory reform that is consistent with work done elsewhere for the International Chamber of Commerce, the Commonwealth and the United Kingdom. Again, this is a stylised approach, and represents an early-stage methodology. However, as part of a broader methodology which combines other tools including discourse analysis and interviews, provides an insight into

RaaS impact at the very least.

4. It links the research to policy actions. While these are not evaluated completely in terms of cost-benefit analysis, the priority defined in the Terms of Reference was to understand costs and to provide a starting point for an action plan.

Many of the challenges for intra-African trade are well-known and substantial work has been done by the ITC, UNCTAD, UNECA and the WTO as referenced throughout this document. This knowledge base underpins the existence of the RECs, the AfCFTA, and other initiatives to stimulate trade and trade finance on the continent from multilateral banks such as the African Development Bank and international organisations such as the World Bank, the IFC, the UNDP and others. The impact of RaaS which is illustrated here serve simply to show that there is huge potential across the region of trade facilitation through regulatory reform. Any numbers are of course projections based on an assumption that market creation and growth will follow within an 18 month period of any regulatory reform and are therefore have to be seen as indicative of the potential rather than absolute. Nevertheless, the approach taken does suggest that there is huge potential to increase intra-African trade and reduce costs for exporters accordingly. This is a wake-up call for the Heads of State to work with the existing legal frameworks to make such changes.

### **Aims and objectives**

This report has one simple aim: to assess the role of RaaS in stimulating intra-African trade. Its more complex objectives were set by the UNDP in their Terms of Reference document in Appendix 3 and summarised here:

- To identify the challenges facing intra-African trade facilitation currently and how these can be addressed through RaaS.
- To identify regulatory bottlenecks that are obstacles to intra-African trade.
- To provide five case studies of intra-African trade facilitation and promotion where RaaS can provide a solution. Note, these case studies were originally intended to be regional export pathways, but the terms were modified after the project inception to make these five thematic case studies.
- To provide estimations of costs and potential cost reductions that would be enabled through RaaS
- To produce a Model Trade Facilitation Accelerated Implementation Plan (MTFAIP) building on actions already taken by key stakeholders and derived

---

from the documentary and stakeholder interviews defined in the Terms of Reference.

- To ensure that the findings are relevant to the broader agenda of the AfCFTA for socio-economic inclusion (especially women) and focused on the needs of Micro, Small and Medium-sized Enterprises (MSMEs) and informal economic actors as these constitute a large but hidden proportion of intra-African trade.

This research additionally aimed to:

1. Quantify the intra-African trade, and revenues and jobs impact of any measures over a five-year period in order to provide a business case for the MTFAIP.
2. Provide a new focus on RaaS rather than replicate known issues in intra-African trade facilitation.

The research only aims to provide ideas and a business case for regulatory reform. This is a vital agenda for the continent in the wake of the pandemic and it is hoped that the contribution of the work conducted will provide at least pause for thought. In the end, it is the Heads of State themselves who need to act and this report is a first step towards catalysing that action.

### Research caveats

There are several caveats to this research. The first, and most obvious, is the fact that the economic impact of regulatory reform is intrinsically “unknowable”. Approaches have looked at reduction in the country risk profile from more stable institutions and the extent to which legal reform can create a framework for market mechanisms to take hold and generate growth.<sup>10</sup> However, underlying these studies is the fact that rates of reform are variable and context specific, while economic growth has been hampered by exogenous factors such as volatility in prices, global financial crises or conflict. This means that while institutional and or regulatory reform in themselves must be seen as a good thing in that they provide a framework for catalysing change, it is the actions that follow regulatory reform that will have the economic impact, not the reform itself.

Second, any recommendations for legal reform and associated growth estimates with those are necessarily qualitative in that they are derived from the research itself. There is little or no precedent for estimating the effects of RaaS as it is conceptualised by the UNDP and used in this research. This is unsurprising since

RaaS is a new initiative. However, every attempt has been made to derive reliable numbers from interviews and discourse analysis, and to triangulate these with numbers established from desk research, other studies and a proprietorial survey of 55 international banks with global operations to estimate “typical” increases in trade business and international trade. So the quantifications provided in this research are based on assumptions about how costs would be reduced and trade increase as a result of streamlining and market creation, particularly enabling Micro, Small and Medium-Sized enterprises (MSMEs) to enter the market as a result of the changes enabled as a result of RaaS. As these are derived from qualitative research they are “untestable” for their accuracy since no precedents exist. This is discussed in more detail in the methodology section and the detailed forecasting methodology is described in the statistical appendix.

Finally, the MTFAIP is based on 35 in-depth semi-structured interviews with senior stakeholders across the continent. Within the timeframes of this research, this is a large number and represents core interests. However, more work needs to be done to assess the framework provided and to integrate it with broader engagement work that is being undertaken by the UNDP. The current position paper on that is appended in Appendix 2.

Despite these caveats, the impact on intra-African trade is substantial. As has already been made clear, RaaS could facilitate as much as \$90bn in additional intra-African trade by 2026, nearly 270,000 new jobs and \$500bn in additional revenue for African businesses. Further, it could reduce costs on average by 75% across the continent giving exporters in some countries access to markets that they currently are prevented from entering since their costs are simply too high. Even if the numbers prove to be over-ambitious because the process of change is slower than expected, anything that moves in the direction of helping the continents small businesses to become more competitive and create jobs must be worth doing. This is the essence of the call-to-action for Heads of State.

---

<sup>10</sup> See for example: Phillip LeBel, “Managing Risk in Africa through Institutional Reform” (New Jersey: School of Business, Montclair State University, 2006), <https://studylib.net/doc/9185094/managing-risk-in-africa-through-institutional-reform>; Kevin E. Davis and Michael J. Trebilcock, “The Relationship Between Law and Development: Optimists versus Skeptics,” SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, May 1, 2008), <https://papers.ssrn.com/abstract=1124045>; Daniel Oto-Peralías and Diego Romero-Avila, “Legal Reforms and Economic Performance: Revisiting the Evidence, Background Paper for the World Development Report, Governance and The Law” (The World Bank, 2017), <https://thedocs.worldbank.org/en/doc/193351485539892515-0050022017/original/WDR17BPRRevisitingLegalOrigins.pdf>.

---

## Report structure

The report is structured as follows:

- Section 1 is a summary of the research methodology undertaken and should be read in conjunction with the statistical appendix. It highlights the fact that assessing the impact of policy and regulatory reform on trade facilitation is fraught with difficulties, as highlighted above, since there are few empirical precedents. This research and its method should be seen as a first attempt and a starting point along that journey as a result.
- Section 2 looks at the challenges for African trade generally and intra-African trade post pandemic and how RaaS, as the term is used in this study, can providing a catalyst for trade facilitation. It is argued that the current forecasts for intra-African trade growth are insufficient to pull the continent out of the current Covid-induced economic recession. Trade is a necessary, if not alone sufficient, mechanism for creating post-pandemic growth, and legal reform to simplify cross border trade will be a major step towards generating African recovery from within Africa.
- Section 3 is a review of each of the thematic case studies in developing the MTFaip. It looks at the business environment, pre-border challenges, border challenges, infrastructure and access to finance as the key issues identified by the project team during the scoping period of the research.<sup>11</sup> While the challenges faced are well-known, interviews conducted suggested novel ways of amending laws to aid digital trade, access to finance, enable the movement of people and capital across borders and to share experiences and effectiveness of reform programmes so that others could learn. Most importantly, these measures had some specific recommendations that would enable women to trade more readily across borders.
- Section 4 draws the analysis together by looking at the Model Trade Facilitation Accelerated Implementation Plan. It is structured around the case studies and looks specifically at how the AfCFTA, the RECs and Heads of State can structure legal frameworks with country level legal reform to facilitate intra-African trade.
- Section 5 is an analysis of the costs of cross-border trade and how RaaS can help to reduce those costs. It estimates that for some countries the savings could be as much as 95% making viable trade in countries like the Democratic Republic of Congo (where costs are currently higher than revenues from international trade).
- Section 6 looks at the multiplier effects that cost

reductions and trade streamlining through legal reform to enable the use of new technologies could create. It is estimated that there could be an additional \$40bn of trade just from improved access to finance, \$37bn of trade as a result of the cost reductions, and another \$12bn of trade by enabling excluded groups, especially female traders, to access international markets without the heavy bureaucracy that delays them at borders.

- Section 7 draws together the conclusions against the core research questions and the terms of reference. The research has identified the key regulatory hurdles as those associated with the costs of border crossings, either before or after the border. Other aspects of barriers to trade, for example creating a more inclusive environment for female exporters, will be addressed if regulations and structures to support trade across borders electronically are introduced rapidly. Similarly, access to finance can be improved through digital means such as digital IDs, and this would have an associated effect of incentivising actors in the informal economy into the formal economy; if they felt they could access finance by registering, then they are more likely to want to do it. The cost reductions and increases in trade represent a business case, but the advantages of streamlining the whole trade system are likely to be more inclusive as well.

One thing came out from all the interviews, documentary research and discussions held during the course of this research: governments have a strategic role to play as regulators and can use this role to facilitate trade in a relatively low-cost way. It does not take away the need for long-term investment in infrastructure or other trade facilitation enablers in the business environment. But regulatory reform does signal an intent to address structural issues at a national and international level. Here the AfCFTA Secretariat, the IFC, the UNDP and the African Development Bank have a role to play alongside international organisations such as the International Chamber of Commerce and the United Nations Development Programme in providing enabling frameworks that make legal reform the trigger for enabling equal access for MSMEs and large businesses alike to the benefits of trade-based growth in Africa.

---

<sup>11</sup> From UNDP: Mr. Tomas Sales, Mr. Eric Picard, Dr. Joy Kategekwa; from Africa Investor: Mr. Hubert Danso; from Coriolis Technologies: Dr. Rebecca Harding, Ms. Hannah Skilton, Ms. Janet Mulu, Ms. Leigh Spratt, Mr. Ciarán Harney, Mr. Alex Scott, Ms. Emma Hurlbert, Ms. Stephanie Hamod and Mr. Kris Makuch.

---

# Research methodology

It is worth dwelling on the research methodology which was designed to achieve the aims and objectives outlined above. There are a number of methodological issues inherent with this research some of which have been highlighted already and which can be summarised as follows:

1. There is irregular and inconsistent data on intra-African trade values, trade costs and business revenues or employment meaning that predicting the future in a consistent way is at best problematic and at worst unreliable. To compensate for this we have taken data from the United Nations Comtrade database and mirrored it and refined it using the methodology in Appendix 1. This also provides us with a framework for trend forecasting using machine learning/Bayesian techniques.
2. There is little quantitative analysis of the costs and benefits of generic legal reform across the continent. The lack of readily available precedents means that the approach here is novel and indicative rather than a final word on the subject.
3. The scope of the research was to develop the MTFaip for individual heads of state but, given the independent authorship of this report, it was considered more robust to provide an assessment of the potential market size and cost reductions for individual countries rather than to engage in a political process. This means that the research appears to rely heavily on a quantitative assessment of impact, but this is simply a way of presenting the opportunity to Heads of State rather than an absolute or accurate forecast of impact.

## Data sources

The following data sources have been used to underpin the findings of this report:

1. 35 semi-structured interviews with senior stakeholders<sup>12</sup> (list provided in Appendix 4)
2. Discourse analysis: python-based web-scraping techniques across 600 media outlets in total across Africa
3. Documentary, desk-based research and meta-analysis (cited articles in footnotes and literature review at end of Appendix 1)
4. World Ease of Doing Business survey data for 2020
5. Transparency International Corruption Indices for 2020
6. Bureau van Dijk/Moody's ORBIS database
7. UNCTAD freight cost data
8. Survey of 55 international banks and 20 international businesses conducted for the ICC UK in 2021 but with estimates of cost savings, time savings and revenue growth
9. Trade data refined and developed using the methodologies in Appendix 1

---

<sup>12</sup> Note – the goal was to provide a sample of senior stakeholders who could contribute to the engagement with RaaS in the future. Of the 200 people who were contacted, 35 responded and were senior enough to meet this criterion. The interviewees were not selected on the basis of being representative of the trade sector across all countries in Africa.

---

## Research questions

The research sought to answer five questions:

- Are there any barriers to the implementation of RaaS across African nations? This question is addressed by means of a discourse analysis covering 600 media outlets across the Commonwealth, semi-structured interviews and desk research.
  - What are the current biggest challenges facing African nations in trade terms? This question is addressed by means of the discourse analysis and trade data
  - What are the costs faced by African countries currently? The costs for the current year are estimated from the Ease of Doing Business survey for pre-border and border costs. Transportation costs are estimated from UNCTAD freight costs for 2019, interview material and documentary research for a typical container shipment worth \$25,000. Where no data is available, costs are estimated by taking an average from neighbouring countries and applying that to the country concerned. Informal costs were available from documentary research for some African countries; to derive an estimate for all countries, an average across available data was taken and then weighted up or down using the Transparency International Corruption Index for the specific country. As a result, informal costs shown are relative rather than absolute but serve as a useful benchmark in the absence of other sources.
  - How can these costs be reduced across African nations through RaaS? A base year of 2019 was taken since this was the last full year of data available. Documentary research, semi-structured interviews and the survey of banks and businesses conducted for the ICC were analysed for cost improvements if RaaS measures contained in the MTFAIP were implemented. The average across all of these processes produced an estimate for cost reduction which was applied to the data derived from 3 above and distributed using a net-present value formula over a five-year period. Cost reduction differentials between nations come from the differential weightings applied to each country reflecting their cost and corruption base.
- How does streamlining through RaaS impact trade growth? A baseline forecast of trade was taken (see Technical Appendix). To estimate the effect that cost reductions would have, the following procedure was followed:
    - a. The total cost per container was taken from adding border, compliance, transport and informal costs together for each country
    - b. The average number of containers worth \$25,000 was calculated by dividing the total trade value for 2019 by the number of containers
    - c. The average cost per container was calculated by dividing the average number of containers by the total cost per container
    - d. Total trade revenue was assumed to be the total value of trade for any given year from 2019 and projected to 2026
    - e. The base projections from the forecasting algorithm were derived from the net present value (NPV) coefficient which was a geometric average of the total estimated cost reduction spread over the time period AND the cost elasticity of trade for each Commonwealth country taken from the literature search.<sup>13</sup>

---

<sup>13</sup> Taken as an average from academic estimates in the following sources: Alberto Behar and Lawrence Edwards, "Estimating Elasticities of Demand and Supply for South African Manufactured Exports Using a Vector Error Correction Model," Centre for the Study of African Economies, University of Oxford, CSAE Working Paper Series, January 1, 2004; Michael Olabisi and W. Charles Sawyer, "The Demand for Imports and Exports in Africa: A Survey," *Journal of African Trade* 7, no. 1–2 (June 13, 2020): 45–59, <https://doi.org/10.2991/jat.k.200530.001>.

---

# The African Continent Free Trade Area and Africa post-pandemic

## The African Continent Free Trade Area and Africa post-pandemic

The AfCFTA provides a continent-wide legal framework for boosting intra-African trade through a free trade agreement.<sup>14</sup> This framework covers the whole spectrum of trade facilitation, hygiene, non-tariff barriers, rules of origin, service trade and customs and excise procedures, as well as dispute settlement. It aims to:

- remove tariffs on 90% of goods
- progressively liberalise trade in services
- address non-tariff issues such as:
  - import quotas
  - intellectual property rights
  - e-commerce
  - competition policies
  - sanitary standards.<sup>15</sup>

The 54 signatures created a single African market of over a billion consumers with a total GDP of over \$3 trillion, making Africa the largest free trade area in the world by population and economic potential.<sup>16</sup> It is estimated by the World Bank that the AfCFTA will boost Africa's income by \$450bn and that Africa will contribute around \$76bn to the global economy as a result of more integrated supply chains and infrastructures across the continent.<sup>17</sup> In addition, it aims to lift the continent out of poverty, support sustainable economic growth and industrial development, create jobs and improve the competitiveness of African businesses in international markets. It also aims to enable more women to access trade as a priority since they represent between 70% and 80% of all trade in the informal economy in some countries.<sup>18</sup>

The AfCFTA was launched at a time when the

world was being rocked by the Covid pandemic. Sub-Saharan Africa entered its first recession in 25 years with GDP forecast to have fallen during 2020 by around 3.3%.<sup>19</sup> While the continent as a whole is expected to return to growth in 2021, this outlook is subject to uncertainties around the likelihood of future waves of the pandemic and their impact on tourism, the consequences of high levels of indebtedness, financial market volatility and commodity price fluctuations, especially if the pressures are downward. Core inflation is rising at the current time, not least because of supply chain pressures on food supplies and high energy costs and this could create downside risks to the growth forecasts against a backdrop of, in the views of the African Development Bank, a deteriorating macroeconomic position. This will present itself in terms of stronger inflationary pressures and greater fiscal deficits which are estimated to have doubled to historical highs of 8.4% of GDP on average across the continent during the pandemic.<sup>20</sup> Further shocks to the African economy will come from lower trade and investment from China, lower demand from OECD countries, and a continental supply shock as supply chain shortages push up domestic costs and add to financial instability.<sup>21</sup>

The socio-economic consequences for the continent are hard to under-estimate. These will include challenges in meeting human development and sustainable development goals (SDGs), building long-lasting economic independence, and ensuring the growth and resilience of supply chains in the future.<sup>22</sup> For example, selected country study estimates suggest that 77% of the population in four countries (Ethiopia, Malawi,

---

14 African Union, "African Continental Free Trade Area (AfCFTA) | African Union."

15 William Pollen, "AfCFTA Gives Glimpse of New African Destiny," African Business, March 12, 2021, <https://african.business/2021/03/trade-investment/afcta-gives-glimpse-of-new-african-destiny/>.

16 Pollen.

17 Maryla Maliszewska et al., "The African Continental Free Trade Area: Economic and Distributional Effects" (The World Bank, July 27, 2020), <https://www.worldbank.org/en/topic/trade/publication/the-african-continental-free-trade-area>.

18 Frank Kuwona, "Africa's Free Trade Area Opens for Business," Africa Renewal, January 7, 2021, <https://www.un.org/africarenewal/magazine/january-2021/afcta-africa-now-open-business>.

19 "World Bank Confirms Economic Downturn in Sub-Saharan Africa, Outlines Key Policies Needed for Recovery," Text/HTML (Washington, DC: The World Bank, October 8, 2020), <https://doi.org/10/08/world-bank-confirms-economic-downturn-in-sub-saharan-africa-outlines-key-policies-needed-for-recovery>.

20 "African Economic Outlook 2021: From Debt Resolution to Growth: The Road Ahead for Africa," Text (African Development Bank, March 12, 2021), <https://www.afdb.org/en/documents/african-economic-outlook-2021>.

21 "COVID-19 in Africa: Regional Socio-Economic Implications and Policy Priorities" (OECD, May 7, 2020), [https://read.oecd-ilibrary.org/view/?ref=132\\_132745-u5pt1rdb5x&title=COVID-19-in-Africa-Regional-socio-economic-implications-and-policy-priorities](https://read.oecd-ilibrary.org/view/?ref=132_132745-u5pt1rdb5x&title=COVID-19-in-Africa-Regional-socio-economic-implications-and-policy-priorities).

22 "Long-Term Socio-Economic Impacts of COVID-19 in African Contexts | UNDP in Africa" (United Nations Development Programme, 2021), <https://www.africa.undp.org/content/rba/en/home/library/reports/analysing-long-term-socio-economic-impacts-of-covid-19-across-di.html>.

Nigeria and Uganda) live in households which have lost income as a result of the pandemic, while only 17% of households in those countries with school-age children have managed to retain pupil-teacher contact during the pandemic.<sup>23</sup> If replicated across the continent, the effects both on livelihoods and long-term education will be devastating.

### Regulation as a Stimulus as it is used in this paper

What is clear is that the socio-economic context of Covid provides a new urgency to RaaS as a means of catalysing recovery through trade. RaaS is a series of regulatory measures aimed at accelerating intra-African trade facilitation and trade promotion. Through legal reform, governments can offset two things: first, they can address the short-term adjustment costs associated with increased openness that is the inevitable consequence of the Free Trade Area across the continent. Some countries will be more impacted by greater competition and supply chain disruption or redistribution that are the result of this. RaaS has the potential to ameliorate some of these costs by, for example, facilitating costless visas for professionals to cross borders or speeding up the adoption of Single Windows to streamline transportation documentation.

Second, RaaS can provide longer term adjustment support by enabling a legal framework to the adoption of paperless trade, digital identities and use of online accounting systems to enable informal and female-owned businesses to access finance, run their own analysis of costs, reduce exposure to fraud, and complete border documentation more readily. These technologies exist in Africa, but legislative reform would enable trust to build, therefore catalysing their adoption. Many of those we surveyed viewed digital reforms as essential to facilitating intra-African trade – country-level legal reform aided by common standards at an AfCFTA level.

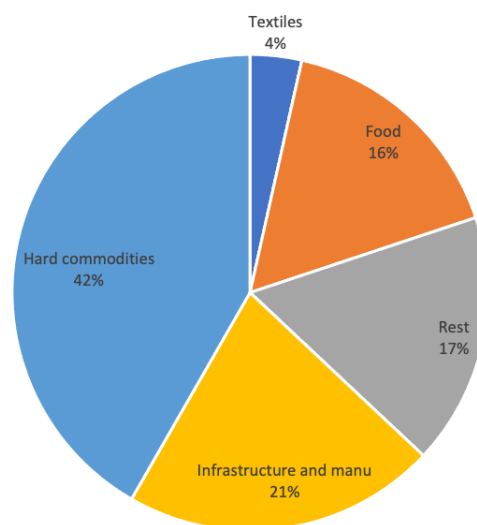
Finally, and perhaps the most exciting aspect of this concept, is that it enables a framework for bringing

in private sector involvement in a structured way. This could be in the form of investments or co-investments in enabling infrastructures, Fintech and smaller businesses to create an effective funding escalator for the continent's smaller traders. As such, the facilitating role of the investment community in RaaS was seen by interviewees as critical to greater empowerment of excluded groups, greater job creation and higher revenue generation by Africa's business community.

### Africa's trade profile

It is not the purpose of this section to give a detail on how intra-African trade is structured or, indeed, how intra-African value chains operate. This is done amply elsewhere.<sup>24</sup> However, Figure 1 gives an indication of the dominant sector value chains and illustrates the current challenge if intra-African trade is to begin to support socio-economic welfare as well as economic growth.

Share of intra-African trade by product grouping, 2019



**Figure 1**  
Calculations for this research based on Coriolis Technologies, MultiLateral Trade Platform<sup>25</sup>

Figure 1 suggests several things:

1. First, intra-African trade is dominated by hard commodities such as fossil fuels, gold, platinum, precious metals and iron and steel. 42% of its trade internally is in

23 Anna Josephson, Talip Kilic, and Jeffrey D. Michler, "Socioeconomic Impacts of COVID-19 in Four African Countries," Working Paper (Washington, DC: The World Bank, November 2020), <https://doi.org/10.1596/1813-9450-9466>.

24 See: Harding, "Africa," August 7, 2020; "AfCFTA Secretariat and UNDP Release Futures Report Highlighting Value Chains That Can Boost Made in Africa," United Nations Development Programme, November 21, 2021, <https://www.africa.undp.org/content/rba/en/home/presscenter/press-releases/2021/afcfta-secretariat-and-undp-release-futures-report-tackling-valu.html>. This identifies critical supply chains for Africa, reflecting diversification away from commodities into sectors like mobile financial services and creative arts.

25 Hard commodities include but are not limited to: fossil fuels, precious metals and stones (gold, platinum, diamonds), copper and copper alloys, iron and steel; "Rest" includes anything that is not food and drink or agriculture, forestry and fishing, hard commodities, or infrastructure and manufacturing – for example raw or intermediate (non-manufactured) textiles

25 See: Harding, "Africa," August 7, 2020; "AfCFTA Secretariat and UNDP Release Futures Report Highlighting Value Chains That Can Boost

---

these sectors and while this creates jobs and business revenues, this may simply be generating exports in these sectors. For example, fossil fuels and precious metals and stones alone account for some 73% of all of Africa's trade with the rest of the world.<sup>26</sup>

2. The dependency of Africa on external supply chains for clothing, and to a lesser extent food, is self-evident. Clothing represents just 3.5% of intra-African trade while food is 16% of intra-African trade suggesting that a lot more could be done to promote these sectors alone. As women are proportionately more represented in food and clothing, this would help achieve several sustainable development goals.<sup>27</sup>
3. Africa's trade in manufactured and infrastructure goods is just 21% of its total trade. Again, if the continent is to become self-sufficient, then these sectors need to be prioritised.

