A dialogue on trade and development in South Asia
Vol. 20, No. 1-2, 2024

TRADE insight

Towards a GREEN Transformation

The right policy mix, appropriate technology, adequate finance, targeted capacity building measures and improved international cooperation will make a green, sustainable and resilient economy achievable.

GREEN INDUSTRIALIZATION | TRADE POLICY | INCLUSIVE GROWTH

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TRADE insight

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editors' note

Prudence in testing times

Industrial policy is back in the spotlight with a vengeance. This time it rides on the climate change agenda and geopolitics. Irrespective of which side of the aisle one is on in the debate over the benefits and costs of industrial policy, sharpening geopolitical rivalry has added a layer of complexity to its design and execution.

The US unveiled the Inflation Reduction Act while the EU unsheathed the Carbon Border Adjustment Mechanism, the Deforestation Regulation and other measures under its Green Deal. China has its own industrial policy juggernaut, an outcome of which is the roaring success of Chinese manufacturers of electric vehicles that now face tariff hikes in the US and the EU. Green industries are among the beneficiaries of India's production-linked incentives scheme under its revamped industrial policy.

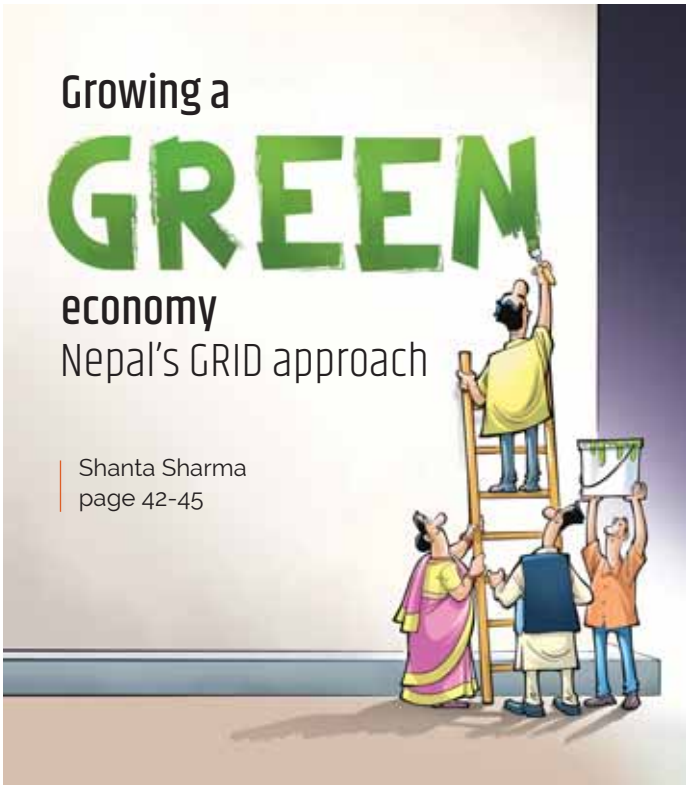
The measures taken by developed countries have put to the test the principle of common but differentiated responsibilities and respective capabilities in fighting climate change. Developing economies are a heterogeneous lot in terms of capabilities. Some of these measures hurt or threaten to hurt the weaker, the poorer and the more vulnerable among them, too.

Poorer countries will come under pressure to liberalize trade in environmental goods and services (EGS). Reports by influential multilateral organizations recommend trade liberalization in EGS as crucial for effective climate change mitigation and adaptation in all countries. Many in the developing world have long wrestled with revenue concerns and infant industry considerations in their approach to the trade liberalization agenda. EGS trade should not be expected to be any different.

Besides the environment-related compulsory standards introduced by advanced economies with trade implications, private standards pose another challenge to countries with weak productive capacities struggling to harness their export potential. Well-targeted financial and technical assistance, in line with national needs and priorities, and effective technology transfer are necessary for weaker economies to deal with non-tariff measures in export destinations, turning them into opportunities. Such support would also help instill in them optimism about the implications of trade liberalization.

Geopolitically motivated near-shoring, friend-shoring and de-risking measures, including trade and investment restrictions, are influencing firms' sourcing, investment and location decisions, impacting trade and investment flows and global supply chains, including those related to environmental goods. Not all developing countries have the capacity to turn these into an opportunity. For most countries in South Asia, which seek to deepen trade and investment ties with both India and China and benefit from the two behemoth's economic expansion, measures that weaken Sino-Indian economic relations do not augur well for the collective welfare of the region. It is, therefore, welcome that the benefits of being more open to investments from China, especially in the manufacturing sector, have begun to be openly discussed among India's intelligentsia. ■

Content



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Pakistan's exports to EU states fall despite GSP+ status

PAKISTAN'S exports to European countries have begun to dip in the current fiscal year despite a GSP+ status that allows duty-free entrance into European markets for the majority of its products.

In absolute terms, Pakistan's exports to European countries dipped year-on-year by 6.89 per cent in the first eight months of the current fiscal year to $5.411 billion from $5.812bn in the corresponding period last year.

The decline was mainly due to reduced demand for Pakistani goods in western, southern and northern Europe, according to figures compiled by the State Bank of Pakistan.

In FY23, exports to the EU dropped 4.41 percent to $8.188bn from $8.566bn in the preceding fiscal year.

In October 2023, the European Parliament unanimously voted to extend the GSP+ status for another four years until 2027 for developing countries, including Pakistan, to enjoy duty-free or minimum duty on exports to the European market.

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Western Europe, which includes countries such as Germany, the Netherlands, France, Italy and Belgium, accounts for the largest portion of Pakistan's exports to the EU.

However, there has been a significant decrease of 13.2 percent in exports to this region. The export value stood at US$2.609bn in the first eight months of FY24, down from US$3.006bn during the same period last year. *(24.03.2024, https://www.dawn.com)* ■

Historic WIPO treaty adopted on intellectual property and genetic resources

IN a landmark achievement for international intellectual property law, the WIPO treaty on intellectual property, genetic resources, and associated traditional knowledge was adopted by consensus. This milestone underscores the vitality of multilateralism in the field of IP.

The treaty, a result of over 20 years of discussions, aims to enhance transparency in the patent system. It introduces a mandatory disclosure requirement for patents based on genetic resources and/or associated traditional knowledge. This significant development demonstrates that intellectual property frameworks can be beneficial for all, with strong support from countries in South America and Africa.

The European Union played a crucial role as a bridge-builder in these negotiations, facilitating a balanced agreement that is acceptable to all parties involved. The discussions on multilateralism in intellectual property will continue in November at another diplomatic conference focused on the design law treaty. Stay tuned for further updates. *(27.05.2024, https://single-market-economy.ec.europa.eu)* ■

Biden quadruples tariffs on Chinese EVs

IN a bid to revive domestic manufacturing, President Joe Biden announced on 14 May that he is imposing a drastic tariff increase on Chinese electric vehicles and new levies on computer chips, solar cells and lithium-ion batteries.

Tariffs on Chinese electric vehicles, also known as EVs, will be quadrupled to a 100 percent rate. Solar cell and semiconductor imports from China will be subject to a 50 percent tariff, double the current rate. The rate on certain steel and aluminum imports will increase to 25 percent, more than triple the current level.

In a bid to revive domestic manufacturing, the US imposed a drastic tariff increase on Chinese electric vehicles and new levies on computer chips, solar cells and lithium-ion batteries.

"We're not going to let China flood our market making it impossible for American manufacturers to compete fairly," US President Joe Biden said.

Tariffs on Chinese electric vehicles, also known as EVs, will be quadrupled to a 100 percent rate. Solar cell and semiconductor imports from

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China will be subject to a 50 percent tariff, double the current rate. The rate on certain steel and aluminum imports will increase to 25 percent, more than triple the current level.

Currently, the U.S. imports almost no EVs from China, but the Biden administration is trying to preempt potential future increases. The tariffs hit sectors where the administration has been investing with industrial policy tools, including the Inflation Reduction Act and the CHIPS and Science Act—Biden's climate and energy legislation, and legislation to boost domestic semiconductor research and manufacturing. *(14.05.2024, https://www.voanews.com)* ■

Trade with India suspended due to heavy duties, says Pakistan

TRADE ties between Pakistan and India have remained suspended since 2019 due to imposition of heavy duties by New Delhi on imports from Pakistan after the Pulwama attack, Pakistani Foreign Minister Ishaq Dar told the National Assembly in written reply.

Mr. Dar was referring to a suicide attack on a bus carrying soldiers in Indian-occupied Kashmir on Feb 14, 2019, in which 40 personnel lost their lives.

He said that India decided to impose 200 percent duty on imports from Pakistan, suspended the Kashmir bus service and trade across the Line of Control.

The foreign minister said India had engineered acts of subversion in Pakistan and the "onus is now on Delhi to take steps for the creation of an environment that is conducive to peace and dialogue". *(19.05.2024, https://www.dawn.com)* ■

USTR identifies Bangladesh among top-five counterfeit product suppliers

THE United States Trade Representative (USTR) said Bangladesh is one of the top five sources for counterfeit clothing globally, which stakeholders have identified as a concern this year.

In its 2024 Special 301 Report on Intellectual Property Protection and Enforcement released yesterday, the USTR identified several countries which supply counterfeit products, violating intellectual property rights.

According to a study by the Organisation for Economic Co-operation and Development (OECD) and European Union Intellectual Property Office (EUIPO) released in 2021, the global trade of counterfeit and pirated goods reached US$464 billion in 2019.

China (together with Hong Kong) continues to be the largest origin economy for counterfeit and pirated goods, accounting for more than 85 percent of global seizures of counterfeit goods from 2017 to 2019.

A few years ago, the American Apparel and Footwear Association (AAFA) complained to the USTR about counterfeit products supplied by Bangladesh to the US market. *(26.04.2024, https://www.thedailystar.net)* ■

India, EFTA ink free trade agreement; US$100 bn investment target in 15 yrs

INDIA and the four-nation European bloc EFTA signed a free trade agreement under which New Delhi has received an investment commitment of US$100 billion in the next 15 years.

Commerce and Industry Minister Piyush Goyal described the signing as a "watershed moment", as it is India's first modern trade pact with a bloc having developed countries.

He said that for the first time in a trade agreement, EFTA had committed to invest US$100 billion in the next 15 years.

