



2025

Digital Regulation and Development: A Global Micro and Macro Comparison

Katrin Kuhlmann

Georgetown University Law Center, kak84@georgetown.edu

This paper can be downloaded free of charge from:
<https://scholarship.law.georgetown.edu/facpub/2659>
<https://ssrn.com/abstract=5183970>

56 *Geo. J. Int'l L.* 3 (forthcoming 2025).

This open-access article is brought to you by the Georgetown Law Library. Posted with permission of the author.
Follow this and additional works at: <https://scholarship.law.georgetown.edu/facpub>

Digital Regulation and Development: A Global Micro and Macro Comparison

KATRIN KUHLMANN*

[56 Geo. J. INT'L L. 3 (forthcoming 2025)]

ABSTRACT

Regulation of the digital economy is receiving increased attention both domestically and internationally, but little scholarship exists assessing the degree to which these new rules effectively support economic, social, and sustainable development. Legal measures governing the digital economy are central to unlocking broad-based opportunity and protecting human rights, directly connecting digital rules and regulations with the operationalization of the United Nations' seventeen Sustainable Development Goals. Domestic law has been an important driver of legal change in areas like data privacy, human rights, digital infrastructure, and access to finance. In many cases, domestic law has influenced rules at a regional level, highlighting how micro interventions can influence more macro-level rules. Trade agreements exhibit new approaches in development-focused digital regulation as well, including the recent trend to include provisions on "inclusive" digital trade, such as those that appear in the Digital Economy Partnership Agreement, the New Zealand-UK Free Trade Agreement, and the Digital Trade Protocol to the African Continental Free Trade Area Agreement. However, both domestic law and trade agreements contain notable gaps in linking digital rules to social and sustainable development. These include insufficient data privacy protection, particularly as it relates to artificial intelligence, and piecemeal focus on digital infrastructure and addressing the digital divide. Sustainability in the digital realm is an even more amorphous concept, and current national and

* Professor, Graduate and International Programs and Faculty Director and Co-Founder, Center on Inclusive Trade and Development, Georgetown University Law Center. I am exceptionally grateful to Rashi Narayan, Kennedy Pivnick, and Kristina Iotzova for excellent research support on this Article and to Luke Rowe for his extensive research on the larger project related to this work. I would also like to thank Jacqueline Mwangi for related research on an earlier study, Irene Korley-Ayerteye and Preethi Vatadahosahalli for additional research on domestic digital laws, and Dhari AlSalah for his insightful comments. This Article references Katrin Kuhlmann *Inclusive and Sustainable Development in Regulation of the Digital Economy: A Comparative and Contextual Analysis*, in *TRADE 4.0: LAW FOR THE DATA-DRIVEN ECONOMY*, Mira Burri and Anupam Chander, eds. (Cambridge University Press, forthcoming). Special thanks also to Mira Burri, Anupam Chander, and other participants in the TradeLaw 4.0 symposium held at Georgetown University Law Center. Contact: kak84@georgetown.edu.

regional rules largely overlook both environmental and social gains and losses resulting from increased digital activity. This Article explores domestic, regional, and international digital rules in the context of broad-based development, highlighting innovations in domestic law and trade agreements, along with alternative “micro” interventions, for future study and scaling.

I. INTRODUCTION: THE CONTEXT OF DEVELOPMENT AND DIGITAL RULES

II. A MICRO APPROACH TO DIGITAL REGULATION

A. *Micro Analysis of Domestic Law*

B. *Micro Analysis of Stakeholder Needs Through Empirical Study*

III. BRIDGING MICRO AND MACRO APPROACHES: DEVELOPMENT AND DIGITAL RULES IN REGIONAL TRADE AGREEMENTS

A. *Multilateral Rules and Soft Law Frameworks on the Digital Economy*

B. *Governance of the Digital Economy in Regional Trade Agreements*

C. *Comparative Assessment of “Digital Inclusion” Provisions in RTAs*

IV. Conclusion and Next Steps

I. INTRODUCTION: THE CONTEXT OF DEVELOPMENT AND DIGITAL RULES

The regulation of the digital economy has significant implications for economic, social, and sustainable development. This necessarily includes viewing digital rules through the lens of human rights,¹ as well as economic, social, and sustainable development in support of the United Nation’s seventeen Sustainable Development Goals (SDGs). Rules on data privacy, artificial intelligence (AI), cross-border data flows, digital infrastructure, digital inclusion, and data

¹ See generally Mira Burri, *Digital Trade Law and Human Rights*, AM. J. INT’L L. UNBOUND Vol. 117, Cambridge University Press (2023), available at <https://www.cambridge.org/core/journals/american-journal-of-international-law/article/digital-trade-law-and-human-rights/F707E6E3D041970C303E2D624646B005>. See also, Katrin Kuhlmann *More Than Words?: Sustainable and Inclusive Trade and Development in NEXT GENERATION APPROACHES TO TRADE AND DEVELOPMENT: BALANCING ECONOMIC, SOCIAL, AND ENVIRONMENTAL SUSTAINABILITY*, Center on Inclusive Trade and Development, Georgetown University Law Center, 2023 [Kuhlmann CITD, 2023]. See generally, Susan Aaronson, *Is the Wedding of Trade and Human Rights a Marriage of Convenience or a Lasting Union?*, HUMAN RTS. & HUMAN WELFARE Vol. 10: Iss.1, Article 14 (2010), available at <https://digitalcommons.du.edu/cgi/viewcontent.cgi?article=1546&context=hrhw>.

localization all deserve greater study in the context of sustainable development and human rights. This Article contributes to the literature by applying a “micro” approach focused on domestic law combined with a “macro” approach that assesses international instruments and regional trade agreements (RTAs) in the context of digital development. Due to the nature of digital regulation, where much has been done at the domestic and regional levels without a full international framework, the article also examines how “meso” approaches between micro (domestic) and macro (international) law are driving change at the nexus of digital regulation and development. Across these layers, while innovations and positive trends exist, existing instruments fall short with respect to protecting a broad range of human rights and making digital opportunity accessible to all.

Despite the promise of the digital economy, its regulation largely overlooks a development dimension. A comprehensive legal design approach in this context should include measures to increase access to digital opportunities by vulnerable communities and stakeholders; appropriate digital infrastructure;² links between the digital economy and financial inclusion; participation of stakeholders in the policymaking process; special and differential treatment (S&DT) for developing economies; focus on micro, small, and medium-sized enterprises (MSMEs) and

² See Angelina Fisher and Thomas Streinz *Confronting Data Inequality*, 60 (3) COLUMBIA J. INT’L L. 829-956 (2022) at 942, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3825724 [Fisher and Streinz].

other stakeholders; and protection of important human rights through digital rules, in particular data privacy laws and regulations and rules on ethical use of AI.

The broader connection between economic development and digital access has been well documented. The World Economic Forum estimates that a 10% increase in digitalization leads to a .75% increase in Gross Domestic Product and a 1.02% decrease in unemployment.³ Overall, lesser developed economies continue to be more marginalized in the global digital economy,⁴ affected by power imbalances and patterns of underdevelopment.⁵ Digital trade, which covers anywhere from one-quarter to one-half of global goods and services trade delivered through digital means,⁶ has proven to be a great source of economic opportunity for

³ Sabbagh, K., Friedrich, R., El-Darwiche, B., Singh, M., & Koster, A., *Digitization for Economic Growth and Job Creation: Regional and Industry Perspectives* in Bilbao-Osorio, B., Dutta, S., Lanvin, B., (eds.) THE GLOBAL INFORMATION TECHNOLOGY REPORT 2013: GROWTH AND JOBS IN A HYPERCONNECTED WORLD (2013) at 36. Available at https://www3.weforum.org/docs/WEF_GITR_Report_2013.pdf.

⁴ International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, World Trade Organization, *Digital Trade for Development 2023* at 6 [hereinafter IMF, OECD, UN, World Bank, and WTO], available at https://www.wto.org/english/res_e/booksp_e/dtd2023_e.pdf.

⁵ Mira Burri and Kholofelo Kugler, *Digitization, Regulatory Barriers, and Sustainable Development*, TradeLaw 4.0 Working Paper No. 3 (2023) at 16, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4424470 [Burri and Kugler].

⁶ About one-quarter of total goods and services trade is delivered digitally. Javier López González, Silvia Sorescu, and Pinar Kaynek, *Of Bytes and Trade: Quantifying the Impact of Digitalisation on Trade*, OECD TRADE POLICY PAPERS No. 273 May 2023, available at https://www.oecd-ilibrary.org/trade/of-bytes-and-trade-quantifying-the-impact-of-digitalisation-on-trade_11889f2a-en;jsessionid=XNnvhK7kw4wAbcvx_5YqVwVd64mBxbxBXtSS5rdx.ip-10-240-5-22 [hereinafter González et al. 2023] (last accessed 19 August 2024). In 2022, digitally delivered services totaled US \$382 trillion, or about 54 percent of total global services exports. IMF, OECD, UN, World Bank, and WTO, *supra* note 4.

smaller economies and small businesses,⁷ although the persistent digital divide and gaps in overall digital infrastructure limit these benefits.

The “digital divide” refers to the gap between those with access to digital infrastructure and services, including the internet, and those without access.⁸ It also includes the skills and capabilities necessary to take advantage of this access. It is a critical contextual factor in assessing both domestic law and trade agreement provisions on the digital economy. An estimated 2.6 billion people, or one-third of the world’s population, are affected by the digital divide,⁹ which disproportionately affects developing countries, rural areas, women, Indigenous communities, and marginalized individuals and groups.¹⁰ Not surprisingly, the digital divide exacerbates existing socio-economic inequalities,¹¹ limiting economic benefit and development. Significant inequality also exists in control over data, including the power to decide what data will be collected, who will collect data, and how data will be used.¹²

⁷ See Manyika, J., Lund, S., Bughin, J., Woetzel, J. R., Stamenov, K., & Dhingra, D., *Digital Globalization: The New Era of Global Flows* (2016) at 76.

⁸ Sabbagh et al., *supra* note 3, at xi.

⁹ IMF, OECD, UN, World Bank, and WTO, *supra* note 4, at 3.

¹⁰ UN-Habitat, *Assessing the Digital Divide: Understanding Internet Connectivity and Its Effects on Communities* (2021), at 15. Available at https://unhabitat.org/sites/default/files/2021/11/assessing_the_digital_divide.pdf

¹¹ “...[T]echnology only amplifies existing inequalities so if you get it out to the people, get them access, it's not necessarily going to solve anything ... this whole notion of a digital divide really is the most recent manifestation of a whole set of other divides and inequalities.” Balaji Parthasarthy, International Institute of Information Technology, on *The Digital Divide: Can We Narrow the Gap*, International Labour Organization WORLD OF WORK PODCAST June 2022, available at <https://www.ilo.org/resource/other/digital-divide-can-we-narrow-gap>.

¹² Fisher and Streinz, *supra* note 2, at 942.

Addressing data inequality and the digital divide will require not just affordable access to technology but also the right investment in (and control over) infrastructure and telecommunications networks, digital skills development, and attention to the needs of vulnerable stakeholders. While domestic policies and international initiatives address some of these areas, a much more comprehensive focus is needed.

In addition, sustainability in a digital context is a critical but often completely overlooked dimension of digital rules. Despite the significant sustainability impact of the digital economy in terms of carbon emissions, electricity, and water usage,¹³ digital rules and trade agreements generally do not address sustainability in a digital context. The broader legal principle of sustainable development, which necessitates focus on equity in the context of digital regulation,¹⁴ is also not fully addressed in digital rules.

Legal gaps also undermine the development impact of the digital economy. These include insufficient data privacy, lack of standards on data mining, gaps in consumer protection measures, data localization rules, intellectual property concerns, censorship measures, cybersecurity challenges, insufficient competition policies, and complex and discriminatory border and taxation measures.¹⁵ While

¹³ See Simone Viani, *Sustainability in the Digital World*, MEDIUM, February 29, 2024, available at <https://medium.com/@flik185/sustainability-in-the-digital-world-42f7d11f4b09>.

¹⁴ Kuhlmann CITD 2023, *supra* note 1.