This picture is for goods only and Africa's service sector in export terms is hard to measure. This is the case for several reasons, including the fact that it is relatively small, under-developed and often in the informal economy (Figure 2). While this applies equally to goods trade, there is better quantitative information for these simply because they are associated with customs and excise and tax regimes nationally as well as internationally.

---

Made in Africa," United Nations Development Programme, November 21, 2021, <https://www.africa.undp.org/content/rba/en/home/presscenter/press-releases/2021/afcfta-secretariat-and-undp-release-futures-report-tackling-valu.html>. This identifies critical supply chains for Africa, reflecting diversification away from commodities into sectors like mobile financial services and creative arts.

25 Hard commodities include but are not limited to: fossil fuels, precious metals and stones (gold, platinum, diamonds), copper and copper alloys, iron and steel; "Rest" includes anything that is not food and drink or agriculture, forestry and fishing, hard commodities, or infrastructure and manufacturing – for example raw or intermediate (non-manufactured) textiles

26 The use of Trade in Value Added indicators to assess the value created as commodities flow between African countries would shed further light on this but was beyond the scope of this research.

27 "Africa's Women Traders Are Poised to Transform Economies through Intra-African Trade | UNDP in Africa," United Nations Development Programme, April 12, 2021, [https://www.africa.undp.org/content/rba/en/home/presscenter/pressreleases/2021/africa\\_s-women-traders-are-poised-to-transform-economies-through.html](https://www.africa.undp.org/content/rba/en/home/presscenter/pressreleases/2021/africa_s-women-traders-are-poised-to-transform-economies-through.html).



---

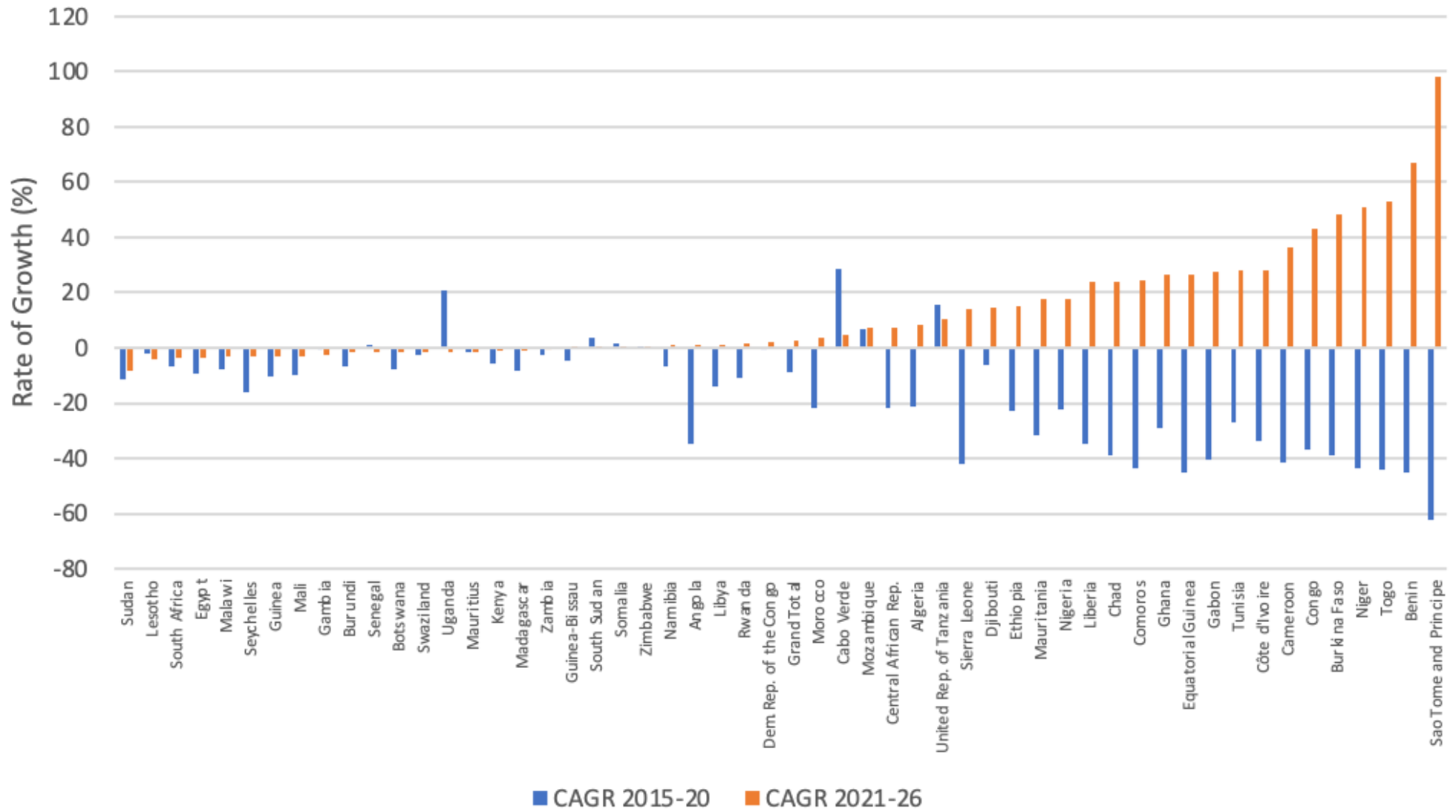
The chart shows all trade for all nations in Africa. It looks at the total trade of each country to all destinations so mixes intra and extra-African trade but gives a profile for each country of the balance between goods and services exports and shows that while there is some service sector activity, it tends to be under-reported in most countries and, more importantly, larger in the larger trade economies such as Morocco, Egypt and South Africa. This does not mean that there is no services trade, rather that much of it is not reported across the continent and may fall into the informal category of exporters.

Since services trade data is poor, therefore, the analysis from here on focuses on goods trade only.<sup>28</sup> Based on that, and using data for intra and extra African trade, Figure 3 shows how trade has fallen back over the past five years, particularly in 2020, and suggests that some of the bigger trade economies, like South Africa and Egypt will struggle to recapture their pre-pandemic growth. Others, such as Sao Tome and Principe, Benin, Togo and Niger may recover quickly but these are smaller economies whose trade is more volatile over the past five years.

---

<sup>28</sup> We are aware that there is considerably more services and fintech analysis that might inform this research. However, within the timeframe and terms of reference of the research, we have deliberately excluded these because a thorough and rigorous piece of analysis would not have been possible. The data suffer from inconsistency across countries and timeframes and their inclusion would not have been possible on a comparable basis to the goods data supplied.

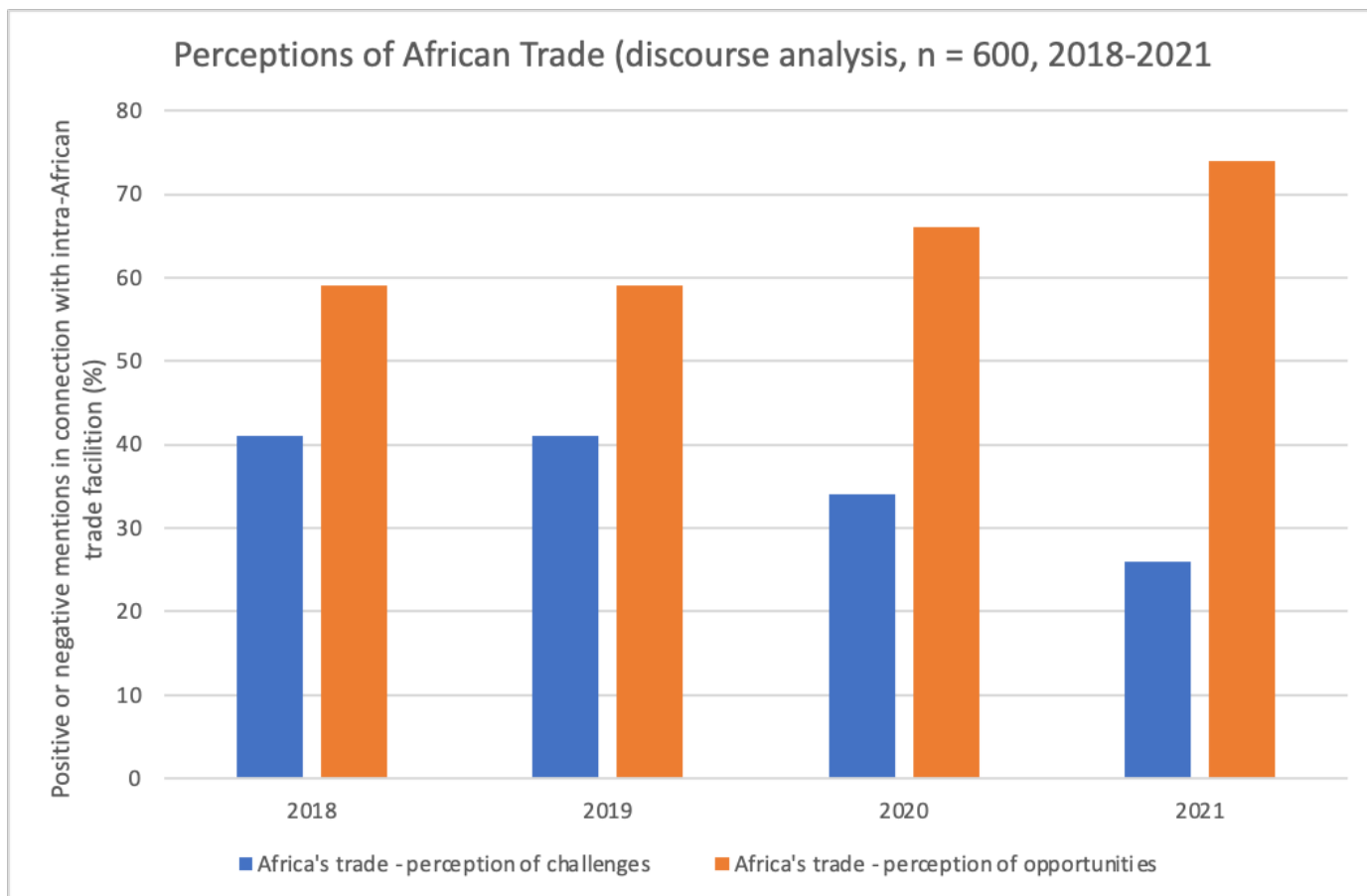
## Average trade growth by country, 2015-20 and 2021-25, projected (CAGR %)



**Figure 3**  
**Source: Calculations for this research from Coriolis Technologies**

### Perceptions of intra-African trade

All of this suggests that African trade generally is not growing fast enough to recover from the pandemic quickly. Yet in the public discourse across Africa, trade is being viewed increasingly positively (Figure 4).



**Figure 4**

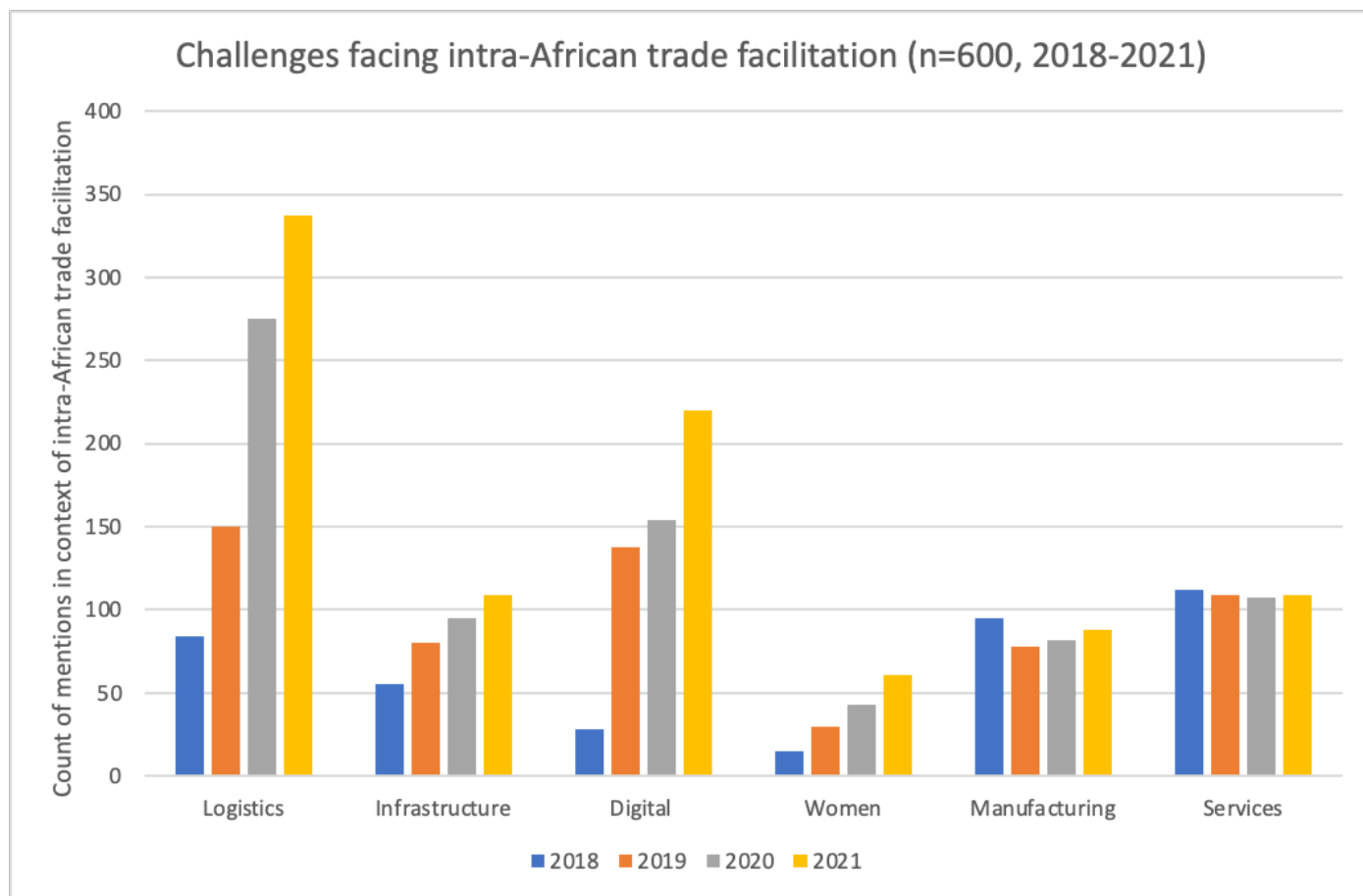
**Source: Discourse analysis conducted for this report (n = 600 media outlets across Africa)**

Figure 4 illustrates just how much more positively trade is seen within Africa since 2018:

- In 2018 just under 60% of public media sources perceived opportunities for intra-African trade, but by October 2021 the figure had grown to 74%.
- Positive perception of opportunities has been growing since 2018.
- As 2021 covers only the first three quarters of the year, this suggests that the recovery from the pandemic is accompanied by positive sentiment towards intra-African trade.
- Public sentiment will support strong action by policy makers to facilitate trade quickly and effectively.

More granularity is provided in Figure 5 which shows how the perception of where key issues in intra-African

trade are.



**Figure 5**  
**Source: Discourse Analysis conducted for this report (n = 600 media outlets across Africa)**

Manufacturing and services trade seem to have stayed relatively constant in terms of mentions over time. However, in terms of the numbers of mentions, all the other areas have grown significantly relative to their mentions in 2018. For example, mentions of the word “women” in connection with “trade” and “reform” grew by four times to the third quarter of 2021, while mentions of “digital” have grown by nearly five times. Logistics remains the most frequently mentioned word in connection with trade and reform. This provides some indication of where regulatory gaps may be and where priorities should lie for policy makers across the continent. Combined with Figure 4 suggests that there is momentum building behind the opportunities rather than the challenges that Africa faces.

Our analysis of public discourse suggests that infrastructure & logistics, women’s inclusion, greater digitisation and manufacturing and services are the key areas for policy focus. We find that “cautious optimism” characterises the mood amongst AfCFTA policymakers and signatory states currently. There is a recognition of the myriad challenges currently being faced, but also the wealth of opportunities that overcoming these challenges will bring.

One of the more significant findings was also that the issues were generally not seen as isolated, but interdependent. It seems that there is a recognition on the African continent as to how one issue may compound or alleviate another.

Not all increases in references to a given theme are positive. Some are discussing poor infrastructure or the need for better digital capabilities, for example. However, this is not necessarily a bad thing; an increase in the frequency of mention, even in a negative light, reflects how critical a particular category is seen to be to the AfCFTA’s success and perhaps also the perceived scale of the challenge. In short, it is a recognition of its importance and of the need to improve (i.e., both a challenge and an opportunity).

In terms of specific issues, the discourse analysis highlighted the challenges given in Figure 6:

Area of discourse	Frequently used negative phrases	Frequently used positive phrases	Implications for AfCFTA and Heads of State
Infrastructure and logistics	Poor road and rail links Excessive border bureaucracy Red Tape Challenge multiplier	Green shoots Bright spots on the horizon Higher investor appetite	Leverage gains across the whole region – infrastructure improvements cannot be one country only or benefits of AfCFTA will go
Inclusion of women	Exclusion, waste, delays, education, illiteracy	Innovation, empowerment, business	Focus on simplifying processes and educating; huge potential to unleash
Digital trade and infrastructure	Computing skills, digital acumen, language barriers, literacy barriers	Technology availability Systems	Centralised online systems; single windows to simplify; requirement for multi-lingual solutions; non-African organisations identify this as key issue so could be means of bringing in investment
Manufacturing and services	Dependency, value chains	Service growth, creative, innovation, education, technology	Scope for integrating supply chains; sustainable intra-African capacity building
Border crossings	Delays, 71% increasing in negative mentions of rules of origin 2018-21 303% increase in negative mentions of border crossings	Promote efficiency, predictability Expand integration Strengthen value chains Economic transformation and jobs	Key area of priority – most detail in border crossing complexity but also most discourse around potential to use for positive change

**Figure 6**

**Source: Discourse analysis for this research (N = 600 media outlets)**

### Summary

Intra-African trade will need to accelerate into 2022 if the continent is to pull itself out of the pandemic successfully. The effects of any further deterioration in global trade conditions from the Omicron variant cannot be predicted at the time of writing, but serves further to illustrate the fact that trade within Africa must drive value chain integration and self-reliance within the continent while supply chains are being redistributed elsewhere in the world.

Regulation as a Stimulus represents a way of providing a regulatory underpinning to the trade facilitation process at a country and regional level. The analysis in this section suggests that the process should be driven around the supply chains that are essential to achieve sustainable development goals by promoting intra-African trade in food, textiles and manufacturing and services. Food and textiles are sectors where there are proportionately more female exporters, but there is remarkably little intra-African trade as a proportion of the country's total food and clothing

requirements. Supporting greater self-sufficiency in these four sectors alone would promote SDGs 2 (zero hunger), 5 (gender equality), 8 (Decent work and economic growth), 9 (Industry and innovation and infrastructure) and 10 (reduced inequalities).

There is real support evident in the discourse analysis of measures to promote trade through legal reform. The main conclusion from that analysis, however, is that this is something that has to be done together across the continent and not by one or two individual states. Particularly in the areas of cross-border trade, digitisation and logistics and infrastructure, the AfCFTA's structures, the RECs and Heads of State need to work together. However, the discourse analysis also suggests that there is scope for greater inward investment, especially in the digital space, so this, in itself, should act as an incentive to policy makers.

## Transforming trade: five case studies and the consequences for the MTFaip

The purpose of the case studies was to develop a clear action plan from the issues raised by interviewees, the documentary research and the discourse analysis. Much of the information presented here in terms of the challenges will be familiar to the reader so it is presented as briefly as possible in order to focus on the MTFaip associated with each case.

What is clear is that most of the solutions are relatively straightforward and focus around enabling mechanisms to support:

- Single windows for documentation associated with cross-border trade including rules of origin, tariffs and regulations
- Digital identities to reduce the form-filling and therefore literacy requirements for individual exporters
- Legal reform to enable cross border movement of professionals and capital
- Aligned capital treatment between countries, for example liquidity ratios as well as financial and prudential regulations
- Acceptance of digital documentation

It should be noted that the African Continent Free Trade Area is not a Single Market or even a Customs Union. For this reason, no recommendations that might suggest any form of closer integration are suggested and the focus is entirely on reforms that can readily be implemented in the short to medium term.

## Business environment

Africa's nations rank amongst the lowest in Ease of Doing Business rankings, with only Mauritius and Rwanda having places within the top 50 globally.<sup>29</sup> Recovery from conflict, poor leadership and poor infrastructure and a non-systematic approach to regulation and cross border trade all contribute to well-established issues with intra-African trade.<sup>30</sup> Interviewees felt that reforms to enable swifter business creation within the formal economy rather than the informal economy would be a major trigger to enabling a more dynamic business base.

Key issues highlighted from the interviews included:

- Visa costs and restrictions harm intra-African trade, particularly for trading MSMEs
- Fewer women traders know about trading regulations, which causes a reluctance to formalise their trade, putting them at risk of exploitation and even sexual abuse.<sup>31</sup> Interviews suggested that around 46% of women still say that they are not fully confident or understand trade regimes.<sup>32</sup>
- Due to a lack of relevant information, goods and services are imported by African countries from outside the continent when goods of similar quality and prices could be sourced from other African countries.
- Lack of sufficient deliberate policies to support and protect MSMEs and women traders harm their ability to trade.

Recommendations from the interviews included:

- Smart regulations to protect investors from fraud and non-compliance
- Tighter anti-money laundering and reporting requirements for Know Your Client purposes
- Streamlined mechanisms for obtaining permits to start a business and harmonised taxation rules on capital gains to create longer term investments
- Data ownership and security regulations to prevent identity theft and fraud
- Tighten incentives to trade with African partners rather than non-African ones
- Ensure consular recognition of all AfCFTA countries in every member nation
- Streamline visa requirements for professionals

## Before the border

The goal of any measures to reduce costs before the border must be to facilitate and simplify trade for all traders, but particularly those with smaller or perishable loads which are often associated with female owned businesses or MSMEs. The whole continent needs to implement trade and transport information networks so that freight can move relatively seamlessly, and a digital system enabling transport and logistics would help reduce pre-border bureaucracy and administration. Kenya alone has saved \$25.4m a year from its single window, and this illustrates how powerful this as a tool could be if replicated across the whole continent.<sup>33</sup>

29 Andrew Mizner, "ALB - African Law and Business," Text, ALB Legal and Business Issues from Africa (Global Legal Group, November 12, 2019), United Kingdom, <https://iclg.com/alb/10428-mixed-report-for-africa-s-business-climate>.

30 Christopher Gekonge, "Challenges of Doing Business in Africa," in *Emerging Business Opportunities in Africa: Market Entry, Competitive Strategy, and the Promotion of Foreign Direct Investments* (Hershey, PA: IGI Global, 2014), 46, <https://www.igi-global.com/chapter/challenges-of-doing-business-in-africa/80146>.

31 Jessica Jacobson and Susan Joekes, "Violence against Women Traders at Border Crossings" (UK AID and Work and Opportunities for Women, November 2019), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/876256/Query-31-VAW-Traders.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876256/Query-31-VAW-Traders.pdf); Paul Brenton, Elisa Gamberoni, and Catherine Sear, "Women and Trade in Africa: Realizing the Potential" (The World Bank, n.d.), <https://documents1.worldbank.org/curated/en/115591468211805723/pdf/825200WP0Women00Box379865B00PUBLIC0.pdf>.

32 F. Aboudou et al., "Study on the Specific Problems of Women Traders on the Abidjan-Lagos Corridor" (Borderless Alliance, 2017).

33 J. Bayili, "Cross-Border Trade on the Abidjan-Lagos Corridor: Challenges and Perspectives," 2021; "Meeting of the Ministries of Trade and

Key issues highlighted from the interviews include:

- Different trade regimes and conflicting industry and product standards confuse traders and deter intra-African trade.
- No space that allows for pre-border electronic payments online.
- A lack of digital certifications and documentation causes delays and costs to traders.
- Difficult to access crucial information such as documentation needed, licensing fees, road fees, and REC rules. There isn't one space that provides all needed information or up-to-date communication on any sudden changes (such as borders closing or halts/bans on certain imports); this was exacerbated by COVID-19.
- Complex trade regimes are a barrier for SMEs and women traders.

Again, the policy measures highlighted the importance of cooperation across the whole continent:

- Regulation to make Rules of Origin Certificates easy to access for domestically purchased goods.
- REC level one-stop-shops for all information addressing the relevant procedures, contacts, and licensing fees.

