



DIGITAL TRADE FOR AFRICA



**Digital Trade for Africa (DTA)
WB–WTO Joint Project**

Stocktaking of the Pilot Phase

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DIGITAL TRADE FOR AFRICA (DTA)

STOCKTAKING OF THE PILOT PHASE

1 INTRODUCTION

The Digital Trade for Africa (DTA) project is a joint endeavour by the WTO Secretariat and the World Bank that started in 2023. The project emerged from the recognition that digital trade offers important opportunities for additional, and more inclusive trade, as WTO Members have frequently noted in the course of deliberations under the Work Programme on Electronic Commerce. Digitally enabled trade can help increase exports to existing markets, create opportunities to enter new markets, drive export diversification, boost competitiveness and promote the participation of smaller firms, women and youth in global trade. This is particularly true for Africa, given the continent's potential in digital trade, and especially digital services trade, to help overcome some of the obstacles that have hampered the participation of the continent in global trade, such as outdated transport infrastructure or slow border clearing processes.

Digital trade in Africa is growing rapidly, surpassing other forms of trade. Data collected by the WTO Secretariat shows that in 2024, the latest full year of available data, Africa recorded a 13% year-on-year increase in exports of digitally delivered services. This represents the highest growth rate among all geographic regions. However, this growth occurs from a low base, with the continent's share of global digitally delivered services exports accounting for less than 1% of the total in 2024.¹

Unlocking the potential benefits of digital trade requires a supportive ecosystem. This comprises adequate connectivity infrastructure and affordable Internet access, an enabling trade policy environment- notably for backbone goods and services as well as for customs procedures - a conducive and comprehensive digital regulatory framework, and the necessary digital skills for businesses and consumers to effectively engage in and benefit from the digital economy. Many African countries are actively pursuing strategies and undertaking concrete actions across several of these areas, with the objective of expanding their digital trade footprint.

Coupling improvements to digital connectivity with upgrading the regulatory environment for digital trade could magnify trade benefits. The WTO Trade Cost Index estimates that if Africa improved its mobile broadband connectivity to the level of South Africa, which has the continent's best mobile broadband access, and simultaneously improved its regulatory infrastructure, average trade costs would decrease almost three times more than if only the hard infrastructure were upgraded.²

Action at the international level can serve as a further catalyst for advancing digital trade in Africa. With the DTA project, the WTO Secretariat and the World Bank partnered to diagnose and better understand the factors shaping digital trade capacity across the continent and in individual countries, and, on this basis, to offer support programmes, capacity building and technical assistance.

The project was officially launched with the production of a joint policy note that examined the opportunities and challenges that digital trade presents for Africa. The policy note, titled "Turning Digital Trade into a Catalyst for African Development",³ was presented to African Ambassadors at an event held at the WTO in July 2023. It highlighted key messages and set out a workplan for how the WTO and World Bank could deepen collaboration to support African countries' efforts to fully leverage the opportunities presented by the shift towards digitally enabled trade. Specifically, it proposed undertaking country-level digital trade assessments, piloted in a select number of interested countries, that would build upon and complement existing work, notably UNCTAD's e-trade readiness diagnostic. Once refined, the pilots could be extended to more countries, upon request.

Several African WTO Members volunteered for the project, prompting joint missions by the WTO Secretariat and World Bank staff to a set of six pilot countries, namely Benin, Côte d'Ivoire, Ghana, Kenya, Nigeria and Rwanda. The missions engaged a wide range of

¹ See [WTO | Digitally Delivered Services Trade Dataset](#)

² See [policy_note_digital_trade_africa_e.pdf](#)

³ [Ibid.](#)

stakeholders and fostered an understanding of the needs and opportunities within each country's digital trade ecosystem. They relied, inter alia, on a "regulatory gap analysis" carried out by the World Bank, as well as an assessment of relevant trade policies. The field visits revealed that, although pilot countries vary in the scope and maturity of their policy and regulatory frameworks for digital trade, all are actively taking meaningful steps to strengthen them. The missions also helped pinpoint areas where more coordinated international support would complement governments' efforts to address gaps.

The WTO Secretariat and the World Bank jointly presented the DTA project, the work undertaken up to that point, and laid out next steps on the occasion of the WTO's 13th Ministerial Conference in February 2024. They indicated that the findings of the digital trade assessments and field visits would be captured in individual "digital trade reports" produced for each of the six pilot countries. The reports were subsequently shared with national authorities for their review and feedback, and after domestic validation, were made publicly available.⁴ The two organisations also identified a number of possible concrete interventions that could help address digital trade policy needs.

This stocktaking note illustrates the main findings of the pilot phase of the DTA project, highlights lessons learnt that apply to this particular set of countries and to other African Nations more generally, and presents next steps.

2 MAIN FINDINGS

The six countries involved in the pilot phase of the DTA project are economically diverse and present a distinct digital trade landscape. Benin and Rwanda are Least-Developed Countries, Nigeria and Kenya are amongst Africa's largest economies, with Côte d'Ivoire and Ghana faring fairly close behind. Nevertheless, the work undertaken revealed that some commonalities do exist, notably in terms of the marked improvement in the digital connectivity foundations all these countries have achieved.

2.1 Connectivity foundations and trade policy frameworks

2.1.1 Electricity access, Internet penetration, usage and affordability

The reports reveal significant progress among the six pilot countries, notably in terms of improving digital connectivity foundations. Over the past two decades, access to electricity, which powers the communication infrastructure necessary to connect to the Internet, has steadily improved in all six countries. The share of the population with electricity access in Benin and Rwanda climbed steadily and surpassed the Sub-Saharan African average in 2022. Ghana, Kenya, Côte d'Ivoire and Nigeria have maintained access rates above the regional average consistently over the last decade, although the rates of improvement differ significantly. As per the latest figures, in 2023 all six pilot countries' access rates were above 50%, with Côte d'Ivoire, Ghana and Kenya recording access rates of over 70%, and Ghana, in particular, very close to the global average share of about 90%.⁵

Internet penetration has also improved significantly in the six studied countries, even if challenges remain. Across the pilot countries, mobile networks are the primary technology to access the Internet. By 2023, 2G coverage was nearly universal, while 3G networks covered 85–99% of the population. LTE/WiMAX technology deployment experienced strong growth in recent years, reaching 80–99% population coverage for all six countries. Conversely, none of the countries in the pilot group has meaningful 5G coverage, also reflecting the relatively recent deployment of the technology.⁶ As per ITU data, Benin, Ghana, Côte d'Ivoire and Rwanda recorded no 5G coverage in 2023, Kenya introduced 5G in major towns, and Nigeria reached 11.8%. These figures compare to a global average 5G coverage of 44.5%.

When it comes to Internet usage, an upward trend is also observable, although significant gaps persist with the global average and disparities remain, particularly in rural areas. Compared to a 64.4% world average share of individuals using the Internet in 2023, all pilot

⁴ See https://www.wto.org/english/tratop_e/serv_e/digitaltrade4africa_e.htm

⁵ See World Bank Development Indicators.