¹⁵ Burri and Kugler, *supra* note 5, at 8-15.

these issues are addressed in part through existing domestic law and some RTAs, they are often not approached from a human rights or sustainable development perspective. Other issues affect the development impact of digital rules, including significant gaps in transparency over digital infrastructure ownership and control over data in the digital economy.¹⁶ Because digital infrastructure issues are directly connected with digital inequality,¹⁷ deeper contextual study and differentiated design of digital law, including approaches that consider cultural diversity and socioeconomic factors,¹⁸ is needed. Under international law, there are additional sustainable development considerations related to development and digital rules, including S&DT for developing countries. However, even though countries have raised these concerns, they remain largely unaddressed in international legal instruments.

This Article explores domestic, regional, and international digital rules in the context of economic and social development, highlighting innovations in domestic law and trade agreements, along with alternative smaller-scale interventions and empirical approaches for future study and scaling. In doing so, it applies a “Micro International Law” framework to digital regulation, which

¹⁶ Fisher and Streinz, *supra* note 10, at 942.

¹⁷ *Id.*

¹⁸ Jake Okechukwu Effoduh, Ugochukwe Ejike Akpundo, and Jude Dzevela Kong, *Toward a Trustworthy and Inclusive Data Governance Policy for the Use of Artificial Intelligence in Africa*, DATA & POLICY Vol. 6 (2024), Cambridge University Press at e34-3, available at <https://www.cambridge.org/core/journals/data-and-policy/article/toward-a-trustworthy-and-inclusive-data-governance-policy-for-the-use-of-artificial-intelligence-in-africa/6C22513DE8598A0A8B1EDBD9A2D6A102>

emphasizes the importance of assessing granular lessons and the circular relationship between innovations at the domestic, regional, and multilateral levels in the context of legal design and implementation.¹⁹ A micro approach is particularly valuable for identifying good practices and shortcomings in digital regulation at the domestic and regional levels, the latter of which can be viewed as a “meso” layer between domestic and international law. The Article further proposes that the European approach under the European Union’s (EU’s) General Data Protection Regulation (GDPR) and other measures, while originally more micro in nature, has become so dominant that it may stifle further micro-level innovation. This shift and its implications for legal innovation and compliance should be further studied.

Part II of this Article approaches lessons of digital regulation from the bottom up, considering “micro international law” takeaways that can be drawn from domestic law and empirical studies,²⁰ with important implications for international law in the future. Part III assesses how regional and international legal instruments, particularly RTAs, currently respond to issues of digital inclusion, sustainable development, and the digital divide. Part IV concludes.

¹⁹ See generally Katrin Kuhlmann, *Micro International Law*, forthcoming 61 STANFORD J. INT’L L. (2025), available at <https://scholarship.law.georgetown.edu/facpub/2633> [Kuhlmann 2025].

²⁰ Katrin Kuhlmann, *Mapping Inclusive Law and Regulation: A Comparative Agenda for Trade and Development* 2 AFRICAN J. INT’L ECON. L. 48 (2021), available at <https://www.afronomicslaw.org/journal-file/mapping-inclusive-law-and-regulations-comparative-agenda-trade-and-development> [Kuhlmann 2021].

II. A MICRO APPROACH TO DIGITAL REGULATION

Differing approaches to digital regulation exist at the domestic level, with several important trade-offs and legal innovations apparent in domestic law and policy. These include varying degrees of personal data protection and privacy; the emergence of AI and cybersecurity measures; and laws, regulations, and other instruments related to digital infrastructure, financial inclusion, addressing the digital divide, and other issues.

Assessment of the micro dimension of digital regulation is part of an ongoing project on “Micro International Law,” which approaches domestic (and sub-national) legal innovations as a contribution to regional and international law and uses empirical studies to assess legal gaps, opportunities, and innovation, particularly as they relate to social and sustainable development.²¹ In areas like digital regulation, where international rules are not yet in place, a circular relationship is particularly evident between domestic and international law, with innovation taking place from both the bottom up and top down.²²

A micro approach is important for several reasons. First, a micro analysis of small-scale interventions highlights legal and regulatory innovation and experimentation at the national and sub-national levels. The most successful efforts to promote development and sustainability tend to come from the ground up rather

²¹ See generally Kuhlmann 2025, *supra* note 19.

²² *Id.* at 65.

than the top down,²³ and domestic law is often more tailored to particular circumstances affecting individuals and communities. As a result, applying a micro approach in the context of digital regulation points to number of areas in which countries have designed systems that contain important good practices, such as sustainability, flexibility, transparency, and participation in the rulemaking process.²⁴ A micro analysis also critically highlights areas in which domestic law falls short.

Second, a micro approach can be instrumental in understanding the degree to which law incorporates and responds to stakeholder needs. This is true of both domestic law and international agreements, the latter of which are inherently top down. New Zealand's approach, which integrates Māori input at different stages in regional and international legal design and negotiation, including in the context of digital rules,²⁵ is a notable exception at both the domestic and regional levels. Often,

²³ See Kuhlmann 2021, *supra* note 19.

²⁴ *Id.*

²⁵ See TE TAUMATA, AN ASSESSMENT OF WHAT THE EU FTA DELIVERS, OR COULD DELIVER, FOR MĀORI 13 (2023) (ex ante assessment of how Māori would be impacted by the New Zealand-EU FTA). See also NGĀ TOKI WHAKARURURANGA, TE TIRITI O WAITANGI ASSESSMENT: NEW ZEALAND-EUROPEAN UNION FREE TRADE AGREEMENT 5 (2023), an independent assessment of Māori rights, interests, and duties resulting from the New Zealand-EU-FTA in the context of the Treaty of Waitangi, which notes that Māori interests are not fully reflected. As compared with other trade agreements, the NZ-EU FTA showed improvement in digital trade protections and absence of investor-state dispute settlement (ISDS) provisions. Gaps included lack of representation in negotiations, no changes to the Treaty of Waitangi exception, insufficient IP and services provisions, and weak and unenforceable chapters on Indigenous cooperation and SMEs.). See generally JASON PAUL MIKA, ŪROPI TAUHOKOHOKO KA TAEA NEW ZEALAND – EUROPEAN UNION FREE TRADE AGREEMENT: AN INDEPENDENT ASSESSMENT OF THE IMPACTS FOR MĀORI (2023), an independent assessment commissioned by the Ministry of Trade and Foreign Affairs of the New Zealand-EU FTA focused on sectoral and issue-specific outcomes built around methodology involving modeling, interviews, and qualitative and quantitative assessment; this

however, regional and international legal instruments, ranging from RTAs to multilateral instruments (including various soft law instruments and the World Trade Organization (WTO) Joint Statement Initiative (JSI) on Electronic Commerce, which is under development), are often designed without broad-based stakeholder engagement and input. An empirical, contextual approach could be instrumental in integrating stakeholder perspectives in relation to ongoing and future legal instruments. Empirical methods, such as interviews, questionnaires, surveys, and case studies, can be particularly instructive. While new research applying these methods is beyond this scope of this essay, a prior micro-level study on the WTO Moratorium on Customs Duties on Electronic Transmissions (WTO Moratorium), discussed below, highlights the use of empirical approaches in the context of digital regulation and development.

The overview of “micro” innovations and interventions in digital regulation below is based on an initial comparative assessment of domestic laws in the digital space and empirical study of stakeholder interests related to digital rules. This micro-level comparative assessment and empirical dimension will be further developed in future work.

assessment raises concerns with Māori treaty rights and intellectual property rights, as well as distribution of benefits.

A. *Micro Analysis of Domestic Law*

A micro analysis of digital regulation points to number of areas in which countries have designed systems tailored to development considerations, human rights, and the needs of stakeholders. These are already having a bottom-up impact on the development of trade agreements and other international rules, as discussed in the sections that follow. The preliminary micro assessment highlights important innovations and gaps that exist at the national level, which will have implications for future rules at the regional and multilateral levels.

Protection of individual and community rights in the digital space is an area in which domestic rules have incorporated human rights and development considerations. This often arises in the context of data privacy protection, where, for example, a number of legal regimes explicitly protect data related to race, color, ethnic or tribal origin, political opinion, religious beliefs, health, and sexual orientation. However, despite the expansion of rights, significant gaps continue to exist in legal coverage and implementation.

Data protection and privacy laws are an important instrument for protecting human rights.²⁶ Although now more of a macro approach than a micro approach, the EU's GDPR is often cited as an example of a law with expansive data protection rights that treats privacy as a fundamental right consistent with human rights norms,

²⁶ See Burri, *supra* note 1.

and this model has influenced a number of other national laws worldwide.²⁷ The GDPR, which is aligned with the European Convention on Human Rights and the Charter of Fundamental Rights of the EU,²⁸ defines categories of personal data for heightened protection, including data related to race, religion, sexual orientation, and others, generally allowing for direct application of at least some rights, like the right to be forgotten.²⁹ One feature of the GDPR that is often raised in a human rights context is its “opt-in” character, which gives data holders the right to choose whether or not personal data will be collected.³⁰

Many countries have data privacy rules modelled on the EU’s GDPR that incorporate these human rights dimension, such as Brazil’s General Data Protection Law and Thailand’s Personal Data Protection Act.³¹ China’s Personal Information Protection Law is also similar to the GDPR in terms of personal data protection.³²

²⁷ Anu Bradford, *DIGITAL EMPIRES: THE GLOBAL BATTLE TO REGULATE TECHNOLOGY*, Oxford University Press (2023) at 105, 325. As of 2023, the EU’s data protection approach has influenced many of the over 150 domestic data privacy regimes worldwide.

²⁸ Regulation (EU) 2016/679 of the European Parliament and the Council of 27 April 2016 on the protection of natural persons with respect to the processing of personal data and the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation). The EU also has a draft AI law and Digital Services Act (2023); Anupam Chander, Margot E. Kaminski, & William McGeeveran, *Catalyzing Privacy Law*, 105 MN. L. REV. (2021) at 1747 [hereinafter Chander, Kaminski & McGeeveran]. See also, *Digital Transformation as a Reshaper of Global Trade Law*, in *LAW AND ECONOMICS OF DIGITAL TRANSFORMATION*, Klaus Mathis & Avishalom Tor (eds.) (forthcoming Berlin: Springer 2023) at 14-15.

²⁹ General Data Protection Regulation, Chapter 2, Art. 9, *Processing of Special Categories of Personal Data*; General Data Protection Regulation, Chapter 3, Art. 17, *Right To Erasure (‘Right To Be Forgotten’)*.

³⁰ General Data Protection Regulation, Chapter 2, Art. 7, *Conditions For Consent*.

³¹ Lei Geral de Proteção de Dados Pessoais [General Data Protection Law], Law No. 13.709, of August 14, 2018 (Braz.); Personal Data Protection Act, B.E. 2562 (2019) (Thai.).

³² Personal Information Protection Law of the People’s Republic of China, August 20, 2021.

Singapore, which has been a leader in the digital space (and at the regional level as well), also has a Personal Data Protection Act that shares characteristics with these other instruments, although it does not delineate categories of protection.³³ Several African countries have GDPR-based data privacy laws, including Kenya, Nigeria, Mauritius, and Uganda.³⁴ Nigeria's regulatory framework, for example, which includes the Data Protection Regulation 2019 and Data Protection Act 2023,³⁵ includes a right to data portability, the right to access and deletion of data, and the right to be forgotten.³⁶ Comprehensive data protection laws are also appearing in the Middle East, such as Saudi Arabia's Personal Data Protection Law,³⁷ which guarantees data subjects the right to be informed, access to personal data, correction of personal data, and deletion of personal data.³⁸ Both Nigeria and Saudi Arabia

³³ Personal Data Protection Act 2012, No. 26 of 2012 (Sing.).

³⁴ *See generally* Data Protection Act, No. 24 (2019) (Kenya); Nat'l Info. Tech. Dev. Agency, *Nigeria Data Protection Regulation 2019* (2019) (Nigeria), <https://nitda.gov.ng/wp-content/uploads/2020/11/NigeriaDataProtectionRegulation11.pdf> [<https://perma.cc/L9VX-69GS>] [Nigeria Data Protection Regulation 2019]; *see generally* Nigeria Data Protection Act, 2023 (Nigeria), <https://placng.org/i/wp-content/uploads/2023/06/Nigeria-Data-Protection-Act-2023.pdf> [<https://perma.cc/JM8H-9HCD>]; Data Protection Act 2017, No. 20 (Mauritius); Data Protection and Privacy Act, No. 9 (2019) (Uganda).