### At the border

Divergent trade policy and non-tariff measures are some of the most significant barriers to trade across the region. More than this, unexpected and prohibitive trading charges at the border, often from informal trade costs associated with the illegal payments to get through the bureaucracy quickly were highlighted as being particularly severe. For some countries these costs amount to more than the revenues received from trade, a comment that has been highlighted in the analysis of costs in Figure 6 below.

Key issues highlighted from the interviews include:

- Different countries having different regulations makes border-crossing confusing, complex, costly, and slower.
- Making payments is complicated as countries use different currencies and traders can't pre-pay or pay electronically.
- Implementation of regulations and procedures varies across border officials.
- Taking samples from too many products and traders slows down border crossing.
- Using multiple and out-of-date systems and paper documentation causes delays and makes

it impossible to track and report real-time trade and statistics.

- Issues such as delays and unannounced regulation changes were made worse by COVID-19.
- Language and literacy barriers.

Policy recommendations included:

1. Consistent regulations on licenses, road fees, and documentary requirements to cross the border
2. Regulated "authorised exporters"
3. Acceptance of digital documentation in online portals (Single Windows) to facilitate trade
4. Regulations to approve private sector agents in streamlining tech and providing independent validation of digital IDs and documentation

### Infrastructure and logistics

Differential infrastructure costs across Africa create a challenge for regulation. For example, it costs \$50-\$60 to connect once to the internet in some parts of Uganda where there are cheaper supplies elsewhere – interviewees asked how that was possible given the intention of creating "level playing fields" across the continent within the Free Trade Area. By way of recognition of the importance of this area, there was a 321% increase in references to infrastructure and logistics over past 4 years in the 600 media sources covered. The key themes that came through were largely negative: poor road and rail links, red tape and excessive border bureaucracy. However, there was some cautious optimism about long term outlook. There was a clear trend in the discourse analysis suggesting that this was an "all or nothing" change – if one Head of State made the change, then others would follow quickly creating a multiplier effect.

Alongside this, digital infrastructure references increased by 685% between 2018 and 2021 with single windows seen as a way of simplifying information flows and document processing. However, the discourse analysis showed clear limits to the role of technology because of access to technology, potential for language barriers and low literacy rates.

Key issues highlighted from the interviews include:

- Infrastructural inequities disadvantage women: border-crossing is significantly more difficult and dangerous for women traders,<sup>34</sup> particularly due to their lack of childcare facilities and pedestrian lanes, bad lighting, poor sanitation, and inadequate lodgings.<sup>35</sup>

Directors of Benin, Côte d'Ivoire, Ghana, Nigeria and Togo on Trade Facilitation, Customs Cooperation and Transit Issues along the Abidjan-Lagos Corridor;" n.d.; Rebecca Harding, Coriolis Technologies Interviews with trade and finance experts, 2021.

34 "Risks and Vulnerabilities Faced by Northern Ugandan Women Cross-Border Traders at the South Sudan and Democratic Republic of Congo Borders" (Strategic Initiative for Women in the Horn of Africa, June 2020), [https://issuu.com/halayassin/docs/uganda\\_women\\_cross-border\\_traders\\_-\\_report\\_3.0\\_-\\_d](https://issuu.com/halayassin/docs/uganda_women_cross-border_traders_-_report_3.0_-_d).

35 ECOWAS Commission, "Diagnostic Study on the Movement of Small Scale Cross Border Women Traders on Three Corridors in West Africa. Final Report. Borderless Alliance Secretariat,," April 2020.

- Out-of-date systems and a lack of technology slows down procedures, affects accuracy, and muddies data on traffic and flow.
- Safety is overlooked: overloading trucks in order to reduce costs creates a significant degradation of roads over time and makes vehicles unsafe.
- Lack of inter-connectivity due to poor intra-regional infrastructure.

Policy recommendations included:

1. Regulation for mutual acceptance of digital documentation
2. Frameworks for digital authentication and digital IDs including electronic certificates of origin, bills of lading and trade declarations
3. Regulation to standardise requirements and trade regimes.

### Access to finance

Applications for finance are more frequently rejected by banks in Africa and the financing gap has widened in Africa during the Covid 19 pandemic.<sup>36</sup> This is due to the perceived risks of trade finance, the size of the informal economy and the number of small businesses without audited accounts.

Key issues highlighted from the interviews include:

- Credit analytics is a challenge as SMEs typically do not have audited financial statements or formal books but use spreadsheets with accounts (payables/receivables and cashflow), which require external validation.
- Banks are more frequently declining SME applications, from a 20% rejection rate in 2013 up to 40% in 2019. This figure could have potentially deteriorated further due to the COVID-19 pandemic, derailing the growth of SME's who are the backbone of trade in African economies.
- Women face many challenges to access finance due to a variety of reasons. They often lack traditional collateral (land) and are therefore seen as riskier borrowers. Financial institutions also lack understanding of women's businesses and lack tailored products and services for women traders that support their nature of trade and needs.
- Know Your Customer (KYC) is a major stumbling block across Africa as it is very difficult to validate IDs, which require verifiable addresses. Businesses and people don't necessarily routinely have ID cards or registration numbers.

Policy recommendations included:

1. Standardised regulations to enable digital trade
2. Regulations to enable digital transferable records

3. Regulations to enable acceptance of digital IDs

### Summary

The case studies provide qualitative evidence to support the fact that the business environment supporting African exports is not fully functional at present. It disadvantages women and smaller businesses and as a result, many of these tend to work in the informal economy because the requirements around form filling and documentation are prohibitive for many people who fall within these groups. There are significant language barriers since much of the documentation tends to be in English and the fragmented system of documentation and border controls across countries means that infrastructures and transport and logistics are barriers to trade, pre border and at the border costs are high and represent effective non-tariff barriers to trade across the continent, and access to finance remains a challenge for many African exporters.

36 African Development Bank Group, "Trade Finance in Africa."

# The Model Trade Facilitation Accelerated Implementation Plan

What is clear from the discourse analysis and the interviews is that the effects of RaaS are greatest if everyone works together through collective and coherent, mutually reinforcing action. This is something that should be instigated by Heads of State but also supported absolutely by frameworks and initiatives at at REC and AfCFTA level. The multiplicative effects of trade facilitation through RaaS are greater if everything happens simultaneously.

Some of the policy measures which could form an Accelerated Implementation Plan over the next 18 months are listed below in Figure 19. The important thing about this table is that it is derived partially from the discourse analysis and partly from interviews and documentary research and is therefore a set of regulatory reforms that would have a high probability of public acceptance.

<b>Regulatory measures</b>	<b>Who</b>	<b>What</b>
<b>Digital</b>	AfCFTA, Regions and nations	Support structures and regulations to enable greater use of digital systems digitisation and implementation of ASYCUDA.
	AfCFTA	Single window platform framework
	Regions	Regional agreements on digital, rules of origin and compliance standards.
	Countries	Legislation to enable digital IDs.
<b>Financial</b>	AfCFTA, Regions and nations	Regulatory framework and implementation to widen financial access and enable cross-border financial flows.
	AfCFTA	Enabling framework increasing financial access and integrated support platform to continent wide initiatives and support frameworks.
	Regions	Agreements on cross-border capital flows and charging/discounting ceilings.
		Regulatory approval of digital accountancy software.
	Countries	Legislation to allow self-validation by businesses of financial forecasting.
		Regulatory approval of digital accountancy software.
		Regulations for liquidity and capital charge ceilings.
<b>Infrastructural</b>	AfCFTA, Regions and nations	Frameworks and support structures to allow cross border trade and reduce costs.
	AfCFTA	Guidelines, framework and platforms for ease of cross-border movement of professionals.
	Regions	Agreements on internal movement of professionals.
	Countries	Legislation to approve free visas for work purposes enabling labour mobility across region.

<b>Enabling frameworks</b>	AfCFTA, Regions and nations	Enabling framework for freedom of movement of goods and services across borders - platform based “single window” across continent.
	AfCFTA	Continent wide acceptance of digital documents.
	Regions	Regional agreements to support digital documents.
	Countries	Legislation to mandate digital documents at ports and logistics hubs.
<b>Inclusion</b>	AfCFTA, Regions and nations	Enabling frameworks for excluded groups, especially women and informal economy.
	AfCFTA	Incentives, education and grants to enable women and informal economy actors into formal economy through access to finance, training and skills.
	Regions	Agreement on policies to support excluded groups and social enterprises as well as informal actors.
	Countries	Legislation to enable quotas for access to finance for excluded groups.
		Legislation to allow protection for informal businesses as they move into formal economy.
Legislation to require registration and legal identifiers.		

**Figure 7**

### **Towards a MTFaip over the next 18 months**

**Source: Discourse analysis, documentary research and interviews conducted for this report**

These are all areas where policy makers can start to structure their thinking immediately. They are not fully costed, nor are they integrated into legislative programmes or lobbying initiatives. They are just derived from the work conducted here which suggested that the technology is available and that the willingness is there. It simply needs to have the full and coordinated action from the Heads of State. In order to implement this of course, there would need to be a comprehensive approach to implementation and the UNDP’s position on this is given in Appendix 2.

### **Role of the private sector and investors in MTFaip**

The private sector can support African governments and generate enabling environments across the continent. By enabling frameworks such as digitisation, standardisation and legislation, investors can support the sustainable growth of trade and trade-related infrastructure throughout Africa. Through this initiative, Africa could add \$500 billion to business revenue and create over 260,000 more jobs by 2025. The specific mechanisms would include but not be limited to:

1. Investment or co-investment to support national and regional digital infrastructures, especially around the requirements of Single Windows customs platforms and enabling on digital IDs
2. Investment or co-investment to support Africa’s emerging services and fintech sectors through dedicated equity schemes specifically focused on international businesses
3. Investment or co-investment to support funding ladders for Africa’s excluded groups, such as

women traders. This would be a funding escalator programme from micro-investment through to full scale venture capital

4. Development of structures to enable acceptance of and investment in invoice finance and credit insurance across the continent
5. Investment in digital accounting software platforms to enable SME self assessment of financial performance
6. Project finance for pan-African trade infrastructure projects with guarantees for local employment and supply-chains
7. Cooperation and co-investment or guarantees alongside government grants or loans for infrastructure and small business development

### **Assessing the costs of cross border trade**

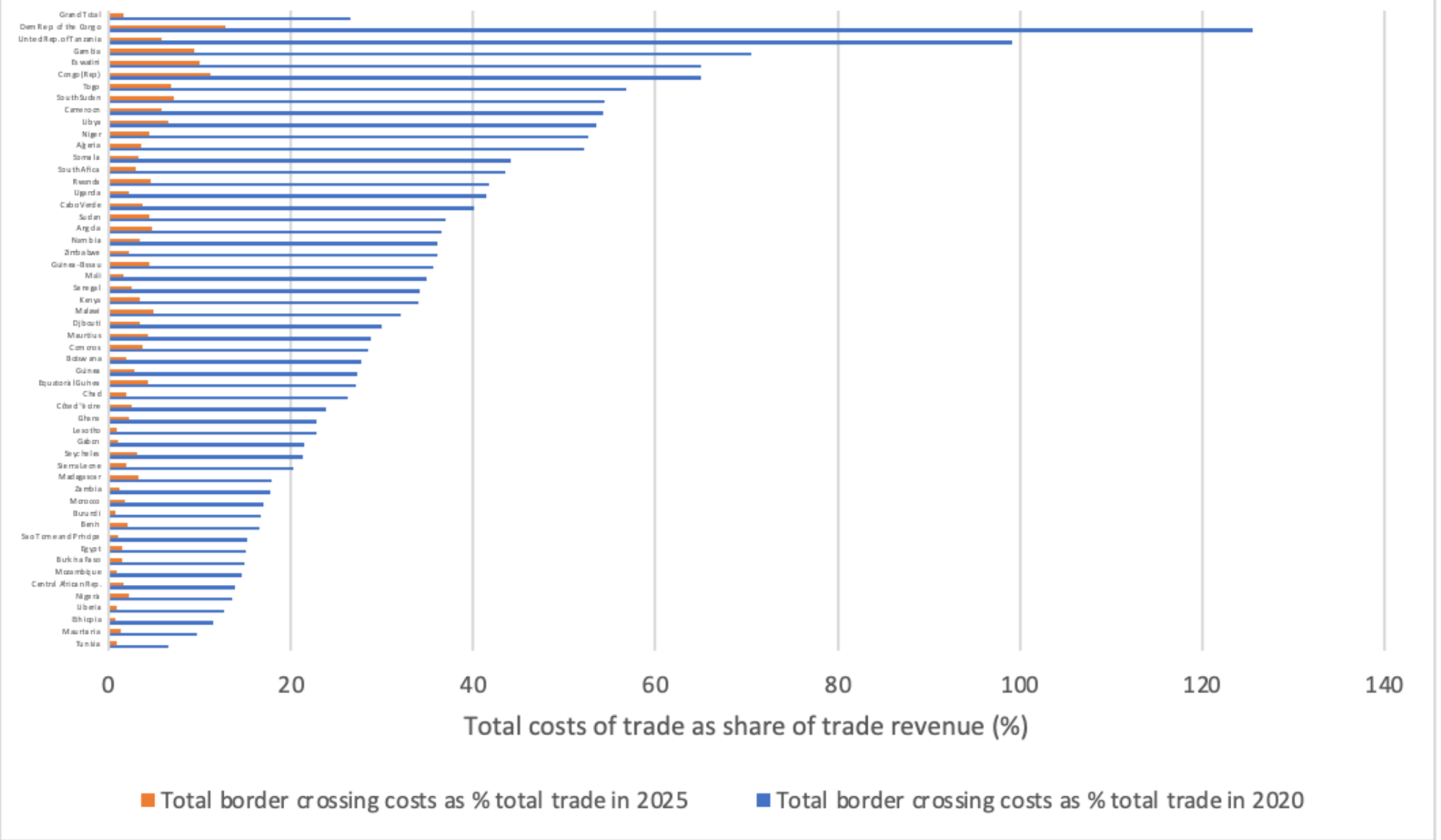
The core challenge of this research was to estimate the costs of trade across borders and to examine how these might be reduced if RaaS were introduced. RaaS is taken to mean all of the instruments that have been discussed so far and the targeted action plan by tool above. The cost reductions are based on the fact that all RaaS measures are introduced simultaneously and quickly but that their impact scales over a five-year period to 2026.

Figure 7 shows the current costs of trading across borders in total as a proportion of the revenues from trade by country. The total cross border trading cost is taken to be the sum of the costs of physical and administrative delays, the costs of documentation, transportation costs and “informal” costs associated with speeding up the process of getting across borders. This latter cost disproportionately affects women traders.<sup>37</sup>

---

37 Jacobson and Joekes, “Violence against Women Traders at Border Crossings.”

## Costs as a % of trade revenues, 2020 and 2025 compared (%)

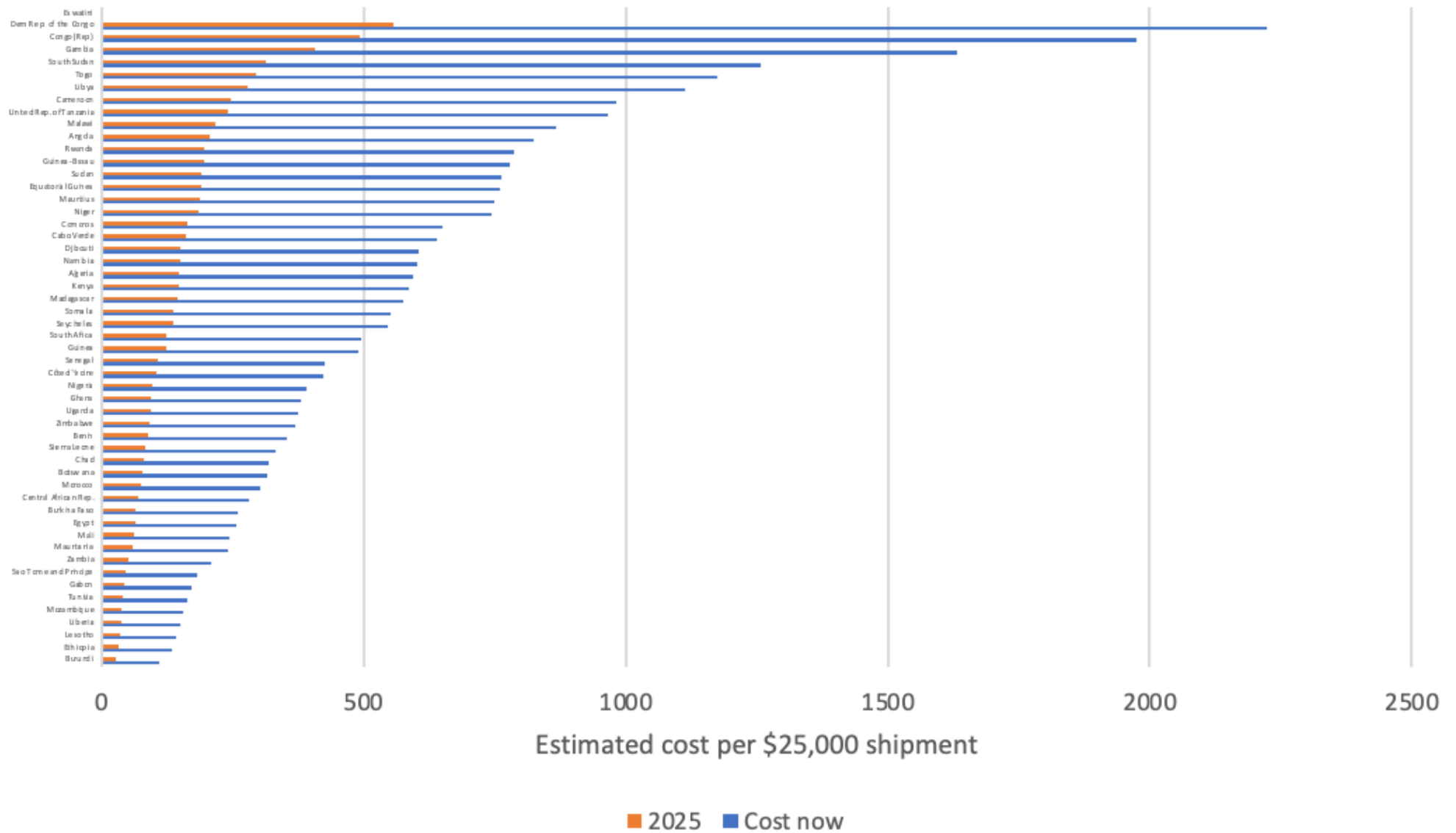


**Figure 8 Source: Calculations for this research based on Ease of Doing Business Indicators, trade data, meta-data and estimates of cost reductions from qualitative research**

For some countries, the costs of cross-border trade are above 50% of their revenues from trade. If the costs of manufacturing, procurement, other associated and distribution costs and sales, marketing and after-sales service are taken into account, this renders exporting across borders within Africa at best barely profitable and at most, loss making.

The net total costs per shipment worth \$25,000 are given in Figure 8.

## Border crossing costs, 2020 and 2025 projections (with RaaS), (\$)

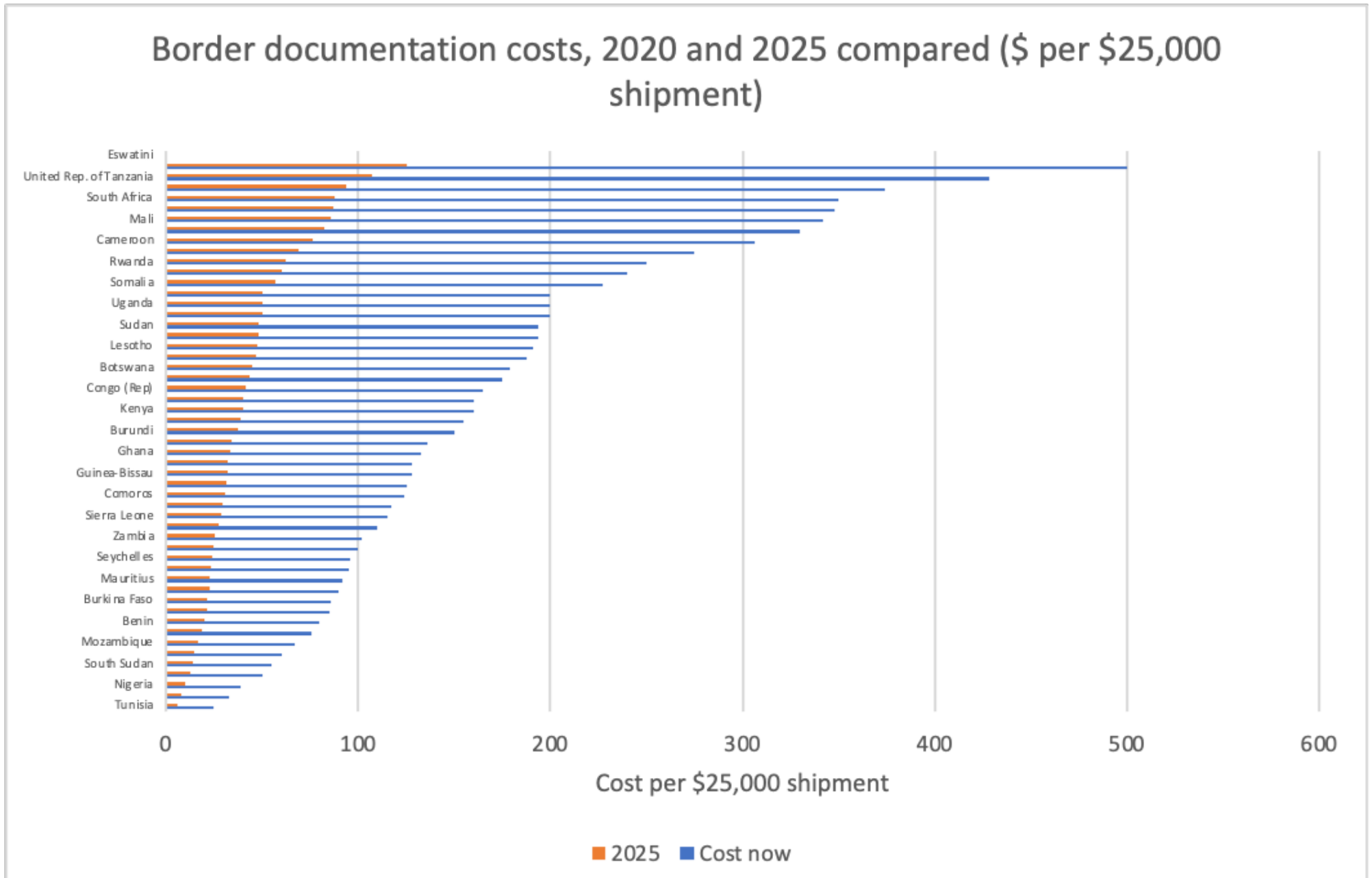


**Figure 9**  
**Source: Calculations conducted for this research based on Ease of Doing Business Indicators, trade data, meta-data and estimates of cost reductions from qualitative research**

Figure 8 suggests:

1. Total costs are lowest in Burundi, Ethiopia and Lesotho at less than 10% of the value of a shipment
2. Total costs are highest in DR Congo and Congo at substantially more than 75% of the cost of the value of a shipment
3. There are significant cost reductions even in the cheapest countries from RaaS

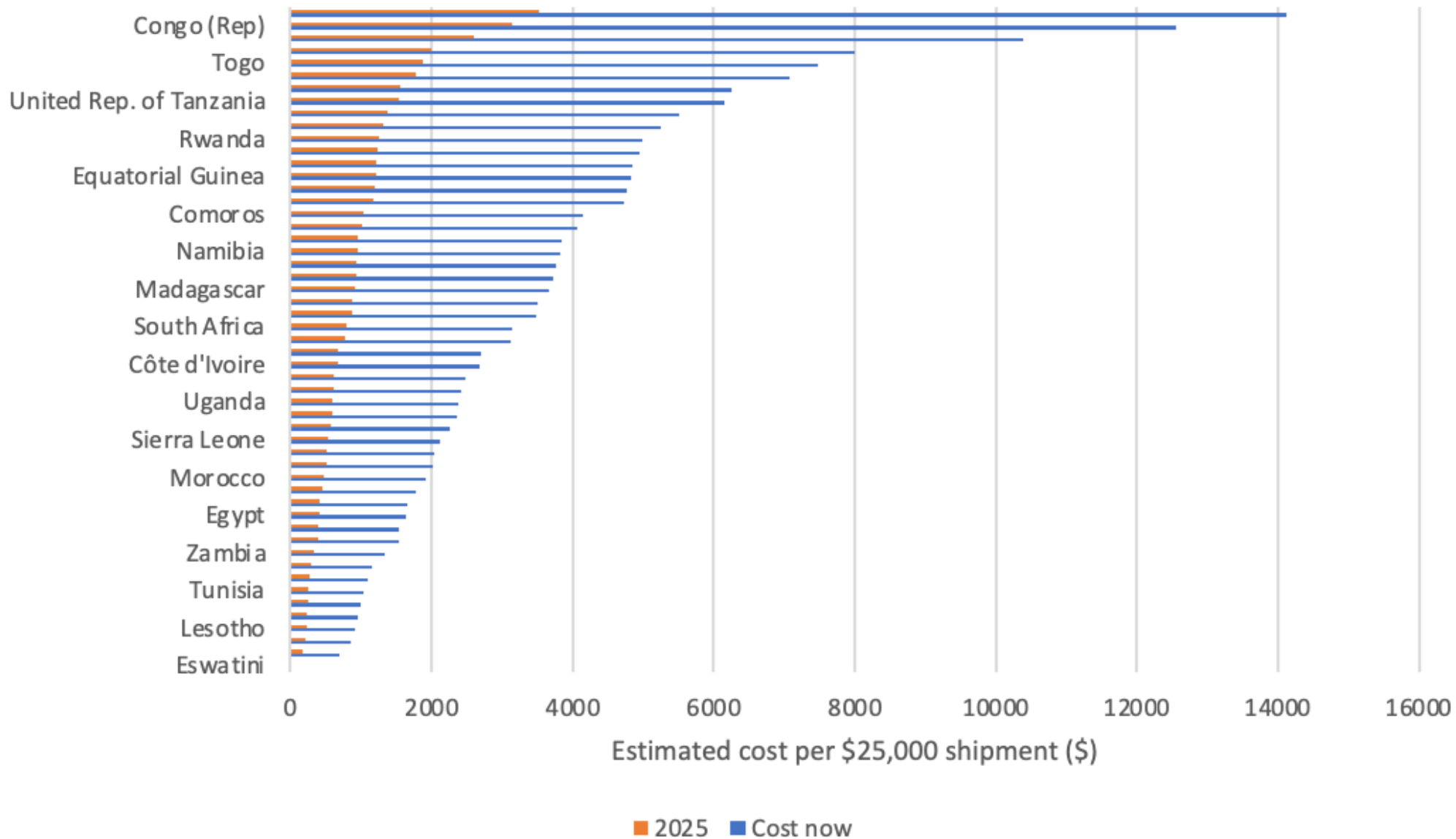
Figures 9 and 10 show the same calculations for cross border costs and transportation before and after RaaS. Again, the assumption is that RaaS can be implemented in full across all countries.



