A dialogue on trade and development in South Asia
Vol. 20, No. 3-4, 2024

TRADE insight

DIGITAL ECONOMY'S FOOTPRINT

E-COMMERCE | CHINA IN SOUTH ASIA | PUBLIC DEBT

A dialogue on trade and development in South Asia Vol. 20, No. 3-4, 2024

TRADE insight

editors' note

A new frontier

South Asian countries lag behind Southeast Asian countries in participation in global value chains. Further, intra-regional trade in South Asia as a percentage of total international trade is low relative to that in most other regions. Meanwhile, the phenomenon of digitalization is transforming and adding a new vista of opportunities to global supply chains. For South Asia to not miss out on the benefits of convergence of digitalization and cross-border supply chains, a strategic vision and an ecosystem approach are prerequisites.

Digital transformation is happening against the backdrop of global environmental crises, such as pollution, climate change and biodiversity loss. While digital technologies are important tools to address these challenges, such technologies have the potential of leaving—and are already leaving—a deep and detrimental environmental footprint. Developing and least developed countries are disproportionately affected by the negative environmental impacts of digitalization just as they bear outsized effects of climate change despite historically contributing the least to global warming. The principle of common but differentiated responsibilities and respective capabilities assumes increased salience in this context.

Global digital trade is growing rapidly. In particular, trade in digitally deliverable services has seen phenomenal expansion. South Asia has immense potential to harness the benefits of digital trade by taking coordinated and strategic actions. Among the actions that could serve to boost digital exports are expanding digital infrastructure, improving affordable and equitable access to bridge the digital divide, enhancing digital literacy and skills, developing and strengthening regional digital payment systems by building on bilateral payment systems, improving cybersecurity through a regional taskforce and harmonizing data protection laws to ensure secure and trusted digital trade. South Asia must be ever alert to new opportunities for integrating new technologies such as artificial intelligence, cloud computing and blockchain into their digitally deliverable services exports.

Plurilateral negotiatons under the World Trade Organization (WTO) Joint Statement Initiative (JSI) on e-commerce has yielded a Stabilized Text. Regardless of whether they agree to the agreement or not, it is in the interest of South Asian countries to examine their regulatory frameworks to identify gaps in relation to the agreement's provisions. This will help them better understand the possible implications of the potential plurilateral agreement and advance their interests.

China is a major economic partner for most South Asian countries. Trade and investment are the bedrock of their ties with China, although the potential is largely untapped. South Asia, including India, is already using and benefiting from Chinese technologies, including digital technologies and those embodied in capital goods. The South Asian Association for Regional Cooperation (SAARC) is an apt forum for South Asia to engage as a region with China, which is an Observer at SAARC, to leverage Chinese expertise and resources, including in emerging technologies, for the collective benefit of the region. Recent visible improvements in Sino-Indian ties, coupled with renewed emphasis on reinvigorating SAARC coming from governments within the region, are meaningful. ■

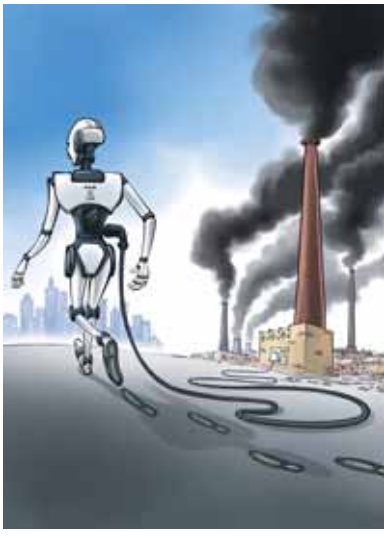
PUBLISHED BY
South Asia Watch on Trade, Economics and Environment (SAWTEE)

sawtee

P.O. Box: 19366
Tukucha Marg
Baluwatar, Kathmandu, Nepal
Tel: +977-1-4524360/4544438
Fax: +977-1-4544570
E-mail: sawtee@sawtee.org
Web: www.sawtee.org

Regd. No. 208/070/071 (Kathmandu)

Content



MEMBER INSTITUTIONS OF SAWTEE
BANGLADESH 1. Bangladesh Environmental Lawyers' Association (BELA), Dhaka; 2. Unnayan Shamannay, Dhaka; INDIA 1. Citizen consumer and civic Action Group (CAG), Chennai; 2. Consumer Unity & Trust Society (CUTS), Jaipur; 3. Development Research and Action Group (DRAG), New Delhi; NEPAL 1. Society for Legal and Environmental Analysis and Development Research (LEADERS), Kathmandu; 2. Forum for Protection of Public Interest (Pro Public), Kathmandu; PAKISTAN 1. Journalists for Democracy and Human Rights (JDHR), Islamabad; 2. Sustainable Development Policy Institute (SDPI), Islamabad; SRI LANKA 1. Institute of Policy Studies (IPS), Colombo; 2. Law & Society Trust (LST), Colombo

China targets European firms in anti-subsidy probe into EU dairy

China on 14 October singled out Dutch firm FrieslandCampina as well as French and Italian companies in an anti-subsidy probe into dairy imports from the European Union, after lawmakers from these countries voted for tariffs on Chinese electric vehicles.

China launched the investigation into imports of some cheese, milk and cream from the European Union in August.

Details of the probe come after EU members on 4 October voted in favour of imposing tariffs of up to 45 percent on imported Chinese EVs.

Italy, France, and the Netherlands had voted in favour of the tariffs, while Belgium had abstained.

China's commerce ministry said it would use samples collected from Elvi (France) Co., Ltd. (ELVIR), FrieslandCampina Nederland B.V., FrieslandCampina Belgium N.V. as well as Italian firm Sterilgarda Alimenti SPA in its investigation.

The companies were selected based on export volume, product structure and geographical distribution, the ministry said in a statement.

Free Malaysia Today

The European Commission has launched a challenge at the World Trade Organization (WTO) against China's probe, the first time it has taken such action at the start of an investigation, rather than wait for it to result in trade measures against the bloc.

The EU was China's second-largest source of dairy products, behind only New Zealand, according to Chinese customs data.

The bloc exported €1.7 billion (US$1.84 billion) in dairy products to China in 2023, according to data from the European Commission's Directorate-General for Agriculture and Rural Development, which cited Eurostat. *(https://www.reuters.com/, 17.10.2024)* ■

China announces zero duty on all goods from LDCs

CHINA has announced that it will grant duty-free access to all goods imported from least developed countries (LDCs) with which it has diplomatic relations. The United Nations lists 45 countries, including Nepal, as LDCs. Although Nepal is currently classified as an LDC, it is set to transition to developing country status after 2026.

China declared that this benefit will apply to all LDCs, including 33 African nations, during the recent China-Africa Summit. China claims to be the first major developing country to make such a decision. Previously, in 2022, China had announced zero customs duty on 98 percent of goods from 16 underdeveloped countries, including Nepal. Under this policy, more than 8,000 items exported from Nepal to China are exempt from customs duties.

However, government officials and exporters from Nepal have pointed out that non-tariff barriers remain a significant challenge for exports to China.

According to data from the Trade and Export Promotion Centre, Nepal exported goods worth NPR 2.59 billion to China in the last fiscal year 2023/24. Imports from China, however, totalled over NPR 298 billion. *(https://newbusinessage.com/, 15.9.2024)* ■

Interim govt of Bangladesh approves decision to import 40 MW of electricity from Nepal

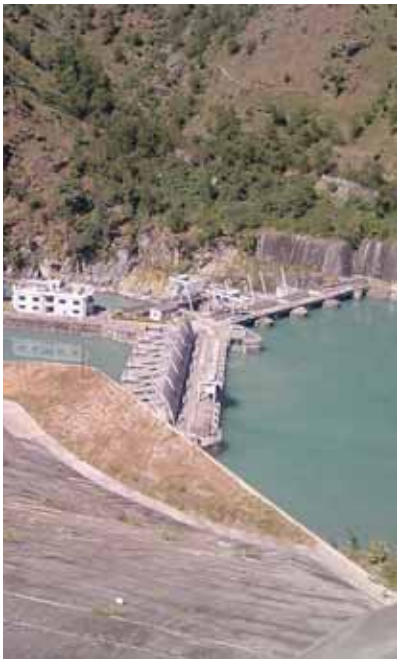
THE Interim Government of Bangladesh has approved the initiative to import 40 MW of hydropower from Nepal.

Power, Energy and Mineral Resources Adviser Mr. Muhammad Fouzul Kabir Khan approved the import of 40 megawatts of hydropower from Nepal to Bangladesh on 16 September. According to the media of Bangladesh, the Finance Division has objected to the transmission line charges imposed by the Indian government on the import of electricity.

Sources also revealed that a tripartite agreement is needed to import electricity from Nepal and could pave the way for a new era of energy cooperation.

The tripartite agreement was earlier expected to be signed this September.

The price of electricity to be delivered to Bangladesh through the Dhalkebar-Muzaffarpur substation in India has been set at NPR 7.32 per unit. Additionally, the cost per unit, including the trading margin



Wikimedia Commons/Krishna Dulal

of India's NTPC Vidyut Vyapar Nigam Limited (NVVN) and transmission line charges, has been fixed at NPR 8.17. *(https://myrepublica.nagariknetwork.com/ 16/09/2024)* ■

Tax on exports, restrictions 'hurting' Pak-Afghan trade

LOCAL traders have said the imposition of a new tax on trade through Khyber Pakhtunkhwa (KP) and other restrictions were hurting Pakistan's bilateral trade with Afghanistan and Central Asian states.

The 2 percent infrastructure development cess (IDC) on trade through KP has impeded the growth of bilateral trade, according to a statement by the Pakistan-Afghanistan Joint Chamber of Commerce and Industry (PAJCCI).

The levy, imposed by the KP government earlier this year, has resulted in a "double taxation burden" on traders who now have to pay taxes on their imports in Karachi and Peshawar. This created a "competitive disadvantage" for KP-based businesses.

Inconsistent cess policies across provinces have resulted in legal challenges and conflicts with the Afghanistan-Pakistan Transit Trade Agreement. *(https://www.dawn.com/, 17.11.2024)* ■

India lifts curbs on rice exports, removes floor price for non-basmati grain

LIFTING all curbs on rice exports, the Indian government on 22 October removed the floor price for non-basmati rice shipments and exempted parboiled and husked (brown) rice from export duty. The government has removed the minimum export price (MEP) of US$490 per tonne on overseas shipments of non-basmati white rice and has exempted parboiled rice and husked (brown) rice from export duty.

On 28 September, the government withdrew a blanket ban on overseas shipments of non-basmati white rice and imposed the floor price.

"The requirement of MEP for the export of non-basmati white rice has been lifted with immediate effect," the Directorate General of Foreign Trade (DGFT) said in a notification.

The government has also exempted parboiled rice and husked (brown) rice from export duty.

Export duty has been reduced from 10 percent to nil on parboiled rice, husked (brown) rice and rice in the husk (paddy or rough), said a late-night notification issued by the finance ministry on 21 October. *(https://economictimes.indiatimes.com/, 23.10.2024)* ■

Current climate pledges by nations 'miles short' of 2030 goal, UN body says

THE world's current climate pledges would only cut emissions by 2.6 percent by 2030, says the UN Framework Convention on Climate Change (UNFCC).

National pledges to cut greenhouse gas emissions fall significantly short of those needed to limit catastrophic global warming, says the United Nations before climate change negotiations in November.

The "Nationally Determined Contributions" (NDCs) are enough to cut global emissions by 2.6 percent from 2019 to 2030, up from two percent last year, the UNFCCC said in its annual assessment on 28 October.

But they hardly equate the 43 percent cut that scientists say is required to stay within reach of a Paris Agreement target to limit global temperature rises to 1.5 degrees Celsius, the body warned, referring to the 2015 global agreement to cut greenhouse gas emissions.

As part of their Paris obligations, nations must deliver new and stronger NDCs before a deadline in February next year, and the report's findings should mark a "turning point", according to UNFCCC.

The forum for conjuring up more ambitious pledges will be the COP29 climate talks beginning in two weeks in the Azerbaijani capital of Baku. Nearly 200 countries will devise a new global emissions trading system as well as a US$100 billion annual financial package to help developing countries meet their climate goals. *(https://www.aljazeera.com/, 28.10.2024)* ■

Trump promises 25% tariff on Mexico and Canada, extra 10% tariff on China

Business World

UNITED States President-elect Donald Trump has pledged to slap a 25 percent tariff on all goods from Mexico and Canada and an "additional" 10 percent tariff on Chinese products in response to irregular border crossings and drug trafficking.

In a post on his social media platform Truth Social, Trump said he would impose tariffs on Mexican and Canadian imports on day one of his administration and that the measures would remain until the "invasion" of undocumented migrants and drugs came to an end.

Trump said in a subsequent post that he would also impose a 10 percent tariff on China, "above any additional tariffs", until the country took action to stop fentanyl smuggling.

It was not immediately clear if Trump's proposed tariffs would be in addition to, or instead of, the tariffs he proposed on the campaign trail.

During his election campaign, Trump said he would impose tariffs of 60 percent or more on imports of Chinese goods and suggested he could impose a tariff of 1,000 percent or higher on vehicles imported from Mexico.

China's embassy in Washington, D.C. said that "no one" would win a trade war between the sides.

If implemented, the president-elect's proposed tariffs on Mexico and Canada, in particular, would raise questions about the future of the US-Mexico-Canada Agreement (USMCA), a free trade deal signed by Trump that largely maintained the provisions of the pre-existing North American Free Trade Agreement (NAFTA).

China, Mexico and Canada are the US's three biggest trading partners.

The countries accounted for US$ 830 billion of US exports and US$1.43 trillion of US imports, respectively, in 2022, according to the Office of the US Trade Representative. *(https://www.aljazeera.com/, 26.11.2024)* ■

Nepal's Goldstar shoes on the brink as India tightens import rules

OVER 100 trucks of Goldstar shoes failed to get export clearance after India refused to issue the Bureau of Indian Standards certificate, putting Nepal's homegrown shoemaker on the brink.

Exports have stopped for the past 25 days without any formal notification.

The Bureau of Indian Standards (BIS), launched two years ago and strictly implemented in the last two months, issues the mandatory certification for products to be imported into and sold in India. The BIS certification assures that the products comply with Indian standards.

The company has been exporting 60 percent of its production to India.

Insiders say the Chinese factor could have influenced the southern neighbour's harsh treatment of the Nepali manufacturer. The company has been sourcing raw materials mainly from China, India, and Taiwan.

India does not buy power from Nepal-based hydropower projects that have any kind of Chinese involvement. Likewise, it has not granted permits for a Nepal-China joint venture airline to land in New Delhi. The southern neighbour has denied permission for Nepali airlines to connect Indian cities via the new international airport in Pokhara built by China.

India has also prevented the import of cement produced by Nepal-China joint venture companies.

Insiders from Nepal's private sector trade body said India also stopped Bangladeshi goods citing the BIS certification requirement. When Bangladesh threatened a reciprocal action, India promptly issued the BIS certificate.

Trade experts have said that Nepal is facing trade issues with India due to its weak negotiation skills, frequent changes in the bureaucracy, and lack of study and data. *(https://kathmandupost.com/, 8.10.2024)* ■

Beijing opens door for Nepali orthodox tea

A few tea enterprises, including orthodox producer Gorkha Tea Estate in Ilam, have registered their products for export with the General Administration of Customs of China.

Nepali entrepreneurs have started exporting tea to the northern neighbour after Beijing started easing import procedures for Nepali tea at Nepal's persistent request.

Exporters say that tea, particularly orthodox and specialty, may find an assured market in China in terms of rates and there could be a bulk consignment going to the north.

Traditionally, Nepali tea is exported to India.

Tea is among the more than 8,000 products from Nepal and other least developed countries that enjoy zero tariffs in China.

For the past two years, Chinese buyers have been frequently visiting Nepali tea gardens, particularly in Ilam.

China can be a big market for Nepali tea in the future and help break India's monopoly, traders hope. *(https://kathmandupost.com/, 06/12/2024)* ■

Pakistan becomes gateway for China-UAE trade under TIR system

MARKING a significant milestone, the National Logistics Corporation (NLC) has formally commenced the transportation of commercial products from China to the United Arab Emirates (UAE) via Pakistan's land-sea route under the international road transport (TIR) system.

This breakthrough represents a turning point in the China-Pakistan Economic Corridor (CPEC) initiative, providing a shorter and more efficient route for transporting goods from China to the Gulf countries.

The goods will be transported from Kashgar to Karachi by NLC trucks in just eight days. From Karachi, the container will be shipped to Jebel Ali Port by sea, taking an additional two days. Thus, the entire journey from Xinjiang, China, to the UAE will take a mere 10 days, significantly faster than the approximately one-month duration via sea alone.

This new China-to-UAE trade route through Pakistan offers substantial benefits for the business community.

The Khunjerab Pass, which serves as a strategic gateway for trade between Europe and South Asia, earlier facilitated bilateral trade, including imports of textiles, agricultural products, and essential commodities, as well as exports of herbs and plants.

The business volume is expected to grow, with the annual transportation estimated to exceed 1,000 vehicle trips.

(https://www.thenews.com.pk/, 29.12.2024) ■

Leveraging carbon markets for development

Carbon markets are considered to be one of the ways to help least developed countries (LDCs) to bridge the divides between economic growth and climate action, between deep pools of private capital in developed countries and unmet financing needs in LDCs and between structural transformation and nature conservation.

UN Trade and Development (UNCTAD)'s *The Least Developed Countries Report 2024: Leveraging Carbon Markets for Development* examines the opportunities and challenges LDCs face within the evolving carbon market landscape, and the potential of carbon markets to mobilize capital flows and serve as catalysts for sustainable development in LDCs.

Carbon markets are entering a new phase, even as climate negotiators are finalizing the detailed rules for those markets under Article 6 of the Paris Agreement. Meanwhile, amid criticisms of greenwashing, initiatives are emerging to strengthen the integrity and quality of carbon credits and related corporate claims in voluntary carbon markets.

The global carbon market is fragmented and includes both private and public actors. On the one hand, carbon trading is a feature of the global climate regime under the Paris Agreement. On the other hand, private companies are tapping into voluntary carbon markets to offset parts of their own emissions and substantiate their claims of being climate-friendly. LDCs are also participating in various carbon markets and have plans to expand their engagement.

From its beginnings in the early 2000s to 2021, the voluntary carbon market witnessed rapid growth. In 2021, issuances peaked at 362 megatons of carbon dioxide (CO2)-equivalent, after which they dropped to reach 308 megatons of CO2-equivalent in 2023. Volumes of carbon credits used to offset environmental impacts peaked in 2022, at 183 megatons of CO2-equivalent, before dropping to 174 megatons of CO2-equivalent in 2023.

Claims of corporate greenwashing and criticism of the integrity of carbon credits contributed to the fall in demand and prices that year. Ultimately, carbon credits derive their value from the trust of buyers in their underlying projects—a trust that is based on the credibility and robustness of certification standards.

Carbon market activities are highly concentrated within the LDC group. As at May 2024, the six largest LDC host countries—Bangladesh, Cambodia, the Democratic Republic of the Congo, Malawi, Uganda and Zambia—jointly accounted for 75 percent of all carbon credits issued in the voluntary carbon market from LDC-hosted projects. Concentration of participation under the Clean Development Mechanism (which accepted new projects from 2001 to 2020) was even higher, with the six largest host countries—Bangladesh, Cambodia, Malawi, Myanmar, Nepal and Uganda—accounting for 80 percent of all credits from LDC-hosted projects.

Thus far, carbon markets have not unlocked substantial financial resources for LDCs compared to other external finance flows such as remittances, official development assistance and foreign direct investment. In 2023, the estimated market value of LDC-sourced carbon credits was US$403 million. This corresponds to about 1 percent of net bilateral official development assistance flows from traditional donors.

Carbon markets are a complex system, requiring a State to take a leading role in international cooperation and carbon trade. This involves the State's active participation in voluntary collaboration between countries, including in relation to internationally transferred mitigation outcomes (Article 6.2) and international carbon trading under the supervision of a global oversight body (Article 6.4). The State's involvement in voluntary cooperation also extends to non-market approaches, which are crucial for scaling up the implementation of mitigation and adaptation actions, and may include cooperative actions on finance, technology transfer and capacity-building among Parties to the Paris Agreement (Article 6.8).

Choosing whether to participate in a compliance carbon market or a voluntary carbon market is a complex decision, as it involves significant socioeconomic trade-offs. Compliance carbon markets are regulated by mandatory national, regional or international carbon reduction regimes that aim at reducing society's greenhouse gas emissions by means of legislation and regulations. On the other hand, voluntary carbon markets are governed by independent standards developed by non-governmental organizations and private sector institutions. ■

This is excerpted from "The least developed countries report 2024: Leveraging carbon markets for development", published by UNCTAD.

Digital Economy of China
New frontier for South Asia

Partnership between China and South Asia incorporating digital economy and infrastructure can bring in huge investments and technology transfer to the region.

Prajol Joshi

The digital economy, defined as a broad range of economic and social activities made possible by information and communications networks, has emerged as a fast-growing area within the global economy. Rapid advances in digital technologies have enabled this growth—for instance, the digital economy is estimated to capture 17 percent of the global GDP for 14 countries across North America, Europe, Asia-Pacific and Latin America[1] and about 70 percent of new value creation in the coming decade is estimated to be based on digitally-enabled platform business models.[2]

The digital economy is further estimated to grow as a result of high growth in supporting industries. One estimate done for 43 countries, representing almost three-quarters of global GDP, shows business e-commerce sales grew nearly 60 percent between 2016 and 2022, to reach US$27 trillion.[3] The annual shipments of smartphones have more than doubled between 2010 and 2013 with initial estimates putting the shipment volume at 1.2 billion in 2023. The value of global exports of digitally delivered services reached US$3.82 trillion in 2022, accounting for 12 percent of total goods and services exports.[4]

China's digital economy, the world's second largest, accounts for around 43 percent of its GDP[5], with nominal year-on-year growth of 10.3 percent in 2023.[6] One key driver for China's large digital economy is its domestic and global e-commerce business activities. With 710 million digital buyers and transactions totalling US$2.29 trillion in 2020, China's e-commerce market generates almost 50 percent of the world's total transactions alone.[7] China's dominance in 5G infrastructure is further going to support its digital economy expansion.

This article examines the opportunities that China's rapidly growing digital economy and emerging closer ties between China and South Asia present for South Asian nations and explores strategies these economies can adopt to effectively capitalize on the benefits of this expanding digital landscape.

Emerging China-South Asia ties

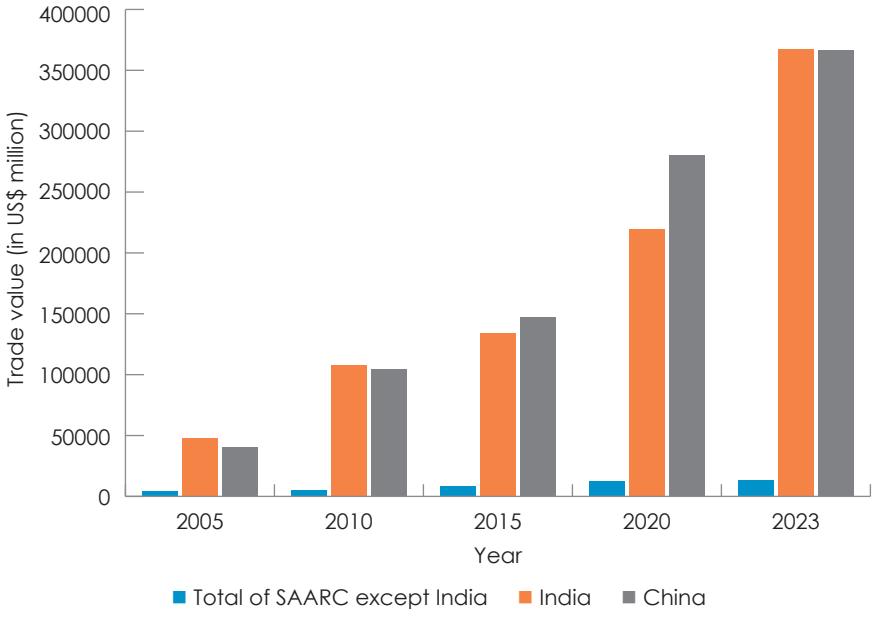
China has an important presence and influence in South Asia. China-India political dynamics have influenced the entire region making the relationship within the region far from homogeneous. Since the 1960s, India and China have had strained ties, with border disputes at the centre. Despite that, they share significant economic ties and are part of the same forums like BRICS. China has varying levels of relationship with each country in the region but is a major economic partner in almost all of them.

One important component of digital economy is digital trade which has grown substantially in recent decades and has become an integral part of global trade. Digital trade—digitally ordered and digitally delivered—represented approximately 25 percent of global trade in 2020.[8] In the last decade, global exports of digitally delivered services have grown much faster than exports of goods and other services. The total trade value of digitally delivered services in South Asian countries (SACs), with India contributing nearly 97 percent, has consistently grown over the past two decades (Figure, next page). Digital trade in the past few decades has grown substantially to become an important part of global trade. There are growing digital linkages of SACs with China as well, and with China going through rapid transformation, there is so much potential for the entire region to reap benefits out of this.