It would take around a year for the agreement to come into force.

The European Free Trade Association (EFTA) members are Iceland, Liechtenstein, Norway, and Switzerland.

The agreement has 14 chapters, including trade in goods, rules of origin, intellectual property rights (IPRs), trade in services, investment promotion and cooperation, government procurement, technical barriers to trade and trade facilitation.

Under free trade pacts, two trading partners significantly reduce or eliminate customs duties on the maximum number of goods traded between them, besides easing norms to promote trade in services and investments.

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India and EFTA have been negotiating the pact, officially dubbed the Trade and Economic Partnership Agreement (TEPA), since January 2008. Thirteen rounds of talks were held till November 2013 before negotiations were put on hold.

Both sides resumed the negotiations in October 2023 and concluded it in a fast-track mode.

EFTA countries are not part of the European Union (EU). It is an inter-governmental organisation for the promotion and intensification of free trade. It was founded as an alternative for states that did not wish to join the European community.

India is negotiating a comprehensive free trade agreement separately with the EU, the 27-nation bloc. *(10.03.2024, https://www.business-standard.com)* ■

EU against forced labour in supply chains

EUROPEAN Union countries have agreed to a law requiring companies to ensure their supply chains do not cause environmental damage or use forced labour.

A majority of 17 out of the 27 members backed the legislation and there were no votes against it.

The agreement came only after substantial changes were made to the original text.

Critics argue that the law has now been diluted too much to be effective.

The Corporate Sustainability Due Diligence Directive (CSDDD) will mean European companies have to document that products they import adhere to environmental and human rights standards, such as not involving child labour.

They will also be required to prevent or minimize potential harm and to communicate their findings.

However, compromises made following weeks of negotiations on the draft text mean only larger businesses that have 1,000 employees or more and which have a net turnover of at least EU€450 million will be affected.

The draft legislation must be approved by the European Parliament to become law. *(16.03.2024, https://www.bbc.com)*■

Nepal ships 1st batch of exports under transit deals with China

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NEPAL started the first batch of exports under transit deals with China, five months after Nepal shipped its first batch of imported goods via the northern neighbor. Instant noodles were set to be shipped to Japan via the Tianjin port in northern China.

The time and cost of importing and exporting goods via China will be further reduced after more border points are opened and the roads and other infrastructure are improved.

Nepal imported the first batch of 15 tons of turmeric powder from Vietnam in early September 2023, also via Tianjin, under the transit transport agreement between Nepal and China.

Under the transit deals, China allows the landlocked country to use Tianjin, Shenzhen, Lianyungang and Zhanjiang as well as Lanzhou, Lhasa and Shigatse to handle traffic in transit. *(01.25.2024, https://english.news.cn)* ■

Nepal's Siddha Devi Tea Estate wins 'World's Best Tea' title

TEA produced in Nepal has won the title of the 'World's Best Tea' in the World Tea Expo 2024 organized in the US.

Siddha Devi Tea Estate, based in Ilam of eastern Nepal, bagged the honor for its product showcased in the trade expo. The company won the titles in four categories, which included 'Grand Champion', 'Best Liquor' and 'Best White Tea.' The company also received the title of 'Origin Winner' out of the beverages from 13 countries in the lists.

The World Tea Expo is one of the largest platforms that allow brands to highlight their finest teas on a global scale and gain recognition from industry experts. These winners represent the best teas and producers in the international tea market. *(01.05.2024, https://myrepublica.nagariknetwork.com)* ■

SLSI to sign MoU with China's Standardisation Administration to boost trade

THE Sri Lanka Standards Institute (SLSI) is set to collaborate with the Standardisation Administration of China to alleviate technical barriers hindering non-tariff trade between Sri Lanka and China.

The Cabinet of Ministers cleared to sign a Memorandum of Understanding

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(MoU) to streamline trade processes and enhance economic cooperation between the two countries.

The move reflects a significant step towards enhancing trade facilitation and strengthening economic ties between Sri Lanka and China. *(13.03.2024, https://www.ft.lk)* ■

Renewable energy investment on the rise

Global energy investment is set to exceed US$3 trillion for the first time in 2024, with US$2 trillion going to clean energy technologies and infrastructure. Investment in clean energy has accelerated since 2020, and spending on renewable power, grids and storage is now higher than total spending on oil, gas, and coal, according to International Energy Agency's World Energy Investment 2024 report.

The report states that solar panel costs have decreased by 30 percent over the last two years, and prices for minerals and metals crucial for energy transitions have also sharply dropped, especially the metals required for batteries. There are tentative signs of a pick-up in clean energy investments as they are set to approach US$320 billion in 2024, up by more 50 percent since 2020 in emerging markets and developing economies (EMDE) besides China. This is similar to the growth seen in advanced economies (+50 percent), although trailing China (+75 percent). The gains primarily come from higher investments in renewable power, now representing half of all power sector investments in these economies. Progress in India, Brazil, parts of Southeast Asia and Africa reflects new policy initiatives, well-managed public tenders, and improved grid infrastructure.

In most cases, this growth comes from a very low base and many of the least-developed economies are being left behind (several face acute problems servicing high levels of debt). In 2024, the share of global clean energy investment in EMDE outside China is expected to remain around 15 percent of the total. Both in terms of volume and share, this is far below the amounts that are required to ensure full access to modern energy and to meet rising energy demand in a sustainable way.

Power sector investment in solar photovoltaic (PV) technology is projected to exceed US$500 billion in 2024, surpassing all other generation sources combined. Though growth may moderate slightly in 2024 due to falling PV module prices, solar remains central to the power sector's transformation. In 2023, each dollar invested in wind and solar PV yielded 2.5 times more energy output than a dollar spent on the same technologies a decade prior.

The rise in solar and wind deployment has driven wholesale prices down in some countries, occasionally below zero, particularly during peak periods of wind and solar generation. This lowers the potential for spot market earnings for producers and highlights the need for complementary investments in flexibility and storage capacity. Investments in nuclear power are expected to pick up in 2024, with its share (9 percent) in clean power investments rising after two consecutive years of decline. Total investment in nuclear is projected to reach US$80 billion in 2024, nearly double the 2018 level, which was the lowest point in a decade.

The report points out that grids have become a bottleneck for energy transitions, but investment is rising. After stagnating around US$300 billion per year since 2015, spending is expected to hit US$400 billion in 2024, driven by new policies and funding in Europe, the United States, China, and parts of Latin America. However, investment remains worryingly low elsewhere.

Investments in battery storage are ramping up and are set to exceed US$50 billion in 2024. But spending is highly concentrated. In 2023, for every dollar invested in battery storage in advanced economies and China, only one cent was invested in other EMDE. Investment in energy efficiency and electrification in buildings and industry has been quite resilient, despite the economic headwinds.

But most of the dynamism in the end-use sectors is coming from transport, where investment is set to reach new highs in 2024 (+8 percent compared to 2023), driven by strong electric vehicle (EV) sales.

The rise in clean energy spending is underpinned by emissions reduction goals, technological gains, energy security imperatives (particularly in the European Union), and an additional strategic element: major economies are deploying new industrial strategies to spur clean energy manufacturing and establish stronger market positions. Such policies can bring local benefits, although gaining a cost-competitive foothold in sectors with ample global capacity like solar PV can be challenging.

Policy makers need to balance the costs and benefits of these programmes so that they increase the resilience of clean energy supply chains while maintaining gains from trade.

This is excerpted from International Energy Agency's World Energy Investment 2024 report. ■

Climate-related finacial sector risks mitigation through central banks

Climate-related risks have reshaped central banks' roles as protecting the financial system from environmental threats has emerged as a critical prudential policy consideration.

Susmita Lamsal

Climate change is no longer a distant threat but a reality. The United Nations' declaration that we have transitioned from the era of global warming to an era of 'global boiling' underscores the urgency of the situation.[1] As the devastating effects of climate change become more evident, the financial sector is vulnerable to three major risks:

- Physical risks involve the damage to firms and assets from climate-induced shocks.
- Transition risks concern the potential loss of value of firms and assets due to changes in climate policy, technology, and consumer and market sentiment during the transition to a low-carbon economy.
- Liability risks pertain to the financial costs and losses incurred if parties seek compensation for the damages resulting from the impacts of climate change.[2]

For instance, extreme weather events such as hurricanes, floods, wildfires, and storms can cause damage to properties and infrastructure. Financial institutions may incur losses due to the decreased value of collateral assets and defaults on mortgages and loans for properties in affected areas. Additionally, insurers may face higher insurance claims and increased payouts due to more frequent and severe climate-related events.

Transitioning to a low-carbon economy introduces a unique set of financial risks, particularly for firms whose business models are not built around low-carbon emissions.

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Various nations that are signatories of the Paris Agreement have emphasized the need for reducing carbon footprints and limiting the temperature increase to 1.5°C above pre-industrial levels.[3] This may require leaving a large portion of existing oil, gas and coal reserves untapped, lowering transportation infrastructure valuations and limiting returns from projects heavily reliant on high-carbon technologies. These changes significantly impact financial institutions with credit or equity in major oil conglomerates, with broad repercussions for economic dynamics and financial stability.

Governments have several tools to address climate-related challenges, including environmental regulations such as fuel efficiency standards. Policymakers can design market-based policies and implement climate-friendly infrastructure investment programmes to promote low-carbon activities among households and businesses. Carbon pricing has become a central topic, with two main mechanisms: taxing carbon content in goods and services and creating cap-and-trade frameworks.[4] Meanwhile, governments are providing subsidies for clean technologies and phasing out fossil fuel subsidies.

Nevertheless, it is important to recognize that the pricing mechanisms within this policy milieu may not fully address certain market failures within financial systems. Given the increasing risks associated with climate change, many central banks and financial regulators are considering contributing to government efforts toward a low-carbon economy, all the while operating within their existing mandates.[5]

Traditionally, central banks and financial regulators have two major responsibilities: maintaining price stability, primarily through implementing monetary policy tools that influence the demand and supply of money in the economy, and ensuring the overall stability of the financial system, particularly through a macroprudential policy framework.

However, the emergence of climate-related risks has reshaped their roles. Central banks now face the critical task of maintaining financial stability by protecting the financial system from environmental threats. This has prompted many central banks and financial regulators to incorporate climate-related financial risks into their prudential policy considerations.