**Figure 10**

**Source:** Calculations conducted for this research based on Ease of Doing Business Indicators, trade data, meta-data and estimates of cost reductions from qualitative research

## Transportation costs, 2020 and 2025 compared per \$25,000 shipment

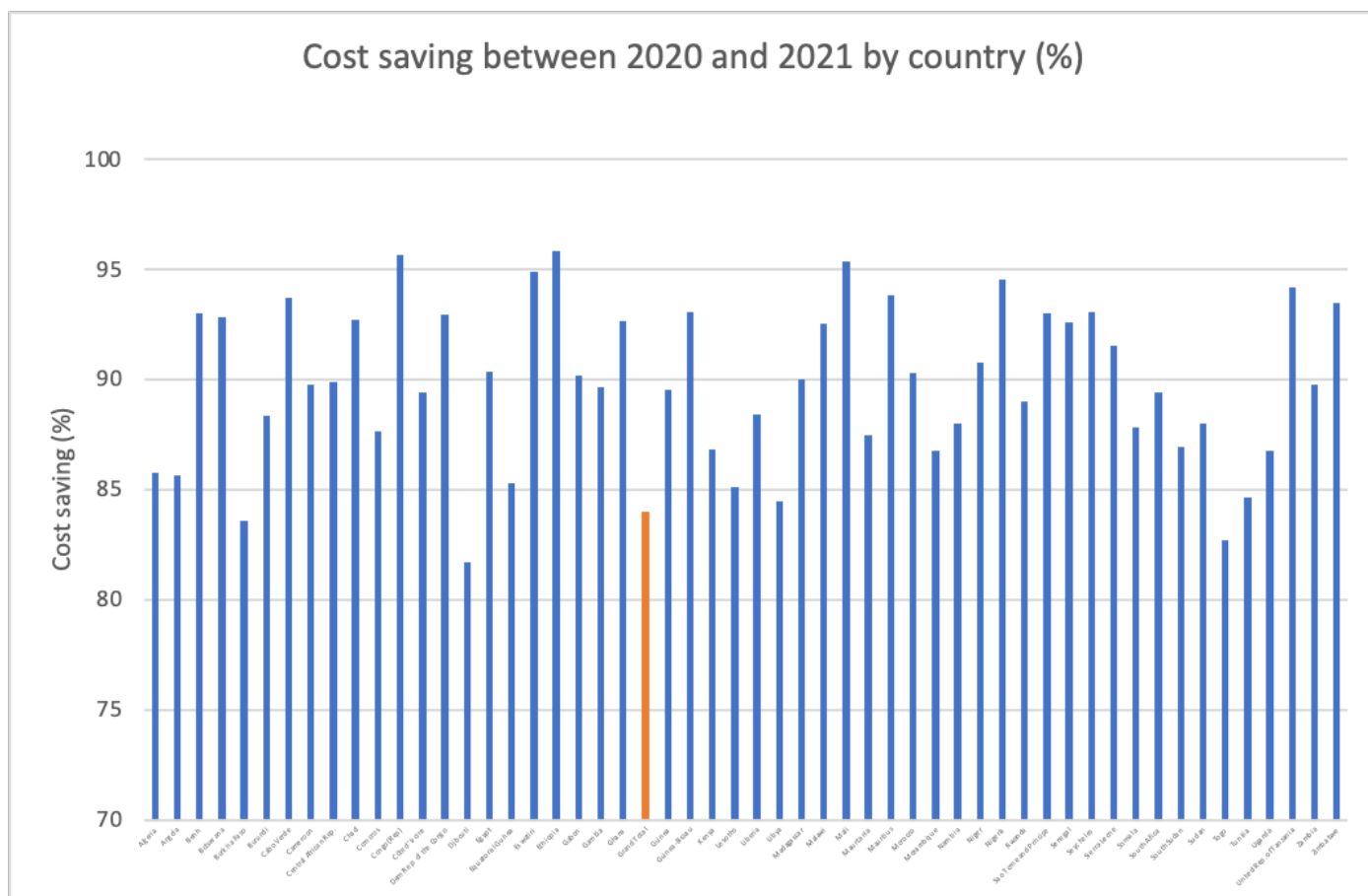


**Figure 11**  
**Calculations conducted for this research based on Ease of Doing Business Indicators, trade data, meta-data and estimates of cost reductions from qualitative research**

The differentials by country in costs savings as a proportion of total trade make it clear which countries will benefit the most from RaaS. This is illustrated in Figure 11 which shows the percentage change between the costs now and the costs after RaaS has been fully implemented by 2025:

1. The average cost saving is 84% across the continent as a whole. In other words, if all countries act together to leverage the AfCFTA frameworks for legal reform, costs across the continent as a whole proportion to the share of trade revenues would reduce by 84%. This is a compelling argument for action at a national and at a coordinated REC and continental level too.
2. For Gabon, the Côte d'Ivoire and Malawi, the costs are more than 95% taking away many of the constraints that are currently holding back trade.
3. DR Congo and Togo are the countries that exhibit the lowest level of improvement in costs but even so the reduction is still above 80%. For DR Congo, where trade has been prohibitively expensive at more than 100% of revenues, this reduction could be a game changer for some of its exporters.

# RaaS and its impact on trade



**Figure 12**

**Source: Calculations for this research based on Ease of Doing Business Indicators, trade data, meta-data and estimates of cost reductions from qualitative research**

## Summary

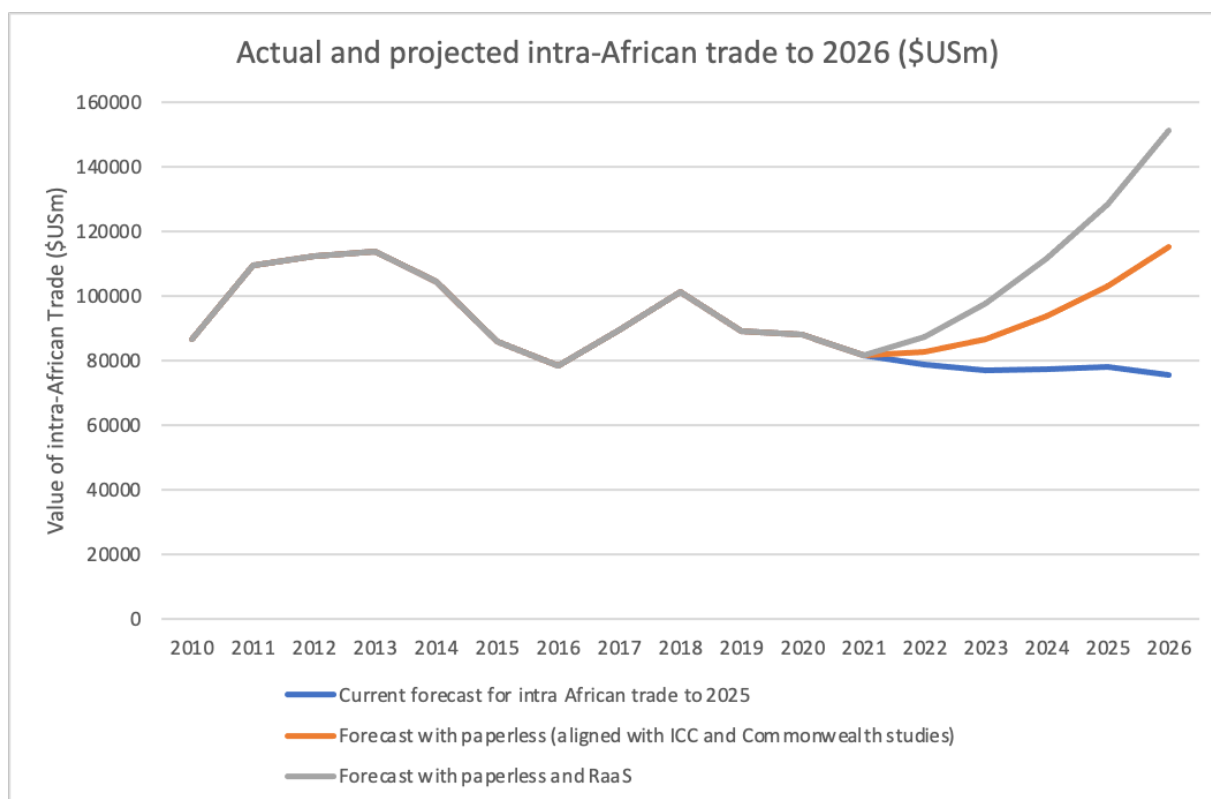
As has been stressed throughout, the goal here is to show a stylised view of how costs could change if every country acts and implements RaaS together. There are clear “leverage advantages” as described in the discourse analysis and the cost improvements will be smaller if the RaaS measures are implemented partially and on a non-coordinated basis. Even so, any reductions are a compelling reason to start the process of using regulatory reform as a means of exiting the current situation of declining intra-African trade.

Figure 12 shows why RaaS is so important in enabling trade. The analysis took the base trend forecast from refined data as illustrated in Appendix 1. From that it took two things:

1. An assumption that costs would decrease as outlined in the previous section and that this would have an impact on trade directly associated with the price elasticity of trade for a particular country. It was assumed that the costs would increase into 2026 at a similar rate.
2. That the “leveraged” effects of streamlined access to finance, digitisation and paperless trade at borders would have a multiplicative effect similar to that seen in other studies on trade facilitation and legal reform conducted by the ICC and the Commonwealth.<sup>38</sup> A survey of 55 banks found that the total effect on their trade businesses over a five year period would be an increase growth of 15% annually to 2026 while businesses estimated a similar growth in their international business of 14% annually. These growth rates are assumed to kick in after an 18 month period in the model. This aligns with the RaaS agenda of implementation over the next 18 months and impact felt thereafter.

The chart shows clearly that intra-African trade is on a downward trajectory at present. However RaaS will help stimulate trade in two stages:

1. The cost reductions as a result of streamlined regulations pre-border and at the border increase trade by around \$35bn (the orange line).
2. The facilitative effect of digital Single Windows, digital documentation and the leveraged effects of digital IDs, more SMEs and women trading and more businesses moving through from the informal economy creates a multiplier of an additional \$52bn (the grey line).



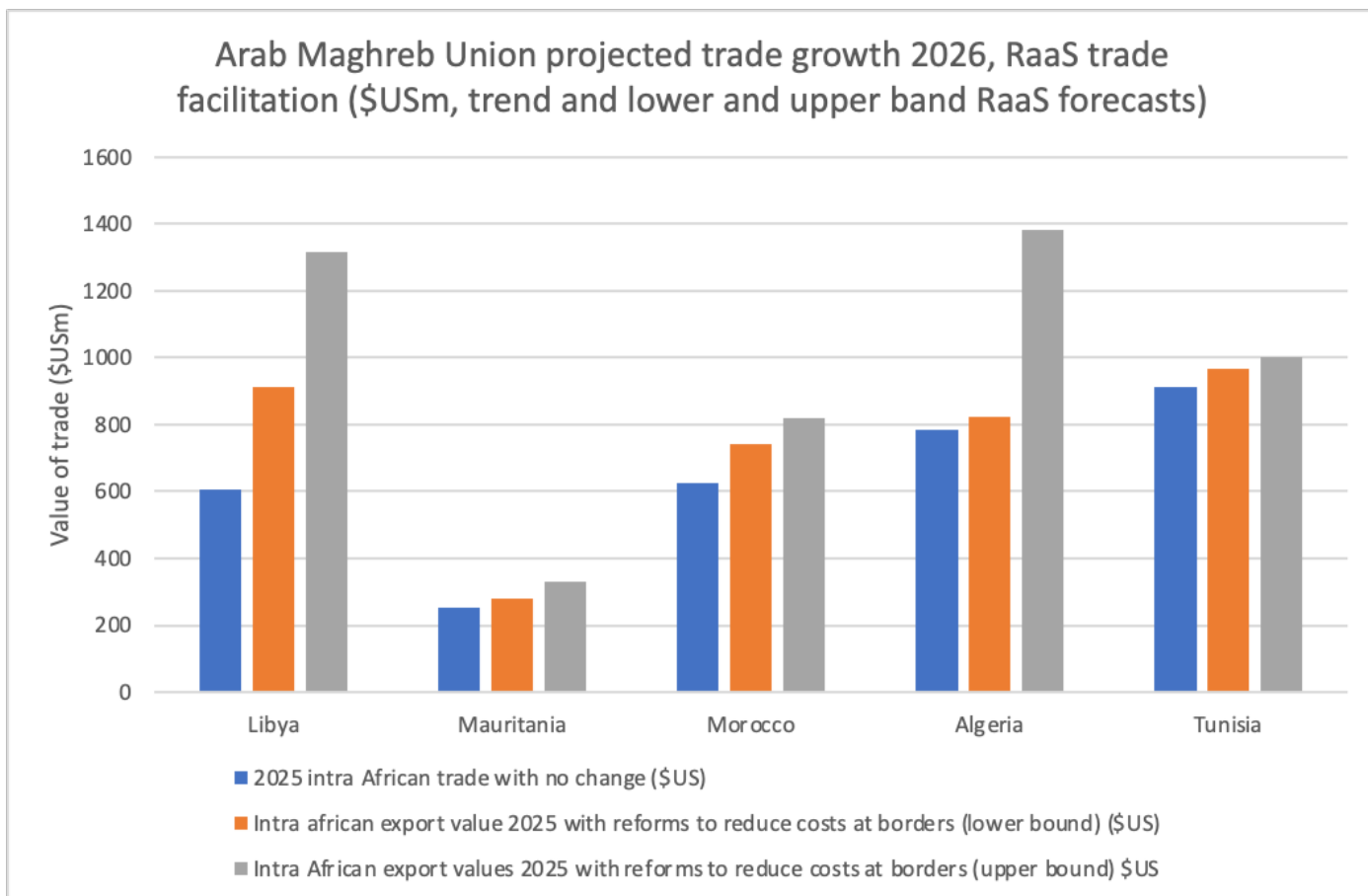
**Figure 13**

**Source: Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.**

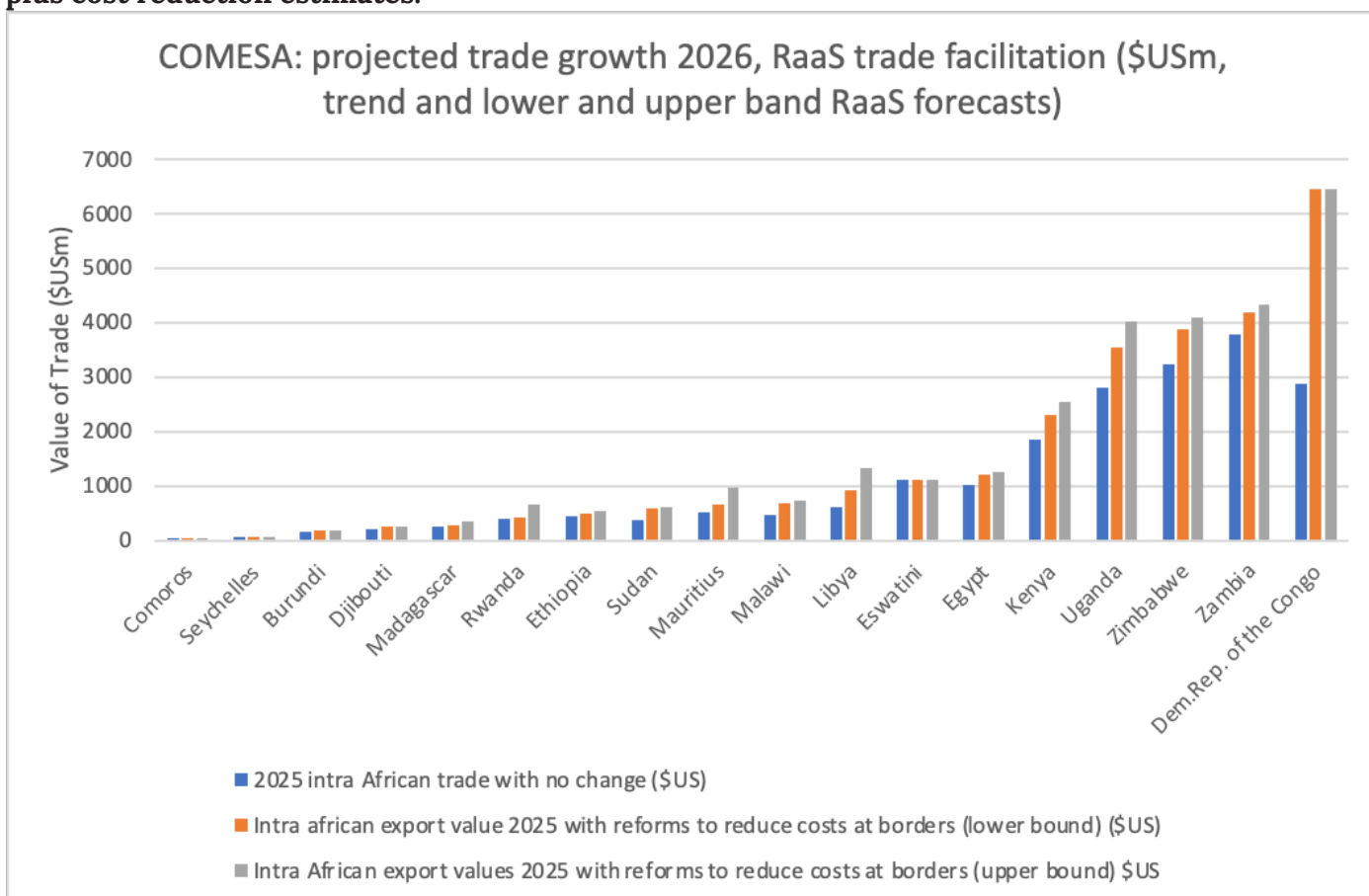
The increase in total trade values by REC is given in charts 13-18. Based on the above they illustrate:

1. The current projection for trade by the end of the time period
2. The lower bound projection for trade based on the price elasticity for that country
3. The upper bound projection for trade based on the price elasticity for that country

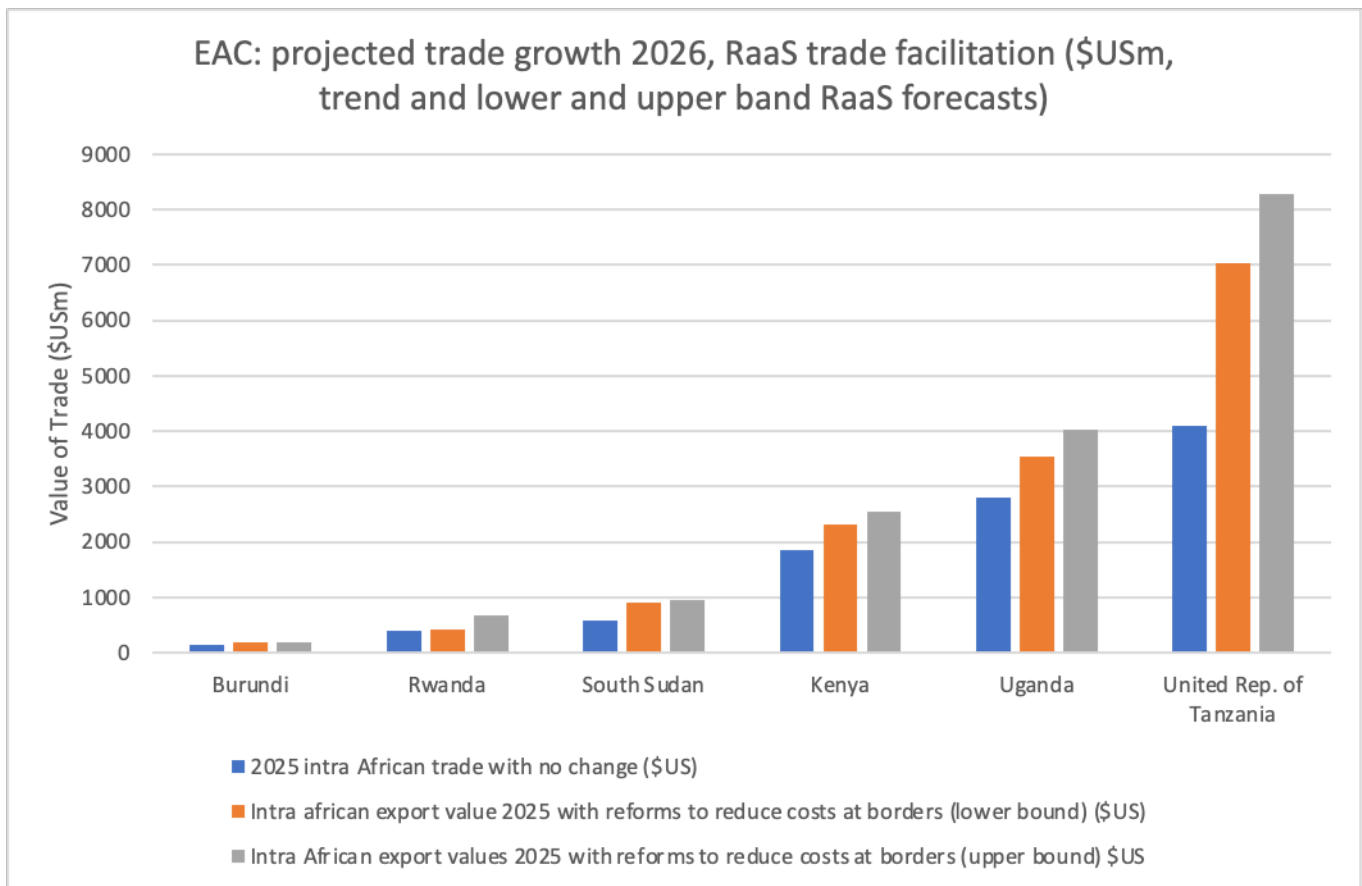
<sup>38</sup> International Chamber of Commerce, “Aligning National Laws to the UNCITRAL Model Law on Electronic Transferrable Records (MLETR): UK Business Case” (UK, 2021); International Chamber of Commerce, “Creating a Modern Digital Trade Ecosystem: Cutting the Cost and Complexity of Trade – Reforming Laws and Harmonising Legal Frameworks” (UK, 2021); Commonwealth, “Quantification of the Impact of Legal Reform to Support Paperless Trade,” 2021.