⁶ See ITU DataHub.

countries with the exception of Ghana, which fares even better than the worldwide level, exhibited usage rates between 32 and 41%.⁷

Finally, Internet affordability has improved markedly across all six countries, although there is still significant room to bring down costs, which are still disproportionately high for low-income users. The cost of connecting to the Internet is still greater than the global average across all six countries, and for some significantly so. While a mobile-only broadband basket cost, on average, around 1.2% of Gross National Income (GNI) at the global level, in Benin this cost was over four times higher, and in most other of the pilot countries it was twice as expensive, save for Ghana, where it was nearly at the global average level.⁸ In addition, in many Sub-Saharan African countries the cost of entry-level internet-enabled devices is nearly as high as the average monthly income of the poorest 20 percent of the population, further limiting access for low-income users.⁹

Overall, progress with the digital connectivity backbone of the countries assessed appears propitious for strengthening their digital trade presence. In spite of the remaining challenges in terms of affordability of Internet access and its geographically uneven spread, the enhanced digital connectivity foundations in the six pilot countries may be expected to have underpinned their growing participation in digital trade.

2.1.2 Digital trade performance

The reports define digital trade as all international trade that is digitally ordered and/or digitally delivered. Different concepts relating to electronically enabled trade have been developed and used in international fora over the years.¹⁰ The IMF/OECD/UNCTAD/WTO (2023) Handbook on Measuring Digital Trade clarifies the linkages between these concepts by providing a statistical definition of digital trade, which is the one used in the DTA analysis.

Exports of digitally delivered services have largely been on an upward trajectory in the six countries, albeit with varying patterns and sectoral drivers. Official data for digitally ordered trade are sparse and not comparable across economies. However, the WTO Secretariat publishes estimates for trade in digitally delivered services (DDS) that provide a measure of digitally delivered trade and a picture, albeit partial, of digital trade. With the exception of Benin, which experienced a significant drop between 2018 and 2021, and Côte d'Ivoire, which has shown some variability, all other piloted countries have registered a fairly steady ascending trend in their DDS exports.

Of the six countries considered, Ghana is by far the largest exporter of DDS, with exports amounting to USD 6.2 billion in 2024. It is followed by Kenya, with USD 2 billion, and Nigeria, with USD 1.4 billion. In the same year, the remaining three countries' scale of exports of DDS was relatively more modest, ranging between USD 50 million and USD 200 million. The main sectors that have driven these exports vary by country. In 2024, the main push for Ghana's export growth was primarily "other business services", which include, for example, research and development services and professional services such as legal, management consulting, advertising and market research services. For Côte d'Ivoire, the principal contribution came from telecommunications services, whereas for Kenya, Nigeria, Benin and Rwanda, financial services were the primary driver of export performance.

Across the pilot countries, imports of digitally delivered services have also generally been on the rise. Nigeria has been the notable exception, with DDS imports peaking in 2019, falling sharply thereafter and recovering only in 2024. Several DDS, such as telecom, financial or business services, are key inputs for overall economic activity. Imports of these services offer domestic firms access to a wider range, higher-quality, more affordable inputs, thereby boosting their competitiveness and improving their overall digital trade performance. The main sectors driving imports in 2024 differed across the six countries. In Kenya, Ghana and Benin, imports were

⁷ See ITU DataHub.

⁸ See ITU DataHub.

⁹ See <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/despite-improvements-sub-saharan-africa-has-the-widest-usage-and-coverage-gaps-worldwide/>

¹⁰ In the WTO, for instance, the term used is "electronic commerce", which, as agreed under the Work Programme on Electronic Commerce, is defined as "the production, distribution, marketing, sale or purchase of goods and services by electronic means". This definition is essentially compatible with that of "digital trade".

dominated by "other business services". Financial services were the primary import sector for Nigeria, while telecommunications led imports in Côte d'Ivoire and Rwanda.

2.1.3 Trade policy frameworks

Trade policies are important determinants of digital trade participation, particularly when guaranteed in trade agreements. The DTA reports considered the elements of the trade policy framework most relevant to digital trade, both applied and bound under the WTO. They also reviewed the pilot countries' participation in recently finalized plurilateral agreements (yet to enter into force) that have developed new relevant disciplines at the WTO, as well as in Regional Trade Agreements.

The reports assess the openness of the trade regimes in key digital trade enabling services, such as telecommunications, computer, payments or transport, guaranteed in the WTO. Liberalizing trade in relevant services has been found to have a positive impact on digital trade. Open telecommunications markets, for instance, have been shown to engender higher Internet penetration rates, lower prices and increased-quality services, thus fostering greater connectivity.¹¹ Binding this trade liberalization in commitments under the WTO's General Agreement on Trade in Services (GATS) has the additional advantage of guaranteeing market openness to foreign services and service suppliers. This enhances the certainty and predictability of trading conditions and may help attract more investment. In the reports, consideration is also given to the uptake of the GATS Basic Telecommunications Reference Paper, a set of regulatory disciplines that promote competitive conditions in the supply of basic telecommunication services and whose adoption can contribute to achieving affordable and efficient infrastructure. Equally, the report takes stock of which pilot countries have taken on board the disciplines on "Services Domestic Regulation" (SDR) developed in 2021 by a group of WTO Members and aimed at increasing transparency, predictability, and efficiency of procedures for authorization of service suppliers, including those involved in digital trade.

The analysis shows that, across the pilot countries, services trade conditions have been guaranteed in relatively few key digital trade enabling sectors. GATS bindings have been most frequently undertaken for freight transportation services, in one or more modes of transport, with Rwanda the only exception. Telecommunication and banking services are also fairly frequently committed, having been inscribed in the schedules of a total of four of the six countries: Benin and Rwanda did not guarantee any access for telecommunication services, and Côte d'Ivoire and Rwanda did not include banking services in their GATS commitments. For other key enabling sectors, such as computer, distribution, or postal and courier services, commitments remain largely unbound across the six countries. However, Côte d'Ivoire, Ghana and Kenya have subscribed to the disciplines of the Telecommunication Reference Paper, and Nigeria to the SDR disciplines.¹²

However, the assessment of the applied services trade regimes, rather than those bound in the WTO, reveals a much more liberal picture in all six pilot countries. For instance, in sectors such as computer, distribution or postal and courier services, foreign suppliers are in practice allowed to operate, often with few or no restrictions on the number of service suppliers that may enter the market, foreign capital participation or forms of establishment. Notably, the pilot countries' applied services trade regimes are often more open than the continental average. This is the case, for instance, for mobile and fixed-line telecommunication services in Benin, Ghana and Kenya, computer services in Benin and Rwanda, distribution services in Benin, Côte d'Ivoire, Kenya and Rwanda, and transport services in all countries except for Côte d'Ivoire and Ghana. The higher openness provided on the ground is a positive element, including as countries consider deeper bindings at the continental level, and may additionally offer the scope for updating services commitments at the WTO.

The reports also examine tariffs on information and communication technology (ICT) goods that underpin the physical infrastructure of digital trade. They assess both the applied tariff levels on goods such as computers or smartphones, and the levels bound in the schedules of concessions under the WTO's General Agreement on Tariffs and Trade (GATT), including when set at zero under the WTO's Information Technology Agreement (ITA). By reducing the cost of ICT goods, the ITA has the capacity to promote greater digital accessibility and adoption.

¹¹ See [trade_in_services_and_development_e.pdf](#).

¹² Although Nigeria has committed to incorporate the SDR disciplines into its GATS schedule of specific commitments, it has not yet completed the necessary WTO procedures.

None of the pilot countries is a party to the ITA, and only some have bound relevant tariffs in their GATT schedule of concessions. Applied duties on computers and smartphones, two key Internet-access enabling goods, range from zero in Kenya and Rwanda to not insignificant 5 and 10 %, respectively, for all the other countries assessed.