Catalyst for enhancing digital economy linkages

In the last decade, The Digital Silk Road (DSR)—a vital component of the Belt and Road Initiative (BRI)—has been a catalyst to spill some benefits of China's rapidly growing digital economy to many developing econ-

Figure **Total trade of digitally delivered services of China and South Asia**



Source: Author's calculation based on data from WTO database. Total trade refers to sum of import and export of digitally delivered services of each country

omies. The DSR offers necessary financing and other support to build the necessary infrastructure such as cellular networks and mobile payment platforms in order to facilitate China's trade with its partners.[9] Although exact data is not revealed, it is estimated that at least 40 countries including a few from SACs, which were aiming to benefit from a rapidly growing digital economy, have signed agreements with China for digital cooperation and digital infrastructure development.[10]

Bangladesh signed a Memorandum of Understanding (MoU) in 2015 to build an information and communication technology (ICT) infrastructure network which would bring Chinese loans and investments worth US$1.1 billion. Similarly, the Maldives has signed an MoU to develop ICT infrastructure under the SMART Maldives project worth US$184 million. Pakistan has signed an MoU where both countries agreed to partner in e-commerce and digital infrastructure projects including ICT developments in the China-Pakistan Economic Corridor worth US$2.73 billion. And Sri Lanka has also signed an MoU with China for projects to improve digital connectivity, reduce internet downtime and improve telecommunications worth US$300 million.[11]

Opportunities for South Asia

The rapid digital transformation and the emerging digital economy of China offer its neighbours in South Asia ample opportunities to grow. The key opportunity is increasing investments inflows from China to SACs. China's pursuit of global presence through DSR has changed investment dynamics in the region, with China pouring huge investments into the sector. Through DSR, developing economies and least developed countries are receiving growing volumes of investments for digital development, mostly in digital infrastructure. The total commitments made by China are close to US$23.1 billion and out of these, SACs have received commitment worth US$4.3 billion, 18.8 percent of total.[12]

China is emerging in the world market as an alternate supplier of advanced and sophisticated technologies. China, with its huge technological and financial capacity, has developed and been offering relatively cheap alternatives such as 5G networks, mobile payments technologies, e-commerce platforms and more. These have already penetrated South Asia, completely transforming the respective industries of SACs. The emerging digital economy offers an opportunity for countries to move to sectors with higher productivity. Digital trade offers more opportunities than challenges for SACs. Digitalization in cross-border trade helps developing countries overcome existing trade cost disadvantage and reach global markets to boost their international trade. An estimate puts that overall trade value in developing countries will increase by at least 2.5 percent per annum.[13]

China's innovative QR codes based mobile payment mechanisms such as Alipay and WeChat pay have eased cross-border payments, a key barrier to cross-border trade. These platforms have been expanding their reach to SACs. Recently, Nepal and Pakistan opened their economies to these platforms, easing cross-border payments and thus enhancing international trade. With these platforms, consumers can easily make cross-border payments, thus promoting economic and financial ties between the people of these countries.

The emerging digital economy through a growing e-commerce market can significantly reduce barriers to entry and provide direct access for domestic products from SACs to the large consumer market in China. Traditional intermediaries can be completely bypassed and thus, producers from South Asia can penetrate the market with much ease and in a cost-effective manner.

Strategies for South Asia

Economies are increasingly going digital, opening up opportunities. But countries still face significant barriers, hindering their ability to reap the full potential of an expanding digital economy. Almost all SACs, despite huge potential, fall in the category and the critical factors include inadequate

digital infrastructure, limited digital skills, a deficient regulatory environment and an inefficient payment system.[14] Financing problems, including increasing external debt burdens and inadequate budgets for public investments, have exacerbated some of these barriers.

A vibrant digital economy requires advanced and reliable ICT infrastructure to ensure seamless digital connectivity. Key components include fibre-optic networks and advanced wireless mobile telecommunication technologies, which facilitate the rapid and reliable transmission of information with minimal data loss. However, data indicates that SACs, including India, lag behind China in infrastructure, affordability, and consumer readiness. To address these gaps, substantial public and private investments are necessary to upgrade the region's ICT infrastructure. Participation in China's Digital Silk Road initiative presents a significant opportunity for SACs to leverage larger Chinese investments. Nonetheless, governments in SACs must enhance their bargaining power and strategically select the projects that provide mutual benefits for both China and the region.

To attain desired economic benefits driven by new digital technologies requires substantial availability of competent workforce and digitally literate citizens within the country. Most SACs, though recognizing digital skills as a key driver of the digital economy, do not have sufficient supply of that workforce and a digitally literate population. Only 43 percent of the total population of South Asia are using the internet in 2021, against almost 73 percent in China and 62 percent in the entire world.[15] This digital gap is far higher for females when compared to males in the region. In this context, there is an urgent need to skill, upskill, and reskill these large proportions of people.

The rapid digital transformation and expansion of digital economy has raised trust issues especially among economies with contrasting views and this has been the biggest challenge to the development of digital economy. The potential solution is bridging the critical gap in the legal and regulatory frameworks by each individual country and aligning their national policies with international norms and standards. These frameworks should allow the governments to respond to new challenges posed by this transformation. A few SACs have already made some progress by laying down the foundations. For example, Bhutan and Nepal have enacted a data protection law, while Bangladesh, India, Pakistan and Sri Lanka have drafted data protection and privacy laws, which are in various stages of consideration by their respective legislatures. Along with this, the governments have to work on enabling policies, such as to enhance affordability which will ultimately allow the economy to reap the desired benefits of transformation.

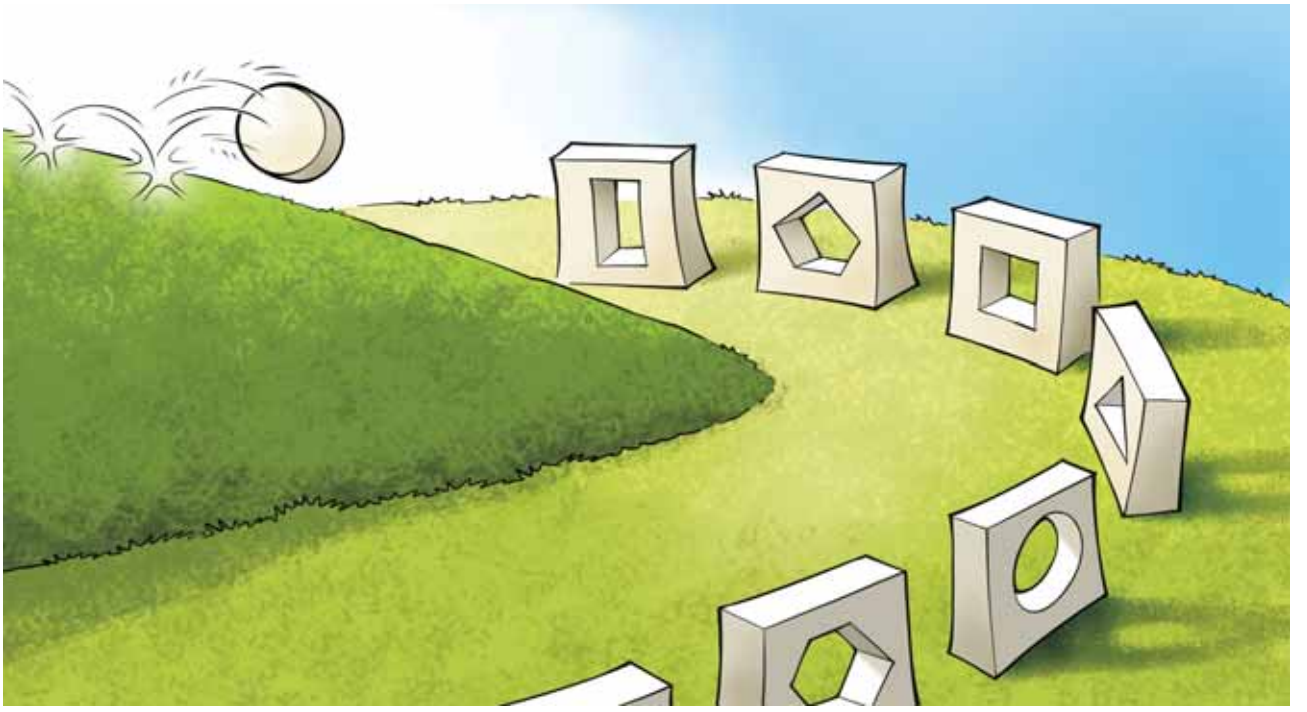
To unlock the full potential of the digital economy, SACs must establish bilateral and regional partnerships with industry leaders such as China. Southeast Asia, which hosts numerous high-profile BRI projects, has already benefited from substantial investments in its digital economy. SACs could adopt a similar approach to attract comparable investments and drive digital transformation in the region. The regional partnership between China and SACs incorporating digital economy and infrastructure can bring in huge investments and technology transfer to the region to ultimately contribute to expanding the region's digital economy.

SACs' rapidly growing economies, buoyed by a large proportion of young people living in rapidly growing and highly promising digitized societies, have a potential to expand the size of their digital economy, ultimately contributing to the region's economic growth. China's digital economy, already occupying the position of the world's second largest and which already has more than 700 million digital buyers, has the potential to grow further with double-digit year-on-year growth rates. China has been dominating in key infrastructures related to connectivity and has been spilling some of the benefits to other countries through the Digital Silk Road. SACs, despite geographical proximity to China, have not been able to enjoy spillover effects of China's rapidly expanding digital economy. SACs, with substantial private and public investments in digital connectivity, proper skilling of their people, conducive regulatory and policy frameworks and building regional partnerships, can all act as a catalyst for promoting digital economy and boosting overall economic growth within the region. ■

Mr. Joshi is Economist at SAWTEE.

Notes

1. O'Grady, Michael. 2024. "The Global Digital Economy Will Reach US$16.5 Trillion and Capture 17% of Global GDP by 2028." *Forrester*, July 23.
2. World Economic Forum. 2024. *The Digital Economy*. Geneva: World Economic Forum.
3. UNCTAD. 2024. *Digital Economy Report 2024*. Geneva: United Nations Trade and Development.
4. World Trade Organisation. 2023. *Digital Trade for Development*. Geneva: World Trade Organisation..
5. Digital Economy has broad and narrow definition. This data is based on broad definition of digital economy.
6. Thomala, Lai Lin. 2024. "Market Size of the digital economy in China." *Statista,* September 2.
7. International Trade Administration. 2023. " eCommerce." *China-Country Commercial Guide*, April 7.
8. OECD. 2023. *Measuring Digital Trade*. Paris: Organisation for Economic Co-operation and Development.
9. Reddy, Rahul Karan. 2023. "Digital Silk Road." *Organisation for Research on China and Asia*, February 8.
10. Council on Foreign Relations. n.d. "Assessing China's Digital Silk Road Initiative." https://www.cfr.org/china-digital-silk-road/
11. Sameer Patil and Prithvi Gupta. "The Digital Silk Road in the Indo-Pacific: Mapping China's Vision for Global Tech Expansion," *Issue Brief No. 683*. New Delhi: Observer Research Foundation.
12. *ibid.*
13. Bekkers, Eddy, Robert Koopman, Giulia Sabbadini and Robert Teh. 2023. T*he Impact of Digital Technologies on Developing Countries Trade*. Geneva: World Trade Organization.
14. WTO. 2023. *Digital Trade for Development*. Geneva: World Trade Organisation
15. The World Bank Group Databank



China's evolving economic ties with South Asia

There exist substantial opportunities for both South Asia and China, alongside a few notes of caution.

Prajol Joshi

The economic reforms implemented since 1978 have enabled China to achieve an average economic growth rate of more than 9 percent per year for almost four decades and as high as 13 percent in some years.[1] This remarkable growth has positioned China as the world's second-largest economy. Alongside its rapid economic expansion, China has been increasing its global economic influence, particularly in developing economies. Through ambitious projects such as the Belt and Road Initiative (BRI) and the Digital Silk Road (DSR), China has invested substantial sums of money in strategically important developing countries, including those in South Asia. Home to almost one-fourth of the world's population and a rapidly growing working-age population, South Asia has, in recent decades, established itself as a strategically significant region for global power dynamics.

Evolving investment relationship

In addition to its geographical proximity, China shares historical ties with many countries in the South Asian region. The cultural, political, and economic ties between Nepal and China date back nearly 1,400 years, with historical records also revealing scholarly exchanges between India and China as early as 67 AD.[2] The ancient Silk Road, a popular trade route connecting the East to the West, facilitated economic exchanges between people in the countries along its path, including China and India.

South Asia, traditionally influenced by the notion that India must lead the neighborhood because of common civilizational heritage and deep historical, cultural, and economic ties, has largely been led by India.[3] India reinforced these ties by signing friendship treaties with Afghanistan (1950), Nepal (1950), and Bhutan (1949) in the early years of its independence to maintain close political relations with its neighbours. Despite this, the relationships among South Asian countries are not homogeneous. China, although not a part of the region, has emerged as a significant influencing partner and has developed varying levels of engagement with each member country, transforming the region's dynamics.

China and India, the two giants of Asia and the world, have a complex relationship that has limited their economic ties. Despite significant potential, China only recently became India's top trading partner, whereas India is still far from being among China's top trading partners. A similar pattern, with untapped potential, can be seen in cross-border investments between the two countries. India has consistently refused to participate in the BRI, citing concerns over the China-Pakistan Economic Corridor (CPEC), the largest BRI project. Although both countries are members of BRICS, an intergovernmental forum comprising Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Indonesia, Iran and the United Arab Emirates, the Indian government has criticized its economic relationship with China as "unfair" and imbalanced.[4] India's historical, cultural, and physical connectivity has traditionally allowed it to influence and, in many cases, lead the South Asian region. However, this dynamic has evolved, resulting in the emergence of two factions within the region—with pro-India and pro-China tilts.

BRI in South Asia

Since the launch of the BRI, China has committed substantial investments in South Asia. The flagship BRI project is the China–Pakistan Economic Corridor (CPEC) with Pakistan, China's "all-weather friend." CPEC includes major infrastructure projects such as the Gwadar Port, energy projects, and industrial and special economic zones, with an estimated investment of nearly US$62 billion.[5] China also has significant investments in Sri Lanka, another close partner, primarily in infrastructure projects such as the Colombo Port City and the Hambantota Port, with total Chinese infrastructure investments estimated at US$12.1 billion between 2006 and 2019.[6]

Under the BRI, the Maldives, an archipelago in the Indian Ocean, has also received significant Chinese investments, marking a strategic shift away from India. Since joining the BRI in 2014, the Maldives has borrowed close to US$1.4 billion from Chinese banks[7] and secured several investments, including the US$200 million China-Maldives Friendship Bridge and the US$26 million China Link Road.[8] These projects aim to enhance economic connectivity and promote people-to-people exchanges between the two countries.[9]

Nepal, despite its close historical, cultural, political, and economic ties with China, only signed the Memorandum of Understanding (MoU) on the BRI framework in 2017 and signed the framework for cooperation in December 2024.[10] While Nepal has not yet received BRI investments,[11] it has secured substantial Chinese involvement in infrastructure projects outside of the BRI framework, such as the Pokhara Regional International Airport and the Ring Road expansion project.[12] Bangladesh, which formally endorsed the BRI in 2013, is expected to receive investments worth US$40 billion for infrastructure projects, including roads, railways, seaports, airports, expressways, ICT infrastructure, power plants, and more. Afghanistan's previous political regime agreed to BRI integration with China in 2016, and the subsequently formed Taliban government pledged to continue this engagement.[13] However, there has been little progress in implementation. China maintains political and economic ties with Taliban-led Afghanistan and has expressed interest in investing there. Bhutan and China, with minimal trade relations, have not yet established diplomatic ties or signed a formal BRI agreement.[14]

China began a set of reforms to upgrade its economy by opening up to the world towards the end of the 1970s, which led to China's rise as an export powerhouse, becoming known as the "world's factory" on the global stage. China's share of global exports was just under 4 percent in the early 2000s, which reached 14.2 percent in 2023, clearly showing China's growing economic influence in the world. China's trade with South Asian Association for Regional Cooperation (SAARC) members has also seen substantial growth—an almost ten-fold increase between 2004 and 2023.

The share of China's trade with SAARC countries in its total trade with the world was just 1.7 percent in 2004, and the ratio has been increasing— it reached 3.18 percent in 2023. Although the share looks small, year-on-year growth shows a promising trend and is expected to further strengthen as a result of growing trade ties between India and China.

Despite the periodic geopolitical tensions between India and China, they have a close trade relationship. Between 2021 and 2022 alone, China's bilateral trade with India grew by 8 percent. India has become the 16th largest trading partner of China, and

China's share of India's total imports had already reached 13.8 percent in 2023.[15] In terms of total trade between China and the SAARC region for 2023, China's trade with India contributes the most—almost 72 percent—while Bangladesh (12.79 percent) and Pakistan (10.58 percent) are distant second and third, respectively. The remaining five countries trade with China but with relatively small contributions—just 4.67 percent of total China-SAARC trade.

Evolving investment relationship

Over the last two decades, China has evolved to become one of the key sources of foreign direct investment (FDI) flows worldwide. The value of FDI outflows from China in 2023 is almost 160 times compared to 2000 and more than twice that of 2010. China's share of global FDI outflows has reached almost 10 percent in 2023, which was less than 0.1 percent in 2000. There are huge possibilities for countries in the South Asia region to attract FDI from China, and data suggests that, in recent times, China is shifting away from the West and towards the Global South.[16]

The Table below reveals the growing evolution of investment dynamics between China and the South Asia region. Over the last five-year period, the total FDI stock from China in the region has almost doubled from US$7.3 billion to US$14.7 billion. The

rawpixel

major recipient of FDI from China is Pakistan, with almost one-half of the total destined there, followed by India and Bangladesh. These three economies have received more than 90 percent of the total flows to the entire region. The remaining amount is shared between Sri Lanka, Afghanistan and Nepal, with a negligible amount destined for the Maldives as well, and Bhutan receiving nothing as yet. There has been significant growth in FDI flows to all the countries in the region, but Bangladesh received in 2022 almost five times what it received in 2018. Despite the significant growth in FDI stock, the region has only received 0.5 percent of China's total outbound FDI stocks.

Opportunities and challenges

The evolving China-South Asia economic ties offer substantial opportunities for both sides, alongside a few notes of caution. Closer economic ties with China will open up the rich possibility of substantial investment inflows for infrastructure, industries, and other sectors from private and public sources into the region. Since the launch of BRI, China's overseas investment has far exceeded the investments made by developed economies—China's investment was twice the US investment, four times that of EU investment, and eight times that of UK investment.[19] With its large foreign exchange reserves, China has established itself as the go-to banker for big investment projects in many developing countries.

A study on missed exports reveals that South Asian countries have an export potential of three times their current levels of export, creating an export gap of 23 percent of GDP for 2017. The same study also shows that China is a destination with which all the countries from South Asia have a large export gap.[20] This means that there is huge potential for countries from South Asia to improve their trade, especially exports to China.

Evolving economic ties with China will allow the inflow of new innovations and technological advancements to the region. In recent decades, China has established itself as a pioneer in innovation and technological progress—it is already leading in industries like commercial nuclear power, electric vehicles, and batteries.[21] Furthermore, Chinese innovations are more affordable than those offered by developed economies. China, with 40 percent of its population expected to be uplifted to

Table **Outward direct investment as reported by China, P.R.: Mainland (in US$ million)**

FDI stock in values	2018	2019	2020	2021	2022
Afghanistan, Islamic Rep. of	388	388	433	435	448
Bangladesh	667	883	1,711	2,204	2,995
Bhutan	-	-	-	-	-
India	2,156	2,571	3,183	3,519	3,483
Maldives	15	18	44	72	63
Nepal	248	297	435	463	436
Pakistan	3,614	3,927	6,219	7,485	6,823
Sri Lanka	251	242	523	640	529
All South Asia	7,338	8,326	12,548	14,819	14,776
World	1,982,270	2,198,881	2,580,658	2,785,150	2,754,814

Source: IMF Coordinated Direct Investment Survey (CDIS)[18]

middle-class and affluent consumer status, is soon predicted to be the world's largest consumer market.[22] Access to this large consumer market will offer new opportunities for South Asia. Thus, the evolving economic ties of the South Asia region with China can open avenues for the largest investment flows, the arrival of new innovations, access to a large consumer market, and other opportunities that will contribute to better productivity, employment generation, and higher economic growth for the region.

There are some potential challenges as well. One often-cited criticism of Chinese investments, especially in the case of BRI investments, is that China is laying out debt traps for developing economies to gain political influence and establish itself as a global power. This notion was established after a few countries, such as Sri Lanka and Zambia, which took BRI loans, faced difficulty in servicing the debt, resulting in China coming to the rescue of those economies with additional debt at much higher interest rates. Between 2019 and 2021, China had to issue rescue loans worth US$104 billion to developing countries and had to renegotiate or write off at least US$78 billion of "bad loans" between 2020 and 2023.[23] Though there exists some evidence supporting this criticism, other studies have found little or no evidence for the claim.[24] For instance, Sri Lanka's economic crisis was the result of decades-long structural economic weaknesses but is often coined as a Chinese debt trap.[25] Thus, recipient countries should identify projects based on merit, their national priorities, and investment returns in a transparent manner when borrowing from any available sources.

One of the agendas of the Chinese government under the BRI framework is to continue its economy's rapid growth through activities executed beyond its territories, so most of the projects selected are handed over for implementation to Chinese companies through government-to-government negotiations. This makes the entire project implementation process less transparent, creating significant governance issues, and this has been cited as a key reason why some countries are still reluctant to move ahead with BRI implementation even though they signed the MoU. ■

Mr. Joshi is Economist at SAWTEE.

Notes

1 World Bank. "Overview. *The World Bank in China*, Oct 24. https://www.worldbank.org/en/country/china/overview

2 Lok Raj Baral, "China - South Asia Connectivity." *The Kathmandu Post*, October 20. https://kathmandupost.com/columns/2024/10/20/china-south-asia-connectivity

3 Raja Mohan, Chilamkuri. 2022. "India and South Asia: The Elusive Sphere of Influence." *Institute of South Asian Studies,* Jan 6.

4 TOI Newsdesk. 2024. "Unfair and Unbalanced: Jaishankar on India's trade ties with China". *The Times of India,* Sep12. https://timesofindia.indiatimes.com/india/unfair-and-imbalanced-jaishankar-on-indias-trade-ties-with-china/articleshow/113288299.cms

5 Mardell, Jacob. 2022. "The BRI in Pakistan: China's flagship economic corridor." *Mercator Institute for China Studies,* May 20.

6 Wignaraja, Ganeshan, Dinusha Panditaratne, Pabasara Kannangara and Divya Hundlani. 2020. *Chinese Investment and the BRI in Sri Lanka*. London: Asia-Pacific Programme

7 BRIWatch. 2022. "Belt and Road Initiative (BRI) in Maldives". *BRIWatch*, June 7. https://briwatch.info/wp-content/uploads/2022/07/NEwnl-maldives_59128382.pdf

8 Basarkar, Rhea. 2024. "The Maldives is moving toward China. Here's what to know." *Council on Foreign Relations, May 2. https://www.cfr.org/in-brief/maldives-moving-toward-china-heres-what-know*

9 Daye, Chu. 2024. "China and Maldives to strengthen BRI cooperation, transform isle industries." *Global Times,* Jan 11. https://www.globaltimes.cn/page/202401/1305218.shtml

10 Giri, Anil. 2024. "Nepal and China sign framework for BRI cooperation in Beijing." *The Kathmandu Post*, December 5. https://kathmandupost.com/national/2024/12/05/nepal-and-china-sign-framework-for-bri-cooperation-in-beijing

11 Tsering, Dolma.2024. "China-Nepal strategic partnership stumbles over BRI and boundary issues." *East Asia Forum,* Aug 31. *https://eastasiaforum.org/2024/08/31/china-nepal-strategic-partnership-stumbles-over-bri-and-boundary-issues/*

12 Noyon, Abbas Uddin. 2023. "How China's Belt and Road changing Bangladesh's economy and infrastructures." *The Business Standard,* Oct 1. https://www.tbsnews.net/economy/how-chinas-belt-and-road-changing-bangladeshs-infrastructures-709826

13 Seerat, Rustam Ali. 2024. "China navigates a new afghanistan with the taliban as its rulers." *Friedrich Naumann Foundation for Freedom,* May 5. https://www.freiheit.org/south-asia/china-navigates-new-afghanistan-taliban-its-rulers

14 *ibid*. Note 7.

15 India Brand Equity Foundation. 2022. "India China Trade." https://www.ibef.org/indian-exports/india-china-trade

16 Body, Patrick. 2024. "Mixing it up: Chinese outbound FDI is shifting away from the West and towards the Global South." *CKGSB Knowledge,* April 3.

17 UNCTAD Data Hub - Annual FDI flows. https://unctadstat.unctad.org/datacentre/dataviewer/US.FdiFlowsStock

18 IMF CDIS Database. Assessed Nov 5, 2024. https://data.imf.org/

19 Wooley, Alex. 2022. "Banking on Beijing: The Aims and Impacts of China's Overseas Development Program." *AidData*, May 5.

20 The World Bank. 2019. "Exports Wanted." *South Asia Economic Focus,* Spring 2019. Washington D.C.: The World Bank.

21 Atkinson, Robert D. 2024. "China is rapidly becoming a leading innovator in advanced industries." *Information Technology and Innovation Foundation,* Sep 16. https://itif.org/publications/2024/09/16/china-is-rapidly-becoming-a-leading-innovator-in-advanced-industries/

22 Chen, Cinthia, Stacey, Li, Florence, Li and Ben Chen. 2023. "The next chapter in China's consumer story," *BCG,* June 22. https://www.bcg.com/publications/2023/next-chapter-in-chinese-consumer-market

23 Raisina Debates. 2024. "Nepal's BRI-shaped Dilemma." *Observer Research Foundation,* Aug 9. https://www.orfonline.org/expert-speak/nepals-bri-shaped-dilemma

24 Jones, Lee and Shahar Hameiri. 2020. "Debunking the Myth of Debt-trap Diplomacy." *Chatham House,* Dec 14. https://www.chathamhouse.org/2020/08/debunking-myth-debt-trap-diplomacy/4-sri-lanka-and-bri

25 Fernando, Yolani and Umesh Moramudali. 2024. "The Political Economy of Sri Lanka's Debt" in *The Political Economy of Debt.* The Asia Foundation.