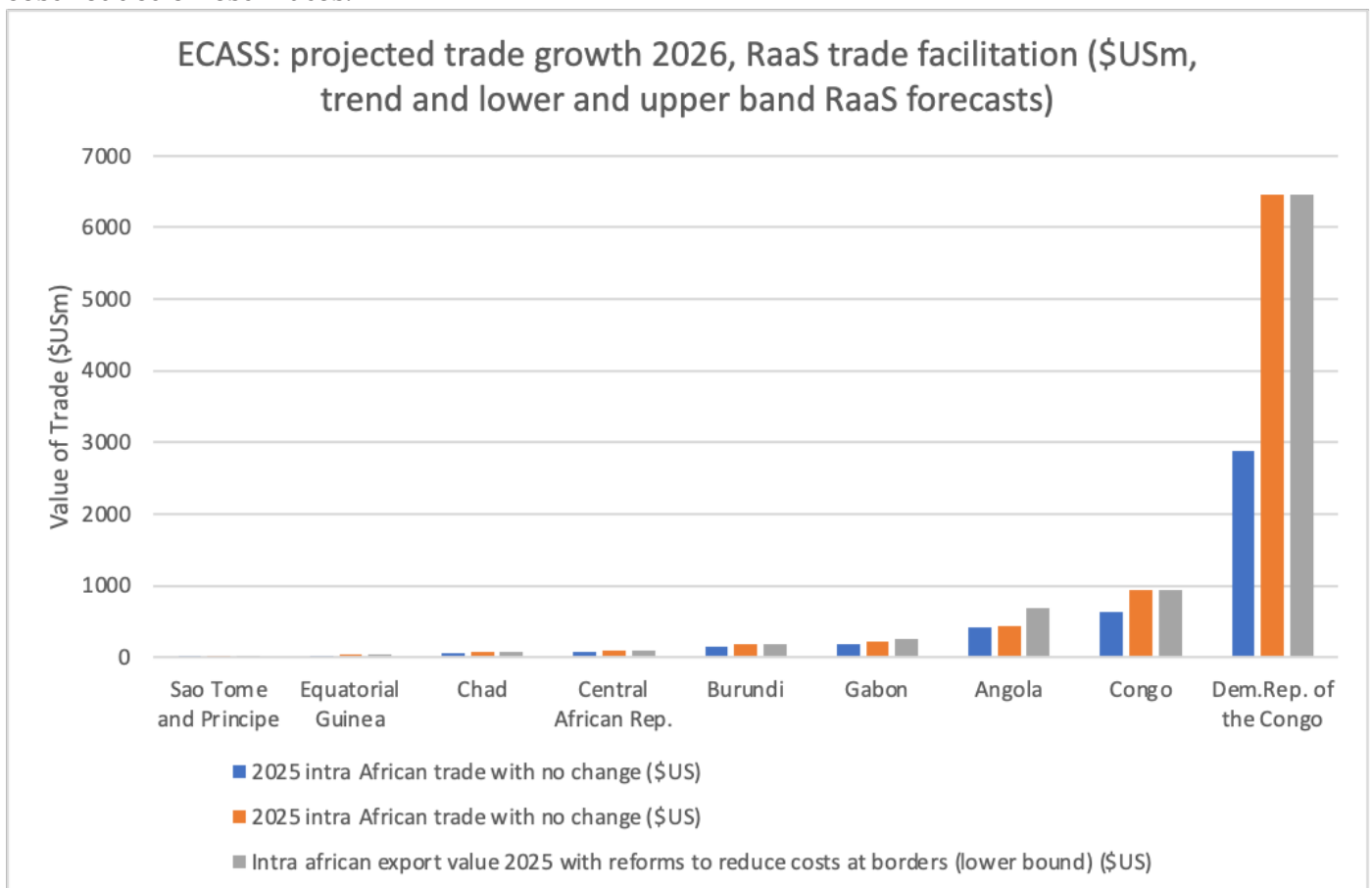
**Figure 14**  
**Source: Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.**



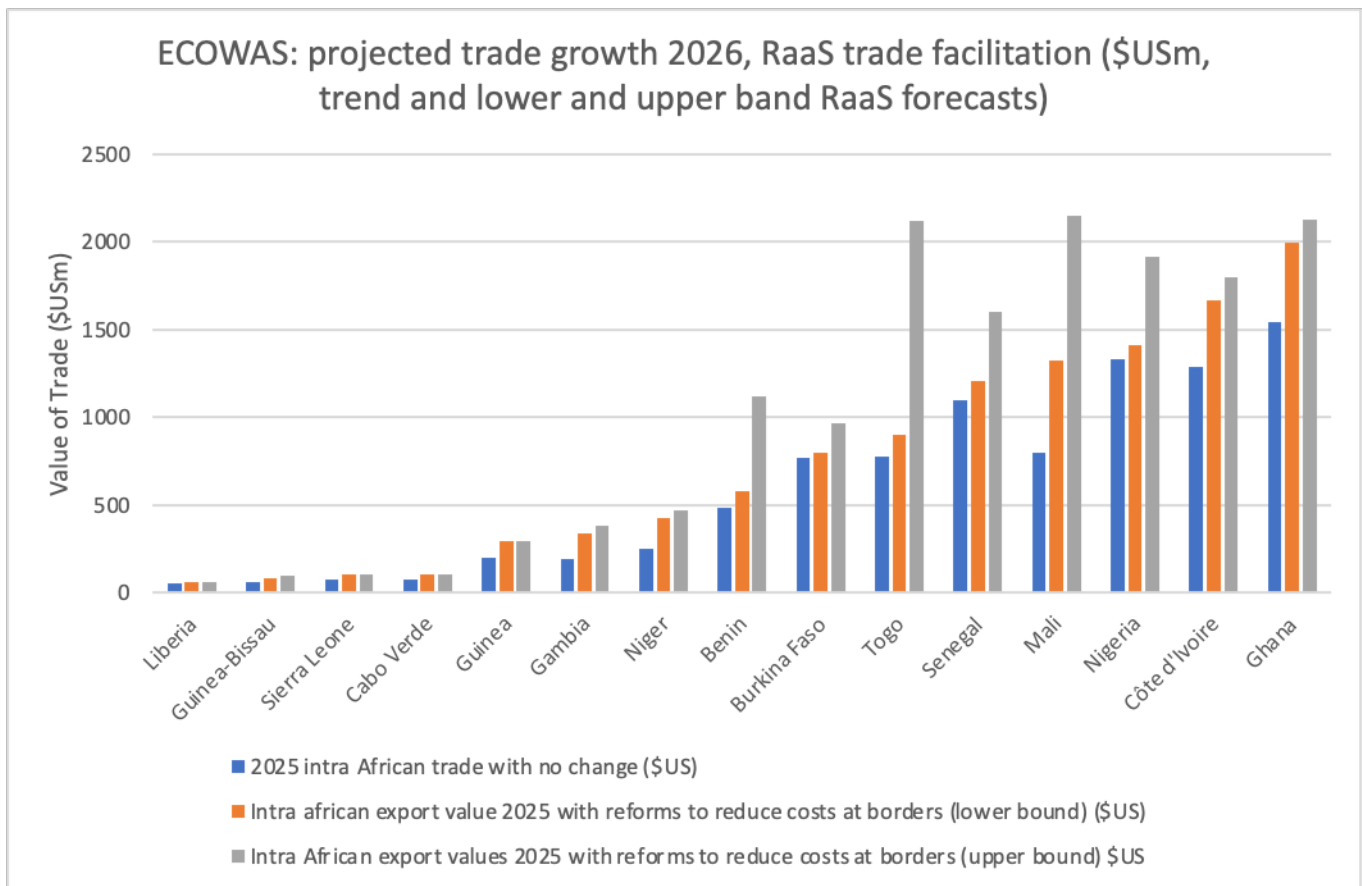
**Figure 15**  
**Source: Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.**



**Figure 16**  
**Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.**

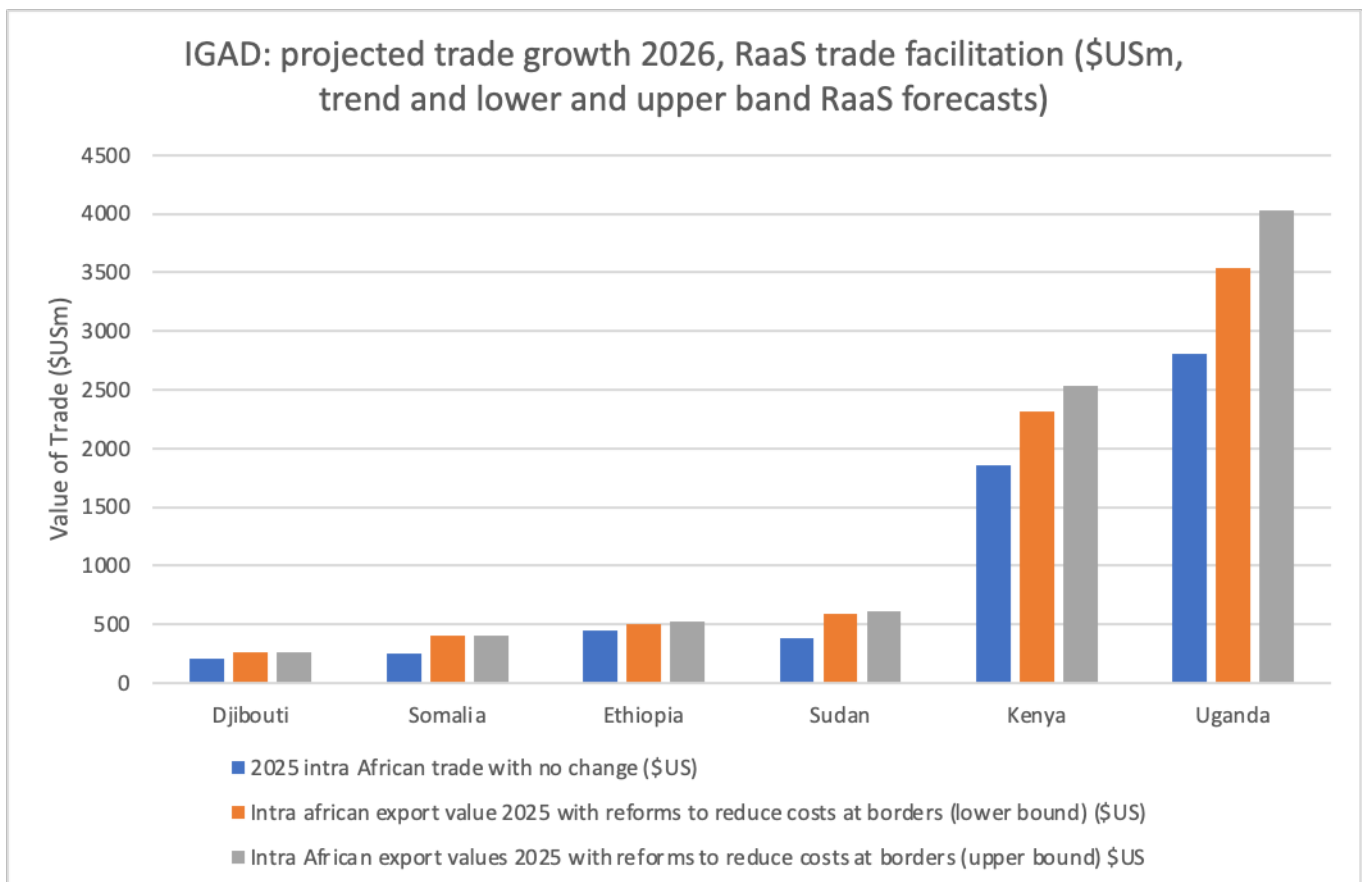


**Figure 17**  
**Source: Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.**



**Figure 18**

Source: Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.



**Figure 19**

Source: Calculations for this research from interviews, documentary research and survey of 55 banks plus cost reduction estimates.

## Summary: Business revenues and employment

The reduction in costs and the consequences for trade growth across Africa are self-evident from the analysis above. What is important here is that RaaS helps overcome core regulatory hurdles, such as those associated with paperwork before borders, rules of origin, tariffs and other transportation documentation. The major hindrance to intra-African trade, however, is the informal costs associated with speeding up the process of border crossing – this are broadly seen in as a consequence of levels of corruption.

If these regulatory hurdles can be removed, then the consequences for trade are shown, both at a regional (REC) level and for individual countries. This would help address the declining share of intra-African trade as a share of all trade and, more importantly, increase endogenously intra-African trade itself.

But how would this affect business revenues and jobs? There are currently around 10.8 million businesses registered on the global company database, Orbis39, collated and collected by Bureau van Dijk, Moody's. Once cleaned and harmonised, Product, revenue or employment data are available for just 251,932 businesses, or just over 2% of businesses in Africa according to the Moody's database. Both revenue and employment data are available for only some of these businesses – some have employment, others have revenue but rarely do the two coincide. However, these businesses alone provided nearly 100,000 jobs and around \$320bn in revenues in 2020.

To estimate the uplift in business revenues and employment, we have taken this sample as representative of all African businesses. Our analysis is based on the method highlighted above assuming an annualised impact from legal reform each year of 16% to 2026. The take-up is likely to be swift after the first 18 months given the need for the solution expressed in interviews. The total increase in turnover and employment over a five-year period using the net present value approach described could be as much as an additional \$500bn in revenues and 268,000 more jobs by 2026.

Part of the process of streamlining regulations should to focus on incentivising informal actors, however. The fact that only 5% of African businesses have formal records in international data sources, and that only a proportion of these have turnover or employment data means that we are likely to be under-representing the values by which reform could improve intra-African trade and the revenues and employment of businesses involved in international trade. In particular, the larger businesses from the Orbis database will be biased towards commodity companies and are likely to under-represent female directors and owners.

---

39 Bureau van Dijk/ Moody's Orbis database used for estimating revenue and employment effects through the API service: "API Collections," Orbis for Developers, accessed January 6, 2022, <https://orbis.dev/api/>.

---

## Concluding remarks

This research set out to answer five key questions:

- Are there any barriers to the implementation of RaaS across African nations? The answer to this question from our discourse analysis is no. There is a strong public sentiment suggesting that there are opportunities in intra-African trade and an appetite for regulations and solutions to enable those opportunities to be realised. This in itself is a necessary but not alone sufficient condition for implementing regulatory or trade reforms in Africa. The interviews suggested that the leadership of the Heads of State had hitherto acted as a barrier but could potentially be the catalyst to increasing rates of adoption and therefore increased intra-African trade.
- What are the current biggest challenges facing African nations in trade terms? The biggest challenges facing intra-African trade are its forecast growth rates which, using the methodologies for this research are relatively slow if there is no stimulus post-pandemic. The second major challenge are the prohibitive and unequal costs for traders associated with cross-border trade, people and financial flows. These are all regulatory barriers and affect exporters generally but have a particularly severe impact on female exporters and those in the informal economy since they are proportionately high relative to revenues.
- What are the costs faced by African countries currently? The average cost across Africa associated with border crossings and transportation is \$2,266 per \$25,000 shipment but our research suggests that for some nations, the cost is considerably higher than the value of trade revenues coming in. These costs obviously diverge across countries, as illustrated in the graphs and charts, and this is reflected in the impact that RaaS will have in each African nation. Similarly, high costs disproportionately affect small businesses and those with lower levels of literacy since they are associated with rules of origin compliance, trade and transport identity and documentation costs and delays associated with incorrect documentation.
- How can these costs be reduced across

African nations through RaaS? RaaS would address this key regulatory hurdle by creating regulations at a country level alongside digital systems such as single windows to streamline the process of border crossing. We estimate an average cost reduction of around 84% across Africa for all exporting businesses.

- How does streamlining through RaaS impact trade growth? We applied price elasticity multiples taking into account the costs, and cost reductions, of a typical container worth \$25,000. Accordingly, we estimate that intra-African trade could grow by an additional \$90bn by 2026 if RaaS measures can be implemented quickly and in a coordinated way across all countries.

The research set out to examine the state of intra-African trade, look at any obstacles in terms of regulation that it might face, the costs associated with those regulatory hurdles and to put together an action plan. Intra-African trade is dominated by hard commodities making it sensitive to external factors including demand for fossil fuels and commodity prices. However, African trade also needs to address the imbalance between trade in these products and ones, like food and clothing, which will help Africa's economy be more sustainable in every sense of the word as well as more inclusive. Women are more representative in these groups.

The research found that the major regulatory issues are pre-border and at-the-border documentation and processing. This pushes up costs prohibitively for some countries, such as the Democratic Republic of Congo, and for some groups, in particular women who are disadvantaged because of the perishability of their produce because it is mostly in soft commodities. Further damage comes from the lack of facilities and high levels of corruption. If these can be addressed then there are potentially reductions in costs for businesses that will be game-changing for the continent's exporters.

To address all of this, Heads of State in particular should work on the Model Trade Facilitation Accelerated Implementation Plan, the key elements of which are to regulate for:

1. Digital IDs to enhance access to finance for the

very smallest, female owned and informal businesses

2. Single Windows to enable streamlined documentation at and before borders
3. Free movement of professionals across borders in Africa
4. Cost ceilings on loans and export or import guarantees to enable trade finance
5. Enabling digital technologies – especially blockchains
6. Regulations to create clear food standards and maximum delays at borders to prevent produce from going off

The success of RaaS as a programme will depend absolutely on the speed and the consistency with which it can be implemented. Importantly it is a whole programme and not an individual action so the research presented here suggests simply what might happen were everything to be implemented simultaneously. The results are compelling.

Even so, the AfCFTA, the RECs and national governments have the opportunity to work together on RaaS to provide the right framework for enabling intra-African trade. This should include greater freedom of movement of capital and labour, but also experience sharing between governments as they introduce changes.

In doing this they will be helping Africa as a whole and their individual economies recover from the pandemic with a socio-economic landscape that is better than it was before.

### **Limitations and further research**

As has been stated throughout, the picture is a stylised one based on a rigorous methodology that was varied and as comprehensive as possible within the time frame of a 10 week piece of work. Its limitations are a function of poor data and timeframes but further research could develop

1. The forecasting approach for trade: the scope of the report did not explicitly ask for trade forecasting and the Bayesian approach developed here has major advantages in that it is not based on assumptions. Accompanied with the machine learning approach to plugging data gaps it represents a neutral and robust methodology. However, there are other approaches to this which may be appropriate, such as Computational General Equilibrium models or Gravity Modelling which are more orthodox approaches to forecasting in the trade literature.
2. Include an analysis of services and fintechs: the approach has been to look at the impact of RaaS on what we know about trade from the available evidence base. This was driven at least in part by the time available to the project. However, further research could spend more time harmonising available data to take account of the emerging importance of the Services and Fintech sectors in intra-African trade generally and the creation of digital infrastructures to support trade in particular.
3. Expand the interview survey to a representative sample across Africa's trade sector. The survey at present is useful in that it creates a basis for understanding the framework for RaaS within the context of what we know about the challenges facing intra-African trade. Further research would use the interview survey to create a larger, and representative sample of stakeholders in intra-African trade. This would substitute depth for quantity but a telephone or attitudinal survey with a larger, and independently originated sample frame would enable greater quantification of some of the emerging attitudes in intra-African trade.

---

# Bibliography

- International Chamber of Commerce. “5 reasons #TradeMatters for Africa,” June 7, 2017. <https://iccwbo.org/media-wall/news-speeches/5-reasons-tradematters-for-africa/>.
- Aboudou, F., A. Oga, M. Tassou, and K. Alamou. “Study on the Specific Problems of Women Traders on the Abidjan-Lagos Corridor.” Borderless Alliance, 2017.
- AfCFTA - African Continental Free Trade Area. “About the African Continental Free Trade Area (AfCFTA).” Accessed January 6, 2022. <https://afcfta.au.int/en/about>.
- United Nations Development Programme. “AfCFTA Secretariat and UNDP Release Futures Report Highlighting Value Chains That Can Boost Made in Africa,” November 21, 2021. <https://www.africa.undp.org/content/rba/en/home/presscenter/pressreleases/2021/afcfta-secretariat-and-undp-release-futures-report-tackling-valu.html>.
- African Development Bank Group. “Trade Finance in Africa: Trends Over the Past Decade and Opportunities Ahead - Policy Research Document 3.” Text. African Development Bank, September 18, 2020. <https://www.afdb.org/en/documents/trade-finance-africa-trends-over-past-decade-and-opportunities-ahead>.
- “African Economic Outlook 2021: From Debt Resolution to Growth: The Road Ahead for Africa.” Text. African Development Bank, March 12, 2021. <https://www.afdb.org/en/documents/african-economic-outlook-2021>.
- African Union. “African Continental Free Trade Area (AfCFTA) | African Union.” African Union. Accessed January 6, 2022. <https://au.int/cfta>.
- United Nations Development Programme. “Africa’s Women Traders Are Poised to Transform Economies through Intra-African Trade | UNDP in Africa,” April 12, 2021. [https://www.africa.undp.org/content/rba/en/home/presscenter/pressreleases/2021/africa\\_s-women-traders-are-poised-to-transform-economies-through.html](https://www.africa.undp.org/content/rba/en/home/presscenter/pressreleases/2021/africa_s-women-traders-are-poised-to-transform-economies-through.html).
- Akinremi, Bunmi. “Best Tools for Model Tuning and Hyperparameter Optimization.” Neptune Blog (blog), May 15, 2021. <https://neptune.ai/blog/best-tools-for-model-tuning-and-hyperparameter-optimization>.
- Alves, Matheus Facure. “Causal Inference for The Brave and True — Causal Inference for the Brave and True.” Github, 2021. <https://matheusfacure.github.io/python-causality-handbook/landing-page.html>.
- “API Collections.” Orbis for Developers. Accessed January 6, 2022. <https://orbis.dev/api/>.
- Bahmani, MJ. “Understanding LightGBM Parameters (and How to Tune Them) - Neptune.Ai.” Neptune Blog (blog), December 3, 2021. <https://neptune.ai/blog/lightgbm-parameters-guide>.
- Bahrpeyma, Fouad. “Multi-Step Ahead Time Series Prediction.” Dublin City University, 2020. [https://doras.dcu.ie/25265/1/\\_Fouad\\_Dissertation%20\(37\).pdf](https://doras.dcu.ie/25265/1/_Fouad_Dissertation%20(37).pdf).
- Batarseh, Feras A, Munisamy Gopinath, Ganesh Nalluru, and Jayson Beckman. “Application of Machine Learning in Forecasting International Trade Trends,” n.d. <https://arxiv.org/ftp/arxiv/papers/1910/1910.03112.pdf>.
- Bayili, J. “Cross-Border Trade on the Abidjan-Lagos Corridor: Challenges and Perspectives,” 2021.
- Behar, Alberto, and Lawrence Edwards. “Estimating Elasticities of Demand and Supply for South African Manufactured Exports Using a Vector Error Correction Model.” Centre for the Study of African Economies, University of Oxford, CSAE Working Paper Series, January 1, 2004.
- Bontempi, Gianluca, Souhaib Ben Taieb, and Yann-Aël Le Borgne. “Machine Learning Strategies for Time Series Forecasting.” In Business Intelligence. Springer-Verlag, 2013. [https://doi.org/10.1007/978-3-642-36318-4\\_3](https://doi.org/10.1007/978-3-642-36318-4_3).
- Brenton, Paul, Elisa Gamberoni, and Catherine Sear. “Women and Trade in Africa: Realizing the Potential.” The World Bank, n.d. <https://documents1.worldbank.org/curated/en/115591468211805723/pdf/825200WP0Women00Box379865B00PUBLIC0.pdf>.
- Brownlee, Jason. “4 Strategies for Multi-Step Time Series Forecasting.” Machine Learning Mastery (blog), March 7, 2017. <https://machinelearningmastery.com/multi-step-time-series-forecasting/>.
- . “On the Suitability of Long Short-Term Memory Networks for Time Series Forecasting.” Machine Learning Mastery (blog), May 25, 2017. <https://machinelearningmastery.com/suitability-long-short-term-memory-networks-time-series-forecasting/>.
- Chen, Peijin. “Tsai — State of the Art Machine Learning for Time Series, Part 1. | by Peijin Chen | Medium.” Peijin Chen (blog), July 15, 2021. <https://peijin.medium.com/tsai-state-of-the-art-machine-learning-for-time-series-part-1-dd4cac6707bc>.
- Cheng, Haibin, and Pang-Ning Tan. “Semi-Supervised Learning with Data Calibration for Long-Term Time Series Forecasting,” 133–41, 2008. <https://doi.org/10.1145/1401890.1401911>.