Ratification of the WTO's Trade Facilitation Agreement (TFA) is another trade policy element analysed in the reports. By expediting customs procedures for goods and their passage through borders, the TFA also contributes to facilitating digitally ordered trade in goods. This involves goods that are marketed, purchased and/or paid for online but then delivered across borders physically. By simplifying and harmonizing international trade procedures, the TFA helps improve the speed and efficiency of customs processes, to the particular benefit of digital trade activities that rely on quick deliveries. Aside from Benin, which has fully implemented the TFA, other pilot countries' implementation rates range from near-total implementation for Rwanda and Nigeria, to two-thirds of the way for Ghana, to around halfway for Côte d'Ivoire and Kenya.

A final WTO aspect covered by the reports concerns participation in two recently finalised plurilateral agreements aimed at improving, respectively, digital trade regimes and trade and investment regimes more broadly. A negotiation on electronic commerce, as digital trade is referred to in the WTO, was launched in 2019 and resulted in July 2024 in the Agreement on Electronic Commerce (AEC).¹³ The Agreement contains disciplines that promote an enabling, open and trusted environment for digital trade by upgrading and expanding existing WTO rules. Four of the six pilot countries, namely Benin, Côte d'Ivoire, Kenya and Nigeria, participated in the negotiation of this agreement. The second negotiation yielded the Investment Facilitation for Development Agreement (IFDA) in November 2023.¹⁴ The IFDA's obligations aim to improve investment procedures and facilitate the operations of investors in all economic sectors. Presently endorsed by more than three-quarters of the WTO Membership, the Agreement could help attract more and higher-quality investment, including in digital connectivity infrastructure. Benin, Côte d'Ivoire and Nigeria participated in its negotiation. Neither the AEC nor the IFDA are in force yet and their incorporation in the WTO's rulebook is under discussion at the time of writing.¹⁵

Finally, all six countries are parties to regional trade agreements, which also offer an opportunity to build conducive digital trade regimes. All are signatories to the African Continental Free Trade Area (AfCFTA). Benin, Côte d'Ivoire, Ghana and Nigeria also participate in the Economic Community of West African States (ECOWAS), with Benin and Côte d'Ivoire additionally parties to the West African Economic and Monetary Union (WAEMU). Kenya and Rwanda are both parties to the Common Market of Eastern and Southern Africa (COMESA) and the East African Community (EAC). Table 1 summarises the trade policy framework for the six pilot countries.

¹³ See WTO document [INF/ECOM/87](#).

¹⁴ See WTO document [INF/IFD/W/55](#).

¹⁵ Many of the WTO Members that negotiated the Agreement on Electronic Commerce requested its incorporation into the WTO rulebook in February 2025 (see WTO document [WT/GC/W/963](#)). The IFD Agreement was finalized in February 2024, and its current number of participants and sponsors stands at 127 WTO Members (see WTO document [WT/GC/W/927/Rev.3](#)).

Table 1. Trade policy framework for the six DTA pilot countries

		Benin	Côte d'Ivoire	Ghana	Kenya	Nigeria	Rwanda
Enabling services	GATS bindings	Banking, Maritime	Telecom (+RP), financial, road	Telecom (+RP), banking, maritime	Telecom (+RP), banking, road	Telecom, banking, maritime +SDR*	-
	Actual Regime (STRI cf. average Africa)	Mobile tel. Fixed tel. Distribution Finance Transport Computer	Mobile tel. Fixed tel. Distribution Finance Transport Computer	Mobile tel. Fixed tel. Distribution Finance Transport Computer	Mobile tel. Fixed tel. Distribution Finance Transport Computer	Mobile tel. Fixed tel. Distribution Finance Transport Computer	Mobile tel. Fixed tel. Distribution Finance Transport Computer
ICT goods	ITA	-	-	-	-	-	-
	Applied duties	Comput.5% Smartph.10%	Comput.5% Smartph.10%	Comput.5% Smartph.10%	Comput.0% Smartph.0%	Comput.5% Smartph.10%	Comput.0% Smartph.0%
	TFA implem.	100%	57.6%	75.2%	43.7%	94.1%	92%
	JSIs	Ecom IFD	Ecom IFD	-	Ecom	Ecom IFD	-
	RTAs	ECOWAS WAEMU AfCFTA	ECOWAS WAEMU AfCFTA	ECOWAS AfCFTA	COMESA EAC AfCFTA	ECOWAS AfCFTA	COMESA EAC AfCFTA

Notes:

- SDR* = Services Domestic Regulation disciplines. The asterisk indicates that the disciplines will become binding after the necessary WTO procedures have been completed.
- RP = Reference Paper on Basic Telecommunications
- STRI = Services Trade Restrictions Index. The STRI provides a synthetic measurement of the restrictiveness of an economy's services trade regime. Sectors are in green/black/red depending on whether their level of restrictiveness is lower/equal/higher than the average for Africa.
- TFA implem. = Rate of current implementation of the TFA commitments according to notification data. The notification data may not reflect implementation in actual practice at a given time in a specific Member.

Source: WTO Secretariat

2.2 Digital trade regulatory framework

A comprehensive and modern digital regulatory framework is essential for supporting digital trade. Regulations play three critical roles for digital transactions. They provide the legal tools needed for concluding valid and enforceable electronic contracts, such as rules giving effect to the electronic authentication of documents and e-signatures. Regulations offer safeguards that enhance trust in digital markets, domestically and internationally, such as with frameworks for personal data protection, online consumer protection and cybersecurity. Finally, regulations support a transparent and predictable framework for digital markets, for instance with rules on the legal liability of platforms for unlawful or harmful content, and on the international transfers of data.

Regulation can also introduce unwarranted limitations to digital trade. For instance, unnecessarily restrictive or overly cumbersome requirements for cross-border data transfers limit access to certain services that are digitally delivered. Limitations on the types of goods and services offered online may be warranted by legitimate public policy goals (e.g. restrictions on guns or controlled substances) but they may also be motivated by trade-restrictive purposes and add costs and inefficiencies by segmenting markets (e.g. requiring the use of domestic cloud services). The central challenge for policymakers and regulators is to adopt a balanced approach that minimizes restrictions to digital trade while offering a comprehensive framework for digital transactions and sound safeguards for stakeholders. Trade agreements provide useful benchmarks on where to draw this line.

Against this backdrop, the World Bank team reviewed the regulatory framework for digital trade in the six pilot countries. The analyses leveraged heavily the Digital Trade Regulatory

Readiness database compiled by the World Bank, as well as various data sources from third parties, including UNCTAD's eTrade Readiness Assessments. The team conducted field research trips, where they met policymakers, stakeholders, and other experts to confirm the analysis.

Table 2. World Bank's Digital Trade Policy Gap Analyses

	Benin	Côte d'Ivoire	Ghana	Kenya	Nigeria	Rwanda
Remote transactions						
Electronic signatures	2	2	3	2	2	2
Electronic contracts	4	4	4	4	1	4
Electronic authentication	1	3	3	2	3	2
Connectivity						
Access to and use of the Internet	2	3	3	2	3	3
Telecomm services – Reference Paper	2	n/d	n/d	2	3	2
Data governance						
Personal information/data protection	3	3	3	5	4	3
Cross-border data/information flows	3	1	2	2	2	3
Location of computing facilities	1	5	5	1	2	1
Open government data	1	2	2	3	2	n/d
Consumer protection						
Online consumer protection	1	2	2	2	2	2
Unsolicited commercial electronic messages (spam)	1	4	4	1	4	1
Paperless Trade						
Electronic invoicing	1	1	2	3	1	1
Paperless trading	3	3	3	2	2	2
Single Windows	3	3	2	4	1	3
Electronic transactions frameworks	1	3	3	2	1	3
Other						
Intermediary Liability	2	1	2	3	3	2

1 No regulation or heavy regulatory restrictions in place.

2 Minimal and inadequate regulation or burdensome restrictions in place.

3 Partial regulatory framework in place. Substantial gaps remain.

4 Broad and adequate regulation in place. Some meaningful gaps remain.

5 Comprehensive and modern regulatory framework, in line with current good practices. Minor improvements can be considered.