Pexels

Public debt in South Asia Lessons from three countries

As South Asian nations rise on the development ladder, managing debt becomes paramount for a secure future.

Kshitiz Dahal and Paras Kharel

The COVID-19 pandemic along with the economic disruptions it caused resulted in a surge in public debt in many countries, including in South Asia. Sri Lanka defaulted for the first time on its sovereign loan and Pakistan faced severe difficulties in financing its increasing public debt stock. Another South Asian nation, Nepal, while not known for its debt issues, with a relatively modest debt stock, has seen some concern over its precipitously rising public debt. Against this background, three country studies (covering Nepal, Pakistan, and Sri Lanka) were conducted to assess the state of public debt in these three South Asian nations and to identify what political-economic factors turned their debt sour.

State of public debt

A good starting point is to present the state of public debt in each country. Although government debt has generally seen a significant increase over the years, there is a considerable variation among the countries in their debt-to-GDP ratio (Figure 1). Likewise, notable differences are seen in government revenue and expenditure patterns, and debt-service obligations (Figure 2, Figure 3, Figure 4, and Figure 5).

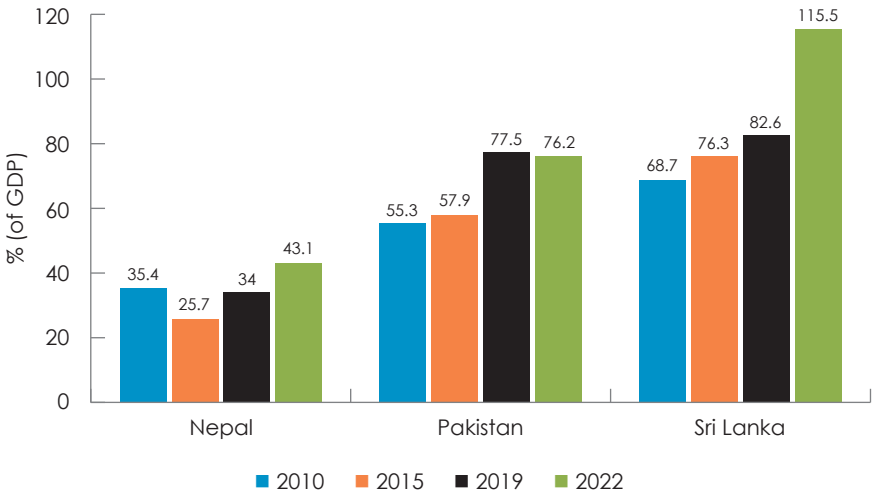
The case of Sri Lanka garnered much media coverage as it defaulted on its sovereign debt for the first

time in April 2022. It may have come as a surprise to many, as Sri Lanka was seen as an economic success model in South Asia and was widely lauded for its extraordinary social achievements despite a 26-year-long civil war. However, the Sri Lanka study points out that its decades-long structural weaknesses meant that the recipe for a debt disaster was always there. In particular, Sri Lanka ran a persistent budget deficit to "fulfillelection pledges and maintain popularity" by relying on foreign loans to finance public investments and social welfare. Even when the debt was skyrocketing, Sri Lanka did not make necessary adjustments and instead opted for counter-intuitive tax-cuts in 2019 (as a fulfilment of an election pledge). This, coupled with the impact of COVID-19 (primarily a grinding halt to tourist inflows, an essential source of Sri Lankan foreign exchange) and policy measures such as a ban on the import of chemical fertilizer (which precipitated a decline in agricultural production and exports) hastened Sri Lanka's debt default.

Unlike Sri Lanka, Pakistan has not defaulted on its sovereign loans. Still, its severe debt distress manifested in its rapid depletion of foreign exchange reserves (covering less than a month of imports at one point) and its scrambling for International Monetary Fund (IMF) bailouts. While COVID-19, the Russia-Ukraine war, and devastating floods[1] contributed to the crisis, the Pakistan study points out that the main issue is structural. A long history of taking excessive debts to finance development projects (in some cases, without adequate preparation and evaluation), a large public enterprise sector (state-owned enterprises) that pose a significant fiscal burden, and a large web of contingent liabilities mean Pakistan has been running a persistent sizeable fiscal deficit—averaging at around 6.3 percent of GDP between 2000 and 2019.

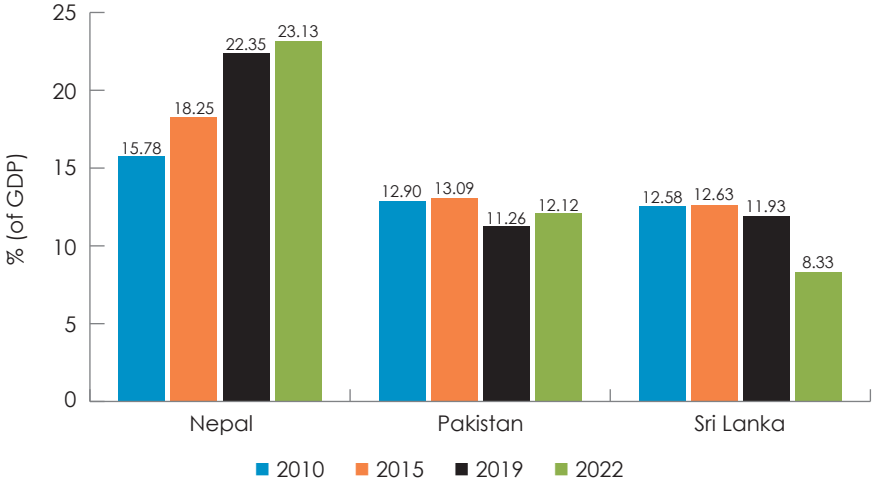
Nepal's case is somewhat peculiar as it boasts a relatively low level of public debt and has been consistently found to have a low level of debt distress in debt sustainability analyses. However, it has seen a precipitous rise in its public debt - its public debt stock rose from 25.7 percent of GDP in fiscal year (FY) 2014/15 to 41.5 percent of GDP in 2021/22.[2] While its South Asian peers are trying to emerge from the debt crisis, Nepal is grappling with a different question: is Nepal veering towards unsustainable debt accumulation even when the debt level itself is not yet at a crisis-inducing level?[3] At its core, this entails answering a seemingly simple question: is the public debt stock becoming large enough that servicing it will constrain the fiscal space for growth-and-development-inducing expenditure? However, answering it is not always easy. There is no magic debt sustainability indicator, and despite many

Figure 1 General government gross debt (% of GDP)



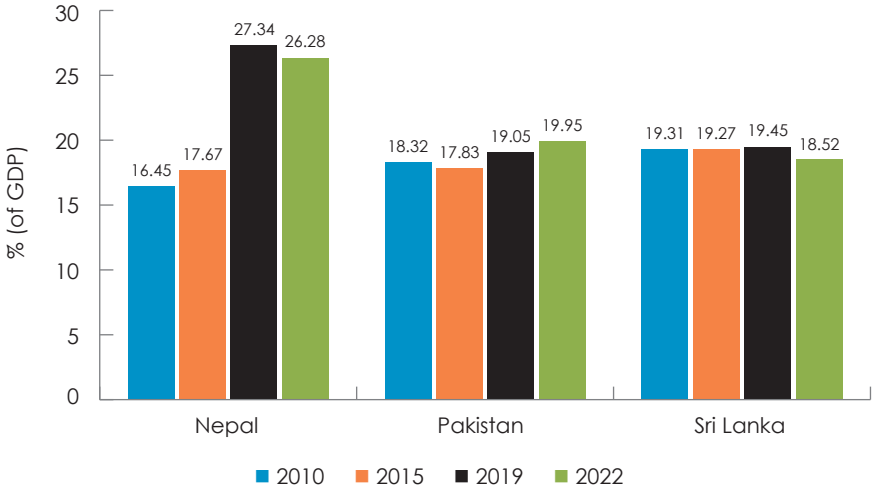
Source: World Economic Outlook (October 2023), IMF Data Mapper, accessed on 7 November 2023.

Figure 2 General government revenue (% of GDP)



Source: Fiscal Monitor (October 2023), IMF Data Mapper, accessed on 7 November 2023.

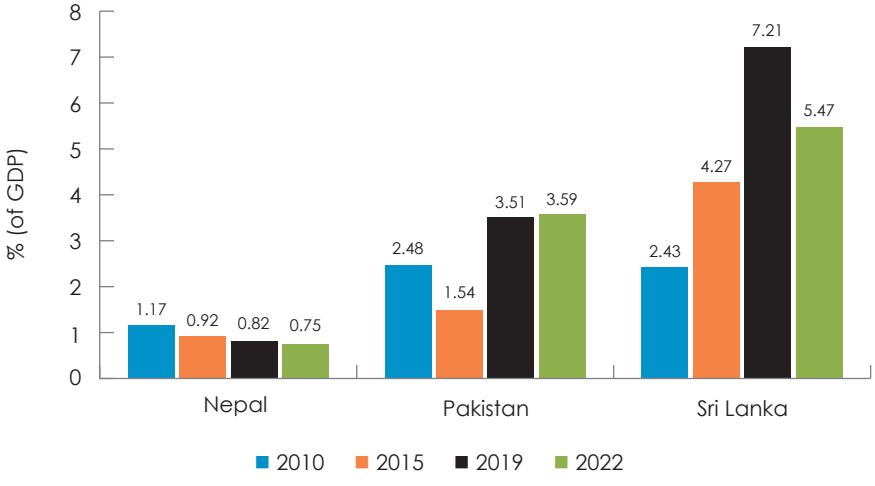
Figure 3 General government expenditure (% of GDP)



Source: Fiscal Monitor (October 2023), IMF Data Mapper, accessed on 7 November 2023.

attempts by economists to assess when debt becomes counterproductive to growth, there is no consensus on a debt-to-GDP ratio that could be termed unsustainable. While Nepal currently remains at a low risk of debt distress, some trends—the debt service) as a percent of GDP) rose sharply to 4.1 percent in FY 2023, and recurrent expenditures are constantly on the rise but development expenditure targets are not met and development expenditures are of low quality—are worrisome. Hence, against the evidence of a meteoric rise in its debt stock, coupled with a low rate of return on public investments and a myriad of issues in public finance administration[4], one can reasonably conclude that not all is well with Nepal's seemingly low level of public debt.

Figure 4 Total debt service (% of GNI)



Source: World Development Indicators (WDI), accessed on 7 November 2023.

Lessons from the country studies

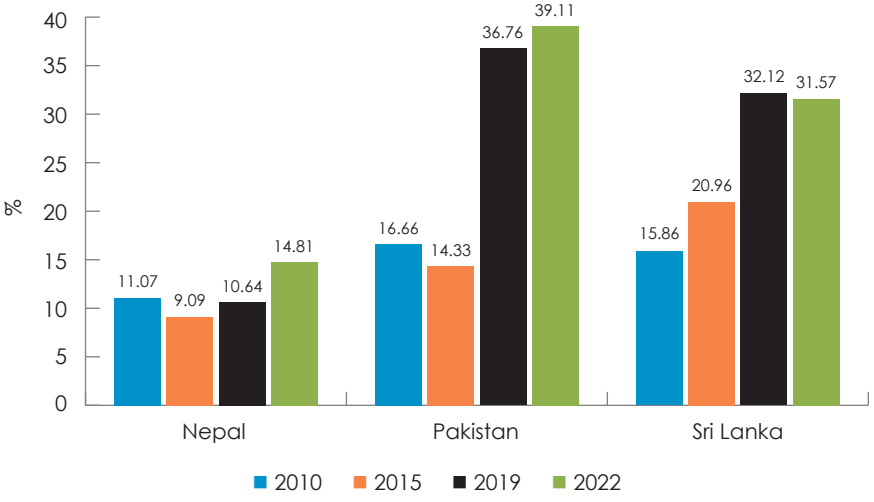
Investigations into the state of public debt by individual country studies generate important insights, especially for Nepal, which is currently at a low risk of debt distress.

Fiscal mismanagement is at the heart of public debt woes. A key observation of the studies is that fiscal mismanagement caused by political expediency is at the heart of these countries' public debt woes. The political expediency favoured persistent deficits to support extravagant expenditures in the form of social transfers, subsidies, and public infrastructure projects of questionable returns.

As the country rises in the income ladder, the landscape for external finance changes. Another important insight generated by these individual country studies is that the foreign borrowing landscape changes as a country climbs the income ladder, which could gradually lead the nation toward unsustainable debt accumulation. As a country moves up from low-income to middle-income status, new avenues of foreign capital open. However, some of these new foreign capital sources, such as international sovereign bonds (ISBs) or foreign loans obtained from commercial lenders abroad, are much more expensive because of higher interest rates and lower maturity periods[5] than official development assistance (ODA) loans to which these countries are accustomed. Nepal's external borrowing remains largely concessionary. However, against its impending LDC graduation (in 2026) and a recent upgradation to lower-middle income status (FY 2021), Nepal would be wise to learn from its South Asian peers and, hence, tread a cautious path, accompanied by institutional reforms.

Geopolitics: myth and reality. Another significant contribution of these individual country studies is that they shed light on the emerging geopolitics surrounding foreign loans, with some observers accusing China of engaging in debt trap diplomacy—burdening developing countries with unsustainable debt. While evidence suggests

Figure 5 External debt service (% of exports of goods and services)



Source: Computed using debt service and exports data obtained from WDI, accessed on 7 November 2023.

that foreign loans from China did add to the debt burden in Sri Lanka and Pakistan (Chinese loans, often at higher rates than concessional loans, became an increasing feature of these countries), deeper analysis does not support the debt trap narrative. Debt from other sources significantly surpassed debts from China. The biggest issue with loans from China seems to be non-transparency rather than its volume and interest rates.

Importance of country contexts

Besides some common themes surrounding the public debt woes of three South Asian countries, we also see certain peculiarities of each country playing an outsized role in their respective public debt issues, which suggests that country contexts play an essential role in the public debt state of a country. In the case of Sri Lanka, its exceptionally low government revenue contributed significantly to its debt distress. In the case of Pakistan, its extensive public enterprises sector[6] remains a significant contributor to the government's persistent fiscal deficit. In the case of Nepal, issues in implementing federalism, primarily the duplication of expenditures by the federal and sub-national governments, owing to the lack of clarity on each government's jurisdiction, have contributed to increased government expenditure. The direct expenditure of the federal government has not subsided even after the devolution of powers and functions to sub-national governments.

Concluding remarks

In crux, these three studies offer insights into how three South Asian countries (Sri Lanka, Pakistan, and Nepal), with vastly different levels of debt, face different debt issues. Sri Lanka faced the starkest crisis, defaulting on its debts and is still struggling to emerge from the crisis. Pakistan is facing a debt distress and scrambling for bailouts. Nepal has seen a meteoric rise in its public debt level in a short period, but the increase in public debt is believed to have minimal impact on its current growth and growth prospects. However, amidst this divergence lies a common source of ailment—fiscal mismanagement for short-term political expediency aided by weak public finance administration.

As South Asian nations rise on the development ladder, managing debt becomes paramount for a secure future. Transparency, good governance, and prudent financial management practices are universally important. Implementing these principles across South Asia will ensure a more stable and prosperous path for all. ■

This article is based on a paper prepared by Mr. Kshitiz Dahal, Senior Research Officer, SAWTEE and Dr. Paras Kharel, Executive Director, SAWTEE, titled "Public Debt in South Asia: Lessons from Three Countries" which synthesizes the country studies on Nepal, Pakistan and Sri Lanka. Nepal study: Kshitiz Dahal and Paras Kharel. 2023. "Nepal's Public Debt: Concerns and Drivers." Kathmandu: South Asia Watch on Trade, Economics and Environment (SAWTEE). Pakistan Study: Ahsan Zia Farooqui, Faisal Bari, Ali Asad Sabir, and Waleed Mehmood. 2023. "The Political Economy of Pakistan's Debt." Sri Lanka Study: Yolani Fernando, and Umesh Moramudali. 2023. "The Political Economy of Sri Lanka's Debt." The research was supported by The Asia Foundation. The views expressed here are of the authors and do not necessarily reflect the views of The Asia Foundation.

Notes

1. Rajvanshi, Astha. 2023. "Why a $3 Billion IMF Loan Isn't Enough to Save Pakistan's Economy." *Time*, July 11.
2. Data obtained from Public Debt Management Office, Government of Nepal.
3. For instance, the Joint World Bank-IMF Debt Sustainability Analysis has consistently found a low risk of debt distress regarding Nepal's public debt, including the latest one in May 2023.
4. For instance, the Nepal Study points out that "projects that have not undergone the necessary preparations are included in the budget, projects which were not included at the start of the budget are forcefully included during the implementation phase, a mammoth proportion of capital expenditure is spent only at the end of the fiscal year, and there is a major abuse of budget head change and source change".
5. For instance, ISBs attracted an effective interest rate of 6.61 percent compared to 0.72 percent for loans from Japan, and 1.35 percent for loans from the World Bank. Likewise, ISBs had a maturity period of 8 years compared to 25 years for ADB loans and 34 years for loans procured from Japan. See https://publicfinance.lk/en/topics/cost-of-bilateral-and-multilateral-loans-1642565346.
6. According to the Pakistan Study report, non-financial state owned-enterprises held assets worth 44 percent of GDP, but only employed 0.7 percent of the formally employed labour force.

E-commerce Joint Initiative AT THE WTO Past, Present and Future

Marathon negotiations have resulted in a potential plurilateral agreement on e-commerce, albeit marred by uncertainty about its implementation mechanism.

Rashid S Kaukab

The plurilateral negotiations under the World Trade Organization (WTO) Joint Statement Initiative (JSI) on e-commerce reached a milestone on 26 July 2024. The JSI Co-convenors (Australia, Japan and Singapore) announced that they have achieved a "Stabilized Text".[1] With some adjustments in that Text, particularly the insertion of the provision that stipulates that the Agreement will enter into force for ratifying Members 30 days after the ratification by 45 Members (Article 29.2), the Agreement is expected to be submitted to the WTO General Council meeting scheduled in December 2024 with the request that it be made a part of the WTO architecture as a plurilateral agreement among participating Members. This article examines the history of the negotiations of the agreement, focusing on its substance, identifies some key questions for the way forward, and offers some thoughts for consideration by developing and least developed countries (LDCs).

Long and short history of e-commerce at WTO

E-commerce was introduced in the WTO as early as 1998. The Ministers, meeting at their Second Ministerial Conference in Geneva, accepted the US's proposal and adopted the Declaration on Global Electronic Commerce on 20 May 1998.[2] This short Declaration had two key elements—one, as proposed by the US, the Members will continue their practice of not imposing customs duties on electronic transmissions (the moratorium), and two, as demanded by many developing countries, a comprehensive work programme will be established to examine all trade-related aspects of global electronic commerce. The Declaration also stated that the extension of this Declaration would be decided by consensus at the next WTO Ministerial Conference. Accordingly, the work programme and the moratorium have been extended at each subsequent Ministerial Conference till the next one. The last extension was agreed upon at the Thirteenth WTO Ministerial Conference held in early 2024, with a significant difference. The Ministerial Decision on Work Programme on Electronic Commerce adopted on 2 March 2024 states that both the moratorium and the work programme will expire on 31 March 2026 or the Fourteenth Ministerial Conference, whichever is earlier.[3] Unless the WTO Members agree to change this by consensus, e-commerce will not be on the WTO multilateral agenda after 31 March

2026, concluding a long chapter without reaching an outcome.

Many WTO Members, particularly from the developed world and several developing countries, were not satisfied with the progress made under the multilateral work programme on e-commerce. At the Eleventh Ministerial Conference, held in December 2017, they decided to launch a plurilateral initiative on e-commerce. Seventy-one WTO Members adopted a Joint Statement on Electronic Commerce on 13 December 2017 to initiate exploratory work for future WTO negotiations on trade-related aspects of electronic commerce.[4] This was the beginning of the e-commerce JSI.

The plurilateral process under the JSI, since its beginning in late 2017, has gone through two broad phases. The first phase, from early 2018 to early 2019, focused on the exploratory work through discussions and exchanges on various trade-related aspects of e-commerce. The second phase started in January 2019 when 76 Members confirmed their intention to commence the negotiations on trade-related aspects of electronic commerce to achieve a high standard agreement with the participation of as many WTO Members as possible.[5] The Stabilized Text of 26 July 2024 is the culmination of the second phase. However, almost five years of negotiations in the second phase were not linear, and several twists and turns were witnessed. At the heart of those were the divergent views among participating Members about the depth and breadth of the commitments being negotiated, including their development dimension.

Based on the Members' proposals and views and to ensure the widest possible coverage, JSI participants identified more than 60 issues and sub-issues. They also outlined a structure to group these issues and sub-issues into sections for ease of understanding and negotiations. Table 1 illustrates this by presenting the Sections and the Issues based on the situation in December 2020.[6]

The subsequent years were characterized by intense negotiations to narrow the differences among participating Members and reach outcomes on as many issues and sub-issues as possible. The situation was dynamic as more issues or sub-issues were proposed, some issues/sub-issues merged while some remained difficult to find compromises. The process, therefore, used both "provisional adoption" and "trimming" to move towards a final agreement. Small groups were created on many issues/sub-issues for focused negotiations. In many cases, these small groups reached outcomes provisionally agreed upon by all the participating Members and "parked" for inclusion in the final agreement. At the same time, some issues/sub-issues that were lacking traction among many participating Members were gradually removed from the centre of negotiations, assuming that these could be addressed in a subsequent negotiating phase. This two-pronged approach towards an agreement received a major boost in 2023 when the US, the major proponent of commitments on data flows, data localization, and source code—three of the most contentious issues—withdrew its proposals on these.[8] After that, it was a home stretch till the Stabilized Text of 26 July 2024. The negotiations remained intense, particularly on provisions related to a permanent moratorium on customs duties, development, e-payments, and national security, to name a few. The Stabilized Text endeavoured to present a compromise on these issues acceptable to most participating Members.

Table 1 Identification and organization of issues under JSI on e-commerce based on consolidated negotiating text of December 2020

Sections	Issues
A. Enabling E-commerce	A.1 Facilitating electronic transactions A.2 Digital trade facilitation and logistics
B. Openness and E-commerce	B.1 Non-discrimination and liability B.2 Flow of information B.3 Customs duties on electronic transmissions B.4 Access to internet and data
C. Trust and E-commerce	C.1 Consumer protection C.2 Privacy C.3 Business trust
D. Cross-cutting Issues	D.1 Transparency, domestic regulation and cooperation D.2 Cybersecurity D.3 Capacity building
E. Telecommunications	E.1 Updating the WTO reference paper on telecommunications services E.2 Network equipment and products
F. Market Access	Services market access; temporary entry and sojourn of electronic commerce-related personnel; goods market access
ANNEX 1: Scope and General Provisions	Preamble; definitions; principles; scope; relation to other agreements; general exceptions; security exception

Source: Adapted from Ismail Y., "E-commerce Joint Statement Initiative Negotiations Among World Trade Organization Members: State of play and the impacts of COVID-19", International Institute for Sustainable Development and CUTS International, Geneva, April 2021[7]

Substance and participation

The plurilateral agreement, which is aimed to be presented to the WTO General Council in December 2024, consists of a preamble, 38 articles divided into eight sections, and one

annex. Table 2 presents the coverage of issues under the agreement.

A cursory comparison of Tables 1 and 2 shows that the agreement's coverage is not as ambitious as the consolidated negotiating texts of earlier years. However, it still includes binding commitments in some key areas related to a moratorium on customs duties, electronic payments, personal data protection, spam, and paperless trading, to name a few.[9] Implementation of these commitments will require substantial human, technical, financial, and institutional resources on the one hand and providing a predictable and stable environment to businesses entrenched in e-commerce on the other.

By early November 2024, 73 participating Members indicated that they were on board with the Agreement. The list includes five least developed countries and seven African countries.[10] The US, Indonesia, Brazil, Colombia, Cote d'Ivoire, Türkiye, and Guatemala are conspicuous by their absence in this list. Although they have been among the most active participants in the JSI negotiations, they have concerns about specific provisions of the agreement. These provisions relate to the permanent moratorium on customs duties (to be reviewed after five years), security exceptions, e-payments and development. On the other hand, the agreement's proponents have reached out to non-participant Members to persuade them to join the agreement.

Table 2 JSI Agreement on e-commerce: sections and articles

Sections	Articles
A: Scope and General Provisions	1-3: Scope, Definitions, Relation to Other Agreements
B. Enabling Electronic Commerce	4-10: Electronic transactions framework, Electronic authentication and electronic signatures, Electronic contracts, Electronic invoicing, Paperless trading, Single windows data exchange and system interoperability, Electronic payments
C. Openness and Electronic Commerce	11-13: Customs duties on electronic transmissions, Open government data, Access to and use of the internet for electronic commerce
D. Trust and Electronic Commerce	14-17: Online consumer protection, Unsolicited commercial electronic messages, Personal data protection, Cybersecurity
E. Transparency, Cooperation and Development	18-20: Transparency, Cooperation, Development
F. Telecommunications	21: Telecommunications
G. Exceptions	22-26: General exceptions, Security exception, Prudential measures, Personal data protection exception, Indigenous peoples
H. Institutional Arrangements and Final Provisions	27-38: Dispute settlement, Committee on trade-aspects of electronic commerce, Acceptance and entry into force, Implementation, Reservations, Amendments, Withdrawal, Non-application of this agreement between particular parties, Review, Secretariat, Deposit, Registration
Annex	Sets out principles on the regulatory framework for basic telecommunications services

Key questions

The presentation of the plurilateral Agreement on Electronic Commerce to the WTO General Council in December 2024 with the request to include that in the WTO legal architecture will culminate long years of discussions and negotiations in e-commerce JSI. But this will not be the end of the road. Several key questions remain and answers to those will determine the future of the agreement.