In December 2017, at the Paris 'Planet Summit', eight central banks and supervisors established the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Since then, its membership has grown to 127 members and 20 observers worldwide. The network aims to strengthen the global response to the Paris Agreement's goals and enhance the financial sector's role in risk management and the mobilization of capital for green and low-carbon investments within the framework of sustainable development. To achieve its goals, the NGFS has established six workstreams and task forces: supervision, scenario design and analysis, monetary policy, net-zero commitments for central banks, nature-related risks, and capacity building and training.[6]

Meanwhile, the Basel Committee on Banking Supervision (BCBS), the primary global standard-setter for the prudential regulation of banks, has formed a task force on climate-related financial risks to measure and assess climate risks. The BCBS plans to examine which climate-related financial risks can be addressed within the pillars of the Basel III framework – minimum capital requirements, supervisory review, and market discipline.[7]

Climate-related risk disclosure

Many companies and investors are unaware of the financial risks posed by climate change. There is a low level of awareness regarding their portfolios' exposure and the impact of the climate-related risks on their business models. To increase awareness, the Financial Stability Board established the Task Force on Climate-related

Financial Disclosures (TCFD) and prepared a report with recommendations on the climate-related financial risk information companies should voluntarily disclose. This disclosure aims to better inform investors, lenders, and insurance underwriters about the potential financial impacts of climate change on businesses.

Central banks and financial regulators can establish transparent guidelines and disclosure mandates for financial institutions. These guidelines would require institutions to disclose their vulnerability to climate-related risks and the actions they are taking to address these risks. Such measures enable well-informed decision-making for investors, policymakers, and the general public.

Regulators can conduct climate scenario stress tests to assess the resilience of financial institutions to extreme weather events, policy changes, and shifts in public sentiment. Central banks like the European Central Bank, Bank of England, and People's Bank of China have already incorporated these tests into their frameworks. Stress tests can reveal potential impacts such as urban flooding on mortgage-heavy banks, stranded assets from coal phase-out commitments, and emerging technologies affecting the profitability of established companies.[8] Regulatory authorities in China, the European Union, South Africa, South Korea, and the United Kingdom have recently conducted these tests.

Recent examples of this practice include examinations conducted in the Bahamas and Jamaica. In these cases, stress tests based on specific scenarios were used to analyze the broader economic impacts of a severe hurricane in the Bahamas and a major natural disaster in Jamaica

Climate-aligned financial regulations

Macro- and micro-prudential policies, such as those outlined in the Basel III regulatory framework, have a range of financial regulations designed to address systemic financial risks and risks specific to financial institutions.

Within this framework, financial institutions must hold capital and liquidity reserves proportional to the risk they undertake. Central banks can use a 'green-supporting factor' or a 'dirty-penalizing factor' in capital and liquidity requirements. This approach encourages financial institutions to favour environmentally sustainable investments and loans resilient to climate-related challenges. For example, Banque Du Liban applies different reserve requirement ratios based on the proportion of bank lending allocated to renewable energy and energy efficiency projects.

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Mitigating the risks within central bank mandates

Ultimately, the efforts of central banks and financial regulators to guide the transition to a low-carbon economy will depend on their mandates, their interpretation of those mandates, and their willingness to act. Mandates and policy tools of central banks vary by country, with some central banks lacking explicit sustainability mandates yet still pursuing environmentally friendly initiatives. In contrast, others already have policy frameworks that account for sustainability.

For example, the Reserve Bank of India requires commercial banks to allocate a portion of lending to priority sectors like renewable energy (solar and biomass-based power generators, windmills and micro-hydel plants).[9] Similarly, the Bangladesh Bank sets minimum targets for scheduled banks, requiring them to allocate at least two percent of their financing to green finance and 15 percent to sustainable finance, including green finance.

Aligning the monetary policy toolkit

Climate change affects how central banks manage their monetary policies. Its impact may disrupt the effectiveness of central bank policies on the financial situations of households and businesses, which in turn can influence consumption and investment. Financial institutions may face losses from physical risks or stranded investments as we transition towards a low-carbon economy. This could weaken their financial stability and reduce the flow of credit to the economy.[10]

To address these climate-related risks, central banks have various options. They can mitigate climate-related risks by adapting their monetary policies. For example, they might revise refinancing operations to account for climate risks, including applying larger discounts to assets that are more exposed to climate-re-


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lated risks. They can also offer lower interest rates for loans in green industries. In July 2021, the Bank of Japan planned interest-free loans for commercial banks to support lending for green projects, promoting low-carbon projects and technologies.[11]

Collateral framework

In their current approach to lending, central banks base the value of assets on their credit ratings. To mitigate and adapt to climate change, they should consider transition risk and adjust the value of collateral according to its environmental impact, whether it is environmentally friendly or carbon-intensive. Implementing this approach would require central banks to either evaluate these transition risks themselves or engage independent third parties to conduct assessments. Considering environmental, social and governance (ESG) factors in determining asset quality and assessing overall risk of assets used as collateral aligns with central banks' objective of maintaining financial markets stability without targeting specific industries.

Green quantitative easing

Green quantitative easing (Green QE) is a monetary policy tool designed to support economic activities that are sustainable and ecologically responsible while maintaining price stability. A variation of traditional QE, it involves central banks purchasing financial assets, typically government bonds, to inject money into the economy and lower interest rates.

Unlike traditional QE, Green QE directs central bank asset purchases towards environmentally responsible investments, such as green bonds and renewable energy projects, to stimulate a transition to a low-carbon economy.

In recent years, the central banks and regulators of South Asia have taken substantial steps to promote ESG investments, aligning their financial systems with global sustainability goals.

The State Bank of India (SBI), one of the largest banks in India, has taken a proactive approach to support this initiative and has identified 17 green and social project categories for financing, including those related to affordable housing, food security, renewable energy, water and wastewater management, biodiversity preservation, and socioeconomic advancement. Furthermore, SBI has committed to refrain from funding any assets linked to nuclear and fossil fuels, as well as luxury brands and products that are prohibited by international law.[12]

To meet World Bank requirements for approving the 'Development Policy Credit' to the government, the Nepal Rastra Bank (NRB) published guidelines for banks and financial institutions (BFIs) to evaluate climate risks before making loans. Nepali banks now must evaluate loan applicants' procedures for

measuring and disclosing greenhouse gas emissions and request emission reduction plans from clients emitting over 25,000 metric tonnes of CO2 annually.[13] The NRB also allows direct lending to renewable energy projects, with a single obligor limit of up to 50 percent of the core capital of BFIs.[14]

According to Bangladesh Bank's updated green and sustainable finance policy of 2020, financial institutions are required to allocate at least 15 percent of their loan budgets to sustainable projects and at least five percent to green initiatives.[15] Data from Bangladesh Bank shows significant growth in BFI investments. In 2022, over US$12 billion was invested in sustainable finance and over US$1.1 billion in green finance—representing a 58 percent and 69 percent increase, respectively, from 2021.

The State Bank of Pakistan's 2017 Green Banking Guidelines resulted in the establishment of green banking offices in all banks. These offices are tasked with assessing and managing environmental and climate impacts on credit portfolios. Although progress has been made in adopting green and sustainable banking principles, challenges remain in ensuring rigorous enforcement and follow-up on environmental assessments within Pakistan.

Furthermore, the Central Bank of Sri Lanka, in collaboration with the UNDP and the IFC, has introduced a Sustainable Finance Roadmap with two main components: ESG Risk Management and ESG Disclosure. The roadmap encourages regulators to work with other governmental entities to improve corporate-level ESG disclosure, increase the quantity and accessibility of available environmental data, and require BFIs to submit ESG data. Financial institutions must engage actively with clients on ESG issues and disclose both positive and negative environmental and social impacts of their investments. They should integrate ESG risk management into all decision-making processes, including corporate governance and risk assessment.

Collaboration among central banks, financial regulators, governments, and the private sector is essential to address climate change. Central banks and regulators must adopt a multifaceted approach, including promoting enhanced climate risk disclosure and requiring financial institutions to transparently assess and disclose their vulnerability to climate-related risks. Research indicates that major stock markets could experience a decline of up to 20 percent if assets are revalued to limit global warming to 2°C. Similarly, financial institutions' portfolios may incur permanent losses ranging from 5 to 20 percent by 2030. While climate risks in the financial sector cannot be ignored, an abrupt transition to a low-carbon economy cannot be overlooked either. Therefore, central banks and financial regulators must ensure accurate and standardized reporting of climate risks. Prioritizing the closure of research and data gaps is crucial. Robust methodologies are needed to analyze, assess, and quantify the macro-financial impacts of climate change and the low-carbon transition. ■

Ms Lamsal is Communication and Outreach Associate at SAWTEE.

Notes

1 United Nations. 2023. “Hottest July ever signals ‘era of global boiling has arrived’ says UN chief”. https://news.un.org/en/story/2023/07/1139162.

2 Climate Transparency and Overseas Development Institute. 2021. “The Role of Central Banks in Tackling Climate Change”. https://www.climate-transparency.org/wp-content/uploads/2021/08/ODI_role-of-central-banks-in-tackling-climate-change.pdf.

3 United Nations Climate Change. “The Paris Agreement”. https://unfccc.int/process-and-meetings/the-paris-agreement.

4 The World Bank. “Main Types of Carbon Pricing”. https://carbonpricingdashboard.worldbank.org/what-carbon-pricing.

5 Shirai, Sayuri. 2023. "Green Central Banking and Regulation to Foster Sustainable Finance". *ADBI Working Paper 1361*. Tokyo: Asian Development Bank Institute. https://doi.org/10.56506/JEMS1821.

6 Network for Greening the Financial System. https://www.ngfs.net/en/about-us/governance/origin-and-purpose#:~:text=At%20the%20Paris%20“One%20Planet,(see%20«%20Membership%20»%20).

7 Lim, Xiang-li, and Vatcharin Sirimaneetham. 2021. "Securing Green Development: Can Asia-Pacific Central Banks and Financial Supervisory Authorities Do More?" *Asia-Pacific Sustainable Development Journal* Vol. 28 (2).

8 Green Central Banking. 2022. “What are Climate Stress Tests and how Effective they are?” https://greencentralbanking.com/2022/03/14/what-are-climate-stress-tests/.