Source: World Bank

A bird's eye view of the various digital trade regulatory gap analyses conducted by the World Bank offers general observations for the group of pilot African countries. While in general the regulatory landscape appears rather uneven for the group, a comparative review brings some common lessons (Table 2):

1. **Across almost all policy areas, countries have made at least some partial progress in adopting good regulatory practices.** Electronic invoicing appears as the least developed regulation in the group, but even this, a relatively new and advanced policy, has been the focus of new regulations in Kenya and Ghana. On the contrary, regulation on electronic contracts – a relatively simple framework focused on e-documents - stands out as the most commonly adopted rules in the group. This suggests that all six pilot countries have a keen interest in digital trade and have already taken steps towards a broader enabling regulatory framework.
2. **The road to a comprehensive framework remains extensive and multifaceted.** The explosion of technology and fast-evolving nature of digital trade have created a need for a robust and complex policy frameworks. Save for a couple of areas, such as electronic documents, current frameworks are largely nascent or substantially outdated, which means that major efforts are still needed for comprehensive enabling regulations to be in place. Interestingly, no policy area seems to have commanded a unanimous effort from all countries in the group and scores remain mixed even within categories.

3. **There are no undisputed frontrunners in terms of good regulatory practices in the group.** While some leaders (Kenya, Ghana) and relative latecomers (Rwanda, Benin) can be identified, the gaps between one and the others remain small, highlighting that most countries in the group are facing likely similar challenges in policy-making.

The World Bank's review of the regulatory framework for digital trade in the six pilot countries is detailed in the sections below.

2.2.1 Electronic documents, signature and paperless trade

Basic e-documents and e-signature regulations are generally in place, but single windows and paperless trade remain aspirational. E-documents and e-signature laws are essential as they provide legal recognition for electronic transactions, especially for business-to-business contracts, as well as for enabling automated border procedures. Most general regulations for electronic documents and electronic signatures are in place, typically following the UNCITRAL Model Laws.

While most countries in the group have substantial frameworks in place, implementation and adoption remains a challenge. All countries in the pilot group, with the exception of Nigeria, have general frameworks for e-documents and e-signatures in place, typically inspired by UNCITRAL model laws. But most regulations have seen little uptake in practice, not least due to incomplete implementation and/or rigid frameworks for e-signatures that are inadequate for commercial transactions (Table 3). For these e-transactions regulations to be effective, especially those on electronic signatures they typically require secondary legislation that sets out the government bodies or private entities that may issue digital signatures and the associated procedures. These frameworks and the relevant public bodies that put those procedures in practice are lacking in our group. Where such digital signatures are in place and effective, like in Rwanda, they are geared towards digital signatures for accessing government services, which are normally stricter and more burdensome (and also more secure) than digital signatures used for private, commercial transactions.

Table 3. Regulations on e-documents, e-signature and paperless trade

	Electronic documents				Electronic signature & Digital ID				Paperless Trade		
	01. Electronic communications are legally valid	02. Electronic contracts have the same legal effect as paper-based documents	03. Specific provision provides detail on admissibility of e-documents as evidence	04. The law is technology neutral regarding the storage of e-documents	05. Electronic signatures are legally valid	06. Certificates issued by a qualified certification authority (CA) or using specific technology have the same leg..	07. Digital signatures with a valid certificate are afforded a rebuttable presumption, regardless of certification pr..	08. Foreign signatures have same legal effect as domestic signatures	11. An electronic single window policy exists for customs procedures	12. Electronic transferable records are functionally equivalent to paper-based transferable document or ins..	13. Foreign origin or use abroad of an electronic transferable record is permitted
DTA countries											
Benin	●	●	●	●	●	●	●	●	●	●	●
Cote d'Ivoire	●	●	●	●	●	●	●	●	●	●	●
Ghana	●	●	●	●	●	●	●	●	●	●	●
Kenya	●	●	●	●	●	●	●	●	●	●	●
Nigeria	●	●	●	●	●	●	●	●	●	●	●
Rwanda	●	●	●	●	●	●	●	●	●	●	●
Lower-middle	●	●	●	●	●	●	●	●	●	●	●
Low income	●	●	●	●	●	●	●	●	●	●	●
Sub-Saharan Africa	●	●	●	●	●	●	●	●	●	●	●

Source: World Bank

Regulation on digital signatures also varies greatly, adding challenges to their use for cross-border transactions. In addition to implementation gaps, regulatory heterogeneity in the types of digital signatures legally recognized adds hurdles for their adoption in digital trade. While most countries in the group include provisions recognizing digital signatures issued abroad, the disparity in approaches to regulating digital signatures adds legal complexity and risks, further disincentivizing their use in trade transactions

More advanced regulations for paperless border procedures remain absent from most countries' regulations, including the six pilot countries. While most countries have adopted frameworks for the establishment of single window mechanisms for custom management, important regulations like electronic invoicing or the recognition of electronic transferable records are yet to be widely adopted.

2.2.2 Consumer protection

Consumer protection rules also play an important role in digital trade, especially for developing countries. As digital markets are still in their infancy, lack of trust in remote electronic transactions remains the top reason for not engaging in online purchases.¹⁶ While often designed for domestic markets, consumer protections are particularly important for digital trade, especially for digitally ordered goods, as trust in international orders of goods is typically lower. Online consumer protection regulations can help bridge these trust gaps by ensuring that cancellations and returns — including internationally — are adequately set up and rules are clearly set out. In addition, requiring the establishment of online dispute resolution mechanisms also offer an important channel for boosting consumer confidence, especially when it allows the consumer to bring a claim directly to its national consumer protection agencies.¹⁷

Table 4. Regulations on consumer protection

		Online consumer protection																		
		14. Framework explicitly addresses online consumer protection	16. Explicit acknowledgement of obligation to pay for online transaction	17. Requirement to provide online transaction information in a format that is accessible on different digital devices	18. Existence of the right of withdrawal	19. No need to provide a reason for withdrawal	20. Rules against dark patterns	21. Sending unsolicited electronic commercial communications is prohibited	23. Consumers may opt out of receiving unsolicited electronic commercial communications	24. Visible and functioning opt-out process required for unsolicited electronic communications	25. Sender must honor opt-out request within a specific period of time	26. Consumer's right to a refund in case of goods of improper quality	27. Alternatives for redress in case of improper quality, such as repair, replacement	28. Penalties for noncompliance with online consumer protection provisions	15. Online information disclosure requirements prior to purchase			22. Legal basis for sending unsolicited commercial communications		
															15a. - Full business address of merchant	15b. - Full description of the product or service	15c. - Information about delivery and/or payment	15d. - Information about complaint handling	22a. - Express consent	22b. - Existing relationship
DTA countries	Benin	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Cote d'Ivoire	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Ghana	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Kenya	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Nigeria	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Rwanda	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sub-Saharan Africa		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lower-middle income		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low income		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Source: World Bank

Consumer protection frameworks remain partial and incompletely implemented. While all pilot countries have disciplines on overall consumer protection, these provide only limited safeguards against the risks associated with online transactions (Table 4). All pilot countries except Nigeria explicitly feature consumer protection disciplines for online transactions. However, most provide only basic safeguards for consumers, missing more sophisticated provisions like the obligation to format information in a way that is accessible on different digital devices, or rules against design features that effectively limit users' options in online transactions ("dark patterns"). Implementation and oversight institutions for consumer protection are also generally lacking or have limited institutional capacity, hampering the effective implementation of consumer protection regulations.