Implementation: Incorporation into the WTO legal architecture or other alternatives?

The General Council can include a plurilateral agreement negotiated among a sub-set of WTO Membership into the WTO legal architecture through a decision by consensus among all WTO Members. This seems unlikely as India and South Africa, lately joined by Türkiye, have repeatedly refused to join the consensus to include another plurilateral agreement on Investment Facilitation for Development (IFDA) into the WTO legal architecture. Their objection is based partly on concerns regarding systemic issues about plurilateral agreements, including that the plurilateral agreements should be negotiated at the WTO only with the approval of the full WTO Membership, and the priority should be to conclude the multilateral negotiations under the Doha Round.[11] The systemic concerns they raised in relation to IFDA are equally relevant to the plurilateral agreement on electronic commerce. Therefore, it seems unlikely that the General Council will have the consensus to accept the request to incorporate the plurilateral Agreement on Electronic Commerce into the WTO legal architecture.

Faced with the stalemate in the WTO General Council, the participating members of the Agreement on Electronic Commerce may implement it as an agreement outside of the WTO. But that will deprive the Agreement of an established institutional framework and hence lose some of its appeal. Therefore, the effort is likely to remain on finding a creative solution to keep the agreement's link with the WTO

but not necessarily as a plurilateral agreement under the formal WTO legal architecture.

Commercial value: Increasing the participation but how?

The commercial value of the Agreement to the participating Members will depend on how much of global electronic commerce it covers, which itself is a function of the number of participants and their shares in global electronic commerce. It is unlikely that the US—the largest shareholder in global electronic commerce – will join the Agreement in its current form. Similarly, some of the other bigger Members that had participated actively in the negotiations, for example, Brazil, Indonesia, and Türkiye, are unlikely to join the Agreement in the near future due to their concerns about the current provisions regarding the moratorium on customs duties. The participating Members in the Agreement may try to counter that by taking the Agreement to other WTO Members who did not participate in the negotiations but may be persuaded to join now as the Agreement has taken a concrete shape.

Further negotiations

Several issues and sub-issues proposed to be addressed in the Agreement were put aside in the last two years to focus on achieving outcomes on a more limited set of issues. These were either too controversial or did not receive traction from many participants. The proponents of these issues would like to bring them back to the negotiating table to build on the success of the concluded Agreement on Electronic Commerce. Finding the right time and forum to do that will be challenging, particularly if the Agreement does not find its way into the WTO legal architecture soon and remains unimplemented.

Way forward

Most developing and LDC Members of WTO did not participate in the e-commerce JSI negotiations. However, several of them did, and most of those participating have accepted the agreement. Almost all of them are undertaking actions and initiatives at the national level to take advantage of the opportunities offered by e-commerce. Many of them are also either part of the regional trade agreements (RTAs) with provisions on e-commerce or negotiating such RTAs. Therefore, whatever rules are developed through the plurilateral Agreement on e-commerce will have implications for all developing countries and LDCs and require their attention.

The immediate task for developing countries and LDCs that have accepted the Agreement should be to identify gaps in their capacity to implement it through a needs assessment. Development partners could support then in carrying out such needs assessments as per Article 20.8 of the Agreement. This gaps analysis will also be critical to identify the provisions which will require a longer implementation period and hence should be notified at the time of entry of force under Article 20.6.

For developing countries and LDCs that prefer not to join the Agreement, it would still be advisable to examine their regulatory frameworks to identify gaps vis-à-vis the Agreement's provisions. They should also examine how the provisions in the plurilateral Agreement on Electronic Commerce compare with the e-commerce provisions in the RTAs that they have either negotiated or are negotiating. This gap analysis and comparison will help them better understand the possible implications of the plurilateral Agreement on Electronic Commerce, take actions as needed, and advance their interests in e-commerce. ■

Mr. Kaukab is Adjunct Faculty, International Institute in Geneva, and international expert on trade and development issues.

Notes

1 WTO. 2024. Joint Statement Initiative on Electronic Commerce. 26 July 2024. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/INF/ECOM/87.pdf&Open=True

2 WTO.1998. Declaration on global electronic commerce — adopted on 20 May 1998. https://www.wto.org/english/thewto_e/minist_e/min98_e/ecom_e.htm

3 WTO. 2017. Joint Statement Initiative on Electronic Commerce. 13 December 2017. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN24/38.pdf&Open=True

4 WTO. 2024. Work Programme on Electronic Commerce. Ministerial Decision. 2 March 2024 https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN17/60.pdf&Open=True

5 Available at https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/L/1056.pdf&Open=True

6 WTO Electronic Commerce Negotiations: Consolidated Negotiating Text – December 2020 – Revision, INF/ECOM/62/Rev.1, 14 December 2020. (Restricted Access)

7 Ismail, Yasmin. 2021. *E-commerce Joint Statement Initiative Negotiations Among World Trade Organization Members: State of play and the impacts of COVID-19*. Geneva: International Institute for Sustainable Development and CUTS International. https://www.iisd.org/system/files/2021-06/e-commerce-negotiations-wto-members-covid-19-en.pdf

8 Press release of 24 October 2023 by the United States Trade Representative (USTR) available at https://ustr.gov/about-us/policy-offices/press-office/press-releases/2023/october/ustr-statement-wto-e-commerce-negotiations

9 Rashmi Jose. 2024. "What Developing Countries Should Know About Negotiations for a New Global Agreement on E-Commerce." *IISD* 26 September 2024. https://www.iisd.org/articles/explainer/what-developing-countries-should-know-about-negotiations-new-global-agreement-e and Rashmi Jose and Rashid S Kaukab. 2024. *WTO Joint Initiative on E-Commerce State of Play Past, present, and future*. Geneva: International Institute for Sustainable Development. https://www.iisd.org/system/files/2024-07/wto-joint-initiative-e-commerce-state-of-play.pdf

10 No Caribbean or Pacific island WTO Member is in the list of participating Members in the E-commerce JSI.

11 For the reasons behind Indian and South African opposition to the incorporation of IFDA, and plurilateral agreements more generally, in the WTO legal architecture, see Third World Network. 2024. "WTO: South Africa, India oppose IFD Agreement at MC13". *TWN Info Service on WTO and Trade Issues* 1 March. https://www.twn.my/title2/wto.info/2024/ti240301.htm

Change in Bangladesh **Lessons for the rest**


Rayhan Ahmed

Enhanced engagement with multilateral and regional institutions will help ensure a firm footing as the country navigates a new future.

Dipin Subedi

All eyes are on the interim government of Bangladesh, formed in the wake of its prime minister fleeing the country in August 2024 following massive student-led protests that met with a violent response. This monumental government can serve to remind South Asians benumbed to the jolts of frequent political tremors, lawlessness, anarchy, and extremism of the benign political aspirations they could realize on their own soil. In terms of foreign policy, this government could serve to be an enigma to those trying to maintain their influence in Bangladesh, but in itself could help sketch foreign policies that are the need of the world at present.

A potential model for stability

The interim government has signalled that maintaining inclusive political stability and preserving the liberty of individuals in its body politic can be pursued through dialogue. The representation of diverse interests in the government points towards an attempt at inclusivity. For instance, including a retired military professional, a lawyer, representatives of student protests, diplomats, and freedom fighters, among others, reduces the chances of protests from disgruntled elements flaring up.

The pardoning of political prisoners by the interim government helps to change the political culture that is shared by almost all nations in South Asia, i.e., repression of political opponents using unqualified pretexts or even with no pretexts at all. This move will fuel the hope of politically active citizens in South Asian nations. The composition of the interim government also signals that liberty is not just the prerogative of a certain group of people but encompasses the whole of humanity through the inclusion of human rights activists.

Economic reforms

While we take a retrospective look at all the South Asian countries that have been roiled in protests and revolts in recent years, we can distill a unique problem that was not endemic to one nation but was present in all of them: serious economic crises. The interim government has shown due consideration to rebuilding Bangladesh's economy by roping in experts. It has formed a committee to prepare a white paper on the economy, presenting an unvarnished picture of the state of the economy. Reform measures that have been initiated include those concerning the banking sector, where banks are to be audited and recapitalized through new investments. Internationally held assets of banks that have been a victim of embezzlement are to be recovered.

The interim government considers such misappropriations a result of the parasitic behaviour among some business figures and former officials, who are to be held responsible. It recognizes the urgency of bringing down inflation, as demonstrated by a series of monetary policy adjustments.

At the same time, the interim government has found that the effort to introduce economic reforms can only attain a satisfactory result through paying an equal attention to all the dimensions involved in multi-layered governance. Regulatory and structural reforms, therefore, are to be instituted—beginning with the constitution and followed by the judiciary, the public administration, the electoral system, the anti-corruption apparatus, among others, through multiple reform commissions.

Furthermore, in instances where international aid is found indispensable, strategic areas such as climate change, sanitation, and safe water supply have been identified. Such an outlook not only benefits Bangladesh's economy but could benefit the neighbourhood and beyond.

Political leaders of other South Asian nations like Nepal where governments change frequently without much heed being paid to the dilapidated state of the economy would do well to pay attention to the importance that Bangladesh's interim government has attached to economic reforms. Nepal could negotiate strategic foreign loans for sustainable and green projects. Reformed financial and governance institutions would have a direct effect on the mobilization of investments for the benefit of the broader society as well.

Bangladesh's insistence on green reform, the new talk of the region and rightfully so, is of relevance to other South Asian countries as well since climate change more often than not transcends international boundaries. Creation of green value chains in the region and securing negotiating power as a collective bunch are avenues for them to navigate a web of trade and industrial policies introduced in other parts of the world that threaten to stymie their export aspirations.

Geostrategic importance

At one political level, the interim government of Bangladesh serves to enlighten the political culture of other South Asian nations and their people. However, in matters of maintaining alliances—economic, military, and diplomatic—with nations in the future, there is no concrete framework as yet. Bangladesh is geographically situated in a spot where maintaining commercial ties and trade relations with Dhaka are supposed to be highly lucrative for any nation. Making and strengthening ties with Bangladesh has been an issue haunting big military powers of the world given the strategic location of Bangladesh. The political changes in Bangladesh have made its upcoming foreign policy a guesswork.

Within close proximity of Bangladesh stand two economic and military giants: China and India. From their point of view, it is a matter of who can succeed in making Bangladesh its ally as well as who can neutralize the other's influence in Dhaka. China is Bangladesh's largest import partner globally. India is Bangladesh's biggest trade partner in South Asia. Bangladesh ranks second among recipients of arms exports from China. China constructed the largest submarine base in South Asian in Bangladesh in 2023. China and Bangladesh held joint military drills named "Golden Friendship 2024" in May 2024. Conscious of loosening military ties with Bangladesh due to this exercise, India wanted to strengthen their bilateral relations, and hence a visit by its foreign secretary to Dhaka. India was also supportive of Bangladesh's previous prime minister, Sheikh Hasina, because it felt she had quelled extremist movements. China has built infrastructures in Bangladesh such as the famous Padma Multipurpose Bridge, a two-level rail road bridge. This gives a snapshot of the interests both China and India have in Bangladesh which they would regret to lose in the future.

Along with India and China, another superpower that aspires to have good relations with the new government in Dhaka is the United States (US). The US understands the importance of the geostrategic location of Bangladesh, yet is also aware of its physical distance. Bangladesh's ousted prime minister contentiously claimed that her rejection of the demand for lending St. Martin's Island to the US for building a military air base led to her downfall. In the wake of a new government, however, US has to handle matters ever so delicately. It has welcomed the newly formed interim government and expressed its commitment to lending a helping hand in uprooting undemocratic practices and corruption in Bangladesh. On the economic front, the US is a major market for Bangladesh's vital readymade garment industry, which has long sought duty-free access to the world's largest economy as well as apparel market.

Another reason behind the eagerness with which the US wants to make Bangladesh its faithful ally can be gleaned from Bangladesh's relations with the Russian Federation. Russia also has a significant interest in Bangladesh which is demonstrated by Russia-funded infrastructure projects in the country, especially the Rooppur Nuclear Power Plant. Bangladesh's abstention from a UN-adopted resolution against Russia's aggression in Ukraine is meaningful.

A new foreign policy path?

The political changes in Bangladesh and a noble effort to instate a democratic and righteous government could make one important contribution to the foreign policy of Bangladesh: to approach foreign policy through enhanced engagements with multilateral institutions as well as regional ones. Leveraging one super power when dealing with another is futile and dangerous for the whole world. The consistent calls for the rejuvenation of the South Asian Association for Regional Cooperation (SAARC) coming from the interim government underscore the high value it attaches to regional collaboration, which is no surprise given the instrumental role played by Bangladesh in the creation of the regional body. ■

Mr. Subedi is intern at SAWTEE.

Digitalizing South Asia **Current trends and outlooks for digital trade**

The performance of digitally deliverable services exports from South Asian countries has varied widely, shaped by their unique economic contexts, digital capabilities, and policy environments.

Salamat Ali, Kyle de Klerk and Neil Balchin

Digitally deliverable services (DDS), encompassing sectors such as telecommunications, information technology (IT), finance, and other knowledge-based industries, have become an increasingly significant component of global trade. In 2023, exports of these services reached a peak of US$4.2 trillion, with more than half of global services trade delivered through digital means.

South Asia, generally known for its merchandise exports, has also emerged as a key exporter of services. In 2023, services exports accounted for 41 percent of the region's total exports of goods and services. Most of these services were delivered digitally, with 73 percent of the region's total services exports occurring through digital means. Overall, South Asia accounted for 9 percent of global DDS exports, valued at US$265 billion. This shift towards 'servicification' in general, and DDS in particular, has occurred steadily over the last two decades.

This article provides a snapshot of the region's DDS exports and highlights key trends and drivers of these exports across the eight member countries of the South Asian Association for Regional Cooper-

stockvault

ation (SAARC), drawing on World Trade Organization (WTO) data[1] from 2005 to 2023.

Trends and compositions

The DDS exports of countries in the SAARC region have grown steadily since 2005, collectively registering a fourfold increase from US$32 billion in 2005 to US$129 billion in 2019. Most countries in this region recorded noticeable growth in these exports, particularly from 2015 onwards. This aligns with global efforts to accelerate digital transformation and the rapidly increasing demand for online services. For India, Bangladesh, and Pakistan, there was a significant boom in DDS exports after 2015.

DDS exports from South Asia have consistently grown faster, in relative terms, than other services and goods exports, particularly since 2015 (Figure 1A). This reflects the global shift toward digitalization, remote work, and online services. The COVID-19 pandemic accelerated this trend by prompting a global shift to remote work and increasing reliance on digital platforms. The rising demand for IT services globally createded opportunities for South Asian firms.

However, the pace of growth has been highly uneven across countries (Figure 1B). While India, Nepal, Bhutan, and Pakistan thrived during the pandemic, others—including Sri Lanka and the Maldives—saw much slower growth in DDS exports.

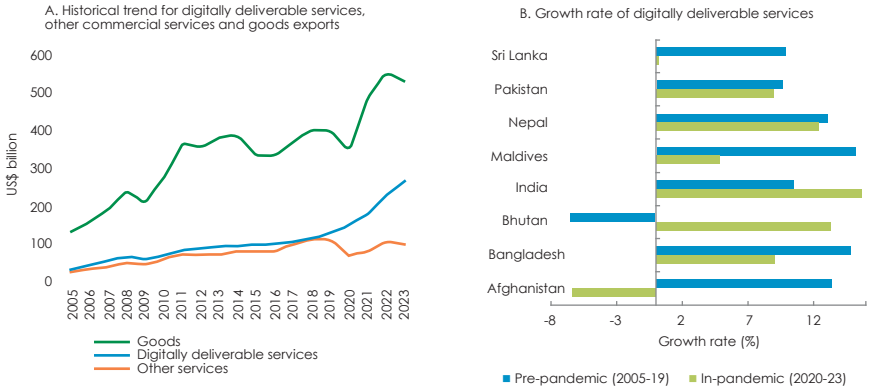
DDS exports from SAARC member countries are concentrated in a few sectors, with computer and general business services together accounting for 91 percent of total exports. These are followed by financial (3 percent), telecommunications (2 percent), and insurance services (1 percent) (Figure 2).

Uneven performance across countries

This composition reflects India's DDS exports in the SAARC region, accounting for 97 percent of total DDS exports. However, when examined individually, the composition of DDS exports varies significantly by country. For instance, Afghanistan's exports of business services, valued at US$269 million, amount to 95 percent of its total DDS exports. The Maldives, on the other hand, only exports telecommunications services. Bhutan is unique in that financial services constitute its largest DDS export (79 percent), while Sri Lanka has the highest share of computer services (67 percent) among its DDS exports. Pakistan and Bangladesh have DDS export structures similar to India's, although both have a higher share of telecommunications services (7 percent and 13 percent, respectively).

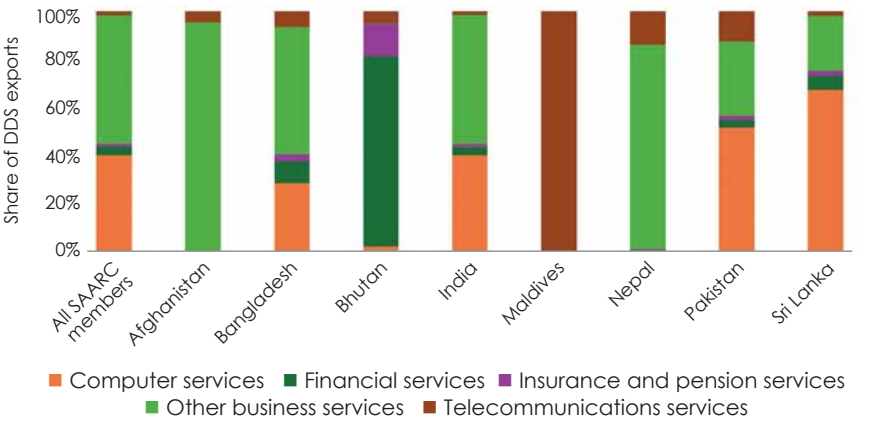
Since 2005, the overall composition of DDS exports from the SAARC countries has remained relatively consistent, with little change in the share of telecommunications, insurance and pension services, and financial services in total DDS exports (Figure 3A). The shares of computer and other business services have also remained relatively stable, although the latter has grown at a faster rate since 2019. However, excluding India reveals greater variability in the composition of DDS exports in other SAARC members (Figure 3B). While exports of financial, insurance and pension services remained similarly stable, exports of

Figure 1 Growth of digitally deliverable services exports from South Asia



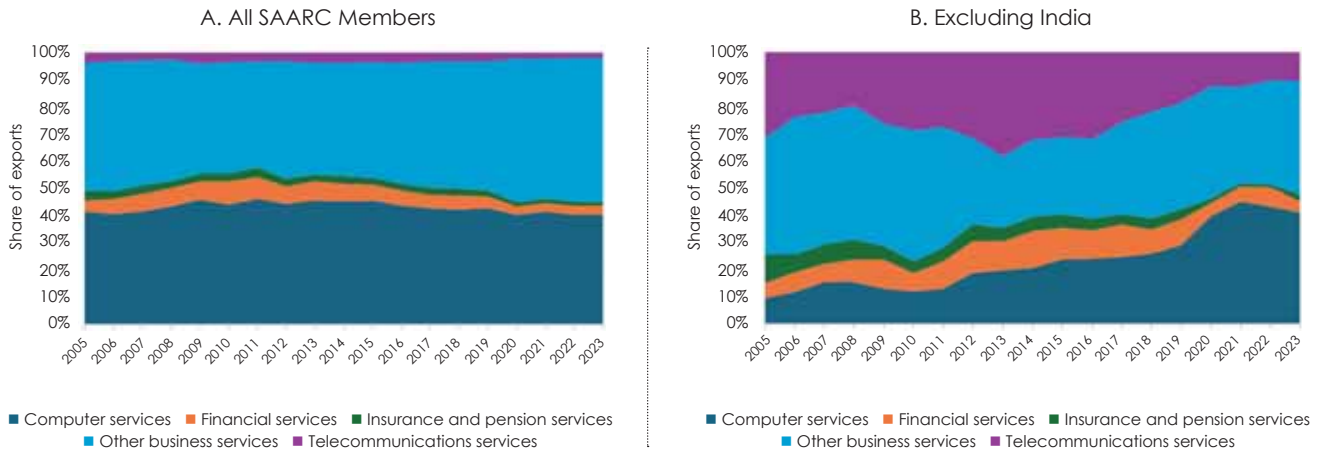
Source: Authors (using data from the WTO)

Figure 2 Composition of digitally deliverable services exports, 2023



Source: Authors (using data from the WTO)

Figure 3 Composition of digitally deliverable services Exports from SAARC countries, 2005-23



Source: Authors (using data from the WTO)

telecommunications services declined from a high in 2015, both in absolute and relative terms. Exports of both computer and other business services recorded substantial growth during the COVID-19 pandemic, but the share of the former has started to decline in the post-pandemic period.

Given the widespread use of English language in SAARC member countries, it is unsurprising that many of their top DDS export markets are in the English-speaking West. Data from the Reserve Bank of India shows that over half of India's DDS exports go to the United States, followed by the United Kingdom (UK) and the European Union (EU). Less than 10 percent are exported to other Asian countries, with only 5 percent going to the rest of the world.

This export orientation is generally mirrored by other SAARC countries. For example, the US and the UK account for over half of Bangladesh's DDS exports, with the remainder split among the EU and other predominantly English-speaking countries such as South Africa, Malaysia, and Singapore. For Pakistan, the US is by far the largest destination for DDS exports, accounting for over ten times the value exported to the second largest destination, the United Arab Emirates. The UK, EU, and other English speaking Asian countries are also large export destinations.

The dominant exporter

India is the largest exporter of DDS in South, accounting for 97 percent to the total exports from the region. India's DDS exports have consistently grown from US$30 billion in 2005 reaching an impressive US$257 billion by 2023.

Key periods of growth are evident during the late 2000s and in the midst of COVID-19, which reflects India's resilience and adaptability to the global shift towards digital services during the pandemic. Between 2020 and 2023, India's exports of DDS grew at an annual cumulative rate of 21 percent. In 2023, India alone accounted for 6 percent of global DDS exports. Its two main export categories were other business services and computer services, accounting for 52 percent and 39 percent of India's DDS exports, respectively.

This spectacular growth underscores India's strong position in the global digital services market, driven by its robust IT sector, skilled workforce, and advanced digital infrastructure. Other SAARC countries can learn from India's strategies to boost their own DDS exports.

Steady growth

DDS exports from Bangladesh, Pakistan, Nepal and Sri Lanka grew steadily in this period. Among these countries, Bangladesh recorded significant progress, expanding DDS exports from US$181 million in 2005 to over US$1.92 billion in 2022. The country's ICT sector has played a central role in this expansion, driven by the government's focus on developing its digital economy through initiatives like *Digital Bangladesh.* Despite a slight dip from the historical trend in 2023, Bangladesh's upward trajectory reflects the strong growth potential in the digital economy. Bangladesh benefits from the World Trade Organization (WTO)'s LDC services wavier, but its practical effectiveness has been questioned. There remains work to do to better implement and operationalize the waiver and ensure it adequately promotes growth in LDCs' priority services sectors.[2] The structure of Bangladesh's services exports is similar to that of India, with business services dominating, followed by computer services.

Pakistan's exports of DDS have also grown considerably from US$620 million in 2005 to US$4.28 billion by 2023. Its ICT clusters in major cities have been instrumental in this growth,

with government initiatives aimed at fostering digital entrepreneurship and expanding the reach of digital services. Despite challenges in infrastructure and regulatory alignment, there is a growing culture of innovation in Pakistan amid a boom in tech start-ups. Another key component of the country's technology sector is freelance work, where individuals provide technology services digitally to global clients through platforms such as Upwork and Fiverr. This talent pool experienced a tremendous increase in their earnings during the pandemic. This trend signals strong potential for continued expansion of the digital economy.

Nepal's DDS exports expanded gradually from US$104 million in 2005 to US$654 million in 2022. This increase highlights Nepal's emerging digital sector, which has benefited from the government's emphasis on ICT skill development and increasing digital connectivity. However, continued growth may be contingent on diversification of the DDS sector. With business services holding an 85 percent share, Nepal's DDS exports are currently very concentrated.

Sri Lanka's DDS exports have progressively increased from US$1.54 billion in 2005 to US$3 billion in 2022. The expansion of the country's IT services sector, alongside supportive government policies, has fostered this growth. Sri Lanka's journey reflects an encouraging shift toward a more digital-centric economy, despite infrastructure and regulatory challenges.

Lagging performers

Afghanistan, Bhutan and the Maldives face structural challenges to scaling up their DDS exports. These include underdeveloped infrastructure, smaller talent pools, and less conducive policy environments. These factors result in relatively modest contributions to the region's DDS exports.

Afghanistan has experienced fluctuations in its DDS exports. These exports increased from a modest US$30 million in 2005 to US$931 million by 2011, but declined drastically in subsequent years. In 2023, Afghanistan's DDS exports stood at US$275 million, reflecting ongoing challenges such as political instability, underdeveloped digital infrastructure, and limited capacity for sustained growth.