9 Baruah, Rituraj. 2022. “Hike Loan Limit for Renewable Energy under Priority Sector Lending: House Panel”. *Livemint,* February 4, 2022. https://www.livemint.com/news/india/hike-loan-limit-for-renewable-energy-under-priority-sector-lending-house-panel-11643964662573.html

10 Schnabel, Isabel. 2021. “Climate Change and Monetary Policy.” *Finance and Development Magazine*, September 2021. International Monetary Fund. https://www.imf.org/en/Publications/fandd/issues/2021/09/isabel-schnabel-ECB-climate-change .

11 *ibid*. Note 7.

12 Azizuddin, Khalid. 2023. “State Bank of India Issues ESG Bond Framework”. *Responsible Investor,* January 23, 2023. https://www.responsible-investor.com/state-bank-of-india-issues-esg-bond-framework/

13 Shrestha, Prithvi Man. 2022. “Banks told to examine climate risks to projects before approving loans”. *The Kathmandu Post,* February 14, 2023. https://kathmandupost.com/national/2022/02/14/banks-told-to-examine-climate-risks-to-projects-before-approving-loans

14 Pokharel, Narayan. 2023. "Climate Change and Green Financing in Nepal" *NRB News* Volume 51 (3). https://www.nrb.org.np/contents/uploads/2023/06/NRB-Quarterly-News-Volume-51.pdf#:~:text=Giving%20priority%20to%20promote%20clean,of%20Bank%20and%20Financial%20Institutions.

15 “Bangladesh banks on green loans to help fight climate change”. *Eco Business,* July 26, 2023. https://www.eco-business.com/news/bangladesh-banks-on-green-loans-to-help-fight-climate-change/#:~:text=Green%20finance%20is%20growing%20fast,solutions%20that%20tackle%20climate%20change.

Goodfon

Trade as part of the solution to climate change

Trade can contribute to countries' efforts to decarbonize their economies by enhancing the access, affordability and dissemination of technologies needed for the transition to a low-carbon economy.

Rainer Lanz

Climate change poses unprecedented challenges to the global community, with developing countries being particularly affected. As this article is being published, Southern Africa has been battling the consequences of a severe drought in the first half of 2024, creating food insecurity for more than 60 million people. And only two years after devastating floods in Pakistan, extreme rainfall in April and May this year has resulted in deadly flash floods in Afghanistan, Pakistan and Iran, destroying thousands of homes and threatening agricultural livelihoods. Alongside adapting and building resilience to climate change, countries also face a momentous task in decarbonizing their economies to mitigate climate change and limit global warming to 1.5°C in line with the Paris Agreement.

To successfully fight climate change, it is essential that policymakers pay more attention to the role of trade and trade policy. The discussion on trade and climate change has shifted, in a constructive way. While in the past, discussions were mainly limited to concerns over the impact of trade on emissions from transport and production, policymakers are asking today how trade can be part of the solution to climate change.

Trade plays an important role in supporting countries to adapt and be-

come more resilient to climate change. Trade can support countries in their response to extreme weather events through access to critical goods and services, such as food and healthcare products. It can also provide technological solutions such as resistant crop varieties or irrigation systems for adaption in agriculture. In the longer term, trade catalyzes economic transformation and can support diversification in response to climate-related changes in comparative advantage.

Trade can contribute to countries' efforts to decarbonize their economies by enhancing the access, affordability and dissemination of technologies needed for the transition to a low-carbon economy. Facilitating trade in environmental goods and services is estimated to lead to both economic gains and net reduction in carbon emissions.[1] Trade can help developing countries exploit their potential in renewable energy sectors such as solar and wind energy, hydropower and green hydrogen, providing them an opportunity to advance industrial development and address long-standing constraints in their energy generation capacity. Trade is also vital for catalyzing investment for the energy transition, particularly in developing countries, which receive less than one-fifth of global clean energy investments despite representing two–thirds of the global population.[2]

Trade can also be a force multiplier for environmental policy action to reduce emissions through a greener distribution of global production and trade. If countries take coordinated actions in terms of carbon pricing or equivalent policies to internalize the costs of greenhouse gas emissions, they can specialize in line with their green comparative advantage. Countries with abundant clean energy could produce more energy-intensive goods and services, while importing energy-light products from places where clean energy is comparatively scarce, and vice versa. Many developing economies could benefit from such green transition as exporters of renewable energy and sustainable agricultural goods.[3]

To take advantage of the opportunities offered by trade for climate, policymakers have a range of trade policies at their disposal. National policymaking will need to be accompanied by international cooperation to avoid fragmentation and ensure coherent and effective trade-related climate measures.

Trade policies in support of climate objectives

At the 2023 United Nations Climate Change Conference (COP28) in Dubai, the World Trade Organization (WTO) Secretariat launched a publication on Trade Policy Tools for Climate Action which illustrates how trade policy can be used by governments for their climate objectives, and possibly integrated into their nationally determined contributions (NDCs) and national adaptation plans (NAPs).[4] These 10 trade policy tools relate to the use of green public procurement, the review of domestic regulations and restrictions for providers of climate-related services, the rebalancing of import tariffs to benefit low-carbon goods, the repurposing of environmentally harmful subsidies, the increase in trade finance to support the diffusion of climaterelated technologies and equipment, the functioning of food and agricultural markets by easing trade in food, as well as the reduction of policy fragmentation by improve coordination on carbon pricing and equivalent policies. Three tools – trade facilitation, sanitary and phytosanitary (SPS) measures and regulatory requirements and certification – are discussed in some more detail below.

Trade facilitation is of critical importance for landlocked countries in normal times, and even more so in the face of climate-related natural disasters such as landslides and floodings. Trade facilitation measures can speed up imports of essential goods such as food, medical supplies and emergency equipment in response to a disaster. Important elements in this regard relate to adequate capacities of border posts, implementation of the WTO Trade Facilitation Agreement and preparatory actions such as these for an approved list of critical goods for simplified procedures and duty exemptions, as well as coordination among border agencies on transit issues.

More efficient customs procedures can also support mitigation efforts by reducing GHG emissions. Digitalization and automation of customs procedures can reduce carbon emissions by reducing border waiting times for transport as well as the use of paper and energy. For instance, programmes aimed at improving the efficiency of border crossings between Mexico and the United States led to a 85 percent reduction in GHG emissions due to a significant reduction in waiting times for freight transport, while estimates suggest that the implementation of paperless trade could save an average of 13.8 million tons of CO2 equivalent for Asia.[5]

Extreme weather events, droughts and rising temperatures are altering the global prevalence of pests and diseases, affecting agricultural output and contributing to greater food safety risks. The strengthening of sanitary and phytosanitary (SPS) systems helps protect people and economies from new pest and disease risks linked to climate change. Adherence to the WTO's SPS Agreement can help ensure that new SPS measures introduced in the context of climate change remain anchored in science and follow international standards, guidelines and recommendations. At the same time, it is critical to ensure that producers suffering from the impacts of climate change are equipped to meet these new SPS standards to be able to tap into export markets. The Standards and Trade Development Facility (STDF), a global partnership hosted by the WTO, supports the development and implementation of SPS projects, and also acts as a knowledge platform for collaborative and cross-cutting approaches in SPS capacity development.

Regulatory requirements and certifications for production methods and performance of goods can exclude the most polluting goods from the market and incentivize companies to produce greener goods. Furthermore, energy

efficiency labelling schemes enhance transparency and help consumers make more informed choices regarding green products. Since 2009, over 1,180 energy efficiency and conservation regulations have been notified to the WTO by over 70 WTO members. Most of the regulations target commercial appliances and industrial equipment (such as air conditioning, and heating and cooling systems), household appliances (such as clothes dryers, refrigerators and dishwashers), and fluorescent lamps, construction products and material. Bangladesh has already included in its NDC the enhanced use of energy-efficient appliances in household and commercial buildings to achieve 5 per cent and 12 per cent reduction in emissions, respectively.[6]

WTO rules and committees, such as the Committee on Technical Barriers to Trade, help to promote coherent regulations and alignment with international standards, including for the measurement of carbon emissions embodied in traded goods or energy efficiency. Compliance with climate-related regulations and standards can be the main challenge for developing economy exporters. International cooperation and technical assistance to help developing countries improve their quality infrastructure systems for testing and certification is important to allow companies, particularly SMEs, to tap into low-carbon export markets and value chains.

International cooperation at the WTO

International cooperation on trade is key to address climate change and for a just transition. As climate ambitions differ, uncoordinated trade-related climate measures can lead to policy fragmentation and trade tensions. The rules and policy dialogue at the WTO are important to prevent protectionism and promote coherent and fit-for-purpose policies.

Transparency is essential for informed policy dialogue

Transparency is a key function of the WTO that is achieved by Members' notifications of their trade policies as required by WTO Agreements as well as by institutionalized trade policy reviews and monitoring. The WTO Environmental Database (EDB) shows that there has been a steady increase in notified trade-related climate measures over time, more than doubling from 652 during 2009-10 to 1,410 during 2021-22 (Figure 1).[7] Environmental requirements are the most common types of measures. During 2021-22, notifications covered 762 environmental requirements, which included 371 technical regulations, 118 conformity assessment procedures, 131 import licencing measures, 78 trade bans and 46 export licences. Climate-related support measures are another frequent type of measures, with the 599 support measures during 2021-22 mainly taking the form of grants (357), tax concessions (112), loans (67) and nonmonetary support (49). Price- and market-based measures such as import and export quotas are less frequently found in notifications.

WTO as an inclusive forum for policy dialogue

Climate change is increasingly taking centre stage in discussions at the WTO. The increased interest of Members on climate issues is reflected in efforts to revitalize work in the WTO Committee on Trade and Environment, which is the central forum in the WTO on trade and environment and has seen rich experience sharing and policy dialogue on trade-related climate measures recently. For example, the European Union has been regularly updating other Members on trade aspects of the European Green Deal such as the Carbon Border Adjustment Mechanism (CBAM) and the regulation on deforestation-free products and other legislative packages. An important step for the revitalization of the CTE has been the recent launch of thematic sessions to deepen exchanges on environmental measures. While the first two thematic sessions on 13 November 2023 and 23 April 2024 focussed on the clean energy transition, the upcoming thematic session will cover the topics of trade-related climate measures, technology transfer and sustainable agriculture.[8]

Complementing multilateral work in the CTE, three recent environmental initiatives – Trade and Environmental Sustainability Structured Discussions (TESSD), the Dialogue on Plastics Pollution (DPP) and the Fossil Fuel Subsidy Reform Initiative – have been working on identifying trade-related actions that Members could take individually or collectively in support of environmental objectives. These plurilateral initiatives are open to all Members and share the innovative characteristic of regularly involving stakeholders from the business community, civil society as well as other international organizations to contribute their technical expertise.