³⁵ *See generally* Nat'l Info. Tech. Dev. Agency, *Nigeria Data Protection Regulation 2019* (2019) (Nigeria), <https://nitda.gov.ng/wp-content/uploads/2020/11/NigeriaDataProtectionRegulation11.pdf> [<https://perma.cc/L9VX-69GS>] [Nigeria Data Protection Regulation 2019]; *see generally* Nigeria Data Protection Act, 2023 (Nigeria), <https://placng.org/i/wp-content/uploads/2023/06/Nigeria-Data-Protection-Act-2023.pdf> [<https://perma.cc/JM8H-9HCD>].

³⁶ *Nigeria Data Protection Regulation 2019*, *supra* note xx, § 2.1.

³⁷ *See Saudi Arabia: Summary*, ONETRUST DATAGUIDANCE, <https://www.dataguidance.com/jurisdiction/saudi-arabia> (<https://perma.cc/E5HT-EBHT>).

³⁸ *Id.*, Art. 4.

include requirements for obtaining specific, legitimate consent for processing personal data.³⁹

At a sub-national level, California’s Consumer Privacy Act (CCPA) provides protection for data subjects and allows data subjects to opt-in to data collection; however, it does not treat data privacy as a fundamental human right, in contrast to the GDPR.⁴⁰ In the United States, the CCPA has been the catalyst for state privacy laws rather than the GDPR,⁴¹ highlighting an important micro intervention in the area of digital regulation. However, like the GDPR, even sub-national rules like the CCPA have the potential to morph from micro models into macro approaches as their influence grows.

Transparency is also central to human rights and sustainability in the digital economy. Singapore, for example, has focused on transparency measures, including guides for individuals and companies in several areas, including the Singapore Personal Data Protection Commission’s “Good Practices to Secure Personal Data in the Cloud Platform,” “Guide on Personal Data Protection Considerations for

³⁹ *Id.*

⁴⁰ Chander, Kaminski, & McGeeveran, *supra* note 29, at 1755; California Consumer Privacy Act, Cal. Civ. Code §§ 1798.100–1798.199 (West 2018).

⁴¹ *Id.* at 1763. The authors argue that the United States represents an exception to the dominant narrative that the GDPR “has been the dominant influence on both de facto and de jure spread of privacy law worldwide” . . . “a narrative that largely, and in our view mistakenly, adheres to a notion of nation-states (and supranational entities) as unitary actors rather than considering the various players within them.”

Blockchain Design,” “Guide on Responsible Use of Biometric Data in Security Applications,” and “Guide to Basic Anonymization.”⁴²

Estonia has built upon the GDPR to include additional flexibilities in its Personal Data Protection Act and has taken an innovative approach to data infrastructure through its “data embassy program.” The “data embassy” is physically located in Luxembourg and is protected by an agreement between the two countries.⁴³ It is designed to maintain full jurisdiction over data and provide security for sensitive government and personal data, including in the event of a cyberattack in Estonia, including for military reasons.⁴⁴ This approach also creates a public sector framework for digital infrastructure that can avoid conflicts between private and public priorities.⁴⁵

Despite these innovations at the domestic level, other aspects of human rights protection are absent in these models. With regard to data privacy protections, opting in to rights can be challenging at an individual level, given the lack of

⁴² Digital Policy Alert, available at <https://digitalpolicyalert.org>. The Cyber Security Agency of Singapore has also issued ‘Cybersecurity Toolkits for Enterprises’ and ‘Cyber Safe Partnership Programme.’

⁴³ Agreement Between the Republic of Estonia and the Grand Duchy of Luxembourg on the Hosting of Data and Information Systems, November 14, 2016, available at https://www.riigiteataja.ee/aktiis/2280/3201/8002/Lux_Info_Agreement.pdf.

⁴⁴ Yuliya Talmazan, *Data Security Meets Diplomacy: Why Estonia is Storing its Data in Luxembourg*, NBC News, June 25, 2019, available at <https://www.nbcnews.com/news/%20world/data-security-meets-diplomacy-why-estonia-storing-its-data-luxembourg-n1018171>.

⁴⁵ For a discussion of challenges with private sector control of digital infrastructure, see Remake Trade Project, *Big Tech ‘Digital Trade’ Plan for IPEF Could Undermine Key Congressional and Administration Privacy, Anti-Monopoly, and AI Accountability Initiatives* (2023), available at <https://rethinktrade.org/reports/https-rethinktrade-org-wp-content-uploads-2023-01-conflicts-between-key-digital-proposals-and-prospective-ipef-digital-trade-terms-memo581-2-pdf/>.

uniformity in allowing data holders to exert these rights and the frequency with which consent is requested. Further, because a number of data privacy regimes call for extraterritorial application, significant and complex compliance challenges can arise, especially for small businesses.⁴⁶ The extraterritorial nature of these rules can also be difficult for nations with limited regulatory capacity, including developing economies.

In addition, data privacy rules have important gaps, such as the absence of strong protections on data collection, including data mining and data scraping, which can violate data privacy and human rights and perpetuate bias in the digital realm.⁴⁷ The lack of such protections creates significant human rights challenges, because much of the source data used for data mining is confidential, private, and sensitive.⁴⁸ Moreover, data mining can lead to bias selection and stigmatization, with unavoidable false positives and false negatives resulting in scenarios where people are judged on the basis of inappropriate characteristics.⁴⁹ While some countries have legal instruments related to AI, such as the EU's AI Act, which

⁴⁶ For example, the GDPR requires compliance for any company dealing with the data of EU citizens. General Data Protection Regulation, *Territorial Scope*, Art. 3.

⁴⁷ The author would like to thank Amanda Levendowski for her suggestions on this point. Data mining is the process of identifying patterns and extracting information from large data sets using machine learning and AI; data scraping involves collecting raw data from online sources and can be particularly problematic in the context of data privacy and copyright. See Bart Custers, *Data Mining with Discrimination Sensitive and Privacy Sensitive Attributes*, PROCEEDINGS OF ISP 2010, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3047217. See also, Amanda Levendowski, *How Copyright Law Can Fix Artificial Intelligence's Implicit Bias Problem*, 93 WASH. L. REV. 579 (2018), available at <https://scholarship.law.georgetown.edu/facpub/2439/>.

⁴⁸ Id. at 1.

⁴⁹ Id.

incorporates the GDPR’s rights-based approach,⁵⁰ and Peru’s 2023 AI law, which notably “aims to promote the use of AI in favor of the country’s economic and social development,”⁵¹ these instruments do not cover all areas important to human rights and sustainability.

In addition to data privacy, countries’ laws and policies protect vulnerable communities in other ways, including through protections on discrimination and by providing access to government programs and digital infrastructure. For example, South Korea protects against discrimination, including for persons with disabilities, in both its broader discrimination laws and digital laws.⁵² Mexico’s digital laws enhance inclusion by requiring translation into indigenous languages so that communities can be informed on equal terms of rights that are protected and the means to enforce this protection.⁵³ India has focused on digital infrastructure through a program called the “Nine Pillars of Digital India,” which includes investment to address the digital divide through broadband highways, universal

⁵⁰ Commission Regulation 2024/1689 of June 24, 2024, Laying Down Harmonised Rules on Artificial Intelligence and Amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), 2024 O.J. (L 1689).

⁵¹ Maia Levy Daniel, *Regional Cooperation Crucial for AI Safety and Governance in Latin America*, Brookings Commentary, February 13, 2025; Law No. 31814, *Artificial Intelligence Law* (Peru).

⁵² Act on the Prohibition of Discrimination Against Persons with Disabilities and Remedy Against Infringement of Their Rights, Act No. 8341 (S. Kor.); Personal Information Protection Act, Act No. 10465 (S. Kor.); Act on the Use and Protection of Credit Information, Act No. 9813 (S. Kor.); Act on the Protection and Use of Location Information, Act No. 9119 (S. Kor.).

⁵³ Federal Law on the Protection of Personal Data Held by Private Parties, *Official Journal of the Federation*, July 5, 2010 (Mex.); General Law on the Protection of Personal Data Held by Mandated Parties, *Official Journal of the Federation*, Jan. 26, 2017 (Mex.).

access to phones and mobile connectivity, a public internet access program, e-governance, electronic delivery of services, information for all (e.g., platforms allowing communication between citizens and government), and electronics manufacturing.⁵⁴

A number of countries, including many in Africa, explicitly recognize the economic development implications of digital rules and regulations. Some have put in place policies to promote the digital sector domestically, which can also involve limiting foreign competition.⁵⁵ For example, Rwanda's regulatory framework for digital trade and data security is designed to promote the domestic economy,⁵⁶ through an emphasis on data privacy and data governance,⁵⁷ cybersecurity regulations,⁵⁸ and measures to foster an e-commerce enabling environment.⁵⁹ The link between development and digital regulation can also be seen in the Digital

⁵⁴ Ministry of Electronics & Information Technology, Gov't of India, *Nine Pillars of Digital India*, <https://www.meity.gov.in/divisions/digital-india> (last visited Feb. 27, 2025).

⁵⁵ Neha Mishra & Kholofelo Kugler, *International Community in the Global Digital Economy: A Case Study on the African Trade Framework*, British Institute of International and Comparative Law (Cambridge University Press, 2024) at 2 [Mishra & Kugler], citing United Nations Trade and Development (UNCTAD), *Digital Economy Report 2021 – Cross-Border Data Flows and Development: For Whom the Data Flow* (2021) UN Doc UNCTAD/DER/2021, 122–3.

⁵⁶ Andrew D. Mitchell & Neha Mishra, *Cross-Border Data Regulatory Frameworks: Opportunities, Challenges, and a Future-Forward Agenda*, 34 *FORDHAM INTELL. PROP. MEDIA & ENT. L. J.* 842, 852 (2024).

⁵⁷ Ministry of Youth & ICT, *National Data Revolution Policy*, iii (Apr. 2017) (Rwanda).

⁵⁸ Cybersecurity, Regulation No. 010/R/CR-CSI/RURA/020 of 29/05/2020, art. 1 (2020) (Rwanda),

https://rura.rw/fileadmin/Documents/ICT/Laws/Cybersecurity_Regulation_in_Rwanda.pdf [<https://perma.cc/6DPP-H3PB>].

⁵⁹ See, e.g., Ministry of ICT, *Smart Rwanda 2020 Master Plan: Towards a Knowledge Based Society*, 29 (Oct. 2015) (Rwanda),

https://www.minict.gov.rw/fileadmin/user_uploadd/minict_user_upload/Documents/Policies/SMART_RWANDA_MASTERPLAN.pdf; Nat'l Bank of Rwanda, *Rwanda Payment System Strategy: Towards a Cashless Rwanda 2018-2024*, § 4.3.1 (2017) (Rwanda).

Trade Protocol to the African Continental Free Trade Area (AfCFTA) Agreement, discussed in Part III that follows.

The government of Ghana has several domestic policy initiatives related to financial inclusion and digital payments, acknowledging the important role that finance plays in digital inclusion. Initiatives include the National Financial Inclusion and Development Strategy, the Digital Financial Services Policy, and the Cash-Lite Roadmap, which are designed to increase financial inclusion, create a resilient and innovative digital ecosystem, and build an inclusive digital payments ecosystem.⁶⁰ Ghana has also established a Digital Payments Coordination Unit to drive the effective implementation of these policies.⁶¹ The Ghana e-payment portal launched in June 2020 centralizes financial services, allowing Ghanaians to fulfil financial obligations to the government through a single digital platform.⁶² Further study of these policies to assess their impact would help signal where other countries might adapt and scale these micro approaches.

Some countries also have legal provisions or policies that provide flexibility designed to help MSMEs. Jurisdictions such as Singapore, the United Kingdom, and others use regulatory sandboxes to provide spaces for innovation and

⁶⁰ National Financial Inclusion and Development Strategy (Ghana, 2018); Digital Financial Services Policy (Ghana, 2020); Cash-Lite Roadmap (Ghana, 2019)

⁶¹ Ghana Digital Payments Coordination Unit, *Digital Payments Roadmap for Ghana*, <https://www.bog.gov.gh> (last visited Mar. 3, 2025).