Bhutan's DDS exports remain modest in comparison to other countries in the region. Starting at US$21 million in 2005, exports have fluctuated considerably and were valued at US$17 million in 2023. Bhutan's relatively modest DDS exports can be attributed to the country's smaller economy and population, along with limited digital infrastructure.

DDS exports by Maldives are relatively small but stable. They increased from US$8 million in 2005 to US$37 million in 2023. The country's strong focus on the tourism sector and limited diversification into digital services mean growth in DDS exports has been slow. Moreover, the country's size and economic focus may continue to limit large-scale expansion of digital trade.

Future outlook

The performance of DDS exports from South Asian countries has varied widely over the last two decades, shaped by their unique economic contexts, digital capabilities, and policy environments. These factors will continue to influence their role in the global DDS market.

The future of DDS exports from these countries depends on fostering digital skills, enhancing digital infrastructure, and accelerating innovation to overcome digital divides. Continuous investment in the digital sector will be crucial for maintaining competitive advantages, especially for large and medium-sized countries. Smaller economies may benefit from focusing on niche areas within digital services, improving regulatory frameworks, and enhancing international collaboration.

Emerging technologies such as artificial intelligence, cloud computing, and blockchain could present new opportunities for South Asian countries to integrate these technologies into their DDS exports. Additionally, enhanced regional cooperation, trade agreements focused on digital services, and greater emphasis on regulatory interoperability could further stimulate growth in this sector across South Asia and beyond.

Further expansion and diversification into high-value DDS exports can help transform South Asian economies. Delivering more services digitally across borders would enable these countries to supply much larger—and, in some cases, wealthier—markets, in the process capitalizing on the surge in demand for services globally and potentially enabling them to benefit from positive scale effects on productivity and competitiveness.[3] However, to achieve these gains, South Asian countries must redouble their efforts to overcome constraints related to internet connectivity, access to digital technologies, digital skills and literacy. They would also need to address regulatory challenges by developing supportive policies and legislative frameworks that facilitate the cross-border delivery of digital services.[4] ■

Dr. Balchin is an Economic Adviser, Dr. Ali is a Trade Economist and Mr. de Klerk is an Assistant Research Officer in the International Trade Policy Section at the Commonwealth Secretariat, United Kingdom.

Notes

1 The International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations and the World Trade Organization. 2023. *Handbook on Measuring Digital Trade*. Geneva: The International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations and the World Trade Organization.

2 Sharma, S. 2023. "Improving the Operationalisation and Implementation of the WTO's LDC Services Waiver: A Commonwealth Perspective." *International Trade Working Paper 2023/01*. London: Commonwealth Secretariat.

3 Balchin, N., S. Ali, and K. de Klerk. 2024. "Services Exports and Structural Transformation in Asia-Pacific LDCs: Stubborn Challenges, New Opportunities." *Asia-Pacific Sustainable Development Journal* 31 (2): 91-124

4 Ali S., N. Balchin, K. de Klerk, and C. Zhuawu. 2024. "Exploring Commonwealth Trade in Digitally Delivered Services." *Trade Hot Topics*, Issue 191. London: Commonwealth Secretariat.

The growing environmental footprint of digitalization
Implications for developing countries

While digitalization may give the impression that it is something virtual, intangible or that is taking place "in the cloud", in reality, it has a large appetite for raw materials.

Torbjörn Fredriksson

The world economy is rapidly changing due to the expanding and evolving use of digital technologies. This is creating many opportunities for development but also bringing new challenges. Digital transformation is unfolding against the backdrop of global environmental crises, such as climate change and biodiversity loss. Digital technologies are essential for addressing these challenges. At the same time, we need to ensure that the process of digitalization itself is as environmentally sustainable as possible.

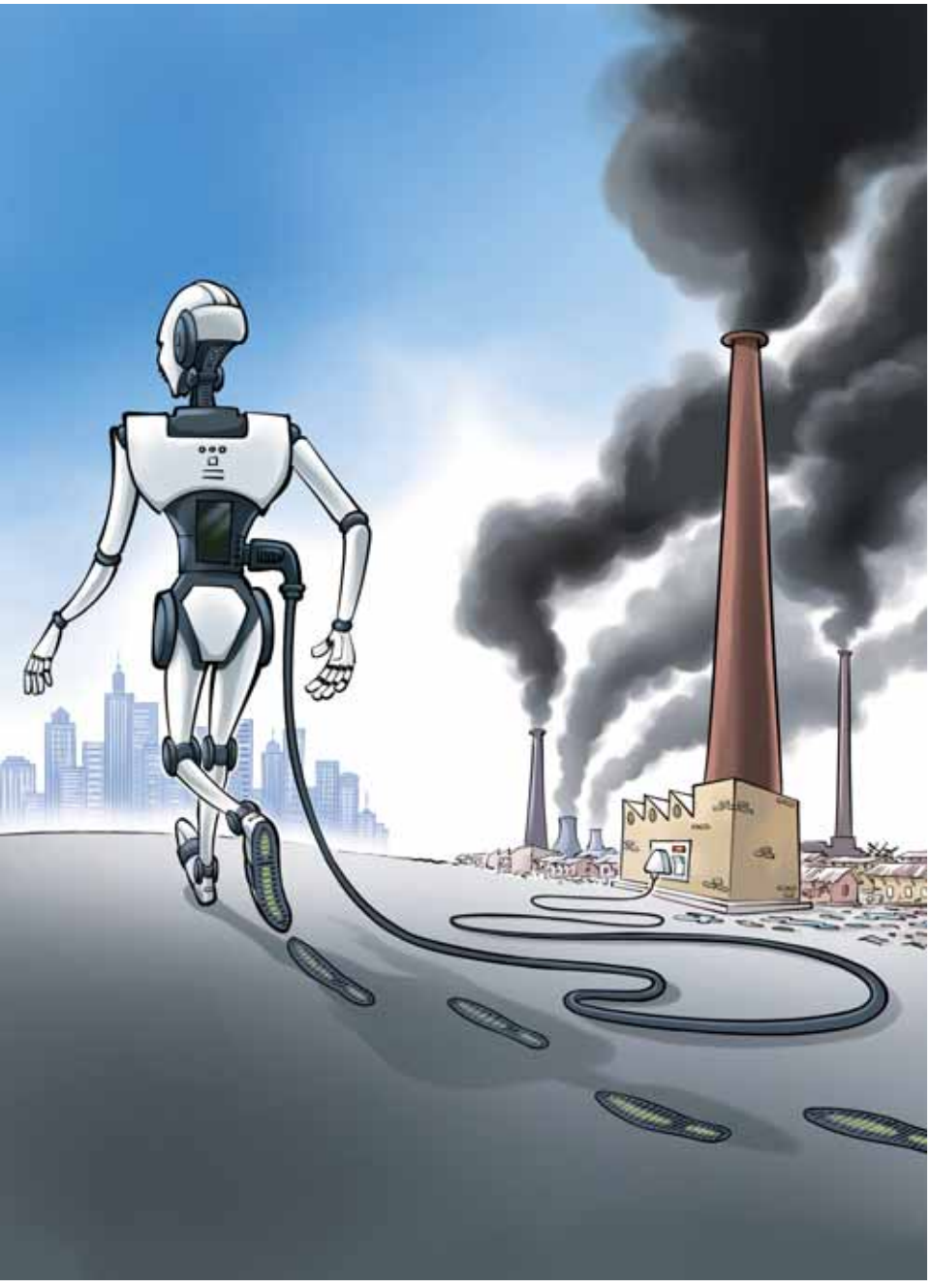
Developing countries, including least developed countries (LDCs), are disproportionately affected by digitalization's negative environmental impacts, while missing out on its economic development opportunities. Many developing countries face digital divide limiting their readiness to make use of and benefit from digitalization.

To address this situation, UN Trade and Development (UNCTAD) in a recent report calls for a new policy mindset and bold actions to enable a more circular digital economy with a reduced environmental footprint, while ensuring inclusive development outcomes.[1]

Digitalization is leaving a growing environmental footprint

In the past two decades, the world has experienced a remarkable shift towards more use of digital technologies and applications. The number of internet users surged from 1 billion in 2005 to 5.4 billion in 2023.[2] Between 2010 and 2023, annual shipments of smartphones more than doubled to about 1.2 billion,[3] while the number of semiconductor units sold each year keeps expanding.[4]

Network infrastructure, including submarine cables and communications



satellites, offers ever faster ways of connecting more people and machines. Fifth generation (5G) mobile broadband population coverage has been projected to rise from 25 percent in 2021 to 85 percent in 2028.[5] Higher connection speeds in turn enable more data to be generated, collected, stored and analyzed, which is central to technologies such as big data analytics, artificial intelligence (AI) and the Internet of things (IoT). Mobile data traffic is expected to more than double in the next five years, led by Asia.[6] At the same time, the number of internet-connected objects is projected to surge from 13 billion in 2022 to 35 billion in 2028.[7]

While digital technologies can be used to mitigate various environmental concerns, the rising numbers of end-user devices, data transmission networks, data centres and digital services are leaving a growing environmental footprint. With the linear production model of the digital economy, the demand for raw materials, water and energy, emissions of greenhouse gases (GHGs) and waste generated at the end-of-life phase keep rising. Recent estimates suggest that the information and communications technology (ICT) sector in 2020 already accounted for a similar share of GHG emissions as the aviation industry.

Dematerialization is yet to materialize

The extraction and processing of material resources overall in the economy affect all aspects of the triple planetary crisis. They account for 60 percent of GHG emissions, over 90 percent of biodiversity impact and 40 percent of pollution-related health impacts. This is set to continue due to unchecked resource use and affluent lifestyles in high-income countries.[8] So, to date, increased digitalization has not made a dent in the use of material resources.

While smart use of terminology may give the impression that digitalization is something virtual, intangible or that is taking place "in the cloud", in reality, it has a large appetite for raw materials. It has been estimated that making a 2 kg computer involves

extracting 800 kg of raw materials, and that 70 kg of raw materials are needed to produce, use and eliminate one smartphone.[9]

Key minerals and metals needed for digitalization, such as aluminium, cobalt, copper, lithium, nickel and rare earth elements, are also essential for the shift towards a low-carbon economy. The parallel shifts to low-carbon and digital technologies are boosting global demand for these materials. Production of some of these minerals, such as graphite, lithium and cobalt, may need to increase by 500 percent by 2050 to meet growing demand, according to the World Bank.[10] Such trends suggest an accelerated depletion of some minerals. They are also adding to geopolitical tension as countries scramble to secure access to "critical minerals".

This increased demand for minerals and metals could be leveraged as an opportunity for development if resource-rich LDCs and other developing countries are able to add more value to the minerals extracted, receive more of the proceeds and diversify into other parts of the value chain and other sectors. However, at present, most of the countries concerned tend to export minerals in un-processed form and import higher value-added manufactures, thus contributing to an "ecologically unequal exchange".

This points to the need for a more balanced global policy response that can help to achieve sustainable consumption and production, and that reflects the interests of both exporters and importers of raw materials.

Digital technologies boosting energy and water use

As more people, businesses and other organizations make increased use of digital services, the consumption of energy and water related to devices and ICT infrastructure increases significantly.

For example, the data-driven digital economy requires more data centres with huge storage and computing capacity, and that consume large amounts of both energy and water. The estimated electricity consumption by 13 of the largest global data-centre operators more than doubled between 2018 and 2022. And there is more to come. Worldwide, electricity for data centres amounted to about 460 TWh in 2022, and is expected to rise to 1,000 TWh by 2026.[11]

By way of comparison, the total combined electricity consumption in Viet Nam and the Philippines was about 450 TWh in 2022.

In Singapore, where data centres were responsible for around 7 percent of all electricity demand in 2020, the government imposed a moratorium on new data centres and later replaced it with stricter conditions on electricity, water and land use by data centres.

The environmental footprint has been accentuated by new activities and technologies. Artificial intelligence, and machine learning in particular, require extensive computing resources and dedicated hardware. Understanding their energy and water use will become critical as their applications (such as ChatGPT) become more mainstream. Cryptocurrency mining is also highly energy intensive. According to the Cambridge Centre for Alternative Finance, global energy consumption of bitcoin mining rose about 34 times between 2015 and 2023 to reach an estimated 121 TWh.[12]

Growing electricity demand has led large tech firms to emit more GHGs despite commitments to "net zero". For example, Google announced in July 2024 that its GHG emissions over the past five years had climbed by 48 percent.[13]

As data centres are highly dependent on stable electricity, they should as much as possible be powered by low-carbon energy (without crowding out the use of renewable energy by other sectors). Operators should also be required to continue to improve the energy and water efficiency of data centres, while limiting the waste generated from frequent equipment replacements. However, the scope for further efficiency improvements in these areas remains uncertain.

There is a lack of detailed data on the energy and water consumption characteristics of data centres and networks. Better tracking of a wider range of indicators related to GHG emissions, water consumption and noise generation is required.

Waste is mounting and too little is properly collected

Waste from digitalization is another growing environmental concern. Between 2010 and 2022, the volume of waste from screens, monitors and small IT and telecommunications equipment expanded by 30 percent globally, from 8.1 million to 10.5 million tonnes (excluding waste from IoT devices, batteries and communications satellites).

In absolute terms, China, the United States and the European Union were the largest contributors of such waste in 2022. In per capita terms, developed countries generated on average 3.25 kg of waste compared with less than 1 kg in developing countries and just 200 g in the LDCs. The average US citizen generated 25 times more waste than someone in LDCs. These disparities reflect the digital divide between countries in terms of access, affordability and use of digital devices and equipment.

The growth in waste stems from increased consumption of electronic devices with shorter life spans, insufficient consumer awareness about the waste implications of their devices, the linear production model and limited options for repairing or upgrading existing devices.

Despite this, formal collection rates of digitalization-related waste remain low. In 2022, just 24 percent of such waste was formally collected globally— a share that dropped to just 7.5 percent in developing countries, and to 1 percent in Africa. Even in developed countries, where formal collection systems tend to be more robust, the average collection rate of 47 percent is insufficient.

The double bind of developing countries

Currently, the distribution of benefits and costs from digitalization

is highly skewed. Most of the value added in the digital economy is captured by the digitally advanced countries. In North America, in 2023 a person was estimated to have on average more than 13 digital devices and connections, compared with just one in Africa and three in the Asia-Pacific.[14] Similarly, while 89 percent of the population in high-income countries had 5G coverage, that share was only 3 percent in LDCs.[15]

Countries are also unevenly affected by the environmental impacts of digitalization. Many developing countries provide key raw materials, face environmental degradation from mining and are destinations for significant digitalization-related waste. At the same time, these regions are often at the tail end of global trade, where opportunities for value addition and economic growth are limited.

Moreover, developing countries tend to be more affected by climate change, which can limit their options for socioeconomic development. At the same time, developing countries often lack the resources and capacity to use digital technologies for mitigating negative environmental impacts.

LDCs are at a risk of falling further behind in both digital development and environmental sustainability. Achieving environmentally sustainable digitalization that fosters inclusive development will require reversing the unequal ecological exchange and addressing vulnerabilities faced by developing countries.

This underscores the principle of "common but differentiated responsibilities", where the obligations for environmental protection reflect each country's capabilities, historical responsibilities and level of development.

More digitally advanced economies have a particular responsibility to devise and implement policies to achieve a digital transformation that is both inclusive and environmentally sustainable. This requires a shift towards a circular digital economy, characterized by responsible consumption and production, renewable energy use and comprehensive e-waste management.

Action is needed at all levels and by all stakeholders

There is an urgent need to bring digital and environmental policy making closer together. Bold actions should be taken along the entire life cycle of digitalization involving all stakeholders.

National digital policies are more likely to prove successful if designed and implemented with economic inclusion and environmental sustainability in mind. Similarly, government strategies to mitigate GHG emissions, conserve water resources and reduce waste should pay attention to the role of digitalization.

At the international level, the needs and priorities of all countries must be acknowledged. Development partners should offer adequate support to low-income countries to strengthen their capabilities for digitalization and environmental sustainability and to ensure that they can participate effectively in a more circular global digital economy.

Several international developments provide opportunities for further policy advancement, including the 20-year review of the World Summit on the Information Society (WSIS) in 2025, and the implementation of the Global Digital Compact which was adopted at the Summit of the Future in September 2024.

Indeed, in the Compact, world leaders committed to, by 2030, promote sustainability across the life cycle of digital technologies, including context-specific measures to increase resource efficiency and to conserve and sustainably use natural resources and that aim to ensure that digital infrastructure and equipment are sustainably designed to address environmental challenges in the context of sustainable development and efforts to eradicate poverty.[16] ■

Mr. Fredriksson is the head of the E-commerce and Digital Economy Branch at UN Trade and Development (UNCTAD).

Notes

1 UNCTAD. 2024. *Digital Economy Report 2024: Shaping an Environmentally Sustainable and Inclusive Digital Future*. Geneva: United Nations Trade and Development.

2 Based on International Telecommunication Union (ITU) statistics.

3 UNCTAD analysis of data provided by Canalys.

4 Semiconductor Industry Association. 2023. "Despite Short-Term Cyclical Downturn, Global Semiconductor Market's Long-Term Outlook is Strong." *Blog*, February 08. https://www.semiconductors.org/despite-short-term-cyclical-downturn-global-semiconductor-markets-long-term-outlook-is-strong/

5 Ericsson. 2023. *Ericsson Mobility Report: November 2023*. Stockholm: Ericsson. https://www.ericsson.com/en/reports-and-papers/mobility-report/reports

6 *ibid*.

7 GSM Association. 2023. *IoT for Development: Use Cases Delivering Impact*. London: GSM Association. https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2023/03/IoT-for-Development-Use-cases-delivering-impact.pdf

8 United Nations Environment Programme and International Resource Panel. 2024. *Global Resources Outlook 2024: Bend the Trend – Pathways to a Liveable Planet as Resource Use Spikes*. Nairobi: United Nations Environment Programme, International Resource Panel. https://www.unep.org/resources/Global-Resource-Outlook-2024

9 Justice et Paix. 2019. *Les Fausses Promesses du Numérique: Environnement, Éducation, Santé, Travail. Étude*. Brussels: Commission Justice et Paix francophone de Belgique.

10 International Energy Agency. 2024. *Electricity 2024: Analysis and Forecast to 2026*. Paris: International Energy Agency.

11 Based on Cambridge Bitcoin Electricity Consumption Index.

12 Rahman-Jones, Imran. 2025. "AI drives 48% increase in Google emissions." *BBC News*, January 24. https://www.bbc.com/news/articles/c51yvz51k2xo

13 CISCO. 2020. *Cisco Annual Internet Report (2018–2023)*. San Jose: CISCO

14 *ibid*. Note 5.

15 United Nations. n.d. *Global Digital Compact*. New York: United Nations.

needpix

QR payments transforming cross-border transactions

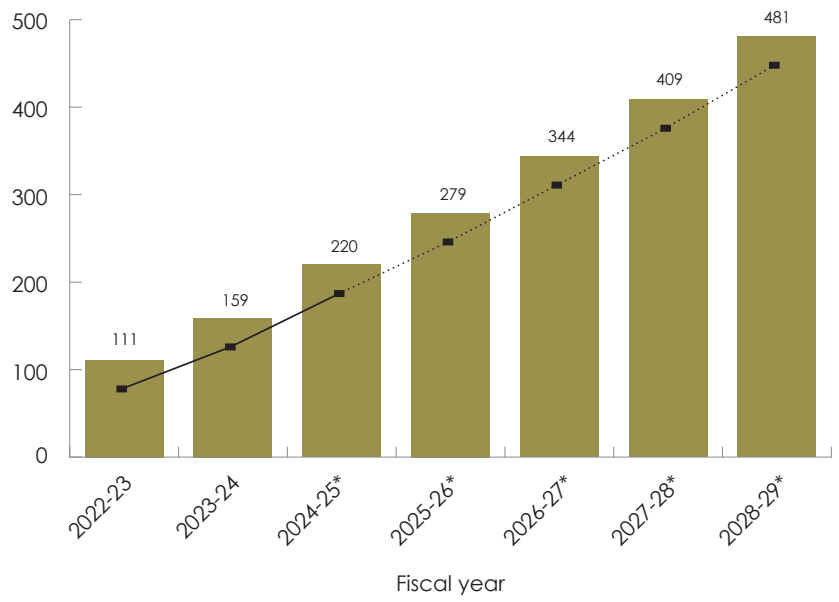
When working towards creating a unified QR payment system in South Asia, member countries can draw lessons from India's success, including government support, adaptability to diverse regulatory environments and scalability.

Bhawana Adhikari

Cross-border payment systems are the foundation of global trade, enabling businesses and individuals to conduct transactions across international borders. Historically, such payments faced challenges such as higher costs, low speed, and a lack of transparency. However, the rise of digital payment solutions has significantly transformed the landscape, making cross-border transactions more efficient and transparent. Digital payment systems are now pivotal in fostering economic integration, supporting international trade, promoting global development, and enhancing financial inclusion.

A study conducted by the Bank of International Settlements (BIS) reveals that a 1-percentage-point increase in

Figure India's digital payments transaction volume (in billion)



Includes Unified Payments Interface, Cards, Bharat Bill Payments Solution, National Electronic Toll Collection and Prepaid payments instruments

** Expected transaction volume*

Source: The Indian Payments Handbook 2024-2029, PwC

digital payment usage corresponds to a 0.10-percentage-point rise in per capita GDP growth over a two-year period. Moreover, digital payments are associated with a reduction in informal employment, which decreases by 0.06 percentage point per 1-percentage-point increase in digital payment adoption.[1] Digital payments also empower micro-payment businesses by enabling small-scale transactions, boosting e-commerce, and facilitating on-demand services. In emerging economies, they help bridge gender gaps, offering access to financial services for 1.6 billion people—more than half of whom are women.[2] This digital shift contributes to the idea of a cashless society. Cashless economies allow governments and banks to exercise greater control over the economy, stimulating increased lending from banks, heightened business investment, and encouraging consumer spending and borrowing. Electronic payments provide governments with comprehensive oversight that enables them to devise appropriate monetary and economic policies.

In terms of international trade, cross-border digital payments can also emerge as an enabler of greater regional integration. Digital payments simplify logistics by enabling quicker and more reliable payments for transport, freight forwarding, and customs clearance. Being faster, cheaper, and more transparent, digital payments can facilitate near-instantaneous settlements. Speedy payments are critical in trade, as delays in payments can disrupt supply chains and hinder business operations. For smaller volumes, digital payments also reduce transaction costs, which can be beneficial for smaller businesses that find traditional payment methods a barrier. The World Bank estimates that reducing remittance costs to 3 percent globally could save US$16 billion annually, much of which would benefit trade by lowering operational costs.[3] In cross-border transactions where small-volume goods need to be transported over short distances, digital payments could be the most suitable option. Moreover, cross-border flow of people for tourism, pilgrimage, education and work would be highly facilitated if digital payments in the regional were integrated. Although there are plenty of reasons to make digital payments ideal for settling regional payments in South Asia, regional integration in digital payments has remained limited. However, the growing footprint of India's cross-border Unified Payments Interface (UPI) within the region and beyond has increased hopes for it becoming a conduit to greater regional digital payments integration.

India's digital payment journey

While South Asia's regional digital payment systems are slowly taking off, India's UPI has bridged significant gaps and revolutionized the payment landscape in India. India's transition from a cash-based economy to a predominantly cashless one is a noteworthy achievement. UPI, developed by the National Payments Corporation of India (NPCI), has not only made transactions more efficient but also boosted financial literacy, fostered economic growth, and formalized over 300 million financial firms.[4] A study by Observer Research Foundation highlights that a 1 percent increase in UPI transaction volume correlates strongly with a 0.03 percent increase in GDP growth, underscoring UPI's economic impact.[5]

Digital payments in India have seen a rapid rise and are expected to witness significant growth in transaction volume (Figure). Following the 2016 demonetization, that saw INR500 and INR1000 denomination currency notes declared invalid and pulled out of circulation, digital payments surged, with UPI leading the charge. UPI has achieved a compound annual growth rate of 40 percent in transaction volume. Its features include Person-to-Person (P2P) payments, Person-to-Merchant (P2M) transactions, Request-to-Pay


Needpix

options, UPI-on-Delivery services, standing instructions, and IPO investments (The Indian Payment Handbook 2024-2029, 2024). UPI's ability to facilitate payments via Quick Response (QR) codes, virtual payment addresses (VPAs), or UPI-registered mobile numbers eliminates the need for detailed bank information. Besides UPI, India also has a thriving ecosystem of other digital payment providers such as digital wallets, card payment networks, and other fintech instruments. But currently, UPI dominates the landscape with over 80 percent of India's digital payment transactions getting through it.

Cross-Border QR payments: Leading the way

QR codes, first developed in 1994 for tracking automotive parts, have become integral to modern payment systems. Their fast readability and capacity to store large amounts of information make them ideal for seamless transactions. They are now popular in payment systems across various sectors. Notably, India ranks as the second-largest country in QR code scanning, accounting for 9.30 percent of worldwide QR code scans.[6] The introduction of Bharat QR in 2017 was a major milestone in this, offering a unified platform for QR code payments that works across different payment networks. UPI's reach has extended beyond South Asia to North and Southeast Asia. This also creates opportunities for other countries to leverage India's success in Digital Public Infrastructure (DPI) to enhance cross-border payment systems, enhance financial inclusion, and strengthen economic ties, provided all parties involved want to pursue that goal.