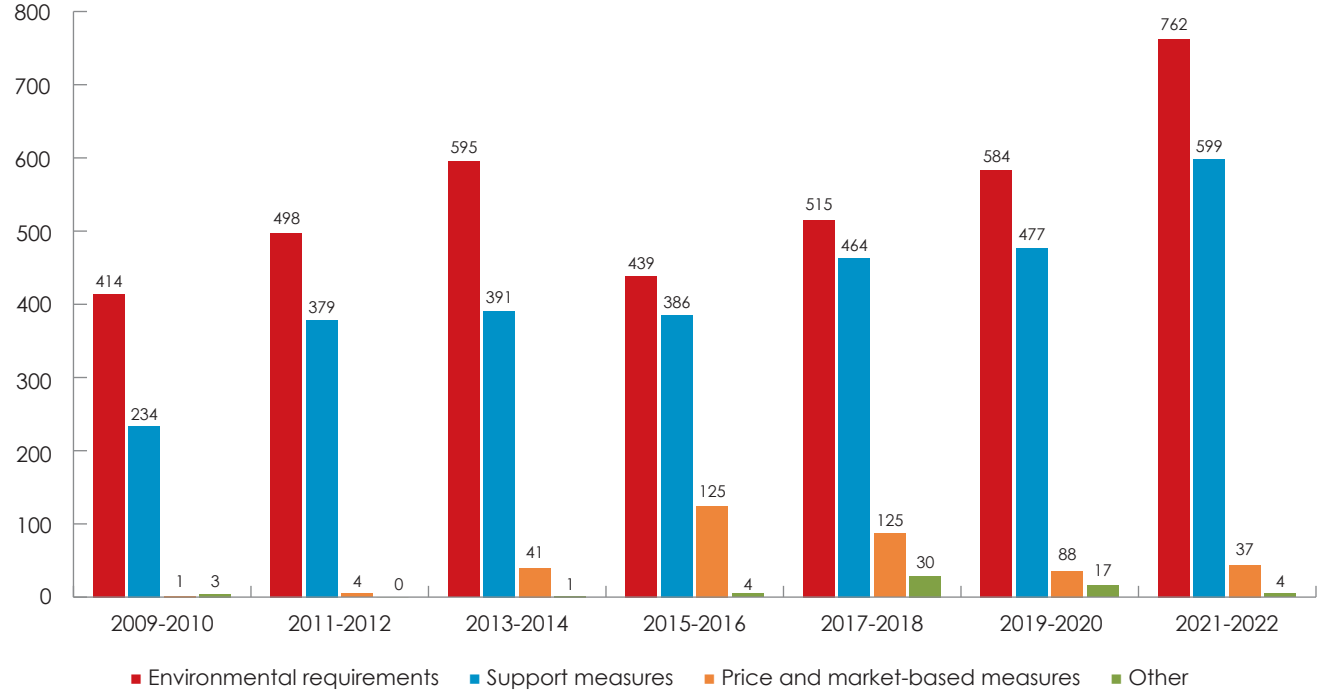
The TESSD carries out substantive discussions in four Informal Working Groups on trade-related climate measures (TrCMs), environmental goods and services (EGS), subsidies and circular economy.

In outcome documents of the four Working Groups presented at MC13, Members have identified practices to guide the design and implementation of trade-related climate measures; an indicative list of renewable energy goods and services that are key for the energy transition; considerations that can guide subsidy design to benefit the environment while avoiding trade-distortions; and trade-related action areas to support a circular economy. Going forward Members will continue substantive work with a view towards achieving concrete results by MC14.

Technical assistance and capacity building

Trade-related technical assistance and capacity building plays an important role to help developing countries achieve their climate objectives and a just transition. The WTO-led Aid for Trade Initiative can help mobilize funding for energy, transport and other supply-side infrastructure as well as for building the necessary productive capacities of the private sector. Climate change is an increasing priority in developing countries' Aid

Figure 1 Trade-related climate measures notified by Members to the WTO, 2009-2022



for Trade planning. This is also reflected in increasing climaterelated aid for trade commitments, which reached an average of US$20 billion during 2021-22 (or 67 percent of bilateral aid for trade commitments).[9]

Cooperation among stakeholders at the sectoral, national and global levels is important for the alignment and mutual supportiveness between trade and climate strategies and related financing. The Enhanced Integrated Framework (EIF), which is a unique partnership dedicated to assist least developed countries (LDCs) to use trade as an engine for their development, can play a special role in supporting LDCs to integrate climate considerations into their trade strategies. In order to develop tailored knowledge on trade and climate change, the WTO together with the World Bank Group (WBG) and the World Economic Forum launched the Action on Climate and Trade (ACT) initiative in 2023. The ACT aims to empower participating developing countries to leverage trade for climate action and ensure a just transition. As part of a pilot phase, ACT is working with Indonesia and Rwanda to develop climate-related analysis and possible policy actions specific to their trade circumstances.

Coming back to the main message of this article, which is that policymakers need to pay more attention to leveraging trade and trade policy for their climate change objectives. This starts at the national level in terms of policymaking and engagement with the private sector and other stakeholders, and continues at the international level, including through international cooperation at the WTO. ■

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Notes

1 WTO. 2022. *World Trade Report 2022*. Geneva: World Trade Organization.

2 WTO. 2024. *Aid for Trade in Action: Supporting the transition to clean energy*. Geneva: World Trade Organization.

3 WTO. 2023. *World Trade Report 2023*. Geneva: World Trade Organization.

4 WTO. 2023. *Trade Policy Tools for Climate Action*. Available at: https://www.wto.org/english/res_e/publications_e/tptforclimataction_e.htm

5 ESCAP-ADB. 2024. *Asia-Pacific Trade Facilitation Report 2024: Promoting Sustainability and Resilience in Global Value Chains*. https://www.adb.org/sites/default/files/publication/954501/asia-pacific-trade-facilitation-report-2024.pdf

6 UNCTAD. 2023. *Mapping trade-related measures in Nationally Determined Contributions*. Available at: https://unctad.org/publication/mapping-trade-related-measures-nationally-determined-contributions

7 The WTO EDB compiles environment-related measures by members based on their notifications as well as Trade Policy Review reports. Measures are classified as climate-related if they relate to the following environmental objectives: Afforestation/reforestation, Air pollution reduction, Ozone layer protection, Climate change mitigation and adaptation, Energy conservation and efficiency, and Alternative and renewable energy.

8 WTO news item. Available here: https://www.wto.org/english/news_e/news24_e/envir_19jun24_e.htm

9 OECD-WTO. 2024. *Aid for Trade at a Glance*. https://search.oecd.org/publications/aid-for-trade-at-a-glance-22234411.htm.

Greening of Trade Facilitation in South Asia: Views from Inside

Greening of trade facilitation could happen through moving to renewable energy-driven transportation, adopting paperless trade facilitation and greening the trade corridors through which trade takes place.

Prabir De

The South Asian Association for Regional Cooperation (SAARC) region has experienced disintegration several times in the past. In contrast, South Asia has deepened its regional integration through the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Today, South Asia is on the verge of a transformation in infrastructure that facilitates connectivity. Trade barriers and border bottlenecks restrict trade flows in the region, as do polluting vehicles and weak regulations in enforcing a clean environment. Both factors work in the same direction. According to ADB-ESCAP, "Asia's CO2 emissions from trade have grown more rapidly than those from production."[1]

Climate-friendly trade and transportation systems pave the way for quality trade and life, and vice versa.[2] Specialization will eventually happen with transportation in a regional context, which is a key building block for sustainable transport. Since trade in intermediates has been more carbon-intensive than trade in final goods, there are significant opportunities for decarbonization efforts to more effectively target trade in intermediates.[3] According to the World Econom-

ic Forum (WEF), "Electric vehicles (EVs) are set to change everything about how energy is consumed and supplied."[4]

There are three ways the greening of trade facilitation has been happening across the world: moving to renewable energy-driven transportation using EVs, bio-fuels, hydrogen, or solar power; adopting paperless trade facilitation with the help of digital technology; and greening the trade corridors through which trade takes place. These efforts all lead to advancing green, digital and sustainable trade and transport facilitation.

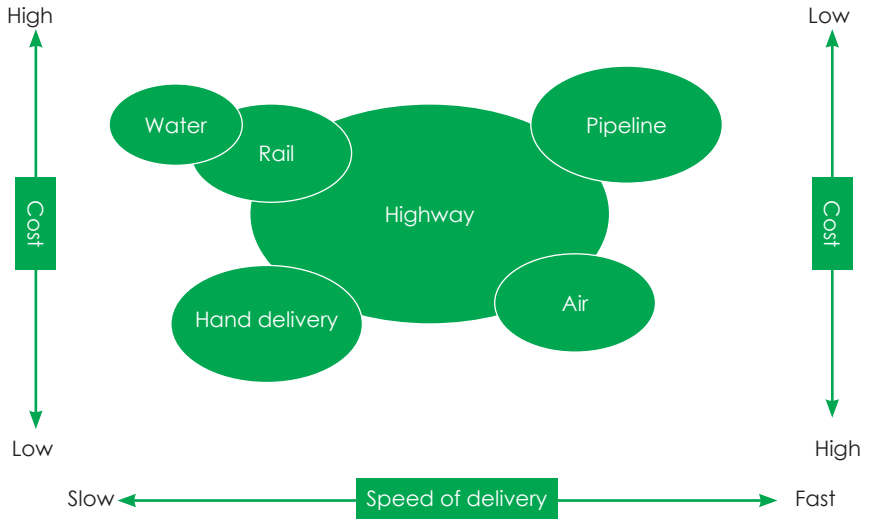
Globally, over 10 percent of trade-related carbon emissions come from international transportation. The International Transport Forum has predicted a potential doubling of transport activity by 2050, with a corresponding 16 percent increase in CO2 emissions, even as freight transport might increase 2.6 times.[5] This sharp rise in transport demand may come from emerging market economies such as China, India, Indonesia, and Brazil as well as developing economies such as Bangladesh, Vietnam and the Philippines. Therefore, stronger decarbonization policies in this sector will pave the way for green and sustainable trade and development.