⁶² *Ghana Government Launches Unique E-Payment Platform for Public Services*, Resilient Digital Africa (June 29, 2020), <https://resilient.digital-africa.co/en/blog/2020/06/29/ghana-government-launches-unique-e-payment-platform-for-public-services/>.

cooperation in a supervised environment.⁶³ Australia has exempted businesses with a specified annual turnover from the requirements of its Privacy Act as a way to address implementation and compliance challenges.⁶⁴ Brazil has also established special conditions for micro-enterprises, small businesses, start-ups, and non-profit legal entities under data regulations, including simplified information security and data protection policies.⁶⁵

New Zealand is a particularly notable example of a country that combines data protection, sustainability, community engagement, and digital development for small businesses. In 2021, the Mana Ōrite Relationship Agreement was signed by Statistics NZ and the Data Iwi Leaders Group of the National Iwi Chairs Forum to engage with the iwi-Māori on data governance and use of data in a sustainable, positive way for the iwi, hapū, and whānau communities.⁶⁶ The Agreement requires that the government of New Zealand consult with the Māori people prior to implementing any digital transformation initiatives, recognizing the validity of different perspectives, knowledge systems, and worldviews.⁶⁷ During the COVID-19 pandemic, the government of New Zealand also created a fund to help build

⁶³ Monetary Authority of Singapore, *Regulatory Sandbox*, <https://www.mas.gov.sg/development/fintech/regulatory-sandbox> (last visited Mar. 3, 2025); Information Commissioner's Office, *Regulatory Sandbox*, <https://ico.org.uk/for-organisations/advice-and-services/regulatory-sandbox/> (last visited Mar. 3, 2025).

⁶⁴ Privacy Act 1988 (Cth) (Austl.).

⁶⁵ General Data Protection Law, Law No. 13.709, Aug. 14, 2018 (Braz.).

⁶⁶ Mana Ōrite Relationship Agreement, June 22, 2021, available at <https://www.digital.govt.nz/dmsdocument/250~mana-orite-relationship-agreement/html>.

⁶⁷ *Id.*

capacity among small and medium-sized enterprises (SMEs) run by Māori, Pacific, and people with disabilities.⁶⁸

The examples of domestic law and policy discussed briefly in this section highlight several important takeaways. First, domestic laws and policies often contain notable innovations (e.g., Estonia’s data embassy, Singapore’s focus on transparency, New Zealand’s Indigenous rights approach) and more detail and nuance than international or regional legal provisions, highlighting areas in which domestic law could share good practices from the bottom up. Second, examples of domestic law highlight some of the challenges associated with implementation and compliance for individual rights holders, MSMEs, and developing countries. Jake Okechukwu Effoduh, Ugochukwu Ejike Akpudo, and Jude Dzevela Kong argue for a human-centric approach to data governance to address these and other challenges, with stronger data privacy and protection for data subjects.⁶⁹ They also stress the importance of alignment with international legal instruments, including human rights instruments, with important implications for the agreements discussed in Part III.⁷⁰ In many cases, these gaps suggest that more detailed provisions should be considered in both domestic and international instruments.

In addition, domestic law shows that many countries tend to gravitate to models advanced by economically dominant economies, including Europe and

⁶⁸ See Kuhlmann 2025 *supra* note 19.

⁶⁹ See Effoduh, Akpudo, & Kong, *supra* note 16, at e34-1.

⁷⁰ *Id.*, at e34-4.

California,⁷¹ even though there is more variation than this overall trend would suggest.⁷² Anu Bradford’s “Brussels Effect,” which refers to Europe’s dominant influence on the laws within and among nations, is a compelling and common frame of reference for this phenomenon,⁷³ which extends to digital regulation as discussed above.⁷⁴ While this can be an important way of globally spreading digital protection, as the diffusion of the GDPR model highlights, there are downsides to pushing countries to regulate in nearly identical ways. Critics have referred to the spread of these models, particularly given their extraterritorial nature, as “regulatory annexation” that occurs through the exportation of regulatory and business approaches.⁷⁵ These dynamics can have significant implications for local and international governance and development. Not only do they give rise to capacity and compliance challenges, but they may also hamper both meaningful protection and future innovation from the bottom up. Development will also be limited if local social, legal, and economic needs are not part of legal design.⁷⁶ These considerations are particularly important as domestic laws continue to

⁷¹ For a discussion of the role the “California Effect” has played in U.S. data privacy law, *see* Chander et al., *supra* note 23.

⁷² Mishra & Kugler, *supra* note 57 at 1.

⁷³ *See* Anu Bradford, *THE BRUSSELS EFFECT*, Oxford University Press (2020, 2021).

⁷⁴ *See* Bradford 2023, *supra* note 28.

⁷⁵ For a discussion of “regulatory annexation,” *see* Vincent Obia, *What Can African Countries Do to Regulate Artificial Intelligence?*, Media@LSE (June 13, 2023).

⁷⁶ *See* Effoduh, Akpudo, and Kong, *supra* note 16, at e34-3. *See generally* Olufunmilayo B. Arewa, *DISRUPTING AFRICA*, Cambridge University Press (2021).

evolve, and they will be critical as new legal instruments, such as the EU AI Act, gain greater influence.

B. Micro Analysis of Stakeholder Needs Through Empirical Study

Integrating human rights and sustainability into digital regulation must be done based on stakeholder engagement and input. The Mana Ōrite Relationship Agreement is one example of how such engagement could be integrated into rulemaking at all stages, especially when new rules and treaties are in the design stage, as well as once they are finalized and implemented.

Empirical research can also contribute to a better understanding of stakeholder needs, which is central to ensuring that digital rules deliver on their development potential. One example of a micro empirical study was done is in the context of the WTO Moratorium, which has been in place since 1998 and has limited global taxes on e-commerce.⁷⁷ At the WTO's Thirteenth Ministerial Conference in February 2024, the Moratorium was extended until 2026, but it faces an uncertain future. Governments have taken differing positions on the Moratorium, with some stressing the importance of maintaining the Moratorium to keep trade restrictions to a minimum and others, mainly some developing economies, pressing for lifting the Moratorium to open up policy space to generate

⁷⁷ World Trade Organization, "Declaration on Global Electronic Commerce," 1 (1998), available at: <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/MIN98/DEC2.pdf&Open=True>

revenue from digital goods and services.⁷⁸ The Moratorium has particular implications for MSMEs, which could be significantly disadvantaged if governments change course and add costs to digital trade.⁷⁹

An empirical study done by Katrin Kuhlmann and Tara Francis underscores the implications of the WTO Moratorium for economic development and small businesses.⁸⁰ The study, which includes statistically significant interviews with nearly 450 MSMEs in Kenya and South Africa, highlighted important development aspects of the Moratorium. The majority of MSMEs surveyed (three-fifths, or 60%) expressed that they had little or no capacity to comply with additional customs administrative requirements.⁸¹ Over half (55%) stated that they would pass on additional administrative costs to consumers, resulting in higher costs. The majority (63%) of MSMEs reported that there would be a “significant” or

⁷⁸ Rashmi Banga, *WTO Moratorium on Customs Duties on Electronic Transmissions: How Much Tariff Revenue Have Developing Countries Lost?* (2022), available at: https://www.southcentre.int/wp-content/uploads/2022/06/RP157_WTO-Moratorium-on-Customs-Duties-on-Electronic-Transmissions_EN.pdf.

⁷⁹ See Katrin Kuhlmann & Tara Francis, *The MSME Moratorium: Stories from MSMEs in South Africa and Kenya on the WTO Moratorium on Customs Duties on Electronic Transmissions*, New Markets Lab White Paper, February 2024 [Kuhlmann & Francis]. See also Badri Narayanan Gopalakrishnan, Rajat Kathuria, Manjeet Kripalani, Jane Drake-Brockman, Pascal Kerneis, and Harsha Vardhana Singh, *Resilience and Inclusivity in Cross-Border Digital Supply Chains Through Digital Services Trade and Investment*, T20 Policy Brief (May 2023), available at https://www.orfonline.org/wp-content/uploads/2023/05/TF-1_Cross-Border-Digital-Supply-Chains.pdf and Trade Expertes, *How the WTO E-commerce Moratorium Impacts Women Across the World* at 6 (2023), available at <https://static1.squarespace.com/static/5d7025a4a7115800013abe24/t/64fd2059b48a5e6f727ee101/1694310493858/The+E-Commerce+Moratorium+%26+Women.pdf>.

⁸⁰ Kuhlmann & Francis, *supra* note 81. The study used a structured survey instrument to gather nearly 450 impressions from MSME as well as interviews with over 30 MSMEs to gather more detailed “stories” or case studies.

⁸¹ *Id.*, at 5-6.

“moderate” impact on their growth potential if the Moratorium were to lapse, and a majority (61%) reported that there would be “significant” or “moderate” impact on competitiveness in global markets.⁸²

The study also showed that the substantial majority of MSMEs (65%) were not aware of the significant policy discussions in Geneva and elsewhere regarding the ongoing application of the Moratorium, and an even more significant majority (74%) had not been consulted by their governments regarding the possible imposition of import tariffs on electronic transmissions.⁸³ Importantly, a large majority of MSMEs surveyed (88%) noted that communication channels with government are not easily accessible, highlighting an important gap in engagement that is central to making trade work for development.⁸⁴ Only a small percentage (13%) stated that they felt that the government adequately represented their interests in international negotiations.

This study is important in what it shows regarding the connection between trade and digital measures and economic and social opportunities. It highlights the implications of a measure like the Moratorium that keeps costs low and the repercussions of a policy change if the measure were to be reversed. It also provides lessons regarding micro-level empirical analysis more generally, underscoring the need for more empirical assessment and bottom-up analysis to understand the

⁸² *Id.*, at 6.

⁸³ *Id.*

⁸⁴ Kuhlmann 2021, *supra* note 17.

impact of a change in rules. Without greater micro-level study, the full potential of sustainable development through trade and digital rules will remain out of reach.

Empirical models could be applied in a number of contexts, including “micro mapping” to compare the details and benefits of different legal models and to map the influence of powerful economies’ domestic legal systems on other countries (as well as the impact of extraterritorial practices).⁸⁵ Micro mapping as an empirical tool could be useful in the context of the GDPR and its influence on other countries’ domestic laws, for example, to better understand the implications of adoption of the EU model, both in terms of rights and compliance. It could also be useful in assessing the details and adoption of sub-national models like California’s CCPA. While the EU AI Act is new, micro mapping could help trace its de jure influence as other countries begin to adopt AI legislation. Ultimately, micro mapping could be used to show subtle variations in domestic countries’ legal approaches, which could signal important differences and priorities, particularly in relation to the more dominant models like GDPR. Such studies will be critical, given the international community’s reliance on a limited set of legal models and norms.⁸⁶ The tendency to cast the rules of more powerful economies as a common standard in the name of universal “best practices” will impact the ability to regulate

⁸⁵ Kuhlmann 2025, *supra* note 19 at 21.

⁸⁶ See Mor Mitrani, *Demarcating the International Community: Where Do International Practices Come From?*, in Ljiljana Biukovic and Pitman B. Potter eds., *LOCAL ENGAGEMENT WITH INT’L ECON. L. AND HUMAN RTS.*, Edward Elgar (2017) at 146.

the global digital economy in a way that can achieve sustainable development, protect human rights, and preserve more local, tailored approaches to digital regulation. Micro-level innovations have significant implications for emerging international and regional rules, as discussed in Part III below.