UPI started its regional expansion in July 2021 with a partnership between NPCI International Payments Ltd (NIPL) and the Royal Monetary Authority (RMA) of Bhutan by implementing BHIM QR-based payments. In September 2023, India and Nepal signed an agreement for cross-border QR payment service at the Global Fintech Fest 2023. In March 2024, India launched cross-border QR transactions in Nepal, allowing Indian citizens to spend up to INR 100,000 per day, while Nepali citizens have a limit of INR 15,000 per day and INR 100,000 per month. Additionally, in February 2024, UPI was officially launched in Sri Lanka through a collaboration with LankaPay, enabling businesses on the LankaPay network to accept payments from UPI-enabled applications, enhancing the digital payment experience in the country.

Pakistan and Bangladesh are the only South Asian countries yet to accept UPI. Bangladesh has published guidelines on Bangla QR in 2021, but is yet to initiate cross-border QR payments. Pakistan entered into cross-border QR payments in January 2024 after a partnership between Pakistan-based fintech platform NayaPay and China-based Alipay+, a cross-border digital payments and marketing platform operated by Ant International. Alipay and WeChat Pay are also accepted in other South Asian nations like Nepal, the Maldives and Sri Lanka.

ASEAN's example

One prominent example of cross-border payment systems is the Association of Southeast Asian Nations (ASEAN), which launched the world's first region-wide Digital Economy Framework Agreement (DEFA) in 2023.[7] DEFA is expected to double the potential value of ASEAN's digital economy from US$1 trillion to US$2 trillion by 2030.[8] Such regional payment systems significantly reduce dependence on the US dollar. Payments made via debit and credit cards are often processed by American companies like Visa and MasterCard, but the ASEAN QR code system enables central banks in the region to collaborate directly. This allows for more efficient transactions, with fees and exchange rates determined through mutual agreement.[9]

ASEAN countries have successfully established bilateral regional digital payment connectivity. Examples include Thailand's PromptPay linked with Singapore's PayNow, Cambodia's KHQR with Lao PDR's QR, Singapore's NETS QR with Indonesia's QRIS, and NETS QR with Malaysia's

DuitNow.[10] These successes provide a roadmap for other regions to adopt similar systems.

Nepal's expectations

Financial digitalization has significantly improved financial inclusion in Nepal, with the percentage of adults using formal financial services rising from 61 percent in 2014 to 90 percent in 2022. This growth has been driven by increased access to mobile and internet services, coupled with the adoption of digital financial solutions.[11] Additionally, cross-border QR payments are expected to further boost these numbers, especially since India is a significant partner in Nepal's economic activities, including tourism and workers' remittances.

India plays a significant role in Nepal's economy through tourism and remittances. Indian tourists accounted for 30 percent of international visitors to Nepal in 2023. However, restrictions on high-denomination Indian currency notes have posed challenges for Indian tourists. Cross-border QR payments could address this issue, boosting Nepal's tourism sector, which contributes 6.7 percent to its GDP.[12]

Remittances are another critical area. India ranks among the top five remittance sources for Nepal, with the India-to-Nepal corridor being one of the most affordable globally. Cross-border QR payments will facilitate remittance flows in both directions. This is because Indian workers in Nepal also send a huge amount of remittances back home. It is estimated that workers' remittances to India from Nepal are thrice the amount from India to Nepal.[13] The average remittance cost in this corridor is 1.9 percent, significantly lower than the 4.5 percent average for Nepal's other corridors. Implementing cross-border QR payments could further reduce these costs, enhancing financial accessibility for Nepali migrant workers and their families.

Path for regional integration

Creating a unified QR payment framework in South Asia could revolutionize cross-border transactions and strengthen economic ties. South Asian countries can draw lessons from UPI's success, including the importance of government support, adaptability to diverse regulatory environments, and scalability. However, as the world is trying to break free from the Visa and Mastercard duopoly in the global card payments market, countries in South Asia need to be mindful to avoid overreliance on the UPI system. Instead of latching onto the DPI of UPI, countries in South Asia should endeavour to develop a regional digital payments interface that allows interoperability among regional banks and financial institutions to ensure seamless payments across the ecosystem. Similarly, clear guidelines for payment aggregators and gateways for cross-border transaction need to be developed to ensure secure and reliable payment processing.

At the same time, challenges like financial fraud, money laundering, and data privacy concerns must be addressed. Solutions such as end-to-end encryption, mandatory multi-factor authentication, tokenization, and fraud detection tools can mitigate these risks. Moreover, for any digital intervention to work, improved internet connectivity, increased smartphone adoption and proper e-governance infrastructure are all necessary. Additionally, fintech initiatives should be supported to test innovative digital payment solutions without facing stringent regulatory requirements.[14] ■

Ms. Adhikari is intern at SAWTEE.

Notes

1 Aguilar, Ana, Frost Jon, Rafael Guerra, Steven Kamin, and Alexandre Tombini. 2024. *Digital payments, informality and economic growth*. Basel: Bank for International Settlements (BIS). https://www.bis.org/publ/work1196.htm

2 Manyika, James, Susan Lund, Marc Singer, Olivia White, and Chris Berry. 2016. *Digital Finance For All: Powering Inclusive Growth in Emerging Economies*. New York: Mckinsey & Company.

3 World Bank. 2023. *Reducing Remittance Costs: A Global Opportunity*. Washington, D.C.: World Bank.

4 Bansal, Rohit, Kanti Mohan Saini, and Kumar Jha. 2024. *Decoding India's UPI phenomenon: A digital revolution with global implications*. New Delhi: Observer Research Foundation. https://www.orfonline.org/expert-speak/decoding-india-s-upi-phenomenon-a-digital-revolution-with-global-implications

5 *ibid.*

6 V., Roselle. 2025. "2025 Global QR Code Trends and Statistics Report." *QR Code Tiger*, January 24. https://www.qrcode-tiger.com/qr-code-trend.

7 Association of Southeast Asian Nations. 2023. "ASEAN launches world's first regionwide Digital Economy Framework Agreement." *News*, September 3. https://asean.org/asean-launches-worlds-first-regionwide-digital-economy-framework-agreement/

8 *ibid*.

9 Guild, James. 2023. "ASEAN's Cross-Border Digital Payment System Explained." *The Diplomat*, June 13. https://thediplomat.com/2023/06/aseans-cross-border-digital-payment-system-explained

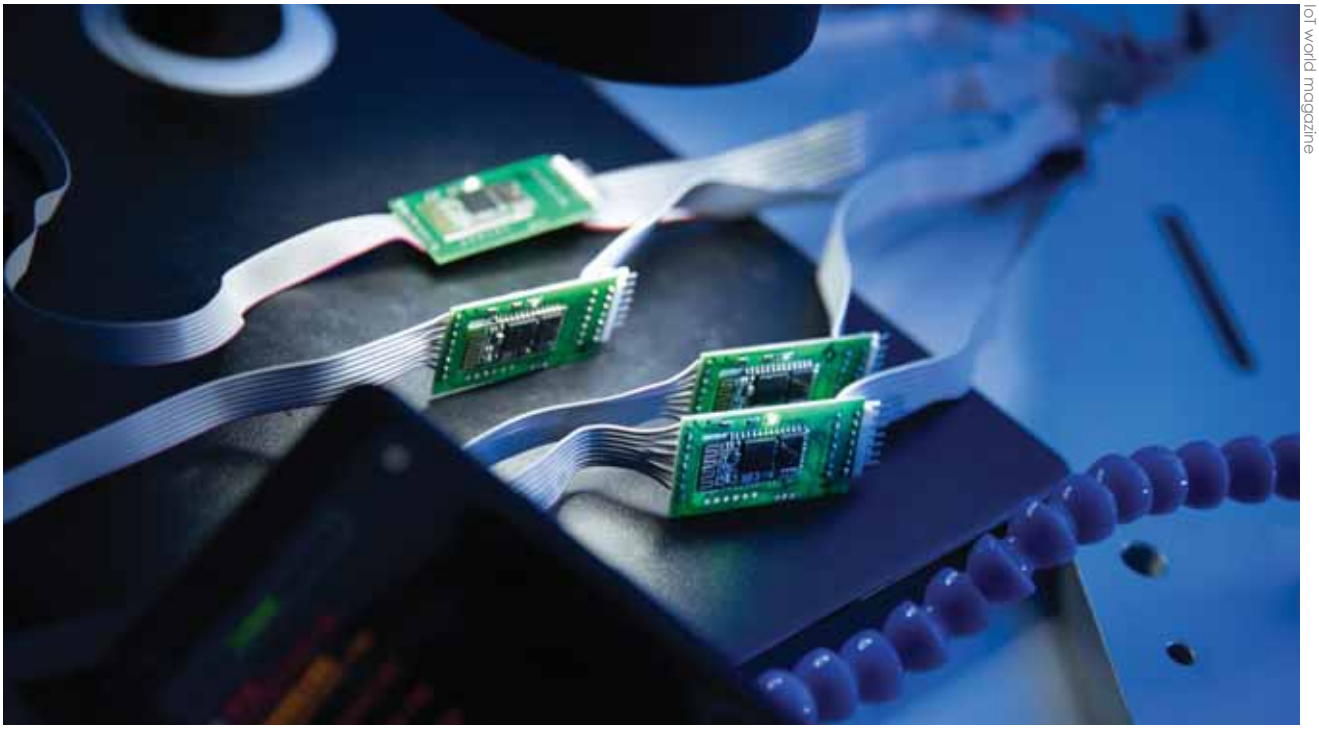
10 Yang, Bryan Tan Jia, and Katrina Navallo. 2024. "The Potential and Prerequisites for ASEAN-Japan Cross-Border Digital Payments." *Fulcrum*, Feb 21. https://fulcrum.sg/aseanfocus/the-potential-and-prerequisites-for-asean-japan-cross-border-digital-payments/.

11 International Finance Corporation. 2023. *Nepal Financial Inclusion Report*. Washington, D.C.: International Finance Corporation. https://www.ifc.org/content/dam/ifc/doc/2023-delta/2023-nepal-financial-inclusion-report.pdf

12 Deccan Herald. 2023. "Nepal's tourism industry bounces back, receives nearly 7 lakh tourists in past nine months." *Deccan Herald*, October 02. https://www.deccanherald.com/world/nepals-tourism-industry-bounces-back-receives-nearly-7-lakh-tourists-in-past-nine-months-2709266#google_vignette.

13 NewBiz Report. 2020. "Indian Workers Earn More in Nepal than Nepali Workers in India". *New Business Age*, August 24. https://newbusinessage.com/article/indian-workers-earn-more-in-nepal-than-nepali-workers-in-india

14 Asanova, Jazira, Yonghwi Kwon, Pratyush, and John Owens. 2024. "Leveraging Lessons Learned from India's Unified Payment Interface for Digital Transformation in Asia and the Pacific." *ADB Briefs*. Philippines: Asian Development Bank. https://www.adb.org/sites/default/files/publication/964626/adb-brief-299-india-unified-payments-interface.pdffiles/publication/964626/adb-brief-299-india-unified-payments-interface.pdf.



IoT world magazine

Digital supply chains
Advancing sustainability and efficiency in LDCs

A strategic vision and an ecosystem approach are needed to reap benefits from the convergence of digitalization and sustainability paradigms.

Ratnakar Adhikari and Rupa Chanda

Supply chain networks spanning international borders are a defining feature of globalization in today's world. They are a key driver of how organizations operate, connect and collaborate by supporting the end-to-end production and delivery of goods and services. There is growing recognition that supply chains have a profound impact on businesses, societies and the environment. Alongside the emergence of global supply chains is another important phenomenon: digitalization. Enabled by advanced digital technologies that are at the forefront of the Fourth Industrial Revolution (Industry 4.0), digitalization is impacting every aspect of our lives and has the potential to transform business processes and practices. Integration of digital technologies across the supply chain—from procurement to manufacturing to logistics, inventory management and retailing—has

significant implications for efficiency, costs and sustainability. These technologies impact every aspect of how companies organize and manage their supply chains, shaping the way in which businesses can address the growing demand of shareholders to balance efficiency with sustainability.

The convergence of digitalization and supply chain-driven integration of businesses and economies across borders offers significant opportunities to achieve a triple bottom line—economic, social and environmental. Digitalization of supply chains can enable businesses, societies and economies to address sustainability considerations alongside those of efficiency and productivity.

Benefiting from supply chain digitalization

There is a growing body of literature, both academic and practitioner-based, which confirms the wide scope for integrating digital technologies in supply chains and the many concomitant benefits for people, planet and prosperity. A study on the impact of digitalization of sustainable supply chains shows the prospects of leveraging various digitally powered technologies, such as artificial intelligence (AI), additive manufacturing, blockchain, big data and the Internet of Things (IoT) in supply chains and enhancing both supply chain sustainability and efficiency.[1] These technologies can lead supply chains toward the creation of a smarter, better-connected, platform-enabled ecosystem, which supports resource, energy and transport savings.[2] A global survey by Deloitte (2018) shows how Industry 4.0 technologies are being used to support sustainability practices in supply chains such as by enabling better use of recycled and repurposed supplies, reducing energy and water usage, and promoting safer workspaces, among others.[3] Blockchain technologies are helping to improve collaboration, accuracy, transparency and security in supply chains.[4] The resulting benefits in terms of cost reductions and efficiency gains can be significant. According to the World Economic Forum, sustainable supply chain practices can reduce costs by an estimated 9 to 16 percent.[5] In this article, we focus on three types of digitalization, namely, digitalization of business processes, tracking and tracing through digitalization and digital trade facilitation that collectively contribute to sustainability of supply chains.

Digitalizing business processes

As supply chains involve a wide range of business transactions, from end to end, business process digitalization is a very important aspect of supply chain digitalization with the potential to contribute to higher efficiency and productivity, and enabling flexible and customized production processes, thereby also contributing to sustainability. Digitalization not only supports different blocks of the sustainable business model but also offers a potential virtuous, reinforcing cycle between digitalization and sustainability.

One practical example of business process digitalization is found in Bhutan, where the ambitious "e-infrastructure for trade and services" project[6] implemented by the Food Corporation of Bhutan (FCB) supported the transition towards a digital ecosystem. The project helped install machine grading and an electronic auction system for potatoes in the southern town of Phuntsholing, which contributed to increased price transparency, reduced cartelization and a decrease in transaction costs.

Moreover, the initiative has resulted in lower waiting times and faster payments—from four days to four hours—and savings of US$420 per truckload of potatoes auctioned for farmers.[7] Impressed by these results, the FCB has replicated this model by establishing a new centre in Wangdue Phodrang district in the heart of one of the largest potato-producing regions in July 2024.[8]

In Bangladesh, the Enhanced Integrated Framework supported the establishment of the Centre of Innovation, Efficiency and Occupation Safety and Health Improvement (CEOSH)[9] on the premises of the Bangladesh Garment Exporters and Manufacturers Association to train owners, managers and workers on latest technologies, such as AI, blockchains and 3D printing, with a view to reducing production and trade costs and complying with environmental and social norms. CEOSH also acts as a clearing house for the latest knowledge, information and trends on fashion market and supply chain practices. The project came handy in the context of Bangladesh's impending graduation from the least developed country (LDC) category, which may result in extensive trade preference losses.

Tracking and tracing through digitalization

Digital technologies have become an important tool to enhance supply chain transparency to allow retailers and consumers to trace the various stages of a supply chain from the origin of products to store shelves. This is even more important for issuing organic certification to products, as demonstrated by examples from various LDCs.

Although still at a relatively incipient stage, the Ethiopia Traceability Project[10] pilots a traceability system with three wet mills in the Sidama region, where most of the coffee is sourced from thousands of smallholder farmers as well as local coffee collectors/buyers. The project's anticipated benefits include improved and digitalized traceability; increased trust between producers and buyers; and an increase in the number of organic certifications.

In Nepal, the use of digital technology to enhance traceability of the traditional tea supply chain has enabled farmers to obtain organic certification, fetch better prices for their products and diversify their exports. As a result of the intervention, the export price of tea has increased from US$8 per kg to US$9.5 per kg.[11]

In Rwanda, a pilot project uses blockchain technology and digitalized traceability systems to support women coffee farmers, since this commodity is a key driver of economic growth, income stability and enhanced earn-

ings for over 450,000 farmers. As the country's leading export crop, it has contributed an average of 24 percent to total agricultural exports over the last decade.[12]

Digital trade facilitation

Another important aspect of supply chain digitalization is found in the context of border trade procedures and the shift towards paperless trade systems to make trade and supply chains not only climate-friendly but also inclusive. The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) estimates that fully digitalizing regulatory procedures around trade could save between 32kgs and 86 kgs of CO2 equivalents per end-to-end transaction.[13] Extrapolating these to Asia and the Pacific region where the study was conducted, this implies potential savings of 13 million tons of CO2, equivalent to planting 439 million trees.[14]

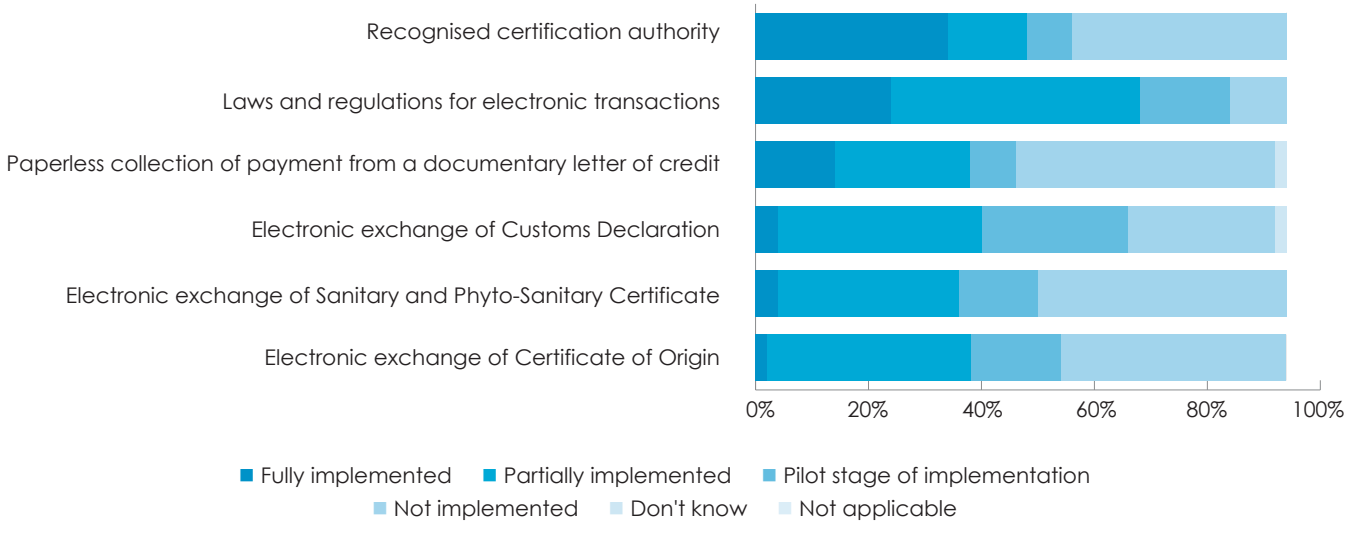
A practical example of this can be found in Vanuatu, a country that recently graduated from LDC status, where the Electronic Single Window project digitalized procedures for the issuance of biosecurity security certificates. As a result, the government managed to reduce the time taken for the issuance of bio-security certificates from six days to 10 minutes and thus achieved a 95 percent reduction in paperwork and an 86 percent reduction in physical trips required for the certification processes. These reforms contributed to cutting down CO2 emissions by 5,827 kgs.[15]

Likewise, the introduction of an Electronic Single Window in Timor-Leste resulted in a 90 percent decrease in physical trips between government agencies and an 80 percent reduction in printed customs documents.[16] Due to this reform, Timor-Leste has lowered its CO2 emissions by 14,492 kgs.[17]

In Cambodia, the Universal Postal Union, the UN Trade and Development, the Global Alliance for Trade Facilitation and Swisscontact have worked together to support an Electronic Advanced Data interface between customs and postal services with a view to ensuring the speedy completion of e-commerce (trade in parcels) transactions for micro-, small- and medium-sized enterprises.[18]

It is important to note, however, that although there are concrete examples of small initiatives at digitalizing trade which have benefited countries, at the global level, the benefits of digital trade facilitation across borders, or cross-border paperless trade, remain largely untapped. The 2023 United Nations Global Survey on Digital and Sustainable Trade Facilitation highlights wide variation in implementation rates for digital trade facilitation measures across countries and that there is much scope for progress. As shown in Figure 1, the implementation of digital measures to facilitate cross-border paperless trade remains low in the Asia-Pacific region, with measures pertaining to the exchange and recognition of trade-related data and documents lagging the most. Even in the case of measures where implementation rates are higher, such as "laws and regulations for electronic transactions", less than 30 percent of the countries surveyed have fully implemented the measure. Similarly, fewer than 40 percent of surveyed countries in the region have fully implemented the "recognized certification authority" measure, which involves establishing an entity responsible for issuing electronic signature certificates to facilitate electronic transactions.

Figure **Implementation of cross-border paperless trade facilitation measures in Asia and the Pacific, 2023**



Source: United Nations Global Survey on Digital and Sustainable Trade Facilitation

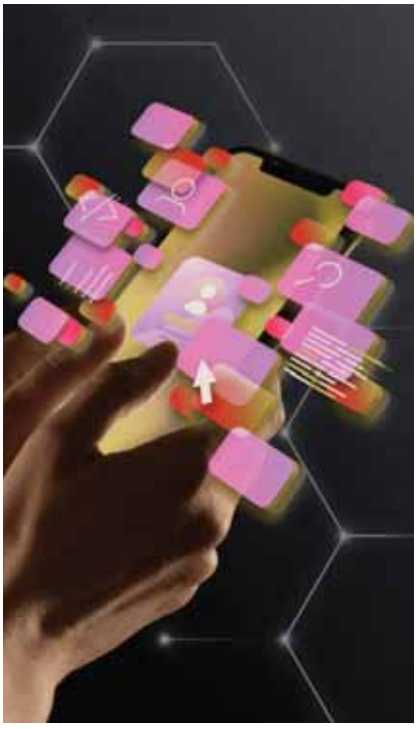
Hence, while countries have digitalized their trade systems nationally, its extension to their trading partners through mutual recognition and acceptance of electronic documents, signatures and payments systems remains lacking. ESCAP estimates suggest that if digital trade facilitation measures were implemented more extensively, the benefits could be immense. Full implementation of cross-border paperless trade, over and above the implementation of the WTO TFA, could generate savings of US$7 billion (13 percent reduction in trade costs), enabling up to US$257 billion in additional exports for the Asia Pacific region alone.[19] Of course, this would require greater regulatory cooperation and efforts at harmonizing standards and systems among countries, including by plugging small initiatives of the kind highlighted earlier and which have yielded tangible beneficial outcomes into larger initiatives and frameworks, such as the *Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific* and *Digital Trade for Africa*.[20] Such steps could have a transformative impact on supply chains, businesses, and economies in terms of efficiency gains, cost reductions and enhanced transparency while also addressing environmental sustainability.

Implications for MSMEs

One important target group for which digitalization of supply chains can have significant implications is MSMEs. Given the critical role played by MSMEs in global supply chains, their ability to leverage digitalization opportunities to transform their business processes and integrate into global value chains is an important determinant of the overall sustainability and efficiency benefits that can accrue to businesses and economies from supply chain digitalization.

For instance, greenhouse gas (GHG) emissions from upstream and downstream activities in the value chain account for most of the total GHG emissions of individual companies.[21] Although the average MSME emits only a fraction of GHG emissions compared to the average large company, due to the large number of such enterprises, their collective contribution to total emissions by companies can be large.

Hence, the adoption of digital technologies by MSMEs in their business processes can have a major bearing on sustainability. Moreover, with the growing incidence of trade-related measures linked to sustainability (for example, the EU's Carbon Border Adjustment Mechanism), the greening of MSMEs, including through digitalization of their business processes and how they contribute to supply chain transactions, has become all the more important to tackle sustainability-linked trade measures.



source compilita

There are also the positive effects of digitalization on MSME competitiveness and their ability to enter global and regional value chains, through enhanced efficiency, traceability, automation, access to information, and cost reductions, thereby also contributing to inclusive growth. Digitalization of trade-related processes in the supply chain can also facilitate the growth of e-commerce in goods and services, where MSMEs are often important players in the supply chain or as direct exporters.

These benefits of digitalization are, however, not automatic. As is well recognized, MSMEs all over the world and particularly in developing countries and LDCs face challenges with adopting digital technologies given their lack of scale, their financial and human resource constraints, and lack of technological sophistication. Hence, if digital transformation of supply chains is to take place and the aforementioned benefits are to be realized, governments, industry associations and large companies need to support MSMEs in digitalizing their business processes and their trade transactions.

This requires a mix of measures, including regulatory and other incentives to encourage and reward digitalization and sustainability efforts by MSMEs, financial and technical support mechanisms to enable digital adoption by MSMEs, raising awareness about digital technologies and their multiple benefits, and enabling sustainability-related compliance, among other support measures. Investments in digitalization also need to be supported, by governments as well as larger companies that procure from MSMEs. Overall, digitalization of MSMEs is needed not only to transform individual small businesses and make them more efficient and sustainable but also to transform and green entire supply chains end-to-end, thereby enabling economy-wide resilience, sustainability and efficiency.

Some final thoughts

Digitalization and sustainability paradigms are clearly moving in tandem, offering tremendous opportunities to make our planet fairer and more liveable. But as is evident from the discussion, if we are to truly reap the benefits from the convergence of these two trends, we require a strategic vision and an ecosystem approach. This is because supply chains are complex, multi-layered and involve a wide range of actors—large and small, public and private, fragmented as well as organized.