Green trade and transport facilitation are critical to sustainable trade and development. In particular, green trade facilitation requires digital measures to reduce carbon emissions. Many countries across the world have been implementing green customs initiatives while integrating environmental, regulatory, social, and governance factors into trade policy.

South Asia in greening trade facilitation

South Asian countries are at a crossroads. They are investing in sustainable transport infrastructure for the environmentally friendly movement of goods across and within borders. Countries have been introducing EVs on a large scale. Owing to environmental mandates such as the net zero emissions, differences in transportation attributes, including rigid structural arrangements, may eventually disappear while embracing the new environment. A scenario is not too far off where India becomes the world's hub for EV manufacturing, thereby serving the entire South Asian region. India's journey towards sustainable transportation offers many important lessons. Bhutan's regulations, on the other hand, significantly contribute to green transportation. This presents an opportunity for South Asian countries to act together in coping with the climate change challenges in transportation.

Figure 1 Three dimensional aspects of logistics



Source: Author's own

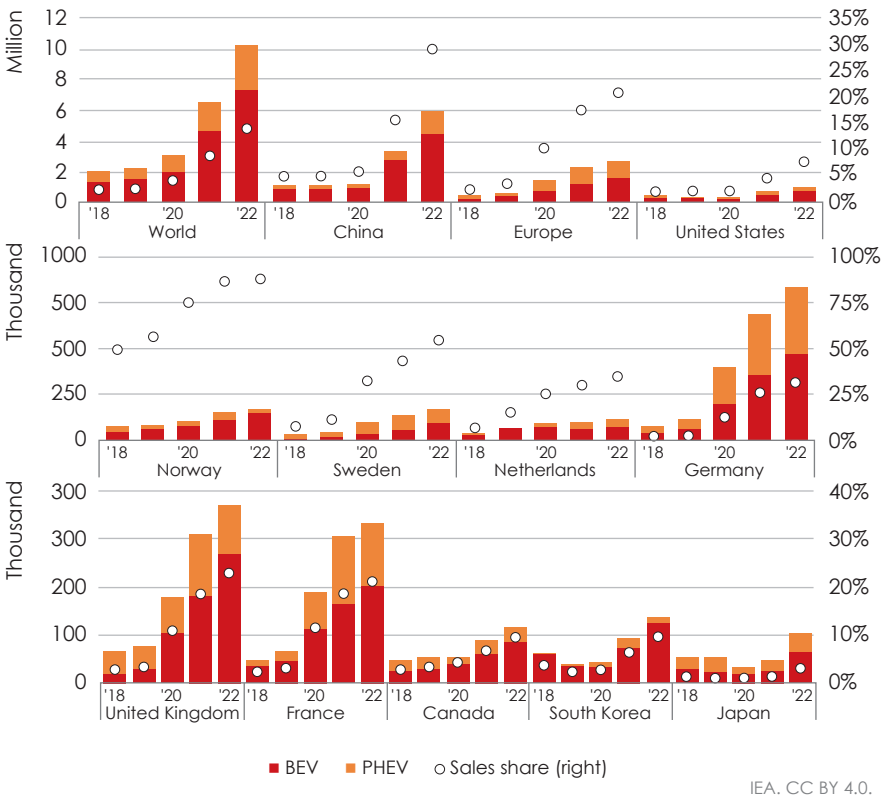
Energy-saving sustainable transportation generates numerous benefits. According to the WEF, "a sustainable transportation system offers greater diversity in the fuel portfolio, reduced dependence on fossil-based sources, lowered total cost of ownership, and increased price stability. In addition, it fosters national security, energy independence, and a healthier environment." As illustrated in Figure 1, air or pipeline transport is better suited for faster delivery, whereas highways carry the bulk of goods, causing high pollution. There is also significant variation among countries in their modes of transportation for saving energy resources and protecting the climate while moving goods across borders. Therefore, enhanced cross-border sustainable transportation (referred to as green connectivity) in South Asia has several merits, including the development of a common template for regulations and sustainable transportation practices, at least among the participating countries to start with. Green connectivity fosters economic integration in the same way trade does. Supply chain resilience and access to larger markets, supported by green connectivity, can strengthen economic interdependence between countries, leading to further integration in South Asia.

The spread of green connectivity may also depend on the strength of paperless-trade. South Asian countries have made enormous progress in achieving paperless trade. The potential annual export gains associated with moving from manual paper-based trade to paperless trade have been estimated at between US$36 billion and US$257 billion in Asia and the Pacific, depending on the extent of automation and digitization of procedures and documents.[6] According to the WTO, the time required

for exports could also decrease by an average of 24 percent with partial implementation and 44 percent with full implementation of paperless trade.[7]

The need for sustainable and resilient infrastructure has gone up.[8] In particular, financing cross-border infrastructure requires special attention. The Asian Development Bank (ADB)'s estimates in its flagship report titled "Meeting Asia's Infrastructure Needs" show that developing Asia will need to invest US$26 trillion during 2016 and 2030, if the region is to maintain its growth momentum, eradicate poverty, and respond to climate change (climate-adjusted estimate). South Asia's climate-adjusted investment needs will be US$6.35 trillion (Table 1). This is also not to deny that the gap between estimated infrastructure needs and realised infrastructure delivery has been growing rapidly due mainly to the developmental challenges imposed by the last pandemic and the ongoing economic uncertainties. Boosting infrastructure investment to meet development and sustainability goals may pave the way for a connected and seamless South Asia. According to the ADB, availability of finance is not a key issue, but the growing challenges are growing financial risks in South Asian countries.[9] Therefore, the financing of infrastructure, particularly cross-border infrastructure, has become an important issue.

Figure 2 Global electric car registrations and market share, 2018-2022



Notes: BEV= battery electric vehicle. PHEV= plug-in hybrid electric vehicle. Passenger light-duty vehicles only. Major markets at the top. Other countries (middle, bottom) ordered by the share of electric car sales in total car sales. Y-axes do not have the same scale to improve readability.

The selected countries and regions are the largest EV markets and are ordered by size of the total car market. Regional EV registration data can be interactively explored via the Global EV Data Explorer.

Source: IEA analysis based on Global EV Outlook 2023

Table 1 Estimated infrastructure investment needs by region (US$ billion in 2015 prices)

Region/Subregion	Baseline estimates			Climate-adjusted estimates		
	Investment needs	Annual average	Investment needs as % of GDP	Investment needs	Annual average	Investment needs as % of GDP
Central Asia	492	33	6.8	565	38	7.8
East Asia	13,781	919	4.5	16,062	1,071	5.2
South Asia	5,477	365	7.6	6,347	423	8.8
Southeast Asia	2,759	184	5.0	3,147	210	5.7
The Pacific	42	2.8	8.2	46	3.1	9.1
Asia and the Pacific	22,551	1,503	5.1	26,166	1,744	5.9

*Note: * Pakistan and Afghanistan are included in South Asia. ** Climate change adjusted figures include climate mitigation and climate proofing costs, but do not include other adaptation costs, especially those associated with sea level rise.*

Source: ADB. 2017. Meeting Asia's Infrastructure Needs. Manila: Asian Development Bank.

The future is in e-mobility. Electric car sales hit new records with the momentum expected to continue through 2023 and about 14 million electric cars were being sold worldwide in 2023 (Figure 2).[10] As illustrated in Figure 2, China and European countries are leading in the EV business, both in terms of sales, technology, and market size. The sale of EVs across the world, including in South Asian countries, has increased rapidly in recent years.[11] Several South Asian countries have begun taking steps to increase the adoption of EVs. In India, the sale of EVs

tripled in 2022.[12] EVs are expected to facilitate a significant energy transition in South Asian countries. So, regional cooperation in sustainable transportation must be encouraged. Initiating a regional dialogue on e-mobility could generate new ideas and identify challenges requiring regional intervention.

Looking ahead, regional connectivity continues to be crucial, especially as South Asian countries seek regional markets to counterbalance global slowdowns and geopolitical uncertainties. Eventually, South Asia will experience a higher concentration of sustainable and green transportation. Financing cross-border projects, including energy and digital connectivity, will be crucial for building sustainable corridors and networks. This presents a significant opportunity for South Asian countries to capitalize on.

One of the operational priorities of South Asia shall be developing economic corridors in the region. According to the ADB, "Developing economic corridors can help diversify the region's industries and make them competitive globally though technology, logistics and other business support services".[13] An economic corridor alone cannot be successful until and unless other priorities such as trade policy, trade facilitation and transit, institutions, energy corridors and telecommunications, are in place. Therefore, a strategic partnership for economic corridor and corresponding action plans must be in place.

South Asian countries have increasingly recognized the importance of greening regional connectivity to boost their competitiveness and accelerate growth. A feasible action plan is outlined below.

First, there is a need for a regional plan for greening trade and promoting sustainable development in South Asia. Regional bodies and agencies such as the ADB and UNESCAP need to be reactivated for this purpose.

Second, supportive political direction is required to accelerate the momentum of green trade and transport facilitation in South Asia.

Third, member countries are encouraged to implement regional initiatives in digital, energy, and sustainable infrastructure sectors. India may take the lead in digital infrastructure; Bangladesh in trade corridors; Bhutan in environmental initiatives; Sri Lanka in sustainable maritime transport; Nepal in energy initiatives; and so forth. Other countries may choose sectors based on their expertise and interests.

Fourth, the financing for regional connectivity must be scaled up. In the past, the ADB and the World Bank have attempted to finance regional connectivity projects. However, due to widening regional political differences, this financing became unsustainable. With renewed interest in regional connectivity, financing for sustainable trade facilitation and corridors should be strengthened. A dialogue among South Asian nations could be organized on regional financing for green corridors and sustainable transportation.