III. BRIDGING MICRO AND MACRO APPROACHES: DEVELOPMENT AND DIGITAL RULES IN TRADE AGREEMENTS

Internationally, the digital economy is largely regulated through a “patchwork of obligations,”⁸⁷ mainly through a growing number of trade agreements, also referred to here as RTAs. RTAs, along with some international soft law instruments,⁸⁸ have been the main source of innovation in international law in the digital realm, since progress at the multilateral (or WTO) level has been slow, leaving RTAs to fill the void in international law. While trade agreement provisions on the digital economy have emerged in the absence of multilateral rules on the digital economy, they can also be viewed as part of the process of international rule

⁸⁷ Katrin Kuhlmann, HANDBOOK ON PROVISIONS AND OPTIONS FOR TRADE IN TIMES OF CRISIS AND PANDEMIC, United Nations Economic and Social Commission for Asia and the Pacific (2021) at 142, available at [https://www.unescap.org/sites/default/d8files/knowledge-products/Handbook%20FINAL%204Nov2021\(edited\).pdf](https://www.unescap.org/sites/default/d8files/knowledge-products/Handbook%20FINAL%204Nov2021(edited).pdf); *See also* Katrin Kuhlmann, HANDBOOK ON PROVISIONS AND OPTIONS FOR SUSTAINABLE AND INCLUSIVE TRADE AND DEVELOPMENT IN TRADE AGREEMENTS, United Nations Economic and Social Commission for Asia and the Pacific (2023), available at <https://www.unescap.org/kp/2023/handbook-provisions-and-options-inclusive-and-sustainable-development-trade-agreements> [Kuhlmann UN 2021 and Kuhlmann UN 2023].

⁸⁸ A number of international soft law frameworks are also relevant in the digital space, such as the Asia Pacific Economic Community (APEC) Privacy Framework and Cross-Border Privacy Rules, the Organisation for Economic Co-Operation and Development (OECD) Recommendation of the Council concerning Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data (2013), the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce 1996, the UNCITRAL Model Law on Electronic Signatures 2001, and other instruments.

development, with regional approaches acting as a precursor to multilateral approaches.

While regional models often raise concerns of fragmentation, they can serve as building blocks to connect domestic and international law. Regional instruments, which represent a “meso” level of international rules, already address some aspects of human rights and sustainability in the digital realm, including the link between data privacy and human rights. Consistent with its legislative model, the EU incorporates a rights-based approach to data in its trade agreements.⁸⁹ Although not a trade agreement, the GDPR itself essentially functions as an international instrument due to its substantial reach, as discussed above. Over time, the EU AI Act could also take on a similar role.⁹⁰

As another example, the Supplementary Act on Data Protection within the Economic Community of West African States (ECOWAS), a regional trade arrangement, also treats data protection as a human right, safeguarding “public liberties and privacy.”⁹¹ The ECOWAS Court has upheld that the Supplementary Act is a human rights instrument that protects privacy and personal data,⁹²

⁸⁹ See EU-New Zealand Free Trade Agreement, Art. 12.5 (1), available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202400866#page=262.

⁹⁰ Graham Greenleaf, *EU AI Act: Brussels Effect(s) or a Race to the Bottom?* 190 PRIVACY LAWS & BUSINESS INT’L REPORT 1, 9-10 (2024) [hereinafter Greenleaf 2024].

⁹¹ See Uchenna Jerome Orji, *Regionalizing Data Protection Law: A Discourse on the Status and Implementation of the ECOWAS Data Protection Act*, 7 INT’L DATA PRIVACY L., 179 (2017).

⁹² Incorporated Trustees of Digital Rights Lawyers Initiative v Federal Republic of Nigeria, Judgment No ECW/CCJ/JUD/16/20 (13 March 2023) para 29. See Mishra & Kugler, *supra* note 57 at 31.

reinforcing its enforceability. These are notable innovations at the regional level given their link between digital rules and human rights. Many other RTAs incorporate provisions on data privacy as well, often leaving the details to domestic legal measures.⁹³

It is important, however, to assess these provisions in context. Graham Greenleaf asserts that the lack of specificity in RTA provisions on data privacy, such as the provisions in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) which are coupled with commitments in other areas such as cross-border data transfer and data localization, may actually pose a threat to the protections under domestic privacy laws.⁹⁴ This highlights the need for studying the interconnections between micro and macro-level digital rulemaking as this Article proposes.

Overall, the Organisation for Economic Co-operation and Development (OECD) estimates that incorporating digital provisions in RTAs can have a significant impact and can effectively “double the effect” of the agreements.⁹⁵ Incorporation of digital provisions in RTAs is on the rise, and since 2001, 44% of

⁹³ See, e.g., Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Art. 14.8, Mar. 8, 2018; United States-Mexico-Canada Agreement, Art. 19.8, July 1, 2020; Regional Comprehensive Economic Partnership Agreement, Art. 12.8, Nov. 15, 2020.

⁹⁴ Graham Greenleaf, *2017-2018 Further Update to Graham Greenleaf’s Asian Data Privacy Laws – Trade and Human Rights Perspectives*, UNIV. OF NEW SOUTH WALES L. RESEARCH SERIES 2018 at 4 (See Graham Greenleaf *ASIAN DATA PRIVACY LAWS – TRADE AND HUMAN RIGHTS PERSPECTIVES*, Oxford University Press, 2014, 2017).

⁹⁵ Javier López González, Silvia Sorescu, and Pinar Kaynek, *Of Bytes and Trade: Quantifying the Impact of Digitalisation on Trade*, OECD TRADE POLICY PAPERS No. 273 May 2023 at 1.

all RTAs have included at least some provision(s) on digital trade or e-commerce, with over 70% of RTAs signed since 2015 addressing digital trade issues.⁹⁶ These include recent comprehensive RTAs, such as the CPTPP, the Regional Comprehensive Economic Partnership (RCEP), the AfCFTA, and the U.S.-Mexico-Canada Agreement (USMCA).

Incorporation of development-focused provisions in RTAs is also on the rise. The U.N. estimates that one-third of trade agreements overall and two-thirds of trade agreements since 2005 include at least some reference to sustainable development, ranging from broad affirmations referencing the SDGs to provisions on the environment, labor, gender, and digital inclusion.⁹⁷ Trade agreement provisions on development and the digital economy are also becoming more frequent, although they still lack the detail that can be found in many national systems. Relevant RTA provisions encompass data privacy, digital inclusion, development of digital skills, and the digital divide,⁹⁸ although the latter seldom

⁹⁶ IMF, OECD, UN, World Bank, and WTO, *supra* note 4, at 3.

⁹⁷ Louise Malingrey and Yann Duval, *Mainstreaming Sustainable Development in Regional Trade Agreements: Comparative Analysis and Way Forward for RCEP*, ARTNET WORKING PAPER SERIES No. 213 (2022), available at <https://www.econstor.eu/bitstream/10419/261387/1/1810548845.pdf>.

⁹⁸ See, e.g., Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Art. 14.8, Mar. 8, 2018; United States-Mexico-Canada Agreement, Art. 19.8, July 1, 2020; Regional Comprehensive Economic Partnership Agreement, Art. 12.8, Nov. 15, 2020; National Financial Inclusion and Development Strategy (Ghana, 2018); Digital Financial Services Policy (Ghana, 2020); Cash-Lite Roadmap (Ghana, 2019); Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, Art. 33, February 9, 2024, available at https://www.bilaterals.org/IMG/pdf/afcfta_digital_trade_protocol_-_9_february_2024_draft.pdf; See UK-Singapore DEA, June 14, 2022, available at <https://www.mti.gov.sg/Trade/Digital-Economy-Agreements/UKSDEA>.

appears explicitly in RTA provisions. Related issues, such as labor rights and affirmations of the SDGs, appear in some digital trade provisions as well.⁹⁹ However, even with this expansion of development-focused provisions related to digital trade, all aspects of sustainable development—economic, social, and economic—are not evenly balanced, and social dimensions tend to be overlooked, including in the regulation of the digital economy.¹⁰⁰

Further, beyond human rights, the limited number of RTAs that deal explicitly with issues of sustainable development in the digital context contain broad, aspirational language and declaratory or soft commitments that are often vague in their construction. On one hand, this may give governments policy space to determine which measures would be most beneficial, but, on the other hand, it can lead to a disconnect between legal provisions and their context. Important gaps remain, which should be more deeply studied. In addition, most stakeholders are often left out of trade agreement design and negotiation, which can have a negative effect on the resulting obligations.

⁹⁹ Regarding labor rights in a digital context, *see* UK-Singapore DEA, *Id.*, Art. 8.61-P; Regarding the SDGs, *see* Digital Economy Partnership Agreement, signed January 7, 2021 Preamble, available at <https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/digital-economy-partnership-agreement-depa>.

¹⁰⁰ Kuhlmann CITD, 2023, *supra* note 1.

A. Multilateral Rules and Soft Law Frameworks on the Digital Economy

Digital protections are not comprehensive or complete at the multilateral level, although some WTO rules relate to the digital economy.¹⁰¹ For example, the 2017 WTO Trade Facilitation Agreement introduced disciplines on electronic transactions and digitalization that have been important for economic development and the integration of MSMEs into trade.¹⁰²

The absence of multilateral rules on many issues prompted a lengthy process that began with the launch of the WTO Work Programme on E-Commerce in 1998 and recently included agreed-upon text on the WTO JSI on Electronic Commerce,¹⁰³ marking an incremental step forward. The JSI could have important implications for economic, social, and sustainable development, yet a number of developing economies have raised concerns about the instrument and have decided not to engage in the negotiations, focusing instead on domestic measures and preservation of policy space.¹⁰⁴

¹⁰¹ These include the WTO Agreement on Basic Telecommunications and the General Agreement on Trade in Services, as well as the WTO Moratorium on Customs Duties on Electronic Transmissions.

¹⁰² World Trade Organization, “2017 Trade Facilitation Agreement,” 1 (2017), available at: https://www.wto.org/english/docs_e/legal_e/downloads_e/TFA_en.pdf

¹⁰³ World Trade Organization, ‘Joint Statement Initiative on Electronic Commerce,’ INF/ECOM/87/26 July 2024, available at <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/INF/ECOM/87.pdf&Open=True> (last accessed 19 August 2024).

¹⁰⁴ See United Nations Conference on Trade and Development, *What is at Stake for Developing Countries in Trade Negotiations? The Case of the Joint Statement Initiative* (February 19, 2021), available at <https://unctad.org/publication/what-stake-developing-countries-trade-negotiations-e-commerce>.

Soft law instruments are also relevant in the context of sustainable digital trade and development. These include the U.N. SDGs, especially SDG 8 on decent work and economic growth; SDG 9 on building resilient infrastructure, promoting sustainable industrialization, and fostering innovation; SDG 10 on reducing inequalities; and SDG 17 on revitalizing the global partnership for sustainable development.¹⁰⁵ SDG goal 9c speaks directly to the digital divide for least developed countries (LDCs), with a target to “significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet.”¹⁰⁶

In addition to the SDGs, other multilateral soft law instruments have proliferated in relation to digital regulation, particularly through institutions like the OECD and various U.N. bodies. These include OECD Recommendations on Electronic Authentication (2007), the Protection of Privacy and Transborder Flows of Personal Data (2013), Consumer Protection in E-Commerce (2016), and Enhancing Access to and Sharing of Data (2021).¹⁰⁷ U.N. instruments include the

¹⁰⁵ UN Sustainable Development Goals. Rep. of the World Comm’n on Env’t and Dev., G.A. Res. 42/187, U.N. DOC. A/Res/42/87, at 46 (Dec. 11, 1987) and Rep. of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, Annex IV, U.N. DOC. E/CN.3/2016/2/Rev.1 (2016) [UN SDGs 2016]. *See also*, World Trade Organization, *World Trade Report 2020: Government Policies to Promote Innovation in the Digital Age* (2020) at 152, https://www.wto.org/english/res_e/booksp_e/wtr20_e/wtr20_e.pdf; United Nations Economic and Social Commission for Asia and the Pacific, *Digital and Sustainable Trade Facilitation: Global Report 2023* (2024), <https://repository.unescap.org/bitstream/handle/20.500.12870/7239/ESCAP-2024-RP-Digital-Sustainable-Trade-Facilitation-Global-Report-TIID-2023.pdf>.

¹⁰⁶ *Id.* (UN SDGs 2016).

¹⁰⁷ For a full list of OECD legal instruments, *see* <https://legalinstruments.oecd.org/en/instruments?mode=normal&statusIds=1&dateType=adoption>.