¹⁶ CIGI-Ipsos Global Survey on the Internet, (2017 and 2019)

¹⁷ Chung and Yu, (2021)

2.2.3 Data governance

Robust data protection safeguards build trust in and promote the growth of digital markets. Users are increasingly conscious of the implications of unrestricted access to personal data. Research shows that lack of trust in data management discourages users from engaging in electronic transactions, limiting the growth of digital markets.¹⁸ On the contrary, safeguards on when and how firms may collect, process and share personal data helps users feel secure when providing their personal information, knowing that its use and sharing will be limited to necessary purposes. Some studies suggest that robust safeguards for personal data protection are associated with greater trade in digitally delivered services.¹⁹

Table 5. Regulations on data protection

	Data protection												32. Legal basis for data collection and processing:	38. Data subject may request data erasure if:		
	29. General personal data protection law explicitly addresses data protection by private entities	30. Special rules for the treatment of sensitive personal data during processing	31. Special rules for the treatment of biometric data	33. The data controller must only collect data for specified purposes	34. Once data are collected, they must not be further processed in a way incompatible with those purposes	35. The data controller must only process information that is necessary for the specified purpose	36. Data subject's right to electronic data access	37. Data subject's right to electronic data rectification	39. Data subject may withdraw consent under certain circumstances	40. Data subject's right to demand that their personal data be transmitted directly from one provider to another	41. Rules for sharing personal data with third parties	42. Legally mandated government agency whose main mandate is data protection		38a. No longer needed for the original purpose	38b. No other legal ground for processing	38c. Processing was against the law in the first place
DTA countries																
Benin	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Kenya	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Rwanda	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Nigeria	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cote d'Ivoire	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ghana	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sub-Saharan Africa	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lower-middle	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low income	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Source: World Bank

Despite its complexity, data protection appears as one of the most advanced areas in terms of policy action in the six pilot countries. In line with Pan-African initiatives such as the African Union Data Policy Framework and the AfCFTA's E-Commerce Protocol, all the pilot countries have recently adopted data protection laws that compare well to the most comprehensive data protection frameworks in the world, and are well ahead of countries at comparable income levels on average (Table 5).

However, practical implementation of these frameworks is incomplete, not least due to the early stages of most data protection agencies in the pilot group. While legislative frameworks have progressed substantially, the institutional framework to monitor and enforce those provisions remains weak for most countries. In the group, only Kenya has successfully established a data protection agency, leveraging international assistance from the European Union and other organizations, including the World Bank.

2.2.4 Cross-border data flows rules

A conducive cross-border data flows framework for digital trade needs to balance strong safeguards with seamless movement of information across borders. Two sets of considerations need to play together to ensure an enabling environment for cross-border data flows. Firstly, a regime setting out conditions and procedures for the safe and secure transfer of data across borders is necessary to ensure that domestic safeguards on personal data are not circumvented. Conditions may also be directed at ensuring that public policy interests such as law enforcement, financial oversight, and national security, are safeguarded. Different approaches are used to achieve this level of oversight, from mandatory measures that data handlers must adopt when transferring data to relying on non-mandatory good business practices. Secondly, regulations should also seek

¹⁸ See WDR (2021).

¹⁹ See WDR (2021), van der Marel and Ferracane (2021).

to minimize hurdles to cross-border services trade, avoiding unwarranted or disproportionate requirements for cross-border data transfers that act as restrictions for digital services traders.²⁰

Table 6. Rules and limitations on cross-border data flows

	Cross-border data regime										Cross-border data limitations					
	57. Explicit framework on cross-border data transfers	58. Data protection in cross-border data transfers relies on evaluation and accountability ..	59a. Data controller on its own terms—with no specific guidance	59b. Data controller based on statutory requirements.	59c. Government agency	60a. Agreement between governments, DPAs, or other governmental agencies	60b. Intra-group transfers based on binding corporate rules	60c. Use of government approved contractual clauses between private parties	60d. Accountability requirement, where domestic controller is liable for data misuse	60e. Ad hoc approval by government agency	61. Personal data is explicitly allowed to transfer across border based on consent by the data subject:	62a. Government pre-approval	62b. Notification of transfer without authorization/pre-a..	62c. Submission of security assessment	63. Data localization requirements	
DTA countries	Ghana	.	●	.	.	.	.	.	.	.	.	.	.	.	.	.
	Nigeria	●	.	.	●	.	●	.	.	●	●	.	.	.	.	.
	Rwanda	●	.	.	.	.	.	.	.	.	●	.	.	.	.	●
	Benin	●	.	.	●	.	.	.	.	●	●	●	.	.	.	.
	Cote d'Ivoire	●	.	●	.	.	.	.	.	.	.	●	.	.	.	.
	Kenya	●	.	.	●	.	●	.	.	.	●	.	.	.	●	●

Source: World Bank

Regulations on cross-border data flows are less aligned than data protection rules in the pilot countries. While, as discussed above, our group of countries has adopted remarkably similar safeguards and overall data protection rules, their regimes for cross-border data transfers are notably diverse (Table 6). Ghana, for example, does not feature any general requirements or conditions for cross-border data transfers, relying on private parties' assessment of the legitimacy and safety –a framework data handlers usually consider amongst the most flexible. Côte d'Ivoire features a similar open framework, but coupled with a general requirement for government approval, effectively limiting flexibility that distinguishes such models. Benin, Nigeria, and Kenya allow for seamless data flows with countries who feature "adequate" safeguards for data protection. Finally, Rwanda, following a recent legislative amendment, requires only that users express their consent for the international data transfer.

Unwarranted government approvals and "data localization" requirements de facto limit cross-border transfers. Statutory requirements to justify and seek government approval for each data process stand out as explicit barriers to cross-border data flow. Further, provisions mandating that certain type of data be stored, processed, or accessed only with the jurisdiction of the country – often referred as "data localization" measures - also critically impact the management of information. Table 7 provides a detail of each of these data localization requirements in the pilot countries.

²⁰ WDR (2021)

Table 7. Data localization requirements

		Data localization requirements											
		Storage						Processing					
		General restrictions			Sectoral restrictions			General restrictions			Sectoral restrictions		
		All Personal Data	National Security data		Financial	Health	Telecoms	All Personal Data	National Security data		Financial	Health	Telecoms
DTA countries	Benin	.	.		.	.	.	.	.		.	.	.
	Cote d'Ivoire	.	.		.	.	.	.	.		.	.	.
	Ghana	.	.		.	.	.	.	.		.	.	.
	Kenya	.	.		.	.	.	.	.		.	.	.
	Nigeria	.	.		.	.	.	.	.		.	.	.
	Rwanda	.	.		.	.	.	.	.		.	.	.