Given the emerging trade facilitation scenario (Table 2), South Asian countries may consider negotiating regional agreements and protocols. If such negotiations prove challenging, they may opt to ratify and/or accede to the UNESCAP cross-border paperless trade agreement.

Paperless trade measures are important tools that complement the implementation of the WTO Trade Facilitation Agreement (TFA). They can bring significant cost savings and efficiency gains to international trade transactions. Digital trade facilitation involves the use of modern information and communication technologies (ICTs) to simplify and automate international trade procedures. Paperless trade generally refers to conducting international trade transactions using electronic data and documents instead of paper-based data and documents.

India, Singapore, Malaysia, South Korea, China and Japan have been widely using computer system processes for the border clearance of export and import goods. These systems provide online information to the trading community regarding shipment statuses, pre-arrival processing, submission of trade-related documents, and more.

Another important measure under paperless trade facilitation is the establishment of a single window system. For example, Article 49 of the ASEAN Trade in Goods Agreement (ATIGA) emphasizes establishing a National Electronic Single Window and an ASEAN Electronic Single Window. Many countries across the world, including India, have already implemented single window systems.

Table 2 Trade facilitation scenario*

Country	Customs Single Window	Online exchange with trade partners				Member of UN CPTA**
		e-LC	e-CD	e-COO	e-Phyto	
Afghanistan	NY	NY	No	No	No	NY
Bangladesh	NY	NY	Yes	No	No	Yes
Bhutan	NY	NY	Yes	No	No	NY
India	Yes	NY	Yes	No	No	NY
Maldives	NY	NY	Yes	No	No	NY
Nepal	NY	NY	NY	No	No	NY
Pakistan	Yes	NY	Yes	No	No	NY
Sri Lanka	NY	NY	Yes	No	No	NY

**Based on countries' accession/ratification as on May 2024. **UN Framework Agreement on the Facilitation of Cross-Border Paperless Trade in Asia and the Pacific (CPTA). NY stands for Not Yet*

Source: Author's own based on UNESCAP

South Asian countries have already introduced trade facilitation ecosystems in parts, and therefore, what is now needed is three-fold:

First, South Asian countries should accept a regional single window and a regional port community system for both seaports and landports;

Second, re-establish regional corridors and regional transit systems for South Asia, accommodating both passengers and vehicles.

Third, promote digital and sustainable trade facilitation and e-mobility.

Implementing a paperless trade environment will provide much-needed support to micro, small and medium enterprises (MSMEs), which suffered significantly during the Covid-19 pandemic. For MSMEs, the marginal return from paperless trade is much higher than for larger firms. In this context, the gains for Afghanistan, Bhutan, the Maldives and Nepal are expected to be substantial.

South Asia requires seamless multi-modal transportation and smooth and simplified trade facilities through the development and modernization of highways, railways, waterways, sea and air routes, and digital connectivity. Some of these efforts may promote synergy with other connectivity frameworks, such as the ASEAN Master Plan on Connectivity 2025 and the BIMSTEC Master Plan for Transport Connectivity.

Green and sustainable trade facilitation can expedite the South Asian integration process. Stronger connectivity will promote the countries' participation in global value chains (GVCs). Moving to a regional single window in customs is worth considering, and to encourage paperless trade, the UN cross-border paperless trade agreement is another option open to all. India has made important strides in paperless trade, and it offers many best practices. Bangladesh has already ratified the UN cross-border paperless trade agreement. A regional mechanism to exchange these best practices may be established. Paperless (or contactless or faceless) trade offers high carbon credits, which is an example of green trade facilitation.

There are some forward-looking achievements. Only Bangladesh from the Bangladesh, Bhutan, India and Nepal (BBIN) Initiative has signed and ratified the UN Framework Agreement on the Facilitation of Cross-Border Paperless Trade in Asia and the Pacific (CPTA). In Nepal, e-Customs, using ASYCUDA World (also known as Nepal Customs Automation System (NECAS)), is now implemented in almost all the customs points in the country. There are plans to upgrade e-Customs to achieve full automation of customs processes. Nepal also introduced the Electronic Transactions Act (ETA) in 2006 and its supporting ETA Rules in 2007, which paved the way for many transactions to be performed electronically instead of through traditional, paper-based methods. Nepal also had a soft launch of the Nepal National Single Window (NNSW) in 2021. However, the country has yet to fully implement electronic exchange of the Certificate of Origin (COO), Sanitary & PhytoSanitary (SPS) Certificates and their cross-border applications in South Asia. Bangladesh, on the other hand, has fully automated its Customs System but has yet to implement the National Single Window (NSW). In terms of cross-border paperless trade implementation, Bangladesh is still behind many of its South Asian peers. The country has not yet introduced the electronic exchange of the electronic COO and SPS Certificates, etc. However, a positive development is that Bangladesh has signed and ratified the UNESCAP Framework Agreement of Paperless Trade.

There has been mixed progress in the implementation of paperless trade measures, and cross-border paperless trade has been the least implemented. Bhutan and Nepal are way behind their South Asian peers in trade facilitation and paperless trade (Figure 3). However, India's paperless trade implementation status remains impressive, though it requires increased momentum for cross-border paperless trade.

India has made important strides in introducing green trade facilitation. India has done well in achieving high scores in the UN global survey on sustainable trade facilitation.[10] India's faceless, contactless, and paperless customs reforms serve as a model for other South Asian countries. Additionally, India's Unified Payments Interface (UPI) has received positive responses for cross-border trade transactions in countries such as Nepal, Singapore, the UK, the UAE, Bhutan, Malaysia, and Mauritius.

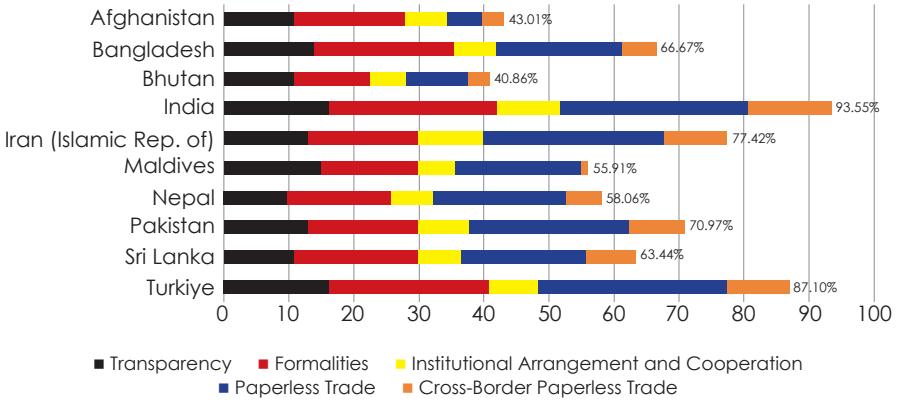
South Asian countries may consider developing a framework for cross-border trade through e-commerce and establishing appropriate regulatory and institutional mechanisms to enable digital payments for such trade. Promoting e-commerce will facilitate MSMEs, start-up enterprises, and others to engage in cross-border trade in a cost-effective way.

Emissions from transport are rapidly increasing in South Asia. The region's transition to green transport must be encouraged and implemented smoothly. A South Asia-wide green transport programme could offer multiple benefits. Examples such as the India-Bangladesh Coastal Shipping Agreement, the renewal of the Protocol on Inland Water Transit and Trade, and the Agreement on the use of Chattogram and Mongla Ports demonstrate positive steps towards greening transport facilitation.

Cross-border payments and country-level capacity building are crucial for maximizing the benefits of trade digitalization and promoting sustainability. In order to re-vitalize digital connectivity, South Asian countries could reinvigorate regional organizations and agencies. This would create institutional mechanisms for electronic fund transfers and other modes of financial transactions among traders and investors across borders. South Asian countries should carry out data harmonization and establish a regional single window system, and also make use of global standards and protocols.

South Asian countries also need technology and development partners such as Japan, the US, Germany, South Korea and others that can

Figure 3 Trade facilitation and paperless trade in South and South-West Asia in 2023



Source: UNESCAP. 2024. Global Trade Facilitation Survey. Bangkok: United Nations Economic and Social Commission for Asia and the Pacific.

provide investments, technologies and infrastructure.

Necessary reforms, policies and cooperation are essential, particularly to gain the support of countries and broaden the shared agenda. Additionally, establishing a suitable legal framework to harness necessary technological, human and financial resources will pave the way for greening trade and transport facilitation.

Special attention must be given to synchronizing national logistics and connectivity plans. When framing the South Asian vision of regional connectivity, it should be closely aligned with India's *GatiShakti* Master Plan, BIMSTEC's Master Plan for Transport Connectivity and ASEAN's Connectivity Master Plan. Undertaking a scoping paper that focuses on the environmental aspects of trade and transport facilitation in this regard would be worthwhile.

Policy recommendations

The following set of policy recommendations are suggested:

- Assist South Asian countries to have a national single window and then move to a regional single window;
- Create a mechanism to monitor paperless trade achievements and benchmarking;
- Ensure a regional paperless trade agreement or adopt the UN paperless trade agreement;
- Hold more dialogue with the business community and conduct training and capacity building programmes on paperless trade;
- A network of custom house agents (CHAs) and/or Authorised Economic Operator (AEOs) of South Asian countries with the support of industry associations (for example, SAARC Chamber of Commerce and Industry) may be set-up. The network will facilitate the paperless trade institutions in the region;
- Build regional institutions to implement regional connectivity and trade facilitation programmes in South Asia;
- Create a regional mechanism to promote e-mobility;
- Take confidence-building measures among South Asian countries.

Without policies and cooperation, South Asian regional integration will stall. Therefore, deepening and broadening cooperation in South Asia is a must in facilitating the integration process. A stronger, green and climate-friendly South Asia is a must for building a sustainable world. ■

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Notes

1 ESCAP-ADB. 2024. *Asia-Pacific Trade Facilitation Report 2024: Promoting Sustainability and Resilience in Global Value Chains*. https://www.adb.org/sites/default/files/publication/954501/asia-pacific-trade-facilitation-report-2024.pdf

2 Based on author's interactions with several experts on the subject.

3 *ibid*. Note 1.

4 Narayan, Amit. 2018. "The electrification of transport could transform our future – if we are prepared for it". *World Economic Forum*, August 16, 2018. https://www.weforum.org/agenda/2018/08/we-must-get-it-right-with-electric-vehicles-for-the-sake-of-our-planet/

5 *ibid*. Note 1.