The case of cross-border digital trade facilitation clearly highlights that without legal, technical, regulatory and institutional readiness and capacity, it will be difficult to embrace digitalization of trade processes across countries, thereby constraining the digital transformation of global supply chains. Likewise, the case of MSMEs highlights how without addressing MSME-specific challenges, meaningful supply chain digitalization and inclusive and scalable transformation will not be possible. The key to realizing the immense opportunities offered by supply chain digitalization is to bring together resources and expertise across government and industry through public-private partnerships and collaboration, and to engage in regional and international processes and frameworks that facilitate the adoption of best practices and global standards. ■

Dr. Adhikari is the Chairman of SAWTEE and Executive Director at Enhanced Integrated Framework (EIF) and Dr. Chanda is Director, Trade, Investment and Innovation Division at United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Views expressed in this article are personal.

The article is an expanded and revised version of a previously published article by the authors: Adhikari, Ratnakar and Rupa Chanda. 2024. "How digitalization can drive sustainable supply chains in the least developed countries". World Economic Forum, September 2. https://www.weforum.org/stories/2024/09/digitalization-sustainable-supply-chains-least-developed-countries/

Notes

1 Rogetzer, Patricia, Thomas Nowak, Werner Jammernegg, and Tina Wakolbinger. 2019. "Impact of Digitalization on Sustainable Supply Chains." In *Chancen und Grenzen der Nachhaltigkeitstransformation* edited by Fred Luks. Wiesbaden: Springer Gabler. https://doi.org/10.1007/978-3-658-22438-7_8

2 Schrauf S and P Berttram. 2016. "Industry 4.0: How digitization makes the supply chain more efficient, agile, and customer-focused." Strategy& 1–32. https://www.strategyand.pwc.com/gx/en/insights/2016/industry-4-digitization/industry40.pdf.

Fuchs, Christian. 2008. "The Implications of New Information and Communication Technologies for Sustainability." *Environment, Development and Sustainability* 10: 291-309.

3 Deloitte. 2018. *Overcoming Barriers to NextGen Supply Chain Innovation.* The MHI Annual Industry Report cited in M. Akbari and J.L. Hopkins. 2022. "Digital technologies as enablers of supply chain sustainability in an emerging economy." Operations Management Research: 15 (689–710).

4 Kouhizadeh, Mahtab, Sara Saberi, and Joseph Sarkis. 2021. "Blockchain technology and the sustainable supply chain: Theoretically exploring adoption barriers." *Int J Prod Econ* 231:107831. https://doi.org/10.1016/j.ijpe.2020.107831

Popper, Nathaniel, and Steve Lohr. 2017. "Blockchain: A Better Way to Track Pork Chops, Bonds, Bad Peanut Butter." *New York Times,* April 4, 2017.

Baker, John, and Jill Steiner. 2015. "Blockchain: The Solution for Transparency in Product." Provenance. https://www.provenance.org/whitepaper.

5 World Economic Forum estimates

6 Rai, Rajesh. 2017. "Online auction for potatoes goes live." *Kuensel,* September 6. https://kuenselonline.com/online-auction-for-potatoes-goes-live

7 Kovacevic, Michelle. 2019. "Bhutan's potato 'stock market' goes online." Enhanced Integrated Framework, April 9, 2019. https://enhancedif.org/en/impact-story/small-market-big-ambition

8 United Nations Development Program. 2024. "Gangtey's new potato trade facilitation center to transform potato trading." July 23, 2024.

https://www.undp.org/bhutan/stories/gangteys-new-potato-trade-facilitation-center-transform-potato-trading

9 The Bangladesh Garment Manufacturers and Exporters Association. 2024. "Centre of Innovation, Efficiency and OSH globally launched." November 18, 2024

https://www.bgmea.com.bd/page/Centre_of_Innovation,_Efficiency_and_OSH_globally_launched

10 WalterMatter 2023. "Introducing: The Ethiopia Traceability Project." *Corporate News,* December 20, 2023 https://www.wama.ch/introducing-the-ethiopia-traceability-project/

11 Republica. 2023. "Nepali Tea now available with barcodes". *Republica,* April 28, 2023

https://myrepublica.nagariknetwork.com/news/nepali-tea-now-available-with-barcodes

Enhanced Integrated Framework. 2023. *EIF Phase Two & Delivering on inclusive trade for the LDCs.* Geneva: Enhanced Integrated Framework.

12 Sykes, Annabel, and Michelle Kristy. n.d. "Tracing Rwandan coffee digitally for inclusive trade." International Trade Centre. https://digital.intracen.org/issue4-21-en-articles/itc-shares-rwanda-coffee/

13 Duval, Yann, Celine Bacrot, and Simon Hardy. 2021. "Quantifying the environmental benefits from paperless trade facilitation." UNCTAD Transport and Trade Facilitation Newsletter, no. 92. https://unctad.org/news/quantifying-environmental-benefits-paperless-trade-facilitation

14 *ibid.*

15 Sirimanne, Shamika, and Ratnakar Adhikari. 2022. "Vanuatu shows how to reduce emissions through trade facilitation." *UN Trade and Development*, May 25. https://unctad.org/news/blog-vanuatu-shows-how-reduce-emissions-through-trade-facilitation

16 UN Trade and Development. 2024. "Roadmap for trade single windows: UNCTAD helps countries cut red tape, costs and emissions." UN Trade and Development, January 29, 2024.

https://unctad.org/news/roadmap-trade-single-windows-unctad-helps-countries-cut-red-tape-costs-and-emissions

17 International Chamber of Commerce. 2022. *Trade is critical to achieve the Sustainable Development Goals.* Paris: International Chamber of Commerce.

18 Swiss Contact. 2023. "Modernizing Cambodia's Customs Processes: EAD Launch for Cross-Border Trade." Swiss Contact, November 6, 2023.

https://www.swisscontact.org/en/news/modernizing-cambodias-customs-processes-ead-launch-for-cross-border-trade

19 World Trade Organization, United Nations Economic and Social Commission for Asia and the Pacific and United Nations Commission on International Trade Law. 2022. *Cross-border Paperless Trade Toolkit.* Geneva: World Trade Organization, United Nations Economic and Social Commission for Asia and the Pacific & The United Nations Commission on International Trade Law

https://www.wto.org/english/res_e/booksp_e/paperlesstrade2022_e.pdf

20 United Nations Economic and Social Commission for Asia and the Pacific. 2020. *United Framework Agreement on Facilitation of C ross-border Paperless Trade in Asia and the Pacific (CPTA).*

https://www.unescap.org/projects/cpta

21 GHG Protocol and Carbon Trust and World Resources Institute. 2013. *Technical Guidance for Calculating Scope 3 Emissions (version 1.0).* Singapore: GHG Protocol and Carbon Trust and Washington, D.C.: World Resources Institute

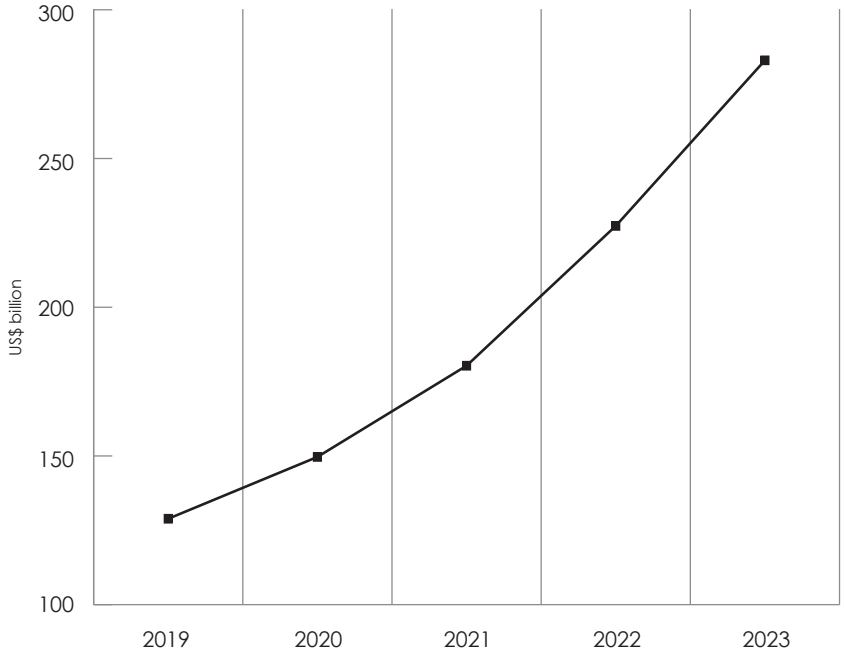
Digital Trade in South Asia
Opportunities for regional cooperation

Traditionally focused on broader economic integration, forums like SAARC and BIMSTEC could spearhead a digital economy initiative to harmonize regulations, establish unified e-commerce frameworks, and develop a regional digital payments network.

Rupesh Tha

In the face of growing digital trade worldwide, South Asian countries have an opportunity to drive economic integration and regional cooperation by developing a regional supply chain network, which can facilitate cross-border e-commerce, digital services, and technology-driven industries, while enabling exports to markets outside the region. To fully capitalize on this potential, the region must work together to harmonize regulations, upgrade digital infrastructure, and improve digital literacy. By strengthening regional cooperation in digital trade, this region can unlock significant economic advantages, enhance their competitiveness, and create inclusive growth for all. While South Asia is making steps in digital trade, its rapid progress is constrained by deficiencies in infrastructure, supporting services, and skills. The growth of digital trade in the region is primarily driven by India, while other countries face slower progress due to more significant constraints. However, regional integration and cooperation can significantly enhance the region's digital trade prospects, provided the

Figure 1 South Asia's digitally delivered service exports from 2019 to 2023 (US$ billion)



Source: WTO

current regulatory fragmentation is addressed.

Digital trade is broadly understood to involve the exchange of goods and services through digital platforms, whether ordered or delivered digitally. It includes transactions where goods or services are ordered online but delivered physically, as well as those that are entirely delivered in digital form.[1] The growth in exports of digitally deliverable services is beginning to surpass that of non-digitally deliverable services globally, signalling an increase in economies' capacity to produce digitally enabled services. From 2005 to 2019, digital services exports grew at an impressive average annual rate of 11 percent, compared to 7 percent for non-digitally deliverable services and 9 percent for total services[2]. In 2022, global exports of digitally delivered services amounted to US$3.82 trillion, reflecting nearly a fourfold growth since 2005. These services represented 54 percent of the total global services exports[3].

South Asia's digitally delivered service exports have grown from US$128.89 billion in 2019 to US$283.01 billion in 2023[4], showing steady growth (See Figure 1). The region has substantial potential to leverage emerging opportunities in digital trade.

Essential elements

The digital economies of South Asian countries have seen significant progress in recent years, driven by advancements in infrastructure, public platforms, financial inclusion, and skill development. These initiatives focus on strengthening domestic capabilities and transforming traditional sectors into digitally empowered ecosystems.

Digital infrastructure

Digital infrastructure refers to the essential components that enable access to the internet and facilitate connections to digital services. This includes physical elements such as fibre-optic cables, data centres, and mobile networks that ensure secure and efficient digital transactions. In South Asia, significant progress has been made in expanding digital infrastructure within individual countries. Nations like India, Bangladesh and Pakistan have focused on enhancing mobile broadband connectivity, with mobile network coverage rapidly growing. However, challenges persist in the area of fixed broadband access. In countries such as Nepal and Afghanistan, fixed broadband remains limited (see Figure 2, next page), with low-speed connections and low subscription rates, further hindering the growth of the digital economy. The average cost of mobile broadband in the region is close to the UN Broadband Commission's benchmark 2 percent of monthly GNI per capita, but the affordability issue persists, especially in landlocked countries like Afghanistan and Nepal. This is mainly due to higher infrastructure and logistical costs, compounded by limited access to sea ports and low competition in the telecommunications sector.

Digital literacy is a significant barrier to expanding internet usage within these countries. Nepal, India, Bangladesh, Pakistan and Sri Lanka have revealed that low digital literacy is preventing large segments of the population from utilizing digital services, thus limiting the growth of the domestic digital economy. Despite South Asia's ongoing efforts to expand digital infrastructure, challenges like affordability, digital literacy, and fixed broadband access still need to be addressed to fully realize the potential of national digital economies.

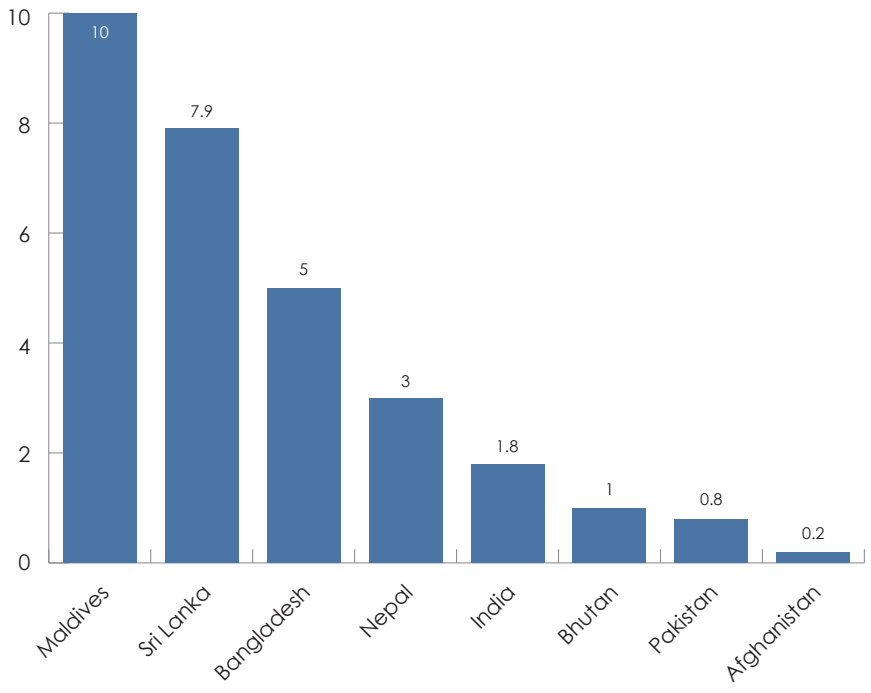
Digital public platform

Digital public platforms are central to supporting the digital economy in South Asia. These platforms include government systems such as digital identification and data-sharing frameworks, which form the backbone of digital transactions within each country. When these systems function together as interoperable 'digital stacks,' they enable both public and private sectors to innovate and create new services. According to the UN E-Gov-

ernment Development Index (EGDI) 2024, South Asian countries generally perform poorly. The introduction of electronic transactions laws and data protection regulations has been a priority for many South Asian governments, helping to ensure trust and safety in digital services.

Bangladesh has introduced the Digital Security Act (2018) and the Personal Data Protection Act (2023), while India passed the Digital Personal Data Protection (DPDP) Act in 2023. While some countries, such as Afghanistan, are still in the early stages of establishing comprehensive data protection laws, the majority of South Asian nations have implemented laws to govern electronic transactions and protect personal data, although gaps remain in their full implementation and interoperability. South Asia faces gaps in data governance and interoperability, with weak legal frameworks and inadequate enforcement in several countries. While India has made progress in data protection and Bhutan has successfully implemented a data governance framework, other countries are still behind.

Figure 2 Fixed broadband subscriptions per 100 inhabitants in 2019



Source: ITU World Telecommunications Indicators Database 2020

Digital financial services

Digital financial services encompass a wide variety of financial offerings, including payments, credit, savings, remittances, investments and insurance, all delivered through digital platforms. These services involve innovative business models and numerous stakeholders within the financial services ecosystem. Similarly, they enhance the speed, transparency, security, affordability and accessibility of customized financial solutions, enabling broader access for underserved populations. Across South Asia, digital financial services are on the rise, with notable growth in digital payment transactions. For example, India saw a 490 percent increase in digital payments since the 2016 demonetization[5], and Bangladesh's transaction value surged by 52.22 percent from 2020 to 2022[6].

However, scaling up digital financial services, particularly cross-border digital payments remains a challenge in the region due to underdeveloped digital infrastructure, especially in rural areas, and inconsistent regulatory frameworks. While countries like India and the Maldives are making strides in the domestic digital financial system, many South Asian nations still struggle with financial inclusion within their borders, as significant portions of their populations remain unbanked. For example, Bangladesh and Nepal have some of the highest unbanked rates in the region, despite the growth in digital payments. Additionally, even with initiatives like Bhutan's RuPay project[7] and the India-Nepal MoU for cross-border payments[8], the region's digital infrastructure remains insufficient to fully support the growth of digital financial services. Therefore, while domestic digital transactions are increasing, South Asian countries need to address infrastructure gaps, improve regulatory environments, and promote financial inclusion to unlock the full potential of digital financial services.

Digital business

Digital business refers to the use of digital technologies and platforms to facilitate e-commerce, online trade, and digitally-enabled services, transforming traditional business models and driving innovation. The growth of digital businesses in South Asia is essential for enhancing economic opportunities, competitiveness, job creation and productivity. The Digital Entrepreneurship Index shows that India and Sri Lanka lead the region, driven by their evolving digital infrastructure and innovation.

However, digital businesses in the region face challenges, particularly in terms of access to financial support. Strengthening key components like infrastructure, financial services and skills is crucial. Governments must play a more active role in fostering digital entrepreneurship through policies that support digital business growth and investment, with greater cooperation needed between policymakers, regulators, and private companies.

Digital skills

In order to facilitate participation in digital trade, it is imperative to develop digital skills and include ICT training into all educational levels. Digital skills are varied and include everything from the fundamentals such as the digital literacy needed to use the internet, make decisions, and complete transactions to the specialized knowledge needed to design, develop, create and maintain ICT systems and software, like websites and applications.

The digital skills landscape in South Asia is characterized by significant disparities, with some countries advancing rapidly while others face challenges in building a skilled workforce. For example, India is a regional leader in digital skills, contributing over 70 percent of global IT talent, while Pakistan struggles with a low adult literacy rate and a severe shortage of skilled ICT professionals, ranking 132nd out of 140 in skills, according to the Global Competitiveness Index. This disparity highlights the need for targeted interventions to enhance digital literacy and skills development across the region. Digital literacy is the largest obstacle to internet usage in South Asia. The 2019 publication of the Digital Nepal Framework (DNF) also noted that a barrier to gaining advantages from technology in Nepal is low levels of digital literacy.

Digital entrepreneurship skills are crucial for creating new business models and driving innovation in products, markets and processes.[9] To build these skills, it is essential to integrate ICT training across all levels of education, collaborate with industries to develop relevant curricula, and foster problem-solving abilities. These efforts will not only prepare young people for the workforce but also help adults incorporate digital technologies into their work, ensuring they remain competitive in an increasingly digital world.[10] This comprehensive approach is key to building a future-ready workforce.

Harmonizing regulations

South Asia holds significant potential for digital trade, with opportunities in areas such as e-commerce, IT services and digital financial services within the region. However, the region faces several barriers that hinder its growth. One of the main challenges is fragmented regulatory frameworks, where each country has its own digital policies, creating confusion for businesses that want to operate across borders. For example, a World Bank report [11] highlights that countries like India, Pakistan and Sri Lanka have introduced data localization policies, which make it harder for businesses to manage data across the region. India's strict data localization requirements force businesses to store data within the country, often requiring them to set up local data centres. While this policy aims to enhance data privacy and security by keeping sensitive information within national borders, it creates significant barriers for foreign businesses. Also, data localization can lead to inefficiencies and redundancies, as data sharing and cross-border collaboration become more difficult. Additionally, differences in data protection laws create further challenges for cross-border data flows, as companies must navigate various compliance requirements when dealing with customer information.

This absence of collaboration prevents the creation of a unified digital market in region. To address these challenges, the region needs to work on harmonizing regulations, also improving cybersecurity and investing in digital infrastructure. For example, aligning data protection laws across South Asia could encourage businesses to invest in cross-border digital services. Additionally, creating common platforms for e-commerce and digital payments could help businesses reach wider markets and streamline trade within the region.

Overall, addressing these barriers can unlock the region's digital trade potential, creating opportunities for businesses and consumers alike.

Digital trade agreements

Digital Trade Agreements (DTAs) and Digital Economy Agreements (DEAs) are becoming essential tools for managing cross-border digital transactions, data flows, and cybersecurity. South Asia lags in adopting such agreements, risking missed opportunities for regional cooperation and growth. The US-Japan Digital Trade Agreement and the Digital Economy Partnership Agreement (DEPA) address data privacy, cybersecurity and cross-border data flows. Experiences from other regions, like the ASEAN Digital Economy Agreement, highlight the positive impact of DTAs. Standardizing regulations like e-commerce rule, data privacy rule and cybersecurity protocol through such agreements can reduce uncertainty, promote innovation, and foster digital inclusion, making it crucial for South Asia to embrace these frameworks.[12]

Leveraging regional cooperation

South Asian countries can capitalize on digital trade by strengthening regional cooperation through regional platforms like South Asian Association for Regional Cooperation (SAARC) and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Traditionally focused on broader economic integration, these forums could spearhead a digital economy initiative to harmonize regulations, establish unified e-commerce frameworks, and develop a regional digital payments network. South Asia can look to models like the EU's Digital Single Market and ASEAN's Agreement on e-Commerce, which facilitate cross-border digital transactions by reducing barriers and setting common rules. Adopting similar frameworks would enhance regional business expansion and economic growth. A key area for cooperation is data privacy and cybersecurity. ASEAN's Data Management Framework offers a template for common data protection standards, while a Regional Cybersecurity Taskforce under SAARC or BIMSTEC could protect digital infrastructure and build trust for cross-border transactions. Finally, scaling India's Unified Payments Interface (UPI) integration with Nepal to other South Asian nations could form a South Asian Digital Payment Network, enabling seamless cross-border transactions and greater economic integration.

Conclusion

South Asia has immense potential to harness the benefits of digital trade by taking coordinated and strategic actions. Harmonizing regulations on data privacy, e-commerce, and cybersecurity through platforms like SAARC and BIMSTEC will reduce cross-border barriers. Expanding digital infrastructure and improving affordable access, especially in underserved areas, is crucial. Equally important is enhancing digital skills through widespread literacy and ICT training to foster innovation. Strengthening regional digital payment systems, like scaling India's UPI, will enable seamless cross-border transactions, while fostering public-private partnerships will drive digital entrepreneurship. Finally, improving cybersecurity through a regional taskforce and harmonizing data protection laws will ensure secure and trusted digital trade. By implementing these measures, South Asia can boost regional integration and unlock the full potential of its digital economy for inclusive growth. ■

Mr. Tha is Research Officer at SAWTEE.

> Scaling up digital financial services, particularly cross-border digital payments, remains a challenge in the region due to underdeveloped digital infrastructure and inconsistent regulatory frameworks.

Notes

1. WTO. 2023. *World Trade Report 2023: Digital Trade*. Geneva: World Trade Organization. https://www.wto.org/english/res_e/publications_e/dtd2023_e.htm.
2. Kang, J. W., M. Helble, R. Avendano, P. Crivelli, and M. C. Tayag, eds. 2022. *Unlocking the Potential of Digital Services Trade in Asia and the Pacific.* Manila: Asian Development Bank.
3. WTO. 2023. *Global Trade Outlook and Statistics*. Geneva: World Trade Organization. https://www.wto.org/english/res_e/statis_e/gstdh_digital_services_e.htm.
4. *ibid.*
5. Alliance for Financial Inclusion. 2023. Payment Innovations and Risks in South Asia. Alliance for Financial Inclusion. https://www.afi-global.org/publications/payment-innovations-and-risks-in-south-asia/
6. *ibid*
7. Royal Monetary Authority of Bhutan. 2021. "BHIM UPI to Foray into Bhutan in Collaboration with Royal Monetary Authority (RMA) of Bhutan." National Payments Corporation of India. https://www.npci.org.in/PDF/npci/press-releases/2021/NPCI-Press-Release-BHIM-UPI-to-foray-into-Bhutan-in-collaboration-with-Royal-Monetary-Authority-RMA-of-Bhutan.pdf.
8. The Kathmandu Post. 2023. "Nepal, India Sign Pact for Cross-Border Digital Payment." *The Kathmandu Post*, June 1. https://kathmandupost.com/money/2023/06/01/hed-nepal-india-sign-pact-for-cross-border-digital-payment.
9. World Bank. 2019. World Development Report 2019: The Changing Nature of Work. Washington, D.C.: World Bank.
10. UNCTAD. 2022. "Digital Trade: Opportunities and Actions for Developing Countries." *Policy Brief No. 92*. Geneva: United Nations Conference on Trade and Development.
11. World Bank Group. 2022. *South Asia's Digital Economy: An Opportunity to Build Back Better, Digitally*. Washington, D.C.: World Bank Group.
12. The Asia Foundation. 2024. *Digital Trade Agreements in Asia and the Pacific*. San Francisco: The Asia Foundation. https://asiafoundation.org/publication/digital-trade-agreements-in-asia-and-the-pacific/.

Taxing digital trade

Competing views and evidence

Votaries and critics of digital trade tax are armed with their own sets of evidence.

Aayush Poudel

Digital technologies are revolutionizing every aspect of the economy and international trade is no exception. Digitalization and digital technologies have simplified market access for businesses by facilitating online transactions of goods and services and this has led to an unparalleled cross-border supply of goods and services, removing numerous barriers to international trade. The European Commission defines digital trade as commerce enabled by electronic means—by telecommunications and/or Informaton and communication technology (ICT) services—and covers trade in both goods and services[1]. The 2019 handbook by the Organisation for Economic Co-operation and Development (OECD), the World Trade Organization (WTO), and the International Monetary Fund (IMF) marked the first formalization of a statistical definition of digital trade, which defines digital trade as all international trade that is digitally ordered and/or digitally delivered[2].