- Cheng, Haibin, Pang-Ning Tan, Jing Gao, and Jerry Scripps. "Multistep-Ahead Time Series Prediction," 3918:765–74. Singapore, 2006. [https://doi.org/10.1007/11731139\\_89](https://doi.org/10.1007/11731139_89).
- Circlaeys, Sonia, Chaitanya Kanitkar, and Daiki Kumazawa. "Bilateral Trade Flow Prediction," 2017. <https://www.semanticscholar.org/paper/Bilateral-Trade-Flow-Prediction-Circlaeys-Kanitkar/2cb48a042aff95b7d231700b4c3e35bdcd9b0919>.
- Commonwealth. "Quantification of the Impact of Legal Reform to Support Paperless Trade," 2021.
- Competitions, M. Forecasting. M5-Methods. Jupyter Notebook, 2022. <https://github.com/Mcompetitions/M5-methods>.
- . M5-Methods. Jupyter Notebook, 2022. <https://github.com/Mcompetitions/M5-methods/blob/789bf91b80b157845a17dc6f5f66b76a00ad04d0/validation/Point%20Forecasts%20-%20Benchmarks.R>.
- causalens. "Confounders: Machine Learning's Blindspot," June 10, 2021. <https://www.causalens.com/blog/confounders-machine-learnings-blindspot/>.
- Cotton, Peter. Humpday. Python, 2022. [https://github.com/microprediction/humpday/blob/bb6b4167201f49d5d1c7daaa186b608a6df03555/black\\_box\\_optimization\\_package\\_recommender.ipynb](https://github.com/microprediction/humpday/blob/bb6b4167201f49d5d1c7daaa186b608a6df03555/black_box_optimization_package_recommender.ipynb).
- "COVID-19 in Africa: Regional Socio-Economic Implications and Policy Priorities." OECD, May 7, 2020. [https://read.oecd-ilibrary.org/view/?ref=132\\_132745-u5pt1rdb5x&title=COVID-19-in-Africa-Regional-socio-economic-implications-and-policy-priorities](https://read.oecd-ilibrary.org/view/?ref=132_132745-u5pt1rdb5x&title=COVID-19-in-Africa-Regional-socio-economic-implications-and-policy-priorities).
- Crone, Sven F., Michèle Hibon, and Konstantinos Nikolopoulos. "Advances in Forecasting with Neural Networks? Empirical Evidence from the NN3 Competition on Time Series Prediction." *International Journal of Forecasting* 27, no. 3 (July 2011): 635–60. <https://doi.org/10.1016/j.ijforecast.2011.04.001>.
- Czakon, Jakub. "How to Do Hyperparameter Tuning on Any Python Script in 3 Easy Steps." Neptune Blog (blog), November 7, 2019. <https://neptune.ai/blog/hyperparameter-tuning-on-any-python-script>.
- Davis, Kevin E., and Michael J. Trebilcock. "The Relationship Between Law and Development: Optimists versus Skeptics." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, May 1, 2008. <https://papers.ssrn.com/abstract=1124045>.
- Duval, Yann. "Cost and Benefits of Implementing Trade Facilitation Measures under Negotiations at the WTO: An Exploratory Survey, ARTNeT Working Paper Series, No. 3." Bangkok: Asia-Pacific Research and Training Network on Trade (ARTNeT), January 2006. <https://www.econstor.eu/bitstream/10419/178361/1/awp-03.pdf>.
- Duval, Yann, Chorthip Utoktham, and Alexey Kravchenko. "Impact of Implementation of Digital Trade Facilitation on Trade Costs, ARTNeT Working Paper Series, No. 174." Bangkok: Asia-Pacific Research and Training Network on Trade (ARTNeT), 2018. <https://www.econstor.eu/bitstream/10419/177771/1/AWP174.pdf>.
- ECOWAS Commission. "Diagnostic Study on the Movement of Small Scale Cross Border Women Traders on Three Corridors in West Africa. Final Report. Borderless Alliance Secretariat.," April 2020.
- causalens. "Explainable AI (XAI) Doesn't Explain Enough," July 28, 2021. <https://www.causalens.com/blog/xai-doesnt-explain/>.
- Facebookresearch/Kats. Python. 2021. Reprint, Meta Research, 2022. <https://github.com/facebookresearch/Kats>.
- Fildes, Robert, and Keith Ord. "Forecasting Competitions: Their Role in Improving Forecasting Practice and Research." In *A Companion to Economic Forecasting*, edited by Michael P. Clements and David F. Hendry, 322–53. Malden, MA, USA: Blackwell Publishing Ltd, 2004. <https://doi.org/10.1002/9780470996430.ch15>.
- Filho, Mario. "How To Predict Multiple Time Series At Once With Scikit-Learn (With a Sales Forecasting Example)." Mario Filho | Data Science | Machine Learning. Accessed January 6, 2022. <https://www.mariofilho.com/how-to-predict-multiple-time-series-with-scikit-learn-with-sales-forecasting-example/>.
- Forecasting Best Practices. Python. 2019. Reprint, Microsoft, 2022. [https://github.com/microsoft/forecasting/blob/86b421b71826b92e47c3e3cb6cdcbf7ff4a63b90/examples/grocery\\_sales/python/00\\_quick\\_start/lightgbm\\_single\\_round.ipynb](https://github.com/microsoft/forecasting/blob/86b421b71826b92e47c3e3cb6cdcbf7ff4a63b90/examples/grocery_sales/python/00_quick_start/lightgbm_single_round.ipynb).
- Forecasting with Sktime — Sktime Documentation. Accessed January 6, 2022. [https://www.sktime.org/en/latest/examples/01\\_forecasting.html](https://www.sktime.org/en/latest/examples/01_forecasting.html).
- Founder, Peter Cotton, PhD. "Fast Python Time-Series Forecasting," August 1, 2021. <https://www.microprediction.com/blog/fast>.
- "G7 | CREATING A MODERN DIGITAL TRADE ECOSYSTEM CUTTING THE COST AND COMPLEXITY OF TRADE - Reforming Laws and Harmonising Legal Frameworks." International Chamber of Commerce, 2021. <https://www.readkong.com/page/g7-creating-a-modern-digital-trade-ecosystem-cutting-the-2313373>.
- Gabrys, Piotr. "How to Make Your Model Awesome with Optuna." *Towards Data Science*, June 30, 2021. <https://towardsdatascience.com/how-to-make-your-model-awesome-with-optuna-b56d490368af>.

- Gekonge, Christopher. "Challenges of Doing Business in Africa." In *Emerging Business Opportunities in Africa: Market Entry, Competitive Strategy, and the Promotion of Foreign Direct Investments*, 46. Hershey, PA: IGI Global, 2014. <https://www.igi-global.com/chapter/challenges-of-doing-business-in-africa/80146>.
- Gerbet, Valentin. "Predict Future Sales - LightGBM," January 6, 2022. <https://kaggle.com/valentingerbet/predict-future-sales-lightgbm>.
- Gopinath, Munisamy, Feras A. Batarseh, Jayson Beckman, Ajay Kulkarni, and Sei Jeong. "International Agricultural Trade Forecasting Using Machine Learning." *Data & Policy* 3 (ed 2021). <https://doi.org/10.1017/dap.2020.22>.
- Harding, Rebecca. "Africa: Trade Briefing." *Global Trade Review (GTR)*, August 1, 2018. <https://www.gtreview.com/supplements/gtr-africa-2018/africa-trade-briefing-2>.
- . "Africa: Trade Briefing." *Global Trade Review (GTR)*, August 13, 2019. <https://www.gtreview.com/supplements/gtr-africa-2019/africa-trade-briefing>.
- . "Africa: Trade Briefing." *Global Trade Review (GTR)* (blog), August 7, 2020. <https://www.gtreview.com/supplements/gtr-africa-2020/africa-trade-briefing-2>.
- . *Coriolis Technologies Interviews with trade and finance experts*, 2021.
- Henderson, Gordon. "Future Sales XGBoost - Top 3%." Accessed January 6, 2022. <https://kaggle.com/gordotron85/future-sales-xgboost-top-3>.
- R Bloggers. "Hierarchical Time Series Forecasting [Full Code Tutorial]," March 3, 2021. <https://www.r-bloggers.com/2021/03/hierarchical-time-series-forecasting-full-code-tutorial/>.
- Hu Chenhui. "Dilated Convolutional Neural Network (CNN)." Gitee. Accessed January 6, 2022. [http://toscode.gitee.com/hamor/forecasting/blob/master/examples/grocery\\_sales/python/02\\_model/dilatedcnn\\_multi\\_round.ipynb](http://toscode.gitee.com/hamor/forecasting/blob/master/examples/grocery_sales/python/02_model/dilatedcnn_multi_round.ipynb).
- Hyndman, Rob J. "A Brief History of Time Series Forecasting Competitions." Rob J. Hyndman (blog), April 11, 2018. <https://robjhyndman.com/hyndsight/forecasting-competitions/>.
- . "Forecasting: Principles & Practice." University of Western Australia, September 23, 2014. <https://robjhyndman.com/uwafiles/fpp-notes.pdf>.
- Hyndman, Rob J, George Athanasopoulos, and Han Lin Shang. "Hts: An R Package for Forecasting Hierarchical or Grouped Time Series," n.d.
- Hyndman, Rob, Alan Lee, and Shanika Wickramasuriya. "Package 'Hts': Hierarchical and Grouped Time Series," May 30, 2021. <https://cran.r-project.org/web/packages/hts/hts.pdf>.
- International Chamber of Commerce. "Aligning National Laws to the UNCITRAL Model Law on Electronic Transferrable Records (MLETR): UK Business Case." UK, 2021.
- . "Creating a Modern Digital Trade Ecosystem: Cutting the Cost and Complexity of Trade – Reforming Laws and Harmonising Legal Frameworks." UK, 2021.
- Jacobson, Jessica, and Susan Joekes. "Violence against Women Traders at Border Crossings." UK AID and Work and Opportunities for Women, November 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/876256/Query-31-VAW-Traders.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876256/Query-31-VAW-Traders.pdf).
- Josephson, Anna, Talip Kilic, and Jeffrey D. Michler. "Socioeconomic Impacts of COVID-19 in Four African Countries." Working Paper. Washington, DC: The World Bank, November 2020. <https://doi.org/10.1596/1813-9450-9466>.
- Keck, Alexander, Alexander Raubold, and Alessandro Truppia. "Forecasting International Trade: A Time Series Approach." *OECD Journal: Journal of Business Cycle Measurement and Analysis* 2009, no. 2 (May 10, 2010): 157–76. <https://doi.org/10.1787/jbcma-2009-5ks9v44bdj32>.
- Kuwona, Frank. "Africa's Free Trade Area Opens for Business." *Africa Renewal*, January 7, 2021. <https://www.un.org/africarenewal/magazine/january-2021/afcfta-africa-now-open-business>.
- Lahoud, Adam. "M5 Forecasting - Accuracy." Accessed January 6, 2022. <https://kaggle.com/c/m5-forecasting-accuracy>.
- LeBel, Phillip. "Managing Risk in Africa through Institutional Reform." New Jersey: School of Business, Montclair State University, 2006. <https://studylib.net/doc/9185094/managing-risk-in-africa-through-institutional-reform>.
- Levenbach, Hans. "The Myth of the MAPE . . . and How to Avoid It." CPDF Training and Certification Program, n.d. [http://cpdftraining.org/downloads/Levenbach\\_AccuracyTAPE2015.pdf](http://cpdftraining.org/downloads/Levenbach_AccuracyTAPE2015.pdf).
- Light Gradient Boosting Machine. C++. 2016. Reprint, Microsoft, 2022. <https://github.com/microsoft/LightGBM/blob/1d8bfd8c9b3fa7d56db81201adedb61cfc11669c/examples/README.md>.
- "LightGBM & Tuning with Optuna." Accessed January 6, 2022. <https://kaggle.com/bjoernholzhauer/lightgbm-tuning-with-optuna>.
- "Long-Term Socio-Economic Impacts of COVID-19 in African Contexts | UNDP in Africa." United Nations

- Development Programme, 2021. <https://www.africa.undp.org/content/rba/en/home/library/reports/analysing-long-term-socio-economic-impacts-of-covid-19-across-di.html>.
- Luke, David. "Why Trade Matters for African Development." Africa at LSE (blog), July 27, 2020. <https://blogs.lse.ac.uk/africaatlse/2020/07/27/why-trade-matters-for-african-development/>.
- "M5 Forecasting - Accuracy." Accessed January 6, 2022. <https://kaggle.com/c/m5-forecasting-accuracy>.
- Makridakis, S., A. Andersen, R. Carbone, R. Fildes, M. Hibon, R. Lewandowski, J. Newton, E. Parzen, and R. Winkler. "The Accuracy of Extrapolation (Time Series) Methods: Results of a Forecasting Competition." *Journal of Forecasting* 1, no. 2 (April 1982): 111–53. <https://doi.org/10.1002/for.3980010202>.
- . "The Accuracy of Extrapolation (Time Series) Methods: Results of a Forecasting Competition." *Journal of Forecasting* 1, no. 2 (April 1982): 111–53. <https://doi.org/10.1002/for.3980010202>.
- Makridakis, Spyros, and Michèle Hibon. "The M3-Competition: Results, Conclusions and Implications." *International Journal of Forecasting* 16, no. 4 (October 2000): 451–76. [https://doi.org/10.1016/S0169-2070\(00\)00057-1](https://doi.org/10.1016/S0169-2070(00)00057-1).
- . "The M3-Competition: Results, Conclusions and Implications." *International Journal of Forecasting* 16, no. 4 (October 2000): 451–76. [https://doi.org/10.1016/S0169-2070\(00\)00057-1](https://doi.org/10.1016/S0169-2070(00)00057-1).
- Makridakis, Spyros, Evangelos Spiliotis, and Vassilis Assimakopoulos. "The M5 Accuracy Competition: Results, Findings and Conclusions," October 6, 2020.
- . "The M5 Competition in Progress." M5 Competition, October 28, 2020. [https://www.researchgate.net/publication/344947668\\_The\\_M5\\_Competition\\_in\\_Progress](https://www.researchgate.net/publication/344947668_The_M5_Competition_in_Progress).
- Makridakis, Spyros, Evangelos Spiliotis, Vassilis Assimakopoulos, Zhi Chen, Anil Gaba, Iliia Tsetlin, and Robert Winkler. "The M5 Uncertainty Competition: Results, Findings and Conclusions," November 30, 2020.
- Maliszewska, Maryla, Michele Ruta, Guillermo Arenas, Paul Brenton, Cesar Calderon, Roberto Echandi, Israel Osorio Rodarte, Dominique van der Mensbrugghe, Maria Filipa Seara e Pereira, and Yulia Vnukova. "The African Continental Free Trade Area: Economic and Distributional Effects." The World Bank, July 27, 2020. <https://www.worldbank.org/en/topic/trade/publication/the-african-continental-free-trade-area>.
- The World Bank. "Manufacturing, Value Added (% of GDP) - Sub-Saharan Africa | Data." Accessed January 7, 2022. <https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=ZG>.
- Masui, Tomonori. "Multi-Step Time Series Forecasting with ARIMA, LightGBM, and Prophet | by Tomonori Masui | Towards Data Science." Towards Data Science, July 6, 2021. <https://towardsdatascience.com/multi-step-time-series-forecasting-with-arima-lightgbm-and-prophet-cc9e3f95dfb0>.
- Help center. "MdAPE - Median Absolute Percentage Error," March 9, 2017. <https://support.numxl.com/hc/en-us/articles/115001223503-MdAPE-Median-Absolute-Percentage-Error>.
- "Meeting of the Ministries of Trade and Directors of Benin, Côte d'Ivoire, Ghana, Nigeria and Togo on Trade Facilitation, Customs Cooperation and Transit Issues along the Abidjan-Lagos Corridor," n.d.
- Meier, Jonas. "Automated Feature Engineering with Open-Source Libraries." inovex GmbH, July 22, 2020. <https://www.inovex.de/de/blog/automated-feature-engineering-open-source-libraries/>.
- Mizner, Andrew. "ALB - African Law and Business." Text. ALB Legal and Business Issues from Africa. Global Legal Group, November 12, 2019. United Kingdom. <https://iclg.com/alb/10428-mixed-report-for-africa-s-business-climate>.
- Moïsé, Evdokia. "The Costs and Challenges of Implementing Trade Facilitation Measures." Paris: OECD, May 15, 2013. <https://doi.org/10.1787/5k46hzqxt8jh-en>.
- Mold, Andrew, and Samiha Chowdhury. "Why the Extent of Intra-African Trade Is Much Higher than Commonly Believed—and What This Means for the AfCFTA." Brookings (blog), May 19, 2021. <https://www.brookings.edu/blog/africa-in-focus/2021/05/19/why-the-extent-of-intra-african-trade-is-much-higher-than-commonly-believed-and-what-this-means-for-the-afcfta/>.
- Montero-Manso, Pablo, and Rob J. Hyndman. "Principles and Algorithms for Forecasting Groups of Time Series: Locality and Globality." Cornell University, August 2, 2020. <https://arxiv.org/abs/2008.00444v3>.
- Moon, Jihoon, Yongsung Kim, Minjae Son, and Eenjun Hwang. "Hybrid Short-Term Load Forecasting Scheme Using Random Forest and Multilayer Perceptron." *Energies* 11, no. 12 (December 2018): 3283. <https://doi.org/10.3390/en11123283>.
- MultiLateral. Coriolis Technologies. Accessed January 7, 2022. <https://www.coriolis-data.com/login>.
- Natekin, Alexey, and Alois Knoll. "Gradient Boosting Machines, a Tutorial." *Frontiers in Neuroinformatics* 7 (2013): 21. <https://doi.org/10.3389/fnbot.2013.00021>.
- Ng, Wee Keong, Masaru Kitsuregawa, and Jianzhong Li. *Advances in Knowledge Discovery and Data Mining: 10th Pacific-Asia Conference, PAKDD 2006, Singapore, April 9-12, 2006, Proceedings*. Springer, 2006.
- Norton, Eddie, and Michael Rolfe. "Intra-African Trade: A Priority for Africa." British Arab Commercial Bank PLC,

2021. <https://www.bacb.co.uk/uploads/files/BACB-WP-Intra-African-Trade.pdf>.
- Olabisi, Michael, and W. Charles Sawyer. "The Demand for Imports and Exports in Africa: A Survey." *Journal of African Trade* 7, no. 1–2 (June 13, 2020): 45–59. <https://doi.org/10.2991/jat.k.200530.001>.
- Olofsson, Casper, and Joel Wadsten. "Forecasting Forestry Product Trade Flow in the European Union." Lulea Tekniska Universitet, 2017. <https://ltu.diva-portal.org/smash/get/diva2:1111399/FULLTEXT01.pdf>.
- Optimization Geeks. Coding Bayesian Optimization (Bayes Opt) with BOTORCH - Python Example for Hyperparameter Tuning, 2021. <https://www.youtube.com/watch?v=BQ4kVn-Rt84>.
- Oto-Peralias, Daniel, and Diego Romero-Avila. "Legal Reforms and Economic Performance: Revisiting the Evidence, Background Paper for the World Development Report, Governance and The Law." The World Bank, 2017. <https://thedocs.worldbank.org/en/doc/193351485539892515-0050022017/original/WDR17BPRVisitingLegalOrigins.pdf>.
- Ouyang, Yicun, and Hujun Yin. "Multi-Step Time Series Forecasting with an Ensemble of Varied Length Mixture Models." *International Journal of Neural Systems* 28, no. 04 (May 1, 2018): 1750053. <https://doi.org/10.1142/S0129065717500538>.
- Ozaki, Kohei. "LightGBM Tuner: New Optuna Integration for Hyperparameter Optimization | by Kohei Ozaki | Optuna | Medium," March 2, 2020. <https://medium.com/optuna/lightgbm-tuner-new-optuna-integration-for-hyperparameter-optimization-8b7095e99258>.
- Park, Jinwoong, Jihoon Moon, Seungmin Jung, and Eenjun Hwang. "Multistep-Ahead Solar Radiation Forecasting Scheme Based on the Light Gradient Boosting Machine: A Case Study of Jeju Island." *Remote Sensing* 12, no. 14 (January 2020): 2271. <https://doi.org/10.3390/rs12142271>.
- Pattnaik, Satya. "A LightGBM Autoregressor — Using Sktime." *Towards Data Science*, December 15, 2020. <https://towardsdatascience.com/a-lightgbm-autoregressor-using-sktime-6402726e0e7b>.
- . "Auto Regressor LightGBM-Sktime." Kaggle. Accessed January 6, 2022. <https://kaggle.com/satyads/auto-regressor-lightgbm-sktime>.
- Pollen, William. "AfCFTA Gives Glimpse of New African Destiny." *African Business*, March 12, 2021. <https://african.business/2021/03/trade-investment/afcfta-gives-glimpse-of-new-african-destiny/>.
- Prestwich, Steven, Roberto Rossi, S. Armagan Tarim, and Brahim Hnich. "Mean-Based Error Measures for Intermittent Demand Forecasting." *International Journal of Production Research* 52, no. 22 (October 18, 2013). <https://doi.org/10.1080/00207543.2014.917771>.
- GitHub Gist. "Python Numpy Functions for Most Common Forecasting Metrics." Accessed January 6, 2022. <https://gist.github.com/bshishov/5dc237f59f019b26145648e2124ca1c9>.
- Rangapuram, Syama Sundar, Lucien D. Werner, Konstantinos Benidis, Pedro Mercado, Jan Gasthaus, and Tim Januschowski. "End-to-End Learning of Coherent Probabilistic Forecasts for Hierarchical Time Series." In *Proceedings of the 38th International Conference on Machine Learning*, 8832–43. PMLR, 2021. <https://proceedings.mlr.press/v139/rangapuram21a.html>.
- GitHub Gist. "Recursive Feature Elimination for LightGBM. This Class Accepts Missing Values and Optuna LightGBM Tuner." Accessed January 6, 2022. <https://gist.github.com/c-bata/87f13e97b7649e1d1a886345abf7e383>.
- "Risks and Vulnerabilities Faced by Northern Ugandan Women Cross-Border Traders at the South Sudan and Democratic Republic of Congo Borders." *Strategic Initiative for Women in the Horn of Africa*, June 2020. [https://issuu.com/halayassin/docs/uganda\\_women\\_cross-border\\_traders\\_-\\_report\\_3.0\\_-\\_d](https://issuu.com/halayassin/docs/uganda_women_cross-border_traders_-_report_3.0_-_d).
- Spiliotis, Evangelos, Spyros Makridakis, Artemios-Anargyros Semenoglou, and Vassilis Assimakopoulos. "Comparison of Statistical and Machine Learning Methods for Daily SKU Demand Forecasting." *Operational Research*, September 16, 2020. [https://www.researchgate.net/publication/344374729\\_Comparison\\_of\\_statistical\\_and\\_machine\\_learning\\_methods\\_for\\_daily\\_SKU\\_demand\\_forecasting](https://www.researchgate.net/publication/344374729_Comparison_of_statistical_and_machine_learning_methods_for_daily_SKU_demand_forecasting).
- Sun, Jingwen, Yuan Suo, Seeha Park, Tianze Xu, Yizhu Liu, and Weiqi Wang. "Analysis of Bilateral Trade Flow and Machine Learning Algorithms for GDP Forecasting." *Engineering, Technology & Applied Science Research* 8, no. 5 (October 13, 2018): 3432–38. <https://doi.org/10.48084/etasr.2311>.
- Taieb, Souhaib Ben, Gianluca Bontempi, Amir Atiya, and Antti Sorjamaa. "A Review and Comparison of Strategies for Multi-Step Ahead Time Series Forecasting Based on the NN5 Forecasting Competition," August 16, 2011. <http://arxiv.org/abs/1108.3259>.
- Taieb, Souhaib Ben, and Rob J Hyndman. "Boosting Multi-Step Autoregressive Forecasts." *Proceedings of Machine Learning Research* 32, no. 1 (2014): 9.
- "The Futures Report: Making the AfCFTA Work for Women and Youth." AfCFTA Secretariat and UNDP. Accessed January 6, 2022. <https://afcfta.au.int/en/documents/2020-12-02/futures-report-making-afcfta-work-women-and-youth>.