Source: World Bank

Restrictions to cross-border data transfers are frequent in the pilot group. All types of measures on data transfers countries are found in our pilot group, from government authorization to multiple types of data localization requirements. Like the overall regime for cross-border transfers, restrictions on data flows are quite diverse in the country group. Benin and Côte d'Ivoire require prior government authorization for data transfers but feature no explicit data localization requirements. All other countries in the group feature instead some explicit form of data localization requirements, either as general requirements that cut across all economic sectors or as sector-specific ones. General requirements, such as Nigeria's mandate that data related to national security be locally stored, critically depend on secondary regulations and transparent administrative procedures to provide certainty and predictability. Kenya stands out as the country with the most extensive data localization measures, having adopted both general and sector-specific requirements in all reviewed areas. Ghana instead appears as the most open country in the group, featuring one data storage requirement for financial data –one of the most common data restrictions around world.

Restrictions to data flows may pursue legitimate policy goals, but should minimize trade restrictions. Legitimate policy objectives, such as law enforcement, privacy protection, or national security, may be behind restrictions on cross-border data flows. The key is to ensure that conditions for cross-border data flows are tailored to achieve those legitimate policy goals while minimizing the restrictions to digital trade. From this perspective, reducing the scope of unnecessarily broad requirements and removing data restrictions with little connection with such legitimate policies would greatly improve the pilot countries' framework for cross-border data flows and digital trade.

2.2.5 Intermediary liability

Rules on intermediary liability need to strike a balance between protecting consumer rights and supporting the expansion of digital markets. Intermediary liability rules set out the responsibilities that fall upon online intermediaries, such as e-commerce marketplaces, social networks and other platforms - for third-party content featured in, or products and services offered through, their website or apps. Digital intermediaries manage the relationship with the consumer, and they are often the larger, more sophisticated party involved in the transaction. As such, regulations can impose liability on intermediaries (jointly with the third party) for fake or faulty products or services, or for offensive or illegal content, transacted through or featured in their services. On the other hand, intermediaries often do not have full knowledge of everything that is being offered by producers and content developers, who have greater control over it. In this context, well-defined and balanced rules provide assurances to consumers and users that digital platforms have procedures in place to minimize offensive or unlawful content, while also allowing platforms, especially in their start-up stage, to engage in these business models by limiting the associated compliance risk and costs.

Table 8. Intermediary liability

	Intermediary liability												69a. Safe harbor for	
	67. Framework explicitly addresses online intermediary liability	68. Online intermediaries are not required to routinely monitor content	70. Notice and take down procedures required for: Unlawful activity generally	71. Notice and take down procedures required for: Infringements related to...	72. Content providers' right to counter notice	73. Online platforms' / Hosting providers' right to counter notice/appeal	74. Online platforms' / Hosting providers are not liable for wrong deletion following a takedown no...	75. Complainants are liable for wrong deletion following a takedown no...	76. Online platforms' / Hosting providers are required to disclose the i...	77. If online platforms' / hosting providers are required to disclose the i...	78. Online platforms' / Hosting providers may not disclose their users' i...	79. An order from a judicial court or competent authority is r...	69a. -Unlawful activity generally	69b. -Infringements related to intellectual property
DTA countries														
Ghana	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Nigeria	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Rwanda	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Benin	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cote d'Ivoire	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Kenya	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sub-Saharan Afr..	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lower-middle	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low income	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Source: World Bank

Intermediary liability frameworks are largely lacking in the pilot group, raising compliance risks for domestic start-ups. Regulatory gaps on platform liability are a common challenge for most countries around the world, and the African countries under review are no exception. While Côte d'Ivoire is the only country lacking specific rules on intermediary liability, the regimes featured by the other countries are all missing major elements of a modern and comprehensive framework (Table 8). For example, intermediary liability rules should cover both unlawful activity online (like posting or sharing child pornography) and intellectual property matters (such as the offer of counterfeit products, or sharing copyrighted material without authorization). However, none of the countries under review feature such framework: Ghana, Rwanda and Benin have adopted rules only against generally unlawful content in the platforms, while Nigeria and Kenya feature rules against violations of intellectual property rights only. Further, no country in the group has currently set out specific procedures on how platforms should address such matters when brought to their attention by interested parties.

3 CONCLUSIONS, LESSONS LEARNT AND NEXT STEPS

The pilot analyses confirmed that digital trade remains high in the policy agenda of the pilot countries. A keen interest in embracing the potential of digital trade and a sense of urgency about the need to advance the domestic framework to that end were the consistent main messages stemming from consultations with policy makers and stakeholders across all pilot countries. All six pilot countries have adopted digital trade or digital economy strategies in the last few years or are currently in the process thereof, further confirming that policies for leveraging digital technologies as a tool for growth are well underway.

Across the pilot group, connectivity foundations and digital trade performance have improved, although some challenges persist. While connectivity gaps remain, notably in terms of the affordability of Internet access and its unequal geographical spread, all six countries have achieved marked progress in strengthening their digital infrastructure. Their participation in digitally delivered services trade has also been on a largely upward trajectory, though the patterns and underlying sectoral drivers differ widely.

Trade policies of relevance to digital trade are quite diverse in the pilot group, but generally more liberal than WTO bindings would indicate. Trade policies are important determinants of digital trade participation, especially when guaranteed in trade agreements. Across the pilot countries, services trade conditions have been bound in the GATS in relatively few key digital trade enabling sectors, although the applied services trade regimes reveal a much more liberal picture. None of the countries in the group is a party to the ITA, and only some have bound relevant tariffs in their GATT schedule of concessions; by comparison, applied duties on computers and smartphones, two key Internet-access enabling goods, range between zero and 5 and 10 %, respectively. Ratification of the TFA, which, by expediting customs procedures, also contributes to facilitating digitally ordered trade in goods, is uneven in the pilot countries, as is their participation in two recently finalised WTO plurilateral agreements. Finally, beyond the WTO, all pilot countries

are parties to regional trade agreements, which also offer an avenue to enhance their digital trade policy regimes.

All pilot countries have made substantial progress on digital trade regulations in recent years, but major challenges remain. The regulatory reviews further confirmed that countries are taking action to embrace the digital economy and digital trade. For example, in addition to longstanding frameworks on digital documents and electronic signatures, all pilot countries have recently adopted major legislation on personal data protection, with a view to boosting trust in digital markets. At the same time, all pilot countries also face major gaps and challenges in their way to a comprehensive and enabling environment for digital trade. While legislation is often in place, secondary regulation and the establishment of governing institutions is often lacking or nascent, including on those areas where main rules have long been in place, such as e-signatures. Furthermore, measures that may unnecessarily restrict digital trade, in the form of limitations to international data flows, are also frequently encountered in the group. While some such measures may pursue legitimate policy interests, like safeguarding personal data or protecting national security, the absence of clear guidelines regarding their scope and requirements, and weak governing bodies add substantial compliance costs and often translate in obstacles to digital trade.

Also, several practical lessons have emerged from the work undertaken in the pilot phase of the DTA project that can help inform the next, operational phase of the endeavour. These discoveries offer a valuable foundation for deciding how best to scale up the DTA efforts so as to be able to support digital trade readiness in more countries, on the continent and beyond.