U.N. Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce (1996) and the UNCITRAL Model Law on Electronic Signatures (2001).¹⁰⁸ On AI, several international policy guidelines have been developed, including the G20 AI Guidelines (2019), OECD AI Principles (2019), which were revised in 2024, U.N. Educational, Scientific, and Cultural Organization (UNESCO) Recommendation on AI Ethics (2021), and the Universal Guidelines for AI (2018) of the Center for AI and Digital Policy.¹⁰⁹

In addition, human rights treaties are closely related to development-focused digital regulation. Article 12 of the Universal Declaration of Human Rights and Article 17 of the International Covenant on Civil and Political Rights encompass protection of privacy rights, which extends to digital privacy.¹¹⁰ The Convention on the Rights of the Child and the Convention on the Elimination of

¹⁰⁸ See *UNCITRAL Model Law on Electronic Commerce (1996) with additional article 5 bis as adopted in 1998*, 12 June 1996, online: https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_commerce; *UNCITRAL Model Law on Electronic Signatures*, U.N. Doc. A/56/17 (2001)

¹⁰⁹ G20, *AI Principles: Principles for Responsible Stewardship of Trustworthy AI* (2019), <https://www.g20.org/>; OECD, *OECD Principles on Artificial Intelligence* (2019), <https://oecd.ai/en/ai-principles>; U.N. Educational, Scientific & Cultural Org. (UNESCO), *Recommendation on the Ethics of Artificial Intelligence* (2021), <https://unesdoc.unesco.org/ark:/48223/pf0000380455>; Center for AI and Digital Policy, *Universal Guidelines for Artificial Intelligence* (2018), <https://www.caidp.org/>.

¹¹⁰ Universal Declaration of Human Rights, art. 12, G.A. Res. 217 (III) A, U.N. Doc. A/810 (Dec. 10, 1948); International Covenant on Civil and Political Rights, art. 17, Dec. 16, 1966, 999 U.N.T.S. 171.

All Forms of Discrimination Against Women have also adopted commentaries highlighting the importance of equal access to the Internet and digital technology.¹¹¹

Regional instruments also cover data rights and governance. For example, the Asia Pacific Economic Community (APEC) Privacy Framework and Cross-Border Privacy Rules have shaped more binding rules.¹¹² Several hard and soft regional instruments exist on the African continent as well. These include the African Charter on Human and Peoples Rights and African Union (AU) instruments like the 2022 AU Data Policy Framework (2022), 2014 AU Convention on Cyber Security and Personal Data Protection (Malabo Convention; entered into force 2023), and AU Digital Transformation Strategy (2020–2030).¹¹³ The latter clearly incorporates development objectives, noting the objective of establishing “an integrated and inclusive digital society and economy in Africa that improves the quality of life of Africa’s citizens, strengthens the existing economic sector, enables its diversification and development, and ensures continental ownership with Africa as a producer and not only a consumer in the global economy.”¹¹⁴

¹¹¹ See, e.g., Committee on the Rights of the Child, *General Comment No. 25* (2021); and Committee on the Elimination of All Forms of Discrimination Against Women, *General Recommendation No. 39* (2022).

¹¹² Asia-Pacific Economic Cooperation (APEC), *APEC Privacy Framework* (2015); Asia-Pacific Economic Cooperation (APEC), *Cross-Border Privacy Rules (CBPR) System* (2011).

¹¹³ African Charter on Human and Peoples’ Rights, June 27, 1981, 1520 U.N.T.S. 217; African Union, *Data Policy Framework* (2022), <https://au.int/>; African Union, *Convention on Cyber Security and Personal Data Protection* (Malabo Convention), June 27, 2014 (entered into force 2023), <https://au.int/>; African Union, *Digital Transformation Strategy (2020–2030)*, <https://au.int/>.

¹¹⁴ African Union, *The Digital Transformation Strategy for Africa (2020–2030*, adopted 9 February 2020 at 2.

Further, in addition to the ECOWAS data privacy measure noted above, instruments of the Regional Economic Communities cover digital issues, including the East African Community Legal Framework for Cyberlaws (2008) and the Southern African Development Community Model Law on Data Protection,¹¹⁵ the latter of which is not a binding framework but has influenced domestic law.¹¹⁶

A growing number of multilateral and regional instruments also focus on AI, including the OECD AI Principles referenced above, with important implications for economic and social development. In 2021, UNESCO adopted recommendations on the ethics of artificial intelligence which include impact assessments to identify and assess benefits, concerns, and risks of AI systems; inclusive, transparent, multidisciplinary, multilateral, and multi-stakeholder governance mechanisms; and national legislation aligned with human rights law obligations.¹¹⁷ The African Commission on Human and Peoples' Rights (ACPHR) also recently adopted a resolution calling for a study on human rights, AI, and other new and emerging technologies in Africa.¹¹⁸ The 2024 AU Continental Artificial

¹¹⁵ East African Community, *Legal Framework for Cyberlaws* (2008), <https://www.eac.int/>; Southern African Development Community, *Model Law on Data Protection*, <https://www.sadc.int/>.

¹¹⁶ African Economic Research Consortium, *Digitalization in Africa: The New Frontier of Development* (2022), at 3. <https://aercafrica.org/old-website/wp-content/uploads/2022/02/DG003.pdf>; Paradigm Initiative, *Press Statement: Paradigm Initiative Calls for Data Protection in the SADC Region*, <https://paradigmhq.org/press-statement-paradigm-initiative-calls-for-data-protection-in-the-sadc-region/> (last visited Mar. 3, 2025).

¹¹⁷ UNESCO, *Recommendation on the Ethics of Artificial Intelligence*, adopted Nov. 23, 2021, at 27.

¹¹⁸ African Commission on Human and Peoples' Rights *Resolution on the Need to Undertake a Study on Human and Peoples' Rights and Artificial Intelligence (AI), Robotics, and Other New*

Intelligence Strategy references human rights and a “people-centric, development-oriented, and inclusive approach” to AI.¹¹⁹ Although the above-referenced instruments all fall within soft law, the first hard law instrument in AI, the Council of Europe’s Framework Convention on Artificial Intelligence, Human Rights, Democracy, and the Rule of Law, 2024 was adopted on May 17, 2024.¹²⁰ All of these instruments will likely shape future rules at the national, regional, and international levels. However, it remains to be seen whether they will address gaps noted in Part II, such as the lack of disciplines on data mining/scraping and privacy.

B. *Governance of the Digital Economy in Regional Trade Agreements*

As noted above, an increasing number of RTAs address digital issues, including issues related to economic and social development in the digital economy. Rules have developed in a heterogenous manner, with differing scope of coverage and approaches apparent across instruments.¹²¹ RTAs with digital trade provisions

and *Emerging Technologies in Africa*, ACHPR/Res. 473 (EXT.OS/XXXI) 2021, available at <https://achpr.au.int/en/adopted-resolutions/473-resolution-need-undertake-study-human-and-peoples-rights-and-art>.

¹¹⁹ African Union Continental Artificial Intelligence Strategy, July 2024. See also, Frederick Ogenga and Aaron Stanley, *Regulating Artificial Intelligence in Africa: Strategies and Insights from Kenya, Ghana, and the African Union*, CTRL FORWARD Woodrow Wilson Center September 2024, available at <https://www.wilsoncenter.org/blog-post/regulating-artificial-intelligence-africa-strategies-and-insights-kenya-ghana-and-african>.

¹²⁰ *Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law*, C.E.T.S. No. 225, opened for signature Sept. 5, 2024 [hereinafter *AI Framework Convention*]. See Cheng-chi (Kirin) Chang, *The First Global AI Treaty: Analyzing the Framework Convention on AI and the EU AI Act*, Dec. 20, 2024 UNIV. ILL. L. REV. (ONLINE) 86 (2024) at 87, available at <https://illinoislawreview.org/online/the-first-global-ai-treaty/>. See also Greenleaf 2024, *supra* note 92, at 6.

¹²¹ See Kuhlmann UN 2021, *supra* note 60. To assess commonality in provisions and extent of hard and soft commitments (legalization), see the Trade Agreement Provisions on Electronic Commerce

often focus on issues of data privacy and protection,¹²² data localization, cross-border data transfer, and electronic transactions and payments. Some RTAs also incorporate provisions on consumer protection,¹²³ cybersecurity, AI,¹²⁴ and other issues. These provisions sometimes include references to human rights and development, but this is not yet the norm.

One recent trend in RTAs that connects digital rules with development is the incorporation of digital inclusion provisions in digital trade chapters or instruments. These take different forms, ranging from free trade agreements (FTAs) that cover a range of issues to digital economy agreements (DEAs), which are more specialized trade instruments focused on digital provisions only. Digital inclusion provisions were first incorporated in the 2021 Digital Economy Partnership Agreement (DEPA) between Singapore, Chile, New Zealand, and, as of 2024, Korea.¹²⁵ Several other trade agreements entered into by the DEPA parties incorporate similar

and Data (TAPED) Dataset; *see also* the UN Legal Trade Intelligence Negotiation Adviser (Legal TINA) and the Digital Policy Alert.

¹²² For example, a higher standard of data protection may be provided for vulnerable stakeholders. Exceptions or differential treatment can also be included for micro, small, and medium-sized enterprises.

¹²³ The United States-Mexico-Canada Agreement, for example, contains provisions on consumer protection in the digital space. European RTAs follow Europe's regulatory model, the General Data Protection Regulation (GDPR), which is arguably more consumer-focused, and includes a range of rights, including the right to be informed, right to access, right to rectification, right to erasure, right to objection to processing and marketing, and others.

¹²⁴ For example, the Digital Economy Partnership Agreement, *supra* note 102, includes provisions on artificial intelligence, calling for transparent, fair, and explainable rules and a focus on human-centered values. The UK-Singapore and Australia-Singapore Digital Economy Agreements also include provisions on artificial intelligence.

¹²⁵ Digital Economy Partnership Agreement, *supra* note 103. Six other countries have applied to join the DEPA: China, Canada, Costa Rica, Peru, the UAE, and El Salvador.

provisions. These include the Chile-Paraguay Free Trade Agreement (Chile-Paraguay FTA),¹²⁶ New Zealand-UK Free Trade Agreement (NZ-UK FTA),¹²⁷ and the UK-Singapore and Australia-Singapore DEAs.¹²⁸ The India-UAE Comprehensive Economic Partnership Agreement (CEPA),¹²⁹ as well as the Partnership Agreement between the EU and the Organisation of African, Caribbean, and Pacific States (OACPS),¹³⁰ also include digital provisions, as does the recent Digital Trade Protocol to the AfCFTA Agreement, which is one of the most comprehensive in terms of development and digital provisions.¹³¹

At a baseline, digital inclusion provisions acknowledge rights of vulnerable stakeholders, including Indigenous communities, women, rural populations, and other communities and stakeholders, who may face challenges in the digital economy. Digital inclusion provisions can also address issues important to MSMEs,

¹²⁶ Chile-Paraguay FTA, December 1, 2021, available at <https://edit.wti.org/document/show/6c1d59c5-a57f-42b6-baec-4ffe1a7c7d6?textBlockId=531cf3ab-5201-4390-932d-25e104cbdc26&page=5>.

¹²⁷ Free Trade Agreement Between New Zealand and the United Kingdom of Great Britain and Northern Ireland, May 31, 2023, available at <https://www.mfat.govt.nz/assets/Trade-agreements/UK-NZ-FTA/NZ-UK-Free-Trade-Agreement.pdf>.

¹²⁸ See UK-Singapore DEA, *supra* note 102. These differ in form from traditional RTAs and are focused exclusively on digital economy issues.

¹²⁹ Comprehensive Economic Partnership Agreement Between the Government of the Republic of India and the Government of the UAE, May 1, 2022, available at https://www.moec.gov.ae/documents/20121/1347101/Final+Agreement_UAE+India+CEPA.pdf.

¹³⁰ Agreement between the European Union and its Member States, on the one part, and the Members of the Organisation of African, Caribbean, and Pacific States, on the other part, December 28, 2023, available at https://eur-lex.europa.eu/eli/agree_internation/2023/2862/oj.