Digital trade has seen significant growth in recent years, with digitally delivered services becoming a crucial component of international trade. Global exports of digitally delivered services reached US$3.82 trillion in 2022, accounting for 54 percent share of total global services exports and 12 percent of total goods and services exports[3]. Between 2005 and 2022, the estimated average annual growth rate of digitally delivered services reached

8.1 percent, outpacing that of goods exports (5.6 percent) and other services exports (4.2 percent).[4] Further, the COVID-19 pandemic also prompted a shift to remote work contributing to a notable year-on-year increase in digitally delivered services exports. These exports grew by 14 percent in 2020 and 15 percent in 2021. By 2022, digitally delivered services exports were 37 percent higher than in 2019.[5]

The rise of digital trade has opened new avenues for all the countries. But the existing structural challenges limit the participation of least developed countries in the digital ecosystem as well. A United Nations Conference on Trade and Development (UNCTAD) report on e-commerce and the digital economy points out some countries especially landlocked developing countries (LLDCs) and least developed countries (LDCs) appear to be being left behind—despite achieving annual growth rates of 8 percent and 4 percent in their exports of digitally delivered services from 2010 to 2022, respectively, these countries accounted for less than half of 1 percent of global exports in 2022 (Table)[6]. These countries face significant challenges in the digital economy due to insufficient infrastructure, limited skills, inadequate resources, lack of supportive environment, and restricted access to capital, which hinder their ability to compete and trade on equal terms with developed countries[7].

Taxing digital trade

One of the major problems with digital international trade lies in taxation policies. Currently, due to the WTO's moratorium of tariffs on e-commerce services, countries do not impose customs duty on cross-border digital transmissions. However, countries have expressed concerns about the WTO's moratorium. Extension of the moratorium was accomplished despite opposition from some developing nations, most notably India, Indonesia[8] and South Africa[9]. These nations argue that the suspension of customs duties on e-commerce imports, including media and professional services, results in a significant loss of revenue for developing countries and intensifies the digital divide that impacts developing and least developed countries. These also point out that it has limited their policy space to regulate digital transmissions through taxation. However, on the other hand, countries that favour the moratorium point out that such tariff-free transactions have contributed to productivity and innovation, with the whole world benefiting.

A 2019 UNCTAD research paper estimated that the moratorium on electronic transmissions will result in a potential tariff revenue loss of US$10 billion for developing countries annually based on bound tariff rates and US$5.1 billion annually based on average Most-Favoured Nation (MFN) applied duties[10]. Several WTO members have also expressed concerns about the opportunity costs of the moratorium and the possible loss of customs revenue due to the dematerialization of goods trade. For instance, countries importing movies through electronic transmissions miss out on the tariff revenue they would gain from physical imports like DVDs. This challenge is worsening due to the accelerating digitalization of trade, particularly for developing countries that generally impose higher tariffs on these products.[11] On the other hand, evidence indicates that the customs revenue lost due to the moratorium may be relatively small, averaging 0.68 percent of total customs revenue or 0.1 percent of overall government revenue[12]. The impact is more pronounced for low-income countries, where it accounts for an average of 0.33 percent of government revenue, compared to just 0.01 percent for high-income countries.[13] However, most countries can mitigate these potential revenue losses through well-structured value-added taxes (VAT) or goods and services taxes (GST). Also, a strand of evidence demonstrates a case for the moratorium to be renewed and that its lapse would come at the expense of wider gains in the economy.[14]

Digital technologies have prompted growing concerns about tax base erosion, profit shifting, and how corporate tax responsibilities and

Table Digitally deliverable services exports

	Share in global exports of digitally deliverable services, 2022 (%)	Average annual growth in digitally deliverable exports services, 2010–2022 (%)	Change in share of global total, 2010–2022 (percentage points)
Global exports of digitally deliverable services	100	7	
Developed economies	76	6	-5
Developing economies	24	9	5
Developing economies excluding China	19	8	3
SIDS (Small island developing states)	5	12	2
LLDCs (Landlocked developing countries)	0.30	8	0.02
LDCs (Least developed countries)	0.20	4	-0.10

Note: Annual average growth based on exports in current prices.
Source: UNCTADstat derived from the UNCTAD report "E-commerce and Digital Economy Programme Year in Review 2023: Strengthening capacities, fostering collaboration"

obligations will be fulfilled across different countries and jurisdictions. Multinational enterprises (MNEs) may take advantage of gaps in taxation policies to artificially reduce taxable income or shift profits to low-tax countries or jurisdictions. Apart from tax havens, MNEs in the digital sector commonly use methods such as thin capitalization, transfer pricing, hybrid mismatches, bypassing controlled foreign corporation rules, preferential tax regimes, treaty shopping, patent boxes, and artificial contractual agreements to erode the tax base.[15] For instance, tax challenges in the digital sector stem from issues related to jurisdictions, data, and characterization. These challenges include the difficulty in defining tax jurisdictions and determining how to attribute value to data generated by users at no cost[16]. Further, MNEs use subsidiaries for technical support or marketing to enable faster customer access to digital products while the principal company bears the risks and claims ownership of intangibles. Thus, they locate intellectual property (IP) such as brands, copyrights and patents in low-tax jurisdictions. MNEs can manipulate transfer pricing to shift income to tax havens by artificially inflating the prices of goods and services between subsidiaries. Additionally, they may mitigate risk at the local company level by limiting capitalization; for example, a local subsidiary selling online products may operate a warehouse with minimal earnings.[17] These challenges have prompted collaborative initiatives aimed at revising international tax regulations concerning digital commerce.

Offered solutions

The OECD and G20 countries came up with an inclusive framework on Base Erosion and Profit Shifting (BEPS) proposal that consists of the two-pillar solution that was initially approved in 2020, but is yet to be implemented, for addressing taxation issues in digital cross-border trade. Each pillar is supposed to address different gaps that will prevent MNEs from avoiding paying taxes. Pillar One focuses on reallocating a portion of the profits of the largest profitable MNEs,[18] i.e., starting with those with at least €20 billion in consolidated revenue and net profits exceeding 10 percent (i.e., profits before tax as a percentage of revenue). It mandates these entities to pay taxes in the jurisdictions where their customers and users are situated.[19] Similarly, Pillar Two introduces a global minimum tax rate to address ongoing risks of profit shifting and base erosion. This ensures that MNEs pay a minimum level of tax, regardless of where they are headquartered or operate. Pillar Two is based on Global Anti-Base Erosion (GloBE) which has set a global minimum tax at 15 percent for multinational enterprises with a turnover of more than €750 million.[20]

Tax policy is more complex in the digital age[21]. Despite the growing role and influence of digital trade and its significant advantages in terms of seamless and cost-effective delivery of goods and services worldwide, there is a need for coordinated efforts to strengthen the capabilities of developing and least developed countries and to address their developmental needs in order to improve and implement the digital trade taxation. There is also a need to assess the impact of digital trade tax on fiscal policy space and fiscal revenue mobilization especially for countries like Nepal that depend on customs revenues on physically traded goods. ■

Mr. Poudel is Research Officer at SAWTEE.

Notes

1 European Commission. n.d. "Digital trade". https://policy.trade.ec.europa.eu/help-exporters-and-importers/accessing-markets/goods-and-services/digital-trade_en#:~:text=Digital%20trade%20refers%20to%20commerce,Trade%20topics.

2 Organisation for Economic Co-operation and Development, the World Trade Organization, and the International Monetary Fund. 2020. Handbook on Measuring Digital Trade. First Edition: OECD, WTO and IMF.

3 World Bank and World Trade Organization. n.d. Trade in Services for Sevelopment: Fostering Sustainable Growth and economic diversification.

4 *ibid.*

5 *ibid.*

6 UNCTAD. 2024. "E-commerce and Digital Economy Programme. Year in Review 2023: Strengthening capacities, fostering collaboration". Geneva: United Nations Conference on Trade and Development.

7 *ibid.*

8 WTO. 2024. Ministerial Conference Thirteenth Session Abu Dhabi. 26-29 February 2024. "Work programme on electronic commerce communication from India and Indonesia". https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN24/W7R1.pdf&Open=True

9 *ibid.*

10 Banga, Rashmi. 2019. "Growing trade in electronic transmission: Implications for the South". UNCTAD Research Paper No. 29. February 2019.

11 Andrenelli, Andrea and Javier López-González. 2023/ "Understanding the scope, definition and impact of the e-commerce Moratorium." *OECD Trade Policy Papers No. 275*. Paris: OECD Publishing.

12 *ibid.*

13 *ibid.*

14 *ibid.*

15 Hadzhieva, Eli. 2016. "Tax Challenges in the Digital Economy". Directorate-General for Internal Policies, Policy Department A: Economic and Scientific Policy, European Parliament. April, 2016.

16 *ibid.*

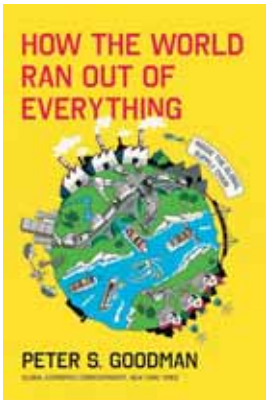
17 *ibid.*

18 Organisation for Economic Co-operation and Development. 2020. *Tax Challenges Arising from Digitalisation – Report on Pillar One Blueprint: Inclusive Framework on BEPS*. Paris: OECD Publishing.

19 Organisation for Economic Co-operation and Development. 2023. *Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy: The Multilateral Convention to Implement Amount A of Pillar One*. Paris: OECD Publishing.

20 Organisation for Economic Co-operation and Development. 2021. *Tax Challenges Arising from the Digitalisation of the Economy – Global Anti-Base Erosion Model Rules*. Paris: OECD Publishing.

21 Organisation for Economic Co-operation and Development. 2021. "Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy." https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf



Dissection of the Great Shortage of 2021

Title: How the World Ran Out of Everything: Inside the Global Supply Chain
Author: Peter S. Goodman
Publisher: Mariner Books
ISBN: 9780063390867

Dikshya Singh

The year 2021 was not only the year that saw the second wave of COVID-19 compelling people to be shuttered inside their homes; it is also remembered as the year when the global supply chain was in such disarray that it appeared as if the world had run out of everything—from computer chips to potato chips. Peter S. Goodman sets out to examine the reasons for the world landing in such a predicament in his book *How the World Ran Out of Everything: Inside the Global Supply Chain*.

Goodman, the global economics correspondent for the *New York Times*, explains that the reason was not as simple as a mismatch between the demand for and supply of goods due to lockdown-induced increases in consumer demand in the West coupled with a shortage of inputs in production units, overwhelmingly located in China. The book posits that the main reason for the supply chain crisis and widespread shortages was actually the cumulative greed of corporations.

The book illustrates the vulnerability of global supply chains as the world outsourced its production to China and became dependent on a logistics chain that was reliable only under normal conditions. The much-touted just-in-time (JIT) production model, embraced by manufacturing corporations, unraveled into global chaos, pushing shipping fees to unprecedented levels. Goodman critiques the widespread adoption of JIT inventory management, where companies minimize stockpiles to cut costs. While efficient under normal conditions, this system left supply chains highly vulnerable when demand surged or production was disrupted. He provides examples of industries—from semiconductors to healthcare—where shortages exposed the risks of relying on lean inventories.

JIT minimizes inventory to cut costs, relying on precise supply chain coordination and requiring seamless logistics. Hence, when the pandemic and the lockdowns caused factories to shut down, unprecedented traffic jams at sea, and container shortages, manufacturing was paralyzed due to lack of buffer stocks.

The book critiques management consultancies, especially global giant McKinsey & Company, for their decades-long advocacy of lean operations, which left businesses unable to cope with shocks like factory shutdowns, shipping disruptions, and sudden demand surges. Slashed inventory and outsourced production led to companies' balance sheets showing profits, and whatever benefits could have been derived were concentrated on sharing dividends with the shareholder class. The slashed inventory and outsourced production also squeezed workers, who were relegated to holding precarious employment contracts. This interconnectedness of global supply chain means that disruptions in one part of the world can have cascading effects on availability and prices elsewhere.

This interconnectedness is facilitated by advancements in technology. The possibility of real-time communication and data exchange has enabled companies to manage their supply chains more efficiently but also makes them susceptible to cyber threats and data breaches. The book highlights incidents such as the SolarWinds hack, which compromised security across multiple sectors and exemplified how vulnerabilities in one part of the supply chain can have widespread repercussions.

The book does not dwell much on the advantages accrued from the spread of global value chains in terms of job creation and poverty reduction. Goodman points out that the deregulation of the shipping industry over the past five decades allowed a handful of international companies to hold a monopolistic grip over the marketplace. These shipping "cartels" were in a perfect position to exploit any disruption on the seas.

Goodman's prose reads like a documentary; at times, it becomes a riveting tale of whether a Mississippi-based small business will get its consignment of toys on time for Christmas.

The book advocates for a "just in case" production model, with companies maintaining strategic reserves of critical materials instead of relying solely on lean inventories. It also calls for reducing over-reliance on a single country or region—China for manufacturing, Taiwan for semiconductors. Instead, businesses should establish regionalized and multi-supplier networks to improve resilience. ■

A primer on Circular econmy

Guided by the idea of waste elimination, material reuse and ecosystem regeneration, the circular economy shifts from linear consumption to a sustainable, resource-efficient model.

Dikshya Singh

The acknowledgement that the world is extracting more from the planet than the earth can generate has encouraged countries to relook at their linear production models, giving impetus to the circular economic model. A circular economy model emphasizes the sustainable use of resources by promoting sharing, leasing, reusing, repairing, refurbishing, and recycling materials and products for as long as possible. This approach contrasts sharply with the traditional linear economy, which follows a "take-make-dispose" model, ultimately leading to waste generation. The circular economy aims to minimize waste and environmental impact while maximizing resource efficiency and value creation throughout the lifecycle of products. Hence, the circular economy is touted as an alternative model of production and consumption that contributes to sustainable development that prevents the exhaustion of the planet without damaging economic prospects.

Although there is no internationally agreed definition of a circular economy, there is an understanding that it is a system designed to minimize waste and maximize resource efficiency. The EU defines the circular economy as "a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible" to extend the life cycle of products. Similarly, the United Nations Environmental Assembly defines it as "one of the current sustainable economic models, in which products and materials are designed in such a way that they can be reused, remanufactured, recycled, or recovered (4-R) and thus maintained in the economy for as long as possible, along with the resources from which they are made, and the generation of waste, especially hazardous waste, is avoided or minimized, and greenhouse gas emissions are prevented or reduced."

The circular economy does not focus solely on reducing waste, which can manifest in various forms, including physical waste, such as construction materials, metals, plastics and organic waste. This model also dwells on minimizing informational waste caused by imperfect information, which could be bridged through communication and creating awareness to utilize idle capacity, for example, unused vehicle seats, empty rooms, and underutilized equipment that could be used by someone looking for a ride, accommodation, and machinery.

Core principles

The circularity model is guided by core ideas of eliminating waste and pollution, keeping products and materials in use, and regenerating natural systems. These principles aim to transform traditional linear economic models into circular systems that prioritize sustainability, resource efficiency, and environmental restoration.

Eliminate waste and pollution

This principle focuses on designing products and systems in a way that prevents waste and pollution from being created in the first place. It emphasizes that many environmental impacts are determined at the design stage, meaning that innovative design can significantly reduce negative effects. By viewing waste as a design flaw, businesses can develop solutions that minimize or eliminate waste and

pollution throughout the product lifecycle.

Keep products and materials in use

This principle advocates for extending the lifespan of products and materials by promoting practices such as reuse, repair, refurbishment, and remanufacturing. The goal is to keep resources circulating within the economy for as long as possible, thereby reducing the need for new materials and minimizing waste. This involves designing products that are durable and easy to maintain, ensuring that they can be effectively recovered and reintegrated into the production cycle at the end of their life.

Regenerate natural systems

The third principle emphasizes the importance of restoring and enhancing natural ecosystems. This can involve practices such as returning organic materials to the earth through composting or adopting agricultural methods that improve soil health and biodiversity. By focusing on regeneration, the circular economy seeks to create a balance between economic activity and environmental health, ensuring that natural resources are replenished rather than depleted.

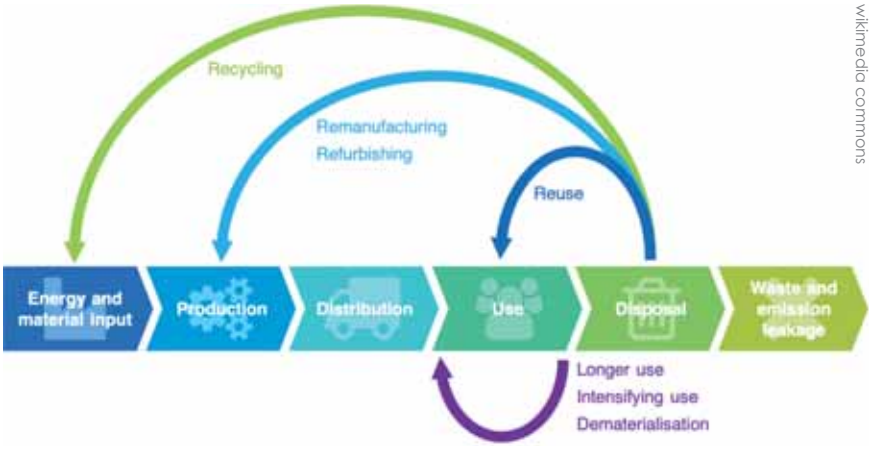
Besides these, some frameworks emphasize the need to power circular systems with renewable energy to ensure sustainability throughout the cycle. This complements the other principles by reducing reliance on finite fossil fuels.

In policy

Various countries and regions are implementing policies and legislation to promote the circular economy, addressing waste reduction, resource efficiency, and sustainability, most notably the EU and the Association of Southeast Asian Nations (ASEAN). The EU has promulgated the Circular Economy Action Plan, which was launched in 2020 as a part of the EU Green Deal. This plan outlines initiatives along the entire lifecycle of products, focusing on design, production processes, and consumption patterns to promote circularity. Similarly, the Circular Economy Act is a forthcoming legislative proposal aimed at transforming the EU's approach to resource use, waste reduction, and sustainability. The Act will harmonize circular economy policies across Member States and incentivize the use of secondary materials in manufacturing, impacting sectors like packaging, electronics, and textiles. In 2021, ASEAN adopted a comprehensive Framework for Circular Economy that outlines strategic goals, guiding principles, and priority areas for action to facilitate the transition to a circular economy. ASEAN member countries such as Thailand and Cambodia have formulated circular economy national plans.

Circular economy in South Asia

South Asia's circular economy is mostly characterized by informal networks that have been aiding the reuse and recycling of goods. The informal circular economy plays a significant role in South Asia, where a large portion of waste management, recycling, and resource recovery activities are conducted by informal workers. Informal workers are crucial in managing waste, particularly in urban areas. They collect, sort, and recycle materials that would otherwise end up in landfills. Grassroots recyclers have established functioning value chains for recyclables, generating income while diverting waste from landfills. Informal actors engage in various circular economy practices, including repair services, refurbishment, and composting. However, these workers operate in a precarious setup considering that handling waste is full of hazards. There is a growing recognition of the need to integrate informal workers into formal waste management systems.



wikimedia commons

Criticisms

Although the circular economy is considered the solution to battling increased consumption without compromising economic growth benefits, the concept faces criticism for being another tool of corporate greenwashing. Greenwashing refers to the practice where companies make false or exaggerated claims about their environmental practices or benefits to appear more sustainable than they truly are. The most repeated criticism of the circular economy is regarding the lack of a clear definition, which makes it difficult to measure its impact effectively. The term encompasses a wide range of practices, from recycling and renting to sharing economies, which can lead to confusion about what constitutes a truly circular practice. In addition, there is skepticism about how effectively circular economy practices will improve resource utilization in the long term. Critics point out that many businesses implement circular activities only in parts of their operations, while core activities remain linear, leading to a limited overall impact. ■

Fifteenth South Asia Economic Summit concludes

THE Fifteenth South Asia Economic Summit (SAES XV), organized by SAWTEE, concluded in Kathmandu on 13 December 2024, after three days of discussions starting from December 11 to 13. The Summit, themed "Unleashing an Equitable Green Transformation in South Asia," served as a platform to discuss the region's most pressing challenges and opportunities for sustainable development.

The event brought together over 200 participants, including 100 speakers, with 50 international participants representing countries outside Nepal. Representatives from seven South Asian nations—Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka—joined ministers, policymakers, economists, business leaders, development partners, and civil society actors for 17 engaging sessions.

Discussions covered topics such as green value chains, trade and industrial policies, green finance, inequality and climate justice, green energy, food security, inclusive business, among others. The Summit highlighted the urgency of cross-border cooperation to foster equitable and sustainable transformations across South Asia. ■

Challenges in shifting from coal to renewable energy in Pakistan

THE experts at a policy dialogue convened by Pakistan- German Climate and Energy Partnership (PGCEP) and the Sustainable Development Policy Institute (SDPI) here on 24 October explored the economic, social, and environmental implications of early coal power plant retirement in Pakistan.

The session, titled "Political Economy of Early Coal Retirement in Pakistan," attracted stakeholders from government, civil society, and international organizations to discuss the challenges and potential solutions for transitioning to cleaner energy sources.

Speakers emphasized the importance of mitigating the negative social impacts of early coal retirement, drawing on Germany's comprehensive approach that balances economic needs with environmental protection. Pak-German Climate and Energy Partnerships (PGCEP) representative highlighted Pakistan's energy security needs, pointing to the significance of the power sector as both an employment generator and a driver of climate change.

The dialogue concluded with a call for a national coal retirement plan, capacity-building for renewable energy projects, and the establishment of a "Just Energy Transition" framework. Experts also highlighted the importance of financing mechanisms and integrated planning to ensure a smooth transition.

The discussion underscored the delicate balance between economic, social, and environmental factors as Pakistan grapples with its energy future, highlighting the urgent need for international support and strategic policy-making to achieve a sustainable transition. ■

CUTS International's 40th anniversary

AT CUTS International's 40th anniversary, trade policy expert Mr. Pradeep Mehta criticized unilateral trade and environmental measures while highlighting the urgent need for global funding to address climate change and biodiversity loss. Mehta stressed the interconnectedness of these issues, advocating for sustainable production and consumption policies that support developing countries in a just transition to a greener economy.

While condemning unilateral measures on trade and environment by the European Union, CUTS International's Secretary-General Mr. Pradeep Mehta has expressed concern over the international community's failure to come up with adequate funding for both climate and biodiversity.

Mr. Mehta made the remarks on the occasion of CUTS International's 40th anniversary hosted by the Commonwealth Secretariat, London on 11 November.

Mr. Suresh Yadav, Senior Director at the Commonwealth Secretariat opened the meeting by acknowledging CUTS International's inspiring journey, beginning with its foundational work in research and advocacy to protect and promote consumer rights in India.

Over the years, it has broadened its focus and activities into other areas, including trade, regional integration, and public policies. This growth has established CUTS International as a respected and influential global civil society organization, a leader in the Global South.

Mr. Mehta also recounted CUTS' history of integrating consumer interests into public policy, evolving its focus to tackle emerging global issues such as responsible consumption and sustainable production. ■

'Sri Lanka: State of the Economy 2024' Report released

THE Institute of Policy Studies of Sri Lanka (IPS) organized an event to mark the release of its annual flagship report, Sri Lanka: State of the Economy 2024 on 8 October. This year's report, themed "Economic Scars of Multiple Crises: From Data to Policy," presents a comprehensive analysis of Sri Lanka's ongoing economic recovery, outlining the socio-economic challenges ahead and the policy choices that will shape the country's future.

Speaking on Sri Lanka's macroeconomic environment, the IPS' Executive Director, Dr. Dushni Weerakoon emphasized the country's constrained policy options in its fragile recovery phase. "Sri Lanka has very limited policy tools to provide relief and boost output recovery", she noted, stressing that "the more prudent option is to look at ways and means of marginal changes on tax and spending policies to address distributional concerns." In this respect, the report's key findings, using the most recently available data provided a foundation for discussions.

With over 100 participants attending from the government, private sector, development partners and research organizations, the thought-provoking sessions also looked at other key issues on health spending, public sector wages, the pros and cons of engaging in regional trade deals, the impact of energy pricing on export competitiveness and agriculture sector export diversification. ■

Preparedness of Nepal's pharmaceutical sector after LDC graduation

AS Nepal prepares to graduate from the least developed country (LDC) category in 2026, its pharmaceutical sector faces significant challenges due to the loss of flexibilities under the WTO's TRIPS agreement. Currently, Nepal is exempt from patent protection for pharmaceuticals, allowing local companies to produce generic versions of patented medicines without royalties. Graduation will end this exemption, impacting the industry and access to affordable medicines.
SAWTEE and Third World Network have conducted a study that highlights while Nepal's pharmaceutical industry has grown by producing off-patent generics, some firms have expanded their capabilities to produce generic versions of patented drugs. However, this progress may be reversed post-graduation if new patents restrict production. The findings of the study was presented at a workshop in Kathmandu on 2 October.
Speakers at the workshop, including SAWTEE officials and government representatives, stressed the need for better collaboration between the pharmaceutical industry and the government. ■

South Asia Watch on Trade, Economics and Environment (SAWTEE) is a regional network that operates through its secretariat in Kathmandu and member institutions from five South Asian countries, namely Bangladesh, India, Nepal, Pakistan and Sri Lanka. The overall objective of SAWTEE is to build the capacity of concerned stakeholders in South Asia in the context of liberalization and globalization.

www.sawtee.org