- **First, the joint missions conducted during the pilot phase implied significant resources but were valuable tools.** They allowed not only to grasp in greater depths the digital trade-related needs and opportunities of the country at hand but also helped the organizations' teams better understand where and how each institution could contribute further. Still, practical challenges, from funding cycles to clearance processes, staffing and institutional mandates, also came to the fore. Learning from these joint experiences, both institutions are now better equipped to design and undertake future engagements, jointly, individually, or with other partners as it may be needed to best support the countries' efforts to benefit from digital trade.
- **Second, the drafting of the country reports was very resource-intensive, but these analytical pieces can be of significant value to national authorities, policymakers, and stakeholders involved in shaping the digital trade ecosystem.** The reports provide a snapshot and foundational tool to support countries in understanding and enhancing their readiness and capacity to engage effectively in digital trade. By assessing key enablers, such as digital infrastructure, trade policies and regulatory frameworks, the diagnostics offer a picture of each country's strengths and possible areas for improvement.
 - **These diagnostic tools allow to benchmark policy and regulatory frameworks against international best practices and emerging standards in digital trade.** This comparative perspective enables countries to evaluate how their legal and policy environments align with those of other African economies as well as globally, and how conducive they are to digital trade.
 - **The documents' findings can also act as a catalyst for a "whole-of-government" approach to digital trade.** As digital trade policymaking spans multiple sectors and Ministries, ensuring coherence across Trade, ICT, Finance, Justice, and other relevant line Ministries is both a significant challenge as well as an essential ingredient to enhancing policy effectiveness and improving implementation. In the pilot phase, the country missions offered an initial opportunity to engage a wide range of agencies, which was later reinforced when the draft reports were shared for national authorities' review. The dissemination of the reports may provide a further springboard for intra-agency dialogue and spur the establishment of cross-ministerial coordination mechanisms or digital trade task forces.
 - **The reports may also help facilitate more meaningful engagement with the private sector.** By laying out the current state of play of the digital trade landscape, the reports provide a common knowledge base that can inform a structured dialogue

between government and industry. This, in turn, may support more targeted and practical policy responses.

- **Finally, these documents can serve an educational function.** They offer a tool to enhance stakeholders' understanding of the existing domestic trade policy regime, WTO obligations and ongoing activities, RTA involvement and regulatory developments in the digital sphere. This shared understanding can play a crucial role in fostering informed policy debates and coordinated actions.
- **Third, the World Bank Digital Trade Gap Analyses proved valuable to assess countries' digital regulatory ecosystems, but their scope may need to be broadened on occasion.** The tools and methodology underpinning the World Bank digital trade gap analyses were an effective approach to review the pilot countries' regulatory framework for digital trade. Global databases, like the WB's Digital Trade Regulatory Readiness, provided valuable and detailed background information, while consultations and in-depth regulatory reviews allowed the World Bank to identify key gaps and to set out detailed recommendations for improvement. However, the regulations reviewed may need to be expanded in certain contexts. For example, economies who wish to use this approach to assess their domestic regimes against the disciplines of the plurilateral WTO Agreement on Electronic Commerce may need to expand the scope of the analysis to include issues like telecom regulation, open data policies and electronic payments, which were not captured in the pilot analyses.
- **Fourth, the pilot phase has enabled the development of an analytical model that can be used to expand the reach of the project.** Thanks to the collaboration, trust and support of the authorities of the pilot countries, both in Capitals and in Geneva, a template for digital trade reports has emerged, which can be replicated and adapted for other countries (see Annex). This standardised approach ensures consistency in analysis while allowing for customization based on country-specific contexts. As such, it provides a valuable foundation for scaling up efforts to assess and support digital trade readiness more widely across Africa and beyond.

The work undertaken so far, the key findings it has revealed and the lessons it has exposed provide a good basis from which to plan next steps. The pilot phase has helped pinpoint areas where more coordinated international support could complement governments' own efforts to harness the benefits of digital trade.

For the pilot countries that have gone through the digital trade assessments, the insights from the reports can serve as a basis to inform and prioritise policy reform and formulate requests for support to both the WTO and the World Bank. The two organisations can deploy complementary efforts: the WTO Secretariat's assistance is focused on promoting the understanding and better use of trade rules, while the World Bank can provide technical assistance and funding across most social or economic policy areas.

Given its mandate, the WTO Secretariat can, subject to the availability of funds, provide tailored-made technical assistance (TA). WTO Members can submit specific TA requests related to digital trade, and, by leveraging the WTO's convening power, these TA activities may also provide complementary insights from other IOs and partners, if so desired. Additionally, in response to any demands for assistance targeted at modernising, introducing or enforcing digital trade regulations in specific areas, the WTO can also work to mobilize resources through initiatives like Aid-for-Trade or by reaching out to the private sector and other donors. By way of concrete example, engagement with the African Development Bank has resulted in the institution funding the production of a digital trade report for Comoros. Finally, the WTO Secretariat can marshal its research and trade policy information and capabilities in support of African countries' analytical needs in the digital trade sphere.

The World Bank Group, with a broad mandate to eradicate poverty, can offer support on most policy areas related to trade policy and the digital economy. World Bank's support may take the form of financial support, both for specific infrastructure investment or general economic policies, or technical assistance, including policy advisor, analytics, or capacity building. This broad mandate allows the World Bank to offer assistance across the various policy areas relevant for digital trade, from capacity building and analytics in the context of trade negotiations to supporting

investment in digital connectivity –an essential enabler of digital trade. For example, the World Bank's Digital Economy Initiative for Africa (DE4A), in support of the African Union's Digital Transformation Strategy, aims to get every individual, business, and government in Africa digitally enabled by 2030. To that end, the World Bank has set up or increased loans for 17 countries since July 2021, with over USD 3.2 billion in commitments. Beyond connectivity, the Bank provides support to improve skills and payments infrastructure and strengthen institutions and regulations, often under comprehensive programs that address these various issues in parallel.

The DTA reports could also be of interest, and use, to governments that have not yet been able to participate in the project or that may not wish to participate. Although the digital trade landscape in different African countries varies, the reports may still be used to identify areas requiring assistance or as a basis to conduct a detailed assessment of the domestic digital trade capacity. Countries may also wish to leverage the reports' template and their accompanying lessons in seeking assistance to analyse their digital trade regimes from International Organisations beyond the WTO and the World Bank.

The practical utility of the DTA reports is not limited to the competency areas of the WTO or the World Bank, however. The findings of the DTA reports can be integrated into broader national strategies on digital transformation, trade competitiveness, and economic development. They can also prove valuable in seeking assistance from other relevant international organizations. In this connection, and following a request supported by all WTO Members, the WTO Secretariat is currently mapping international assistance programs relevant to digital trade development. Once finalised, this compendium will provide a useful tool to identify possible complementary assistance.

The pilot phase of the DTA project has delivered important lessons, and the WTO Secretariat and the World Bank are very grateful to the six countries that have volunteered to participate. The DTA digital trade diagnostic reports have proven to be not just analytical tools but also instruments for policy engagement, institutional reform, and stakeholder collaboration. Their value lies not only in the findings they present, but in the momentum they can generate toward a more coherent, inclusive, and future-ready digital trade agenda. In recognition of this, the WTO Secretariat and the World Bank plan to continue working in close coordination with African countries to sustain their efforts to realize the growth and development promise of digital trade.

ANNEX

TEMPLATE OF THE DTA DIGITAL TRADE REPORTS

The DTA digital trade reports follow a generally similar structure. This is laid out below, alongside the main information sources that were used to conduct the assessment.