¹³¹ The Digital Trade Protocol to the AfCFTA is also a somewhat different model, since it adds a separate legal instrument focused on digital economy issues to the foundational AfCFTA Agreement. Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, February 9, 2024, available at https://www.bilaterals.org/IMG/pdf/afcfta_digital_trade_protocol_-_9_february_2024_draft.pdf.

although MSME-related digital provisions often appear in other parts of an agreement.¹³² Digital inclusion provisions tend to merely recognize the importance of the needs of vulnerable stakeholders and communities (women, persons with disabilities, Indigenous communities, small businesses, and others) without creating actionable rights. Some provisions focus on addressing the digital divide, while other agreements integrate financial inclusion and S&DT with respect to digital rules, reflecting articulated priorities of developing economies. In some cases, these provisions track with domestic laws and policies discussed in Part II, highlighting the circular nature between domestic and regional law. However, even the more expansive digital provisions leave out details addressed in domestic instruments, and none address sustainable development to the extent of other RTA chapters, such as those on environment and labor, meaning that they lack precision and enforceability.¹³³ Digital inclusion provisions also fail to include detail that other social provisions in RTAs, such as those on women, are beginning to reflect, although they also do not fully take relevant contextual factors into account.¹³⁴ Again, this makes the case for deeper study of domestic rules and policies.

¹³² See Kuhlmann UN 2021 and 2023, *supra* note 60.

¹³³ Kuhlmann 2021, *supra* note 17 at 59-88.

¹³⁴ See Katrin Kuhlmann 'Gender Approaches in Regional Trade Agreements and a Possible Gender Protocol Under the African Continental Free Trade Area: A Comparative Assessment' in *Trade Policy and Gender Equality*, Cambridge University Press (2023) (Amrita Bahri, Jan Yves Remy, and Dorotea Lopez, eds.), available at <https://www.cambridge.org/core/books/trade-policy-and-gender-equality/gender-approaches-in-regional-trade-agreements-and-a-possible-gender-protocol-under-the-african-continental-free-trade-area/BC406A9D888E43C3EC51E224221377E5>.

C. Comparative Assessment of “Digital Inclusion” Provisions in RTAs

The DEPA was the first agreement to “acknowledge the importance of digital inclusion.”¹³⁵ Its Module 11 on Digital Inclusion has the goal of ensuring that all stakeholders can “benefit from the digital economy” and “recognize[s] the importance of expanding and facilitating digital economy opportunities by removing barriers” and “enhancing cultural and people-to-people links including between Indigenous Peoples, and improving access for women, rural populations and low socio-economic groups.”¹³⁶ The domestic legal practices of the DEPA parties are reflected in these provisions, such as New Zealand’s focus on Indigenous rights. The DEPA also highlights the importance of cooperation among the parties on digital inclusion, again with an emphasis on vulnerable and marginalized groups.¹³⁷ In addition, it recognizes the need for capacity building focused on SMEs and promotes responsible AI governance frameworks.¹³⁸

Although these provisions are largely soft and aspirational, they established an important precedent and have formed the basis for other RTAs, which have built upon the DEPA model.¹³⁹ Within a relatively short period of time (2021–24), these provisions have evolved fairly significantly. One of the agreements that followed the DEPA, the 2021 Chile-Paraguay FTA, largely followed the DEPA model and

¹³⁵ DEPA, *supra* note 82.

¹³⁶ DEPA, *supra* note 82, Module 11, clauses 1 and 2.

¹³⁷ *Id.*, preamble; *Id.*, Art. 11.1; *Id.*, Art. 15.3

¹³⁸ *Id.*, module 10; *Id.*, art. 8.2.

¹³⁹ See Burri and Kugler, *supra* note 5.

contained similar, but slightly different, language on digital inclusion.¹⁴⁰ Since 2021, other instruments have expanded upon the DEPA model.

The 2022 UK-Singapore DEA contains a digital inclusion article (Art. 8.61-P) that goes beyond the language in the DEPA.¹⁴¹ It covers digital inclusion and participation as well as addresses the digital divide. It is particularly notable in its emphasis of the promotion of decent work conditions in the digital economy, integrating an innovative human rights and contextual element that is absent in other agreements. The UK-Singapore DEA also highlights the importance of focusing on “women and groups and individuals that may disproportionately face barriers to digital trade.”¹⁴² It further emphasizes the importance of cooperation on digital inclusion, linking the approach to other social issues, such as gender and labor provisions, and emphasizes the “role for digital trade in promoting economic development and poverty reduction.”¹⁴³ These innovations perhaps reflect Singapore’s domestic approaches in digital economic development and digital regulation. However, in contrast, another agreement to which Singapore is a party, the 2023 MERCOSUR-Singapore FTA, contains only minimal language on digital inclusion, which is incorporated into a broader clause (Art. 12.9) on cooperation.¹⁴⁴

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² UK-Singapore DEA, *supra* note 85, Art. 8.61-P.

¹⁴³ *Ibid.*

¹⁴⁴ Free Trade Agreement between the Southern Common Market (MERCOSUR) and the Republic of Singapore FTA, December 7, 2023, available at <https://edit.wti.org/document/show/90a55f5d-e629-4727-afb2-6d11fae91f71?textBlockId=64c6694d-824c-4e98-b2a6-c4928b51554e&page=10>.

The 2022 India-UAE CEPA takes a more moderate approach to digital development and does not contain a digital inclusion article like other agreements. However, it does incorporate relevant provisions on Open Data (Art 9.12) and Digital Government (Art 9.13).¹⁴⁵ Article 9.13 states,

[The] Parties shall endeavour to develop and implement programs to digitally transform their respective government operations and services, which may include:

(a) adopting open and inclusive government processes focusing on accessibility, transparency, and accountability in a manner that promotes digital inclusion and overcomes digital divides . . .

(c) shaping government processes, services and policies with digital inclusivity in mind.¹⁴⁶

The 2023 NZ-UK FTA contains digital inclusion language similar to Article 11(1) of the DEPA and Article 8.61-P of the UK-Singapore DEA, with some important differences. In particular, the New Zealand-UK FTA incorporates aspects of New Zealand's approach on integrating the needs of Indigenous communities, as discussed above. The NZ-UK FTA's digital inclusion article includes language focused on SMEs and the digital divide, emphasizing the importance of addressing the needs of the Māori people.¹⁴⁷ Consistent with other RTAs, it focuses on coordination and consultation, here with the Māori and other vulnerable communities, including women, persons with disabilities, rural populations, and

¹⁴⁵ Burri and Kugler, *supra* note 5. India-UAE CEPA, *supra* note 86.

¹⁴⁶ *Id.* Art. 9.13.

¹⁴⁷ New Zealand-UK FTA, *supra* note 84 at Art. 15.20.

low socio-economic groups.¹⁴⁸ The agreement calls for development of “tailored approaches” to facilitating digital trade, which should be “developed in consultation with Māori, enterprises, individuals, and other groups that disproportionately face such barriers,”¹⁴⁹ emphasizing engagement in the rulemaking process.¹⁵⁰ It also incorporates provisions on cooperation to address the digital divide and promote business development services for SMEs, integrating small businesses.¹⁵¹ However, in contrast to the UK-Singapore FTA, while the NZ-UK FTA includes decent work provisions among its labor provisions,¹⁵² it does not reference decent work in a digital context. Sustainable development is also generally referenced in the preamble and the chapter on Trade and Development (Chapter 27), as well as in more specific contexts throughout the agreement,¹⁵³ but it is not explicitly integrated in the agreement’s digital provisions.

The Partnership Agreement between the EU and Members of the OACPS,¹⁵⁴ also known as the Post-Cotonou Agreement or the Samoa Agreement, also emphasizes the needs of MSMEs, women, and youth. While it uses terminology that differs from other agreements, it highlights digital infrastructure and cooperation to address the digital divide, noting the importance of improving

¹⁴⁸ *Id.*, at Art. 15.17; Art 15.20.

¹⁴⁹ *Id.* at Art. 15.20 (1).

¹⁵⁰ See Kuhlmann 2021, *supra* note 17.

¹⁵¹ New Zealand-UK FTA, *supra* note 84 at Art. 15.20.

¹⁵² *Id.* at Art. 23.5; Art. 23.7

¹⁵³ *Id.* at Preamble; Article 27.1 (1).

¹⁵⁴ EU-OACPS Partnership Agreement, *supra* note 27.

access to digital technologies, including information and communication technology (ICT) adapted to local circumstances.¹⁵⁵ Notably, the Partnership Agreement’s provisions also integrate the “use of affordable and renewable energy sources and the development and redeployment of low-cost wireless networks” in the context of ICT, as well as complementarity in ICT systems.¹⁵⁶ The agreement contains cooperation provisions on data privacy and protection, highlighting the importance of a regulatory framework “to promote the production, sale and delivery of digital products and services.”¹⁵⁷ Sustainable development is interwoven in the agreement’s provisions throughout, including in the preamble, which recognizes the link between digital tools and sustainable development,¹⁵⁸ and Article 14 of Title IV on Industrialization, which draws a connection between digital transformation and “climate-smart and environmentally-friendly practices.”¹⁵⁹ This connection is one of the more explicit links between sustainable development and the digital economy across RTAs, and it could be a precedent for addressing these issues more concretely in future agreements.

The recently concluded AfCFTA Digital Trade Protocol contains relatively expansive provisions on development in a digital context,¹⁶⁰ going beyond other

¹⁵⁵ *Id.* at Art. 48 (1).

¹⁵⁶ *Ibid.*

¹⁵⁷ EU-OACPS Partnership Agreement, *supra* note 27, at Art. 48 (4).

¹⁵⁸ *Id.* at page en15.

¹⁵⁹ *Id.* at Ch. 1 Art. 14 (3).

¹⁶⁰ Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, February 9, 2024, available at https://www.bilaterals.org/IMG/pdf/afcfta_digital_trade_protocol_-_9_february_2024_draft.pdf.

agreement models. While the link with sustainability is still largely absent, the AfCFTA Digital Trade Protocol explicitly connects digital trade and sustainable and inclusive economic growth in its preamble, which also references digital inclusion.¹⁶¹ This emphasis on sustainable and inclusive growth in the digital economy is not typical in other digital trade instruments.

The AfCFTA notably contains provisions on digital infrastructure and last-mile delivery (Art. 11), perhaps signaling a way of addressing digital divide issues in a concrete way, as well as an article on Personal Data Protection (Art. 21), which requires signatories to uphold a legal framework that ensures the protection and safeguarding of individuals' personal data.¹⁶² Digital inclusion is a prominent feature of the agreement, with Part IV of the agreement devoted to digital inclusion. Part VI covers Digital Inclusion (Art. 30), Micro, Small, and Medium-Sized Enterprises (Art. 31); Digital Innovation and Entrepreneurship (Art. 32); and Digital Skills Development (Art. 33).¹⁶³

Article 30 on Digital Inclusion is significantly more detailed than digital inclusion provisions in earlier trade agreements:

State Parties shall promote and facilitate the inclusion and participation of women, youth, indigenous peoples, rural and local communities,

¹⁶¹ *Ibid.* The Preamble to the AfCFTA Digital Trade Protocol states: “DETERMINED to ensure the inclusion of all peoples and businesses, including micro, small and medium-sized enterprises, rural and local communities, indigenous peoples, women, youth, persons with disabilities and other underrepresented groups in digital trade,” AfCFTA Digital Trade Protocol, *supra* note 83.

¹⁶² *Id.*, Art. 21.