- “Trade Finance in Africa: Trends Over the Past Decade and Opportunities Ahead - Policy Research Document 3.” Text. African Development Bank, September 18, 2020. <https://www.afdb.org/en/documents/trade-finance-africa-trends-over-past-decade-and-opportunities-ahead>.
- Tran, Van Tung, Bo-Suk Yang, and Andy Chit Chiow Tan. “Multi-Step Ahead Direct Prediction for Machine Condition Prognosis Using Regression Trees and Neuro-Fuzzy Systems.” *Expert Systems With Applications* 36, no. 5 (2009): 9378–87.
- “Tsai — State of the Art Machine Learning for Time Series, Part 1. | by Peijin Chen | Medium.” Accessed January 6, 2022. <https://peijin.medium.com/tsai-state-of-the-art-machine-learning-for-time-series-part-1-dd4cac6707bc>.
- Velasco, Borja. “Double Machine Learning for Causal Inference.” *Towards Data Science*, June 25, 2021. <https://towardsdatascience.com/double-machine-learning-for-causal-inference-78e0c611f9d>.
- Vertes, Druce. “Beyond Grid Search: Hypercharge Hyperparameter Tuning for XGBoost | by Druce Vertes | Towards Data Science.” *Towards Data Science*, October 30, 2020. <https://towardsdatascience.com/beyond-grid-search-hypercharge-hyperparameter-tuning-for-xgboost-7c78f7a2929d>.
- Vries, Jos de. “Forecasting World Banana Trade Flows.” *The World Bank*, May 1979. <https://documents1.worldbank.org/curated/en/734301492042668436/pdf/CMN16000Foreca0d0banana0trade0flows.pdf>.
- Wallis, Kenneth F. “Revisiting Francis Galton’s Forecasting Competition.” *Statistical Science* 29, no. 3 (August 1, 2014). <https://doi.org/10.1214/14-STS468>.
- “Welcome - International Institute of Forecasters,” December 28, 2011. <https://forecasters.org/>.
- Welcome to Sktime. Python. 2018. Reprint, The Alan Turing Institute, 2022. [https://github.com/alan-turing-institute/sktime/blob/36f3cb1b96421bb08e041d16949d3d8a9be6f7d8/sktime/forecasting/compose/\\_reduce.py](https://github.com/alan-turing-institute/sktime/blob/36f3cb1b96421bb08e041d16949d3d8a9be6f7d8/sktime/forecasting/compose/_reduce.py).
- “World Bank Confirms Economic Downturn in Sub-Saharan Africa, Outlines Key Policies Needed for Recovery.” Text/HTML. Washington, DC: The World Bank, October 8, 2020. <https://doi.org/10.08/world-bank-confirms-economic-downturn-in-sub-saharan-africa-outlines-key-policies-needed-for-recovery>.
- Yakovlev, Konstantin. M5 - Simple FE. Python. Accessed January 6, 2022. <https://kaggle.com/kyakovlev/m5-simple-fe>.

---

# Acknowledgements

We would like to thank the many contributors to this report. In particular, we would like to thank distinguished participants to the RaaS put correct UNGA number UNGA side-event for their reflections that fed into the report: UNDP Assistant Administrator and Director of Regional Bureau for Africa- Ahunna Eziakonwa  
Former President of Niger - Issoufou Mahamadou;  
Secretary-General of the AfCFTA Secretariat - Wamkele Mene;  
Chief of staff at the AfCFTA Secretariat - Commissioner Silver Ojakol  
Southern African Customs Union (SACU) Executive Secretary - Pauline Mbala Elago;  
Trade and Development Bank President and CEO - Tadesse Admassu;  
World Customs Organization Secretary-General - Kunio Mikuriya; and  
International Factoring Association (FCI) CEO - Peter Mulroy

## Technical Report Team

The report is a joint product of the UNDP Regional Bureau for Africa (RBA), the UNDP Africa Sustainable Finance Hub and Africa Investor. The Expert Team that oversaw its conceptual development was led by Antonia Joy Kategekwa, Strategic Advisor to the Assistant Administrator and RBA Director and Hubert Danso, CEO of Africa Investor. Direct technical backstopping, coordination and secretariat assistance was provided by Tomas Sales, Eric Picard and Sara Hamano with the Private Sector and Sustainable Investment Team at the Africa Sustainable Finance Hub in Pretoria.

The report was written by the Coriolis Technologies Team. We would like to thank Dr. Rebecca Harding as its lead author and acknowledge Hannah Skilton, Janet Mulu' Ms. Leigh Spratt, Mr. Ciarán Harney, Mr. Alex Scott, Ms. Emma Hurlbert, Ms. Stephanie Hamod contributions. We also acknowledge Mr. Kris Makuch contribution for the report and webpage design.

We thank the many key informants listed in Annex 4 for their expert contributions to this report.

We would also like to thank Ahunna Eziakonwa, UNDP Assistant Administrator and RBA Director, Dr. Ayodele Odusola, Director, UNDP Africa Finance Sector Hub, Pretoria and Resident Representative, UNDP South Africa, colleagues from the UNDP AfCFTA Regional Project Team and Angola, DRC, Ghana, South Africa and Ghana for their invaluable contributions to this report.

---

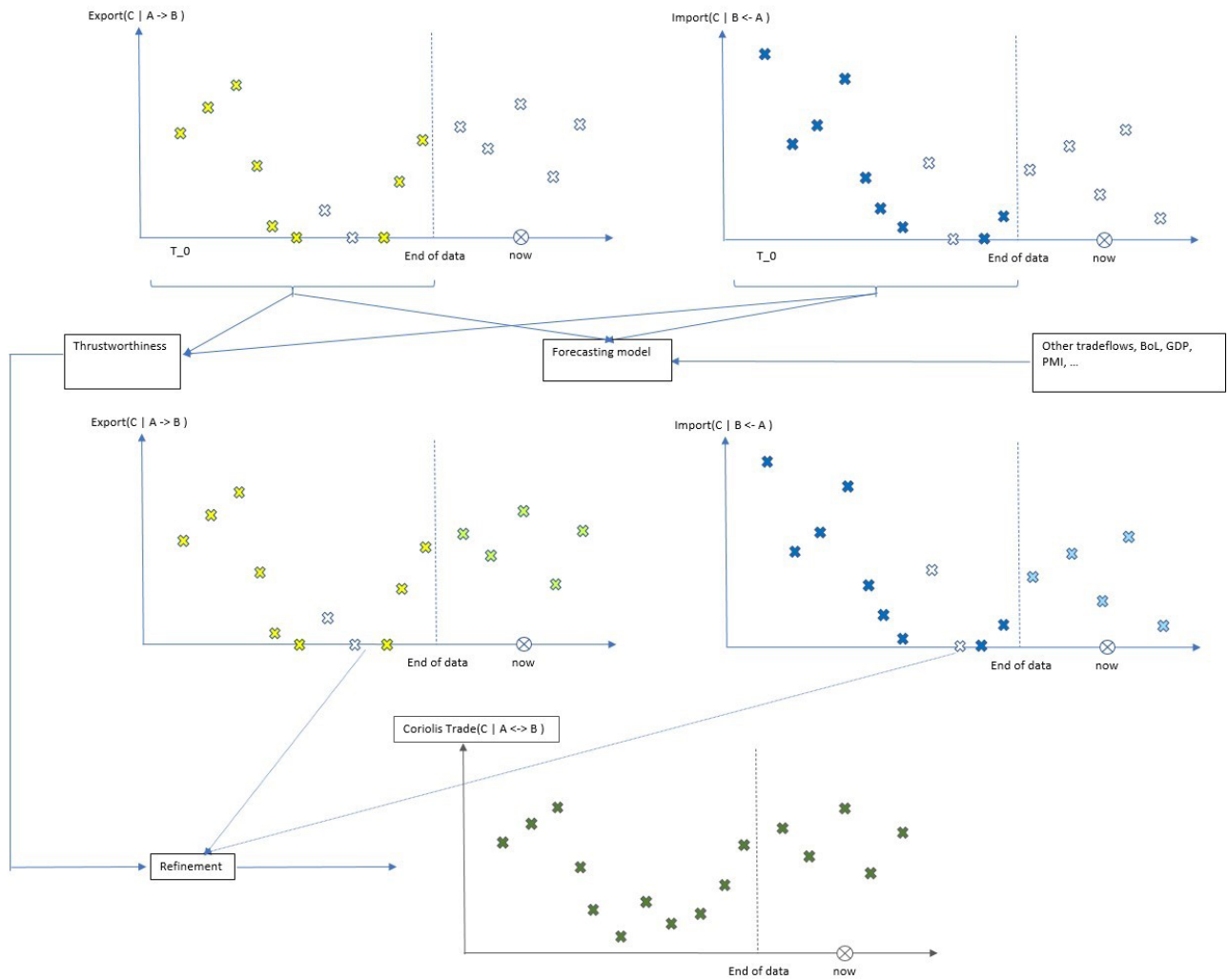
# Appendix 1: Technical Methodology – Coriolis Technologies baseline trade forecasting methodology

Coriolis trade flow refinement methodology is a set of algorithms to provide current and accurate global trade flow estimates. The aim is to provide a comprehensive solution to two known error sources in trade data – data lags and bilateral asymmetries. Lags arise from the complexities of reporting and aggregating trade for all goods in a country. The fastest reporting economies are still at least 3 months lagged. Bilateral asymmetries in trade data (both in goods and services) are a well-known phenomenon in official statistics. They occur when the reported exports from country A to country B do not match the reported imports to country B from country A.

We define the two challenges as statistical and machine learning problems. We tackle lags through a forecasting model based on Recurrent LightGBM. This step solely calculates the current and future (12 months ahead) monthly reported trade values (USD) of all global trade flows on a 6-digit HS-code level. Modelling reported trade values directly means that the model forecasts ‘what the Reporting economy will report’. If the economy constantly under-reports then the model will also under-report in the same manner. The reporting bias is estimated and mitigated in the subsequent step: trade value refinement. In this part we design a Bayesian methodology approach to quantify reporters trustworthiness. The trustworthiness score is then used to determine the actual value of trade between two economies by weighting the reported export value and the reported import value based on their score.

Lastly there is also the challenge of scale. There are 53 million trade flows which require a monthly update. This has implications for the modelling logic and for the choice of hardware and data processing methodologies. The forecasting model must be able to create robust forecasts for trade flows of all-time series types, including very sparse trade flows, smooth trade flows, jumpy, erratic or intermittent trade flows without the possibility of making model changes for a single trade flow.

The base forecasting below is used to create a view of what will happen to trade if all else remains equal. There are no assumptions, but the machine learns for the history of a specific timeseries.



The diagram summarises the flow of data in the Coriolis trade flow refinement approach. On top is the raw Comtrade data. Two example trade flows are defined:  $\text{Export}(C | A \rightarrow B)$  the reported export value of commodity C by from Reporter A to Partner B and  $\text{Import}(C | B \leftarrow A)$  the reported import value of commodity C by Reporter B from Partner A. The pair of those values is called a symmetric trade pair. In the long run (summed over many years) these values of those should be the same because both relate to the same commodity just registered at different times and in different countries. In practice there are differences in reporting, goods are qualified differently, pass through third countries or different exchange rates are used to qualify the value. In the medium and short run there are also differences stemming from shipment delay, warehousing and the treatment of differential reporting - Freight on Board (FoB) for exports and Cost Insurance and Freight (CiF) for imports estimated as up to 5% of the asymmetry in any one trade flow (Baringa 2019)

The second row represents the modeling phase. From the raw data two models are built. One is the Bayesian thrustworthiness model which outputs a thrustworthiness score for each Reporter and Commodity combinations. The second is the forecasting model which uses all previously available trade flow data, additional features derived from the raw data and external variables (Bill of Lading, PMI, macroeconomic data) to estimate current (nowcast) and future (forecast) values of the raw trade flow data.

The third step is to put together the two models to arrive at a the actual trade values for past, present and future trade.

## Forecasting methodology

Karol Przybylak and Jintao Long, Coriolis Technologies

The goal is to create a forecasting algorithm for monthly bilateral trade flows at a 6-digit HS code level (note: this can then be aggregated to four digit and two digit levels and from monthly data to annual data). Trade flow data is registered by the customs offices of each country and is then processed and aggregated by UN Comtrade as the most comprehensive and consistent “raw” data source for world trade.

The Comtrade data is lagged by several months hence the goal is to create ‘nowcasts’- estimates of the current values and forecasts - estimates for 12 months ahead on the moment of forecast creation. The algorithm is based on Machine Learning and Statistical models for time series. It extracts patterns in trade flow time series and patterns between the trade flow time series and external variables (macro economic indicators, trade restrictions etc.) to extrapolate those patterns into the future and hence create forecasts.

### Setting and data

Variable \ Time	T-7	T-6	T-5	T-4	T-3	T-2	T-1	T	T+1	...T+6
$V_{baec}$	940k	980k	?	?	?	?	?	?	?	?
<b>GDP forecast or other macro indicators</b>	10bn	10bn	10bn	10bn	10bn	10bn	10bn	10bn	10bn	10bn
<b>Bill of lading data</b>	1M	1.1M	1M	0.9M	1M	1.2M	1.1M	-	-	-
<b>Oil prices</b>	40\$	41\$	46\$	34\$	42\$	37\$	38\$	41\$	-	-
<b>Trade restrictions and tariffs</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	25%

Table 1. Summarizes the input and output variables of the model. Light blue cells are historic values available at time point T before creating the forecast, light green are values to be forecasted by the model.  $V_{baec}$ , the external variable, is total monthly USD value of the export e of commodity c between reporter country b and partner country a.

The most prevalent characteristics of the task are:

- The data is big – 58 million tradeflows with monthly data and hence 58 million forecasts to be updated each month.
- The data is lagged - even creating ‘nowcasts’ means forecasting ~6 months ahead. A lot can happen in trade within 6 months.
- There are different sources for the reporting lag and the lag can also be change dynamically.
- Exogenous variables have different lags. Some, like for example Bill of lading data, can be used as a proxy for trade flows in the more recent periods where trade data is not yet available.
- The data is hierarchical. Commodities are categorized into 6-digit HS codes. This hierarchy can help utilizing cross-correlations between commodities with similar codes.
- There are trade flows that look ‘censored’ - with periods of 0s and then some months with data. The algorithm has to be able to output positive or 0 numbers only. In machine learning terms it is a truncated regression problem

---

## Literature and Resources

This section summarizes the available research in the context of trade flow forecasting. For a full list of resources, including research papers and publically available code, please refer to the Bibliography section.

Research from two main areas of interest has been revised. First Machine Learning and Statistical approaches to trade flow forecasting. This helped gaining a domain specific understanding of the problem. Secondly we analysed research on large scale time series forecasting which could be applied to any time series data.

### Machine Learning and Statistical approach to trade flow forecasting

In the first instance the sources focus either on explanation of the model (parameter analysis) or on forecasting accuracy. Traditionally statistical and econometric literature is focused on explanation and the significance of results while the Machine Learning community is focused on accuracy. We are interested in the later but the results of statistical research provides great insight into the data which helps to understand the problem and propose improvements also for the accuracy focused approaches. None of the research so far has focused on forecasting all trade flows globally. So far it has always been a small selection of commodities and a small selection of countries.

The best performing models from the reviewed research usually share the following characteristics:

- Ability to extract nonlinearity.
- Ability to extract patterns in cross-correlations between different trade flows.
- Ability to extract seasonality and changepoints.
- Usage of external regressors
- Handling of a dynamically changing time structure
- Handling very different types of time series. Some trade flows are 90% 0s.
- Handling large amounts of trade flows (58M) simultaneously
- Handle relatively small amount of data for specific trade flows. In the best case we have 140months of data for a given trade flow. Overfitting is a real possibility. The model should operate on a larger set of time series with shared parameters.

Deep Learning and/or on Boosting algorithms (Random Forests, XGB, Lightboost) are pretty much the only available approaches to handle all of these issues.

## Large Scale Time Series Forecasting- Model Estimation

LightGBM is chosen as the supervised learning model for forecasting. The model is built together for a set of trade flows. This is a necessity as it wouldn't be possible to be built at once for all tradeflows together with the currently available infrastructure. An optimization for the choice of the grouping remains to be done. Generally an informed clustering should be better than either of the extremes – one model for all trade flows or one model for each tradeflow.

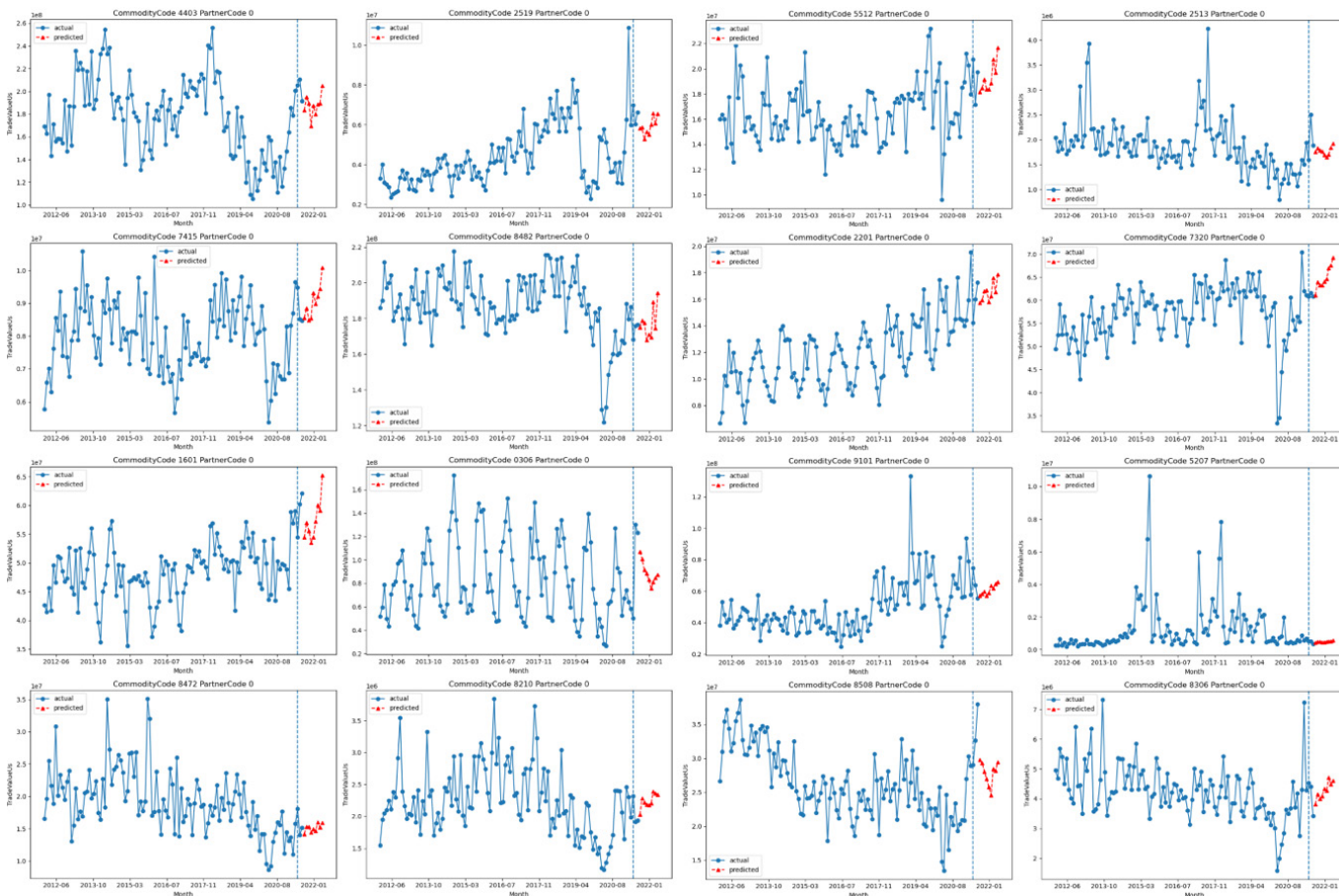
This implies that a group-invariant error measure has to be chosen as the algorithms' loss functions. With standard error measures like AE, RMSE Tradeflows with higher values would have a stronger impact on the error measure. Hence the learning algorithm would optimize the parameters towards mostly performance on those flows. MAPE is group-invariant but not scale-invariant. I.e. if actual value is close to 0 then even if the forecast is close in nominal terms in percentage terms it could be millions% off the actual value. Again this outlier would have unproportionately large impact on architecture of the LightGBM model. Currently Mean Absolute Scaled Error is chosen as a measure that is both scale-invariant and group-invariant.

LightGBM, as a tree based ensemble algorithm, does not extrapolate into the future. Unlike generative models the values for different time horizons can not be generated by one model. We built one model for each forecasting horizon:  $[M=f(X_t, Y_{t+1}), M=f(X_t, Y_{t+2}), \dots, M=f(X_t, Y_{t+s})]$ , where  $s$  is the required horizon.

To capture recurrency and other time series related characteristics past values of the trade flow are fed into the model as exogenous variables. The set of exogenous variables  $X_t$  consists of: past values of the modelled trade flow, past values of other trade flows (including those of the symmetric trade pair), month (1-12), period (201001-max), Bill of lading values of the related HS code, macroeconomic indicators, tariff values, non-tariff related trade measures for the related time-space, time series characterization features (intermittency, smoothness etc.), macroeconomic indicators, USD exchange rate related features. Since multiple trade flows are fed into one model cross-correlations between reporters, partners, commodities and trade direction (export/import) are latently inferred by the model without explicitly defining them as exogenous variables.

The model is estimated on data from 2010.01-2017:12 and tested on all months of 2018. Hyperparameter optimization techniques are utilised to tune the performance and then the model is reestimated on all available data from 2010.01 - now and forecasts are created for all months until 2022.05.

Below are forecasting results for a random sample of 2-digit HS code reported total sum of France's export values:



### Missing and Zero trade values (especially significant in context of emerging markets)

The available trade data has a fraction of 0 or close to 0 monthly trade values. It also has a bigger fraction of months where certain trade flows were not reported. In this situation the trade might not be reported properly, it might be reported with the next month's data or it might be a custom of the reporter to not report values if they are 0. The forecasting algorithm is reused to also decide on the missing values whether to treat them as 0s or a missing value and estimate that value.

The algorithm is also informed with results of an additional investigation on the randomness of missing values. Missing value in global trade data is used as an indicator of the level of pattern intervention presented in a particular trade series. Three categories of data missingness are developed - missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR). In a time series, the missing value proportion and the maximum missing gap by month are integrated into a system to determine missingness types. In general, it is assumed that time series with very low missing value proportion would fall into the category of MCAR, while those with relatively high missing value proportion and maximum missing gap by month would fall into the category of MNAR, and those outside the above two categories would fall into the category of MAR.

## Bayesian Trustworthiness (TW)

This is a proposal of a probability model to evaluate the trustworthiness of global trade value on the granular level of reporter and commodity.

Definitions and conditions

1. Chg is the acceptable upper limit of a gap difference in percentage, default set to 5%.
2. A symmetric trade value pair matches when the proportion of gap (PoG) is smaller than the acceptable upper limit (Chg) of the sum of the doubleton.

$$PoG = \frac{|V_a - V_b|}{V_a + V_b}$$

3. An observation (O) is to see whether a symmetric trade value pair matches or not, 1 means matches ( $PoG \leq Chg$ ) and 0 means mismatch ( $PoG > Chg$ ).
4. Relationship between an observation result and country trustworthiness - in an observation  $O_k$ , where country A reports import from country B on commodity C at time T -  $V_{abict}$ , the symmetrical trade should be country B reports export to country A on commodity C at time T -  $V_{baect}$ :
  - a. When country A is trustworthy thus reporting the true value of  $V_{abict}$ , and country B is also trustworthy thus reporting the true value of  $V_{baect}$ , then  $O_k = 1$  (values match).
  - b. When country A is not trustworthy thus reporting the false value of  $V_{abict}$  and country B is trustworthy thus reporting the true value of  $V_{baect}$ , then  $O_k = 0$  (values do not match).
  - c. When country A is trustworthy thus reporting the true value of  $V_{abict}$  and country B is not trustworthy thus reporting the false value of  $V_{baect}$ , then  $O_k = 0$  (values do not match).
  - d. When country A is not trustworthy thus reporting the false value of  $V_{abict}$  and country B is not trustworthy thus reporting the false value of  $V_{baect}$ , then
    - d1. The probability of  $O_k = 0$  (not match) is 95%
    - d2. The probability of  $O_k = 1$  (still match) is 5%
5. Each observation is independent.
6. Caps are applied with a upper limit of trustworthiness be 99% and lower limit be 1%. Posterior probability outside this range would be capped.

## Bayesian Steps

The end goal is to calculate the probabilities of every country being trustworthy in reporting trade values for every sector, import and export, based on reported raw trade values.

With Bayesian probability as the ground theory, suppose we want to know all of the probabilities of countries be trustworthy in reporting trade values regarding commodity C. Figure 1 shows all the trade values reported at time T. There are 12 pairs of symmetric trades, therefore 12 observations can be extracted from this single time point. Suppose the result of the 12 observations  $O_N$  is as follows:

$$\{1,0,1,1,1,0,0,1,1,1,0,0\}$$

Suppose we are looking to calculate the probability of country A being trustworthy in reporting its import trade values of commodity C. According to Bayesian theorem, we are looking to calculate the posterior probability of country A being trustworthy in import  $P(A_i\text{-trustworthy} | O_N)$  given  $O_N$ ,

$$P(A_i\text{-trustworthy} | O_N) = \frac{P(A_i\text{-trustworthy} \cup O_N)}{P(O_N)} = \frac{P(O_N | A_i\text{-trustworthy}) * P(A_i\text{-trustworthy})}{P(O_N)}$$

where B represents the partner country in the observation.