EXECUTIVE SUMMARY

1 INTRODUCTION

This section provides an overview of the rationale for the DTA project and presents the overall structure and content of the report.

2 BACKGROUND

2.1 Digital connectivity foundations

This section takes stock of digital connectivity trends, including in comparison to world and regional averages, with regard to:

- Electricity access, as measured by the percentage of population with access to power (World Bank Development Indicators)
- Internet coverage, as measured by the percentage of population covered by 2G, 3G, LTE/WiMAX and 5G mobile networks (ITU DataHub).
- Internet usage, as measured by the percentage of population using the Internet (ITU DataHub).
- Internet affordability, as measured by the cost of a fixed-broadband Internet basket and of a data-only mobile broadband basket, as a percentage of per capita Gross National Income (ITU DataHub).

2.2 Participation in digital trade

This section presents trends in digitally delivered services trade, including in comparison to other select WTO Members, with regard to:

- Digitally delivered services exports
- Breakdown of digitally delivered services exports
- Structure of digitally delivered services exports
- Digitally delivered services imports
- Breakdown of digitally delivered services imports
- Structure of digitally delivered services imports
(All data sourced from the WTO Digitally Delivered Services Trade Dataset)

3 GENERAL POLICY FRAMEWORK RELEVANT FOR DIGITAL TRADE

3.1 Trade agreements

3.1.1 Participation in relevant WTO agreements and negotiations

This section takes stock of bindings under relevant WTO trade agreements and of participation in WTO negotiations with regard to:

- Ratification and implementation of the Trade Facilitation Agreement (WTO Trade Facilitation Agreement Database)
- Participation in the Information Technology Agreement (ITA), and level of tariffs bound for computers and smartphones (WTO ITA webpage and WTO Analytical Database)
- Trade regimes for digitally enabling sectors bound under the General Agreement on Trade in Services (GATS), including commitments on the Reference Paper on Basic Telecommunications and on Services Domestic Regulation (WTO services webpage)
- Participation in the plurilateral negotiations on the Agreement on Electronic Commerce (AEC) and the Investment Facilitation for Development Agreement (IFDA) (WTO AEC and IFDA webpages)

3.1.2 Participation in Regional Trade Agreements

This section outlines participation in Regional Trade Agreements (WTO RTA database)

3.2 Applied trade policy regime

This section takes stock of the applied trade regimes with regard to:

- Applied duties on key ITA products (WTO Analytical Database)
- Applied trade policies in digitally enabling service sectors, as covered under the World Bank-WTO Services Trade Policy Database (STPD) and measured by the World Bank-WTO Services Trade Restrictions Index (STRI) (WTO I-TIP Services webpage).

4 WORLD BANK'S ASSESSMENT OF THE DIGITAL TRADE-SPECIFIC REGULATORY FRAMEWORK

This section provides a review and high-level assessment of key regulatory policies for digital trade in light of best regulatory practices. Based on the underlying analysis, a table or graph may provide an indicative assessment of compliance of those policies on numeric values.

Policies to be reviewed include:

- Remote transactions
 - Electronic signatures
 - Electronic contracts
 - Electronic authentication
- Connectivity
 - Access to and use of the Internet
 - Telecomm services – Reference Paper
- Data governance
 - Personal information/data protection
 - Cross-border data/information flows
 - Location of computing facilities
 - Open government data
- Consumer protection
 - Online consumer protection
 - Unsolicited commercial electronic messages (spam)
- Paperless Trade
 - Electronic invoicing
 - Paperless trading
 - Single Windows
 - Electronic transactions frameworks
- Other
 - Intermediary Liability
 - Other ad hoc policies as needed.

The assessment leverages global databases, such as the Digital Trade Regulatory Readiness database compiled by the World Bank, as well as various data sources from third parties, including UNCTAD's eTrade Readiness Assessments, the OECD Digital Trade Restrictiveness Index, ECIPE Digital Trade Index, amongst others, as listed in Table A1. Desktop based analysis is complemented by field research and consultations with policymakers, stakeholders, and other experts.

Table A1. Data sources for desktop review of Gap Analysis

	STRI (WTO-WB)	DTRR	ECPE DTRI	STRI (OECD)	UNCTAD Cyberlaw tracker	Data Guidance	UN Global Survey Digital & Sust. Trade	OECD Open Gov. Data	Global Open Data Index	Global Trade Alert	DE4A	E-Trade Readiness
Positive or facilitative obligations												
Electronic transactions frameworks	✓	✓		✓	✓						✓	✓
Electronic authentication		✓		✓	✓						✓	✓
Electronic signatures	✓	✓		✓	✓						✓	✓
Electronic contracts	✓	✓		✓	✓						✓	✓
Electronic invoicing	✓	✓									✓	✓
Paperless trading	✓	✓					✓				✓	✓
Single Windows							✓				✓	✓
Open government data								✓	✓	✓	✓	✓
Access to and Use of the Internet				✓								
Online consumer protection	✓	✓			✓						✓	✓
Unsolicited commercial electronic messages	✓	✓			✓	✓					✓	✓
Cybersecurity		✓			✓	✓					✓	✓
Personal information/data protection	✓	✓		✓	✓	✓						
Telecomm services-Reference paper	✓			✓								
Transparency											✓	
Cooperation and cooperation mechanisms											✓	
Cross-border data/information flows	✓	✓	✓	✓		✓					✓	✓
Location of computing facilities		✓		✓		✓						
Intermediary Liability	✓	✓		✓								

Source: World Bank

Subsections on reviewed policies provide additional information on the conditions and challenges observed for each of those policies. Depending on resources, the analysis may include a subsection for each of those policies or limit the detailed descriptions to select priority policy areas.

5 MAIN FINDINGS AND NEXT STEPS

This section presents some general observations, takes stock of the main findings with regard to policies, regulations and digital infrastructure, outlines the World Bank's recommendations¹ and discusses potential future work.

ANNEXES

ANNEX 1 – METHODOLOGY OF WORLD BANK'S DIGITAL TRADE POLICY GAP ANALYSIS

This Annex provides the details and methodology of the World Bank's Digital Trade Gap Assessment. Suggested methodological steps to support the analysis include:

- 1) **Assessing policies with regard to individual provisions:** The analysis focuses on the regulatory framework of the country concerned, and assesses whether regulation is present that meets the requirements of each of the individual provisions under consideration. For provisions, the review may assign a rating ('Implemented', 'Not Implemented', 'Partially Implemented') based on the current state of the country's regulations.
- 2) **Assessing gaps between current regulatory framework and best practices at the policy level:** Based on the assessment at the level of each provision, the analysis aggregates the assessment at the policy level for each of the categories in Table A1. This expert assessment is not free from subjective considerations; however, the granular review of each provision provides a solid factual base that limits subjectivity.

¹ These recommendations are from the World Bank only. The WTO Secretariat does not offer trade policy advice or recommendations.

- 3) **Based on such assessment, identifying recommendations at the provision and policy level** that would support the development of an enabling regulatory framework for digital trade, in particular on the policy categories under review. This systematic approach aims to provide a comprehensive understanding of the country's regulatory "readiness" and eventual compliance with rules on digital trade featured in trade agreements.

ANNEX 2 - WORLD BANK-WTO SERVICES TRADE RESTRICTIONS INDEX, SELECTED SECTORS

This Annex presents the World Bank-WTO STRI for selected digitally enabling sectors for the economy concerned, all 54 countries in the African Union, as well as the world average. (WTO I-TIP Services webpage).

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