¹⁶³ *Id.*, Art. 30; *Id.*, Art. 31; *Id.*, Art. 32; *Id.*, Art. 33.

persons with disabilities, and other underrepresented groups in digital trade through, among others:

- (a) promoting access to information and communications technologies;
- (b) improving cross-border connectivity and interoperability;
- (c) providing accessible, affordable, safe, and reliable internet;
- (d) sharing experiences and best practices, including the exchange of experts, with respect to digital inclusion;
- (e) identifying and addressing barriers to accessing digital trade opportunities;
- (f) sharing methods and procedures for developing datasets and conducting analysis in relation to their participation in digital trade;
- (g) participating in regional and multilateral fora to promote digital inclusion; and
- (h) improving digital skills, digital literacy, and access to online business tools.¹⁶⁴

Article 30 begins with participation as an element of inclusion (with a fairly lengthy list of stakeholders), going on to integrate aspects such as ICT; cross-border connectivity; and “accessible, affordable, safe, and reliable internet” that relate to addressing the digital divide and building digital infrastructure.¹⁶⁵ It also incorporates digital skills development and cooperation, including at the regional and multilateral levels.¹⁶⁶

Article 31(g) of the AfCFTA Digital Trade Protocol on MSMEs encourages the granting of credit, loans, or grants on preferential terms for financing MSMEs

¹⁶⁴ *Id.* at Part VI, Art. 30.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

in digital trade, linking access to credit with digital inclusion as some countries have done at the national level.¹⁶⁷ Article 32 on Digital Innovation and Entrepreneurship also covers access to finance.¹⁶⁸ As the final provision in Part IV, Article 33 on Digital Skills Development incorporates a provision (Art. 33(c)) on encouraging diversity and inclusivity in digital skills development programs and policies.¹⁶⁹

The AfCFTA Digital Trade Protocol contains additional provisions that are missing from other digital trade rules. As one example, Article 42 includes S&DT provisions, recognizing the different levels of development among the AfCFTA state parties and highlighting the importance of technical assistance and capacity building.¹⁷⁰ Article 4 affirms the state parties' right to regulate, which notes sustainable development among the regulatory objectives, even though it is not clear how this provision will be interpreted and enforced.¹⁷¹ This follows a broader trend in AfCFTA legal instruments to strengthen the right to regulate. The provisions on data localization focus on the “development of local digital infrastructure,”¹⁷² which is a departure from other data localization provisions and reflects African national and continental priorities. The AfCFTA Digital Trade

¹⁶⁷ *Id.* at Part VI, Art. 31.

¹⁶⁸ *Id.* at Part VI, Art. 32.

¹⁶⁹ *Id.* at Part VI, Art. 33.

¹⁷⁰ *Id.* at Art. 42.

¹⁷¹ See Simon Lester, *The AfCFTA Digital Trade Protocol*, INTERNATIONAL ECONOMIC LAW AND POLICY BLOG, February 22, 2024, available at, [HTTPS://IELP.WORLDTRADELAW.NET/2024/02/AFCFATA-DIGITAL-TRADE-PROTOCOL.HTML](https://ielp.worldtradelaw.net/2024/02/afcfata-digital-trade-protocol.html)

¹⁷² AfCFTA Digital Trade Protocol, *supra* note 83, Art. 22.

Protocol includes multiple cooperation provisions, not just in Part IV but also more generally in Article 43, which again references digital inclusion.¹⁷³ The AfCFTA Digital Trade Protocol's provisions also reference the ethical use of emerging and advanced technologies,¹⁷⁴ which could perhaps pave the way for deeper protections on AI in the future.

The AfCFTA State Parties adopted the AfCFTA Digital Trade Protocol in 2024,¹⁷⁵ and its eight annexes were adopted in February 2025. While the annexes do not include digital inclusion, underscoring the soft nature of these provisions, they would cover other areas important to sustainable economic and social development.

Table One summarizes development-focused RTA provisions, principles, and features. In addition to the agreements noted, new legal instruments, such as the Second Protocol to the ASEAN-Australia-New Zealand Free Trade Area, which is not yet in effect, also incorporate digital inclusion. Other RTA provisions relate to sustainable economic and social development as well, such as Article 1801 in the Canada-Colombia RTA on recognizing the role of women in digital trade¹⁷⁶ and a

¹⁷³ *Id.*, Art. 43.

¹⁷⁴ *Id.*, Art. 34.

¹⁷⁵ See Kholofelo Kugler, *AfCFTA's Digital Trade Protocol: What You Need to Know*, Int'l Inst. for Sustainable Dev. (Oct. 30, 2024), <https://www.iisd.org/articles/policy-analysis/afcfta-digital-protocol>.

¹⁷⁶ See Kuhlmann UN 2023, *supra* note 61.

number of commitments on maintaining the Moratorium on Customs Duties on Electronic Transmissions.

TABLE ONE: Development-Focused Digital Provisions in RTAs¹⁷⁷

RTA	Key Areas Covered	Notable Features
DEPA (2021)	Digital Inclusion; SME Capacity Building; AI Accountability.	DEPA's provisions are largely broad and aspirational but set an important precedent that other countries have followed.
Chile-Paraguay FTA (2021)	Digital Inclusion.	Largely follows DEPA model.
UK-Singapore DEA (2022)	Digital Inclusion; Addressing Digital Divide; Decent Work in the Digital Economy; Cooperation.	Standalone digital inclusion article that goes beyond the DEPA; notable inclusion of decent work in digital context.
India-UAE CEPA (2022)	No separate provision or article on digital inclusion; digital inclusion and addressing digital divide incorporated into Digital Government provision.	Digital inclusion and digital divide addressed under digital government provision, which is a narrower approach.
New Zealand-UK FTA (2023)	Digital Inclusion; Cooperation; Measures to Address Digital Divide; Role of SMEs.	More expansive digital inclusion provisions, with particular focus on Māori; references to sustainable development throughout agreement but not in digital context.
EU-OACPS Partnership Agreement (2024)	Digital Infrastructure; Cooperation to Address the Digital Divide; Improved Access to Digital Technologies and	Digital provisions incorporate areas relevant to digital inclusion (addressing digital divide, digital entrepreneurship, access to finance) but do not explicitly

¹⁷⁷ Katrin Kuhlmann *Inclusive and Sustainable Development in Regulation of the Digital Economy: A Comparative and Contextual Analysis*, in *TRADE 4.0: LAW FOR THE DATA-DRIVEN ECONOMY*, xx, 11 (Cambridge University Press, Mira Burri and Anupam Chander, eds., forthcoming)

	ICT; Digital Entrepreneurship; Data Privacy; Access to Finance.	refer to digital inclusion; broad link between sustainability and digital infrastructure in industrialization provisions.
AfCFTA Digital Trade Protocol (2024)	Digital Inclusion (Part IV); Digital Divide, Access to Finance; Cooperation; MSME Skill Development; Special & Differential Treatment; Right to Regulate.	Expansive digital inclusion provisions (entire section of agreement); also incorporates S&DT; provisions largely aspirational with no additional instruments (annexes).

Despite the innovations summarized above, it is important to keep in mind that critical gaps persist. For example, trade agreements do not yet address data sharing, algorithmic decision making, censorship, and disinformation,¹⁷⁸ among other things such as sustainability in the digital economy. These are also gaps in domestic law.

Without stronger legal protections at the domestic and international levels, AI systems pose disproportionate risk and harm to many, undermining the efficacy of the technology.¹⁷⁹ As is true in other areas, those most affected do not have active

¹⁷⁸ Burri, *supra* note 1 at 114-15. *See also*, Susan A. Aaronson, *The Difficult Past and Troubled Future of Digital Protectionism*, in ADDRESSING IMPEDIMENTS TO DIGITAL TRADE (Ingo Borchert & L. Alan Winters eds., 2021). *See also*, Svetlana Yakovleva & Joris van Hoboken, *The Algorithmic Learning Deficit: Artificial Intelligence, Data Protection and Trade*, in BIG DATA AND GLOBAL TRADE LAW Cambridge University Press, 2021.

¹⁷⁹ *See* Effoduh, Akpudo, & Kong, *supra* note 16, at e-34-4. *See also* GPAI 2023. *Towards Real Diversity and Gender Equality in Artificial Intelligence: Advancement Report*, November 2023, Global Partnership on AI, at 4. For example, AI systems narrow employment opportunities, undermine housing equality, reinforce fabricated categorizations, and engage in mass surveillance systems.

agency in negotiations.¹⁸⁰ Few RTAs explicitly addresses ethical AI, although broad provisions in this area are beginning to appear. For example, the DEPA includes provisions that specifically refer to the importance of developing ethical governance frameworks for the trusted, safe and responsible use of AI technologies, as do the Australia-Singapore DEA and UK-Singapore DEA, which build upon the DEPA.¹⁸¹ The Australia-Singapore DA refers to the adoption “of frameworks that support the trusted, safe, and responsible use of AI technologies.”¹⁸² The AfCFTA Digital Trade Protocol also includes among its objectives “encourage[ing] trusted, safe, ethical, and responsible adoption and regulation of the use of emerging and advanced technologies to support and promote digital trade.”¹⁸³ These provisions are a start, but they are broad and largely unenforceable, highlighting an area for future focus.

Finally, it is important to note that further legal innovation in the digital space will not take place either only at the micro level or the macro level. Micro and macro approaches, and everything in between, will be needed to strengthen digital rules and promote economic and social development through digital trade. Anupam Chander writes of the importance of “glocalization” in a legal context, or

¹⁸⁰ *Id.* See also, Aman Arora, Michael Barrett, Eunhee Lee, Eivor Oborn & Kira Prince, *Risk and the Future of AI: Algorithmic Bias, Data Colonialism, and Marginalization*, 33 INFO. & ORG. 100478 (2023), <https://doi.org/10.1016/j.infoandorg.2023.100478>.

¹⁸¹ See Article 31 of the Australia-Singapore Digital Economy Agreement, Article 8.2 of the DEPA, and Article 8.61-R of the UK-Singapore DEA.

¹⁸² Australia-Singapore Digital Economy Agreement, Article 31.

¹⁸³ AfCFTA Digital Trade Protocol, Article 2.

maintaining local, customized legal approaches to governing technology “within the bounds of international law.”¹⁸⁴ The micro international law approach discussed and initially applied in a digital regulation context in this paper proposes a way of studying and cataloguing legal approaches at both the micro and macro levels and understanding the circular relationship between them as legal instruments evolve.

IV. CONCLUSION

The growing incorporation of development-focused digital provisions in domestic law and trade agreements represents a crucial step toward fostering a more rights-based and sustainable digital economy. Comparative assessment shows that innovative approaches are appearing at the micro, meso (regional), and macro levels of digital regulation, which are designed to address important social and economic development considerations. However, significant gaps remain.

At the domestic, or “micro” level, legal innovations provide valuable lessons for international digital governance. A number of jurisdictions have approached data privacy in the context of human rights, an innovation that could more fully extend into trade agreements as well. New, rights-based approaches are also starting to emerge on AI, although these will require much greater focus. Other examples, such as New Zealand, Ghana, and Estonia, demonstrate how bottom-up regulatory approaches can innovatively address the needs of communities and small

¹⁸⁴ Anupam Chander, *THE ELECTRONIC SILK ROAD*, Yale University Press (2013) at 169.

enterprises. Some of these micro-level legal advancements have already influenced the design of trade agreements and other instruments. Overall, however, domestic and regional protections tend to overlook important legal and procedural dimensions. Moving forward, international frameworks should better integrate tailored, granular practices to create a more comprehensive and responsive digital trade ecosystem.

At a more “macro” (or “meso”) level, regional agreements such as the DEPA, the New Zealand-UK Free Trade Agreement, and the AfCFTA Digital Trade Protocol have introduced promising provisions on sustainable and inclusive digital regulation. However, these provisions remain largely aspirational and lack enforceability, particularly in comparison to other sustainable development provisions in trade agreements, such as labor and environmental standards. While these collaborative approaches are a good start, more robust commitments, particularly regarding digital infrastructure, financial inclusion, and governance of AI and other emerging technologies, could help ensure that digital trade benefits all stakeholders around the world.

Despite the emergence of promising legal models, quite a few challenges persist. One is the emergence of AI and concerns with its governance, particularly relating to data privacy, human rights, and the ethical use of AI. Future rules and agreements should more deeply explore how digital trade rules could better incorporate human rights protections, ensure regulatory flexibility for developing

economies, and promote stakeholder participation in digital rulemaking. Further, digital sustainability policies that take into account the environmental impact of the digital economy remain an underdeveloped aspect of trade law that require greater attention.

Development in the digital economy will ultimately require a blended approach that combines micro-level legal insights and macro-level agreements and frameworks. Empirical research, particularly studies on the efficacy of domestic and sub-national legal approaches and the influence of dominant models and their impact on customized, local approaches to rulemaking should guide the development of future digital trade rules. Addressing development considerations in the digital economy will not only depend upon regulatory innovation but also a commitment to translating broad policy aspirations into actionable, enforceable rights and commitments at all levels of governance.