$P(A_i\text{-trustworthy})$  is the prior probability which represent the pre-knowledge before each observation. It is the prior probability of country A being trustworthy in reporting import trade on commodity C. It is equal to a preassigned value in the first iteration of calculation, and generally equal to the posterior probability  $P(A_i\text{-trustworthy} | O_N)$ .

---

trustworthy | ON) calculated in the last observation.

P(ON) is the marginal probability, which means the probability of ON happening. It has the following properties:

When ON = 1

$$P(\text{ON}=1) = P(\text{Ai-trustworthy}) * P(\text{Be-trustworthy}) + 5\% * (1 - P(\text{Ai-trustworthy})) * (1 - P(\text{Be-trustworthy}))$$

To make ON = 1 happen, either they both are telling the truth, or both lying while values still are matching, the probability of which is set to 5% as defined in 4d in Definition.

When ON = 0

$$P(\text{ON}=0) = 1 - P(\text{ON}=1)$$

Algorithm Pseudo Code

Therefore, the final algorithm is as follows:

For commodity S1 to SN:

For time point/month T1 to TM:

    Preassign prior probability to every country (global default 0.5, half trustworthy);

    Repeat

    For country C1 to CL:

        Calculate P(Aile, trustworthy | ON) with prior probability;

        Update prior probability with P(Aile, trustworthy | ON);

    Until all the probability converges without dramatic changes;

Average all probabilities for each country through different time points (or make them all converge to one);

Refinement – trade report latency calculation

We define latency as the lag between reported export and import of the same trade flow. It is an integer value describing the number of months it takes for goods to be shipped between the countries. In reality this number will change dynamically.

Approach 1: OLS approach to investigate latency for each reporter/partner/commodity

OLS to calculate correlation between shifted series (T+N, N=1, 2, 3, 4, 5)

Choose N with lowest p-value

o When >1 N are found to be significant, choose largest abs(t-value)

Approach 2:

Allocated lagging level to be 1, 2, 3

Assign lagging level to reporter/partner pair based on geographical coordinates

---

Step 1. For each set of reporter country C1, partner country C2, commodity S and period T, identify the genuine import and export pair of trade records by applying the pre-calculated trade latency N, such that,

X1 = The import of S from country C1 from country C2 at period T+N;

X2 = The export of S from country C2 to country C1 at period T

OLS Correlation hypothesis testing reference [1] (also see attached OLS.pdf)

Step 1. (version 2)

In this approach we intend to incorporate the fact that commodities arrive from exporter to importer with a delay. For example lets assume Japan reported exports of TVs to Belgium in march to be 1000USD. This is a total of all shipments registered by the customs office. Also they could have been registered anywhere between 1-31 march. The shippments could be exported by plane or by ships and from all different ports. The ships have different speed, shippers use different routes. All this leads to the shipments arriving in Belgium at different times. Some will arrive in the same month, some will arrive months later.

Using the same definitions as above:

X1(T) = The import of S from country C1 from country C2 at period T;

X2(T) = The export of S from country C2 to country C1 at period T,

Through a modeling process we seek to substitute X2(T) with an optimized X2\*(T) such that:

X2\*(T) = The weighted average of export of S from country C2 to country C1 at period T, T-1, T-2,...

The problem remains to estimate the optimal weights. It's helpfull to think of this as a linear regression [eq1]:

$$X1(T) = w_0 + w_1 * X2(T) + w_2 * X2(T-1) + w_3 * X2(T-2) + \dots$$

It's tempting to define X2\*(T) as just the RHS of this equation. Although this has two major drawbacks. First is that this would mean that we modeled import values with export values. In other words, through a linear model, we made the import values as similar to the exprot values as possible. But this is not really our goal because in this step we just want to solve the lag structure. The problem of defining where the actual value lies between X1 and X2 is solved in Step 2. Secondly, with OLS, the weights may achieve negative values. We'd like to impose that a reported export will always cause an increase in the reported import (somewhere in time). We can also impose  $w_0=0$  because we know that if all  $X2(T)=0$  at all T then  $X1(T)$  also has to be 0. In other words if there was nothing exported, import should also be 0.

Taking these into account lets define [eq2]:

$$X1(T) = w_1 * X2(T) + w_2 * X2(T-1) + w_3 * X2(T-2) + \dots, \text{ where } w_i > 0$$

The weights can be estimated through Non-negative least squares [https://en.wikipedia.org/wiki/Non-negative\\_least\\_squares](https://en.wikipedia.org/wiki/Non-negative_least_squares) and there is also a corresponding Python implementation [https://scikit-learn.org/stable/auto\\_examples/linear\\_model/plot\\_nnls.html](https://scikit-learn.org/stable/auto_examples/linear_model/plot_nnls.html) . If we sum the weights w then we achieve a general over/under reportedness measure of X2 compared to X1. That is if  $\|w\| < 1$  then X2 overreports compared to X1, otherwise it underreports. Now we don't want to get involved in over/under- reportedness in this step so above we should normalize  $w_i$  to sum to 1. Hence we can define

$$X2^*(T) = (w_1/\|w\|) * X2(T) + (w_2/\|w\|) * X2(T-1) + (w_3/\|w\|) * X2(T-2)$$

Now substitute X2 with X2\* and continue with Step 2.

---

Step 2. For each pair of trade, the steps are followed through:

1. Calculate the percentage difference between the different reported values of the same trade flow as:

$$d = \frac{|X1 - X2|}{X1 + X2}$$

2.

3. Based on the scale of d, apply the following fixing:

4. a. If  $X1 = X2$  ( $d=0$ ) no change is made

5. b. If  $d > 0.25$ , the difference is large that we choose the number reported by country with larger trustworthiness index for this commodity and trade flow.

6. c. If  $0 < d < 0.25$ , the difference is mild that we set the refined value to be the weighted average by trustworthiness

$$\frac{TW1 * X1 + TW2 * X2}{TW1 + TW2}$$

7.

---

## Appendix 2: UNDP framework for Regulation as a Stimulus

Presidential Group of Champions for RaaS  
Regulations as a Stimulus (RAAS) for Trade Facilitation in Africa  
A UNDP/AfCFTA Secretariat/Africa Investor partnership

### Context and Objectives

The Regional Bureau of Africa (RBA) of UNDP in collaboration with Africa Investor (AI) and the AfCFTA successfully conceptualized and launched during the 2021 UNGA, a continent-wide programme that will promote the scale-up of the AfCFTA, focusing on Regulations as a Stimulus (RaaS). The purpose of the programme was to identify the most binding regulatory constraints to smooth trade flows in goods and services within the AfCFTA framework, to mobilize high-level support for domestic reform, and for UNDP to support such reform agenda both at the regional and country-levels, through appropriate technical and advisory assistance.

Governments, through regulatory measures, play a critical role in stimulating regional trade through clearing the impediments in each of the multiple pathways of exportation.

The report to which this note is appended is a first phase towards advocating for the power of accelerating trade facilitation measures as a form of stimulus towards economic recovery and growth for the Continent. The findings from the assessment have informed recommendations for reforms in key areas which are expected, in complement with other sources, to serve as a basis for formulating a Model Trade Facilitation Acceleration Implementation Plan (MTFAIP), at the national level with clear goals, timelines and key milestones to be achieved over a period of 18 months.

On the 29th of September 2021, at a high-level [side-event](#) on the margins of the 76th United Nations General Assembly, RaaS Founding partners; the African Continental Free Trade Area (AfCFTA) Secretariat, Africa Investor, and the United Nations Development Programme (UNDP) launched the new and innovative Regulation as a Stimulus (RaaS) Agenda and urged African governments to support Micro, Small and Medium Enterprises (MSMEs) through intentional regulatory reforms that remove trade bottlenecks so as to enhance the continent's socioeconomic recovery from the COVID-19 pandemic.

Co-Chaired by Ahunna Eziakonwa, UNDP Assistant Administrator and Regional Director for Africa and Hubert Danso Eminent panellists, including African Union's AfCFTA Champion - former President of Niger - Issoufou Mahamadou; Secretary-General of the AfCFTA Secretariat Wamkele Mene; Southern African Customs Union (SACU) Executive Secretary Pauline Mbala Elago; Trade and Development Bank President and CEO Tadesse Admassu; World Customs Organization Secretary-General Kunio Mikuriya; and FCI CEO Peter Mulroy; welcomed the timely focus of the Regulation as a Stimulus (RaaS) approach.

Building up on the momentum and support generated at this event, and as a second step following the rapid assessment, UNDP will support the establishment of the Presidential Group of Champions (PGC), consisting of high-level champions promoting the strategic reform areas under RaaS. The purpose of the PGC is to build upon the exemplary political leadership from African Heads of State that have ratified the AfCFTA, to further stimulate contributions from stakeholders and motivate their engagement within an agreed framework to accelerate the closure of the continent's gaps in enabling the effective implementation of AfCFTA and promoting reform agendas for RaaS, based on the Model Trade Facilitation Acceleration Implementation Plan (MTFAIP). The MTFAIP will capitalize on related initiatives from AU, AfDB and AfreximBank, other UN agencies, RECs and the AUDA Continental Business Network (CBN) and propose to leverage synergies for collective action where relevant. UNDP will provide support to the committee by taking part in national forums and providing oversight and technical expertise to the RaaS Agenda as relevant.

## Scope

Following the results of UNDP's rapid assessment, the PGC, once structured will formulate a reform agenda for 18 months targeting the most pertinent actions that will eliminate the barriers to cross-border trade, in particular costs of cross-border trade, finance, digital and infrastructural interventions, enabling frameworks and inclusion. The broad scope of the PGC will be on trade facilitation, understood as a pathway dealing with both within and at the border measures that exporters face.

The PGC will operate as a multi-stakeholder, multi-disciplinary platform gathering high-level political, private sector and investment champions, who will actively promote the RaaS reform agenda with UNDP support. It will be convened on the sidelines of high-level UN and AU Heads of State Summits, particularly those addressing the AfCFTA, economic and/or private sector development. Presentations on progress realised in advancing the RaaS agenda will be made during these high-level events.

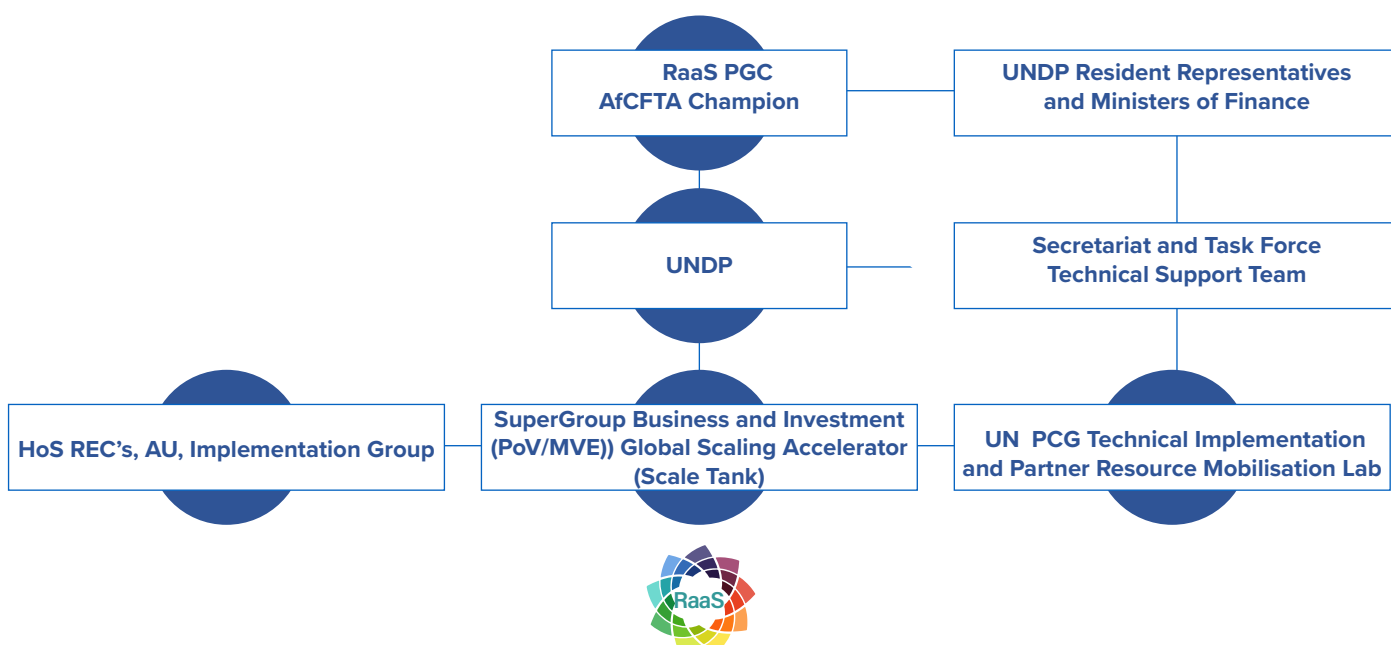
The PGC will be articulated to the Africa Influencers for Development Supergroup (AI4DSG) in order to identify and promote and foster participation of the private sector in key investments and the development of transformative business models that will strategically leverage RaaS. This linkage will also be critical as an advocacy mechanism to streamline the RaaS Agenda by demonstrating private sector commitment to action towards impact in promoting trade facilitation under the AfCFTA. The PGC nominee will appoint a taskforce consisting of key private sector and investment actors, including the national trade facilitation committees and relevant ministries, especially finance and trade, to implement a domestic RaaS reform agenda with targeted results, and contribute to resource mobilization.

Furthermore, the taskforce will as part of its mandate, provide recommendations to the PGC on fast-tracking legislative action that will reduce bottlenecks to the AfCFTA agenda. In light of the COVID-19 pandemic, the smooth and timely implementation of regulatory reforms will be crucial to ensure successful implementation of AfCFTA. Decisive and swift political action is required to prioritize regional and continental free trade. Therefore, the taskforce will act as a platform to provide evidence-based recommendations for the relevant Government bodies to consider fast-tracking legislation measures and processes in the form of an executive order or equivalent procedures in the respective countries.

## PCG Administrative Structure

The PGC administrative structure within the domestic framework will be based on a domestic council of representatives led by a secretariat team in the form of a Virtual Secretariat. Where relevant, the administrative structure will take into account and/ or build upon existing national taskforces and structures both domestically and regionally, such as the AUDA Continental Business Network (CBN). The elected PGC member will be the chair of the domestic taskforce and may delegate decision-making functions to the secretariat team.

## The RaaS PGC Working and Consultative Implementation Process



---

## Timeframes and Activities

### Nomination of PCG Members

The PGC will be nominated based on geographic representation, demonstrated willingness to advance the AfCFTA, both domestically and regionally, and agreement to mobilize a domestic taskforce and action plan.

In terms of geographical representation, members will be selected from key African Union Regional Economic Communities (RECs), as well as represent North, East, West, Central and Southern Africa respectively. Preference will be given to those countries that are state parties to the AfCFTA. The nominated members will be part of the founding members of the PGC, with potential expansion of membership after the first 18 months MTFaip implementation phase. Prospective members will be included with consideration for geographic representation and support expressed for the AfCFTA.

### Set-up of Domestic Taskforce and Action Plan: 18 months

As an appointed member of the PGC, the Champion will be responsible for mobilizing industry leaders and stakeholders of international trade in the country to disseminate high-level action points domestically to achieve implementable action points outlined by the MTFaip for 18 months. Actions within the Domestic Action Plan may entail, but not limited to, the following:

- Appointing and convening prominent experts and stakeholders domestically including: technical experts drawn from academia, the private sector, the investment community, labour, community, think tanks and other constituencies;
- Establishing a domestic council of representatives who may serve as a forum for in-depth and structured discussions, including representatives from key Government ministries and departments that are responsible for trade-related legislations and financing such as the Ministry of Trade and Finance;
- Regular discussions at chosen timelines (e.g. quarterly, bi-annually, etc.), including at AU Heads of States and Regional Economic Community summits and side-line events
- Defining success criteria taking into account the action points outlined by the 18 months, and adapting or harmonizing as necessary with existing national agendas and regional economic community mandates;
- Developing a knowledge base of policy and implementation lessons, best practices and field-tested success stories;
- Overseeing the domestic roadmap of RaaS as outlined by the MTFaip, and serving as an overseeing and coordinating structure for enhancing cross-regional trade within the framework of the AfCFTA;
- Set-up of a systematic review and monitoring mechanism (bi-annual or annual) to track the progress of the action plan deliverables;
- • Identification and recommendations of follow-up actions from the MTFaip and Domestic Action Plan beyond the 18-month implementation framework which could be in alignment with the national agenda.
- Recommendations provided for fast-tracking legislative action to enable evidence-based reforms for greater cross-regional trade, potentially in the form of an executive order.

### UNDP Support to the PGC Members

- Domestic actions plans will be structured along the key areas of intervention outlined in the MTFaip.
- UNDP will commit support to the PGC structure by ensuring smooth facilitation and following-up with the action points of the domestic action plan as necessary in collaboration with the relevant Ministries.
- UNDP's support team to the PGC in respective countries is represented by the Resident Representative of each UNDP country office.
- UNDP country offices will act as a liaison point, sending representatives in domestic committee meetings, providing technical expertise and tapping to regional and global resources as necessary, and responding to requests from the committee members on the development of any ensuing projects that will accelerate the domestic implementation of the AfCFTA.
- Following the discussions and ensuing recommendations, the UNDP will facilitate commencement of the development of a fully-fledged Regional Trade Facilitation programme document, which will be implemented in at least 5 countries representing geographical scope.

---

## **Administrative Structure**

The PGC administrative structure within the domestic framework will be based on a domestic council of representatives led by a secretariat team in the form of a Virtual Secretariat. Where relevant, the administrative structure will take into account and/ or build upon existing national taskforces and structures both domestically and regionally, such as the AUDA Continental Business Network (CBN). The elected PGC member will be the chair of the domestic taskforce and may delegate decision-making functions to the secretariat team.

## **Nomination of Members**

The PGC will be nominated based on geographic representation, demonstrated willingness to advance the AfCFTA, both domestically and regionally, and agreement to mobilize a domestic taskforce and action plan.

In terms of geographical representation, members will be selected from key African Union Regional Economic Communities (RECs), as well as represent North, East, West, Central and Southern Africa respectively. Preference will be given to those countries that are state parties to the AfCFTA. The nominated members will be part of the founding members of the PGC, with potential expansion of membership after the first 18 months MTFaip implementation phase. Prospective members will be included with consideration for geographic representation and support expressed for the AfCFTA.

## **ANNEX: Strategy for Engagement of PGC Nominees**

### **Preparation of Engagement**

- The substantive component for the scope of the PGC initiative will be outlined by a Model Trade Facilitation Acceleration Implementation Plan (MTFAIP) will include clear goals, timelines and key milestones to be reached over a period of 18 months, to be prepared as part of a preliminary rapid assessment. Elements of the 18 month Plan could include, yet not be limited to the following:
  - A compact to drive reform action on trade facilitation. This compact will set out a comprehensive list of legal, regulatory and administrative processes that require reform.
  - List of key interlocutors for engagement in implementing reforms (e.g Minister of Finance, Minister for Trade, Director General Customs; CEOs of Export processing institutions, business representatives including for large and small enterprises etc).
  - A time – specific engagement plan – e.g monthly, where the PGC takes stock and ticks off reforms as per the MTFaip, while also course correcting where needed.
  - Appointment of key players carrying out impromptu checks to ensure reform agenda is rolling out in practice.
  - Review of trade facilitation border- measures to ensure reforms are on course.
  - Quarterly round tables with development partners to ensure trade related technical support and capacity building arrangements are on track.
- During the phase of the rapid assessment, invitation lists and selection criteria for the nominees of Champions were refined to ensure geographic representation and high-level commitment to implement domestic reforms.
- The UNDP will lead the preparatory documents, briefing materials, creation of invitation lists and compile stakeholder contacts for both high-level engagement initiatives from the Headquarter and Regional Office, as well as the Country Office level.

### **Regional Level Engagement**

- The UNDP will reach out to the AfCFTA Secretariat to brief the outline of the RaaS PGC initiative to identify potential nominees for the Champions.
- A high-level engagement will be planned between UNDP represented by Administrator Achim Steiner and/ or Regional Director for Africa and members of the AfCFTA Heads of State for a direct engagement and discussions for participation as a PGC. Subsequent finalization of participation will be facilitated through a technical team or task force on both sides.

### **UNDP Country Office Level Engagement**

- The UNDP Country Office located in the member state of a PGC Nominee will spearhead the engagement efforts through national bodies in collaboration with the Minister of Finance.
- The UNDP Country Office lead negotiators will be the UN Resident Coordinator and the UNDP Resident Representative.
- The entities for consideration of engagement include:

- Ministries of Finance
- AU development agencies.
- National investment bodies

**Issuing of Invitations and Liaison**

- The elected nominees will be invited directly through a letter issued by the office of the UNDP Administrator Mr. Achim Steiner and Regional Bureau of Africa Director Ms. Ahunna Eziakonwa, Africa investor and AfCFTA.
- Submissions of interest and subsequent liaisons will be managed by the UNDP

## Appendix 3: list of stakeholders interviewed for this research

Note: the individuals in the list below have agreed to share their names but any publication may need to agree this with them individually for data protection reasons. An additional two were interviewed but they have not agreed to share their details in print.

Name	Organisation	Job title
Hassan Mena	WTO	Trade Policy and Trade Facilitation Expert
Tsotetsi Makong	Trade Policy Training Centre in Africa (TRAPCA)	Trade Facilitation - Trade Law Expert, Lecturer
Lovemore Bingandadi	The Southern African Development Community (SADC) Secretariat	Transport and Logistics Advisor
Danilo Desiderio	Desiderio Consultants LTD	CEO & Expert in Customs Regulation & Trade Facilitation
Ones Karuho	Alliance for a Green Revolution in Africa (AGRA)	Head of Markets
George Mukisa	BRAC	Head Internal Audit
Bruce Byiers	ECDPM (European Centre for Development Policy Management)	Head of Programme - African Institutions and Regional Dynamics
Terence Sibiya	Nedbank	Group Managing Executive: Nedbank Africa Regions
Sujay Sarkar	Olam	Sr Vice President and Group Head Corporate Finance, Olam Global Agri
Ali Hussein Kassim	Association of Fintechs in Kenya	Chairman
Amadou Chico Cissoko	Chico's Innovators & Consultants	CEO (Former Representative at Chamber Of Commerce, Industry & Crafts Republic Of Guinea in Kenya)
Gloria Atuheirwe	TradeMark East Africa	Director Gender, Inclusion & Women in Trade
Holger Vogt	AMENA Africa Ltd.	Managing Director
Nadira Bayat	UN Women	Gender and Trade Consultant
Yusuf Atiku Abdalla	COMESA Secretariat	Regional Trade Advisor-COMESA and Interim Chief Technical Advisor (CTA), ESA-EU EPA
John Uwayezu	British High Commission Kigali	Country Director and Market Access Officer - UK Department for International Trade
Jackson Wambua	Kenya Association of Manufacturers (KAM)	KAM Sectors Manager

Ziad Hamoui	Borderless Alliance	National President - Ghana
Liz May	Freelancer	Independent Freelancer (formerly Director of Policy and Advocacy at Traidcraft Exchange)
Douglas Nyamori	Intertek	Regional Operations Manager
	UNECA	
Tom Adlam	Rift Africa	Non Executive Director (also currently Team Leader at Palladium: Make It Possible)
Tedd George	Kleos Advisory Ltd (UK)	Chief Narrative Officer
Joseah Rotich	Ministry of Industry, Trade and Cooperatives	Ast. Director
John Denton	International Chamber of Commerce	Secretary General
Robert Ochola	Africanendo	CEO
Duarte Pedreira	Africa Committee, International Trade Forfeiting Association	ITFA Board member
Sanjay Tiwari	21st Century Education	CEO
Jean Azapmo	African Union	Principal Adviser
Daniel Kiange	ISCOS	Secretary General
Liliane Munezero Ndabaneze	Women's Initiative for Delivering Clean Energy to Africa	CEO
Ian Sayers	United Nations International Trade Centre	Senior Adviser, Access to Financing and Investment
Peter Mulroy	Secretary General	FCI Association

July 2022

# Regulation as a Stimulus

Strategic Trade Facilitation for a Sustainable post-Covid 19 Recovery in Africa



RaaS