6 Duval, Y. and K. Mengjing. 2017. *Digital Trade Facilitation: Paperless Trade in Regional Trade Agreements. ADBI Working Paper 747*. Tokyo: Asian Development Bank Institute.

7 WTO. 2022. *World Trade Report 2022*. Geneva: World Trade Organization.

8 New Delhi G20 Summit Declaration, available at https://www.g20.org/content/dam/gtwenty/gtwenty_new/document/G20-New-Delhi-Leaders-Declaration.pdf

9 ADB. 2017. *Meeting Asia's Infrastructure Needs*. Manila: Asian Development Bank.

10 IEA. 2023. *Global EV Outlook 2023: Catching up with climate ambitions.* https://iea.blob.core.windows.net/assets/dacf14d2-eabc-498a-8263-9f97fd5dc327/GEVO2023.pdf

11 More than 10 million electric cars were on the world's roads in 2020 with battery electric models driving the expansion, and registration of electric cars increased in 2022 despite COVID-19 pandemic. According to the forecast of the IEA, approximately 1 million electric cars will be sold in 2023 in India. IEA. 2021. *Global EV Outlook 2021: Accelerating ambitions despite the pandemic.* https://iea.blob.core.windows.net/assets/ed5f4484-f556-4110-8c5c-4ede8bcba637/GlobalEVOutlook2021.pdf

12 De, Prabir. 2023. "Strengthening Regional Integration in South Asia: A Strategy Paper on Regional Connectivity and Trade Facilitation". *Discussion Paper 228*. New Delhi: Research and Information System for Developing Countries.

Climate-smart agriculture in Sri Lanka: A Policy Review

Climate-smart agriculture objectives are widely incorporated into agriculture sector policies in Sri Lanka but implementation challenges exist.

Erandathie Pathiraja and Nishamini Ihalagedara

Human-caused global warming has intensified weather and climate extremes worldwide, causing adverse impacts on nature and people (IPCC, 2023).[1] The regions that contributed least to greenhouse gas emissions are the most vulnerable to climate change (CC) and these impacts are predicted to be more intensified in the future. The impacts are visible across many sectors, lowering food and water security and affecting livelihoods globally. The main food production sectors such as agriculture and fisheries are climate-exposed and have displayed economic losses due to adverse climatic impacts. The growth of global agriculture sector productivity has slowed down over the last 50 years. According to IPCC AR6 analysis, these negative impacts are mainly evident in mid- and low-latitude countries while positive impacts are evident in some high-latitude regions.[2] Therefore, agriculture in the South Asian region is more vulnerable to CC. As a tropical island, mainly characterized by rainfed crop production systems, Sri Lanka's agriculture sector is heavily influenced by tropical cyclones, warming temperatures, droughts, floods, saltwater intrusions, declining soil fertility, climate-influenced pest and disease outbreaks, and changing weather patterns. Therefore, meeting the Sustainable Development Goal 2 (SDG2) requires great effort.

Climate-smart agriculture to improve resilience

According to the Food and Agriculture Organisation (FAO), climate-smart agriculture (CSA) is defined as "an approach that helps guide actions to transform agri-food systems towards green and climate resilient practices". Hence, CSA has three main objectives.

- Sustainably increasing agricultural productivity and incomes (productivity)
- Adapting and building resilience to CC (adaptation)
- Reducing and/or removing greenhouse gas emissions, where possible (mitigation)

These CSA objectives support meeting the SDGs and the Paris Agreement (PA) commitments.

Policy landscape

The Sri Lankan agriculture is historically rainfed with supplementary irrigation infrastructure facilities to irrigate during droughts considering the low rainfall areas and the bimodal rainfall pattern of the country. Further,

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46 different agroecological regions (AERs) have been identified for crop production mainly considering monthly rainfall, soil type, topography, and land use. Hence, the policies, strategies, and programmes were sensitive to seasonal and regional climatic conditions. For example, developing irrigation facilities, moisture conservation practices, water-efficient farming techniques, crop calendars, and developing drought- and flood-tolerant varieties, introducing different varieties and breeds for different agro-climatic zones were already incorporated in the policy action plans. However, CC has been incorporated into policy development in parallel with the global climatic policy movements.

Key global policies

The first global-scale negotiation commenced in 1990 with the United Nations Framework Convention on Climate Change (UNFCCC) which came into force in 1994 with 196 signatories.[3] Operationalizing the UNFCCC, the Kyoto Protocol came into force in 2005 by committing the industrialized countries and economies in transition to adopt policies and measures to reduce GHG emissions giving the flexibility to select three market-based mechanisms: International Emissions Trading, Clean Development Mechanism (CDM) and Joint Implementation (JI).[4] After several rounds of negotiations, the Paris Agreement (PA) of 2015 came into force in 2016 replacing the Kyoto Protocol.[5] It considers commitments from all the countries through Nationally Determined Contributions (NDCs) across economic sectors for mitigation, adaptation, loss and damage, financing and implementation.

The United Nations 2030 Agenda for Sustainable Development was adopted by its member countries in the same year 2015. It introduces 17 Sustainable Development Goals (SDGs) "for peace and prosperity for people and the planet, now and into the future" while emphasizing tackling CC, sharing similarities with the PA.

Key policies in Sri Lanka

Sri Lanka became a signatory to the UNFCCC in 1993, marking its first climate change policy movement. Subsequently, its first National Environmental Action Plan (NEAP) was developed for the 1992-1996 period. The Kyoto Protocol was adopted in 1997 though it came into force in 2005. As a result, Sri Lanka accepted the Clean Development Mechanism in the year 2002. The National

Environment Policy (NEP) in 2003 advocated for flexible environmental management, including climate change adaptation.[6] In 2012, Sri Lanka's first National Climate Change Policy (NCCP) was developed with the vision for a "future free from adverse climate change impacts".[7] It focused on six areas: vulnerability, adaptation, mitigation, sustainable consumption, knowledge management, and general statements. The policy incorporated adaptation measures for food production systems including agriculture, animal production, and fisheries for food security while mitigation measures in the agriculture sector are discussed under the mitigation section.

Agriculture

Adaptation was a main priority due to Sri Lanka's low contribution to global emissions. The NCCP led to the National Adaptation Plan (NAP) in 2013, which identified adaptation needs and actions across various sectors like agriculture, water, and infrastructure. The first NAP covered the period 2011–2016 followed by the second NAP for the 2016–2025 period.[8] These were prepared as a part of the commitments to the UNFCC and the PA while considering potential contributions to the SDGs. The NAP has recognized food security as a priority sector which considers priority actions, such as, developing tolerant varieties and breeds for climatic risks such as heat stress, drought, floods, and pests and diseases; water-efficient farming methods; timely communication of climate information to farmers; and capacity development of research institutions.

The National Guidelines for CSA Technologies and Practices for the Dry and Intermediate Zones of Sri Lanka was prepared in 2019 by the UNDP in collaboration with the Ministry of Agriculture (MOA) with funding assistance from the Green Climate Fund. These technologies are specified under six thrust areas, namely, Tank Cascade Management, Soil and Water Management, Agronomy: Research and Development, Climate Information and Forecasting: Research and Development, Institutional and Social Development, and Energy and Mitigation.

The National Policy on Waste Management was developed in 2020 with the vision of "managing waste sustainably for a healthy life and a cleaner environment for all" which contributes to emission reductions from agricultural waste.[9]

The updated NDCs were prepared in 2021 based on the PA covering the areas of mitigation, adaptation, loss and damage and integrating those into the SDGs.[10] Agriculture sector mitigation strategis are discussed under six NDCs which consider reducing post-harvest losses of fruits and vegetables, increasing the productivity of crops, dairy, and livestock sectors, and integrating renewable energy. There are six adaptation NDCs for the agriculture sector. The first considers mainstreaming CC considerations into agriculture. It considers commencing the implementation of the national guidelines prepared for CSA. Moreover, building CC resilience through Good Agricultural Practices (SLGAP), crop-livestock integration, and connecting home garden production systems to value addition and markets are considered. The second one concerns promoting Integrated Pest Management Systems (IPMS) and Integrated Plant Nutrition Systems (IPNS). The third is about producing tolerant varieties for biotic and abiotic stresses for vulnerable crops and fodder. The other NDCs were on a revising agro ecological regions (AERs) according to current and future climates to make recommendations, improving soil and water conservation and efficient use of water and fertilizer, and developing early warning systems and risk management mechanisms. The agriculture sector is interlinked with most of the SDGs in different degrees and gender responsiveness is incorporated into the NDCs.

The National Agriculture Policy was updated in 2021.[11] The policy comprises eight thrust areas: Crop production and productivity improvement; self-sufficiency and independence in basic food and feed requirements; planned resource use; market competitiveness; climate resilience; minimize all risks and uncertainties; mainstreaming gender and youth in agriculture; and mintaining center-periphery relationships. Climate resilience and other risk management directly contribute to NAP and NDC actions. Moreover, crop production and productivity themes cover 16 policy actions that

consider encouraging and strengthening CSA interventions on the food systems, SLGAP, and Agro-met Advisories (AMAs).

The NEP was updated in 2021 to incorporate new environmental challenges and green economic development.[12] Climate change adaptation, mitigation, green development goals, loss and damage, and cross-cutting issues accommodate all sectors including the agriculture sector.

The recently updated National Envrionmental Action Plan (NEAP) 2022–2030 was based on the NEP 2021. Among the nine thematic areas, climate actions for sustainability cover updating policies and plans to incorporate new climate change-related developments in general and the agriculture sector as a separate section covering the agriculture sector actions under NDC 2 and NDC 5. For instance, updating the NCCP, and NAP for 2026-2035, promoting IPM and IPNS and developing tolerant varieties, revising the AER map, and water and land management are included. Moreover, the water sector actions cover improving irrigation canals to enhance agriculture sector resilience which comes under the Ministry of Irrigation. Similarly, mitigation NDCs of agriculture are also incorporated into NEAP.

The National Climate Prosperity Plan (NCPP) was launched in 2022, seeking opportunities for climate financing including debt-for-climate swaps at the COP27.[13] The NCPP considers CSA as a goal to accelerate agriculture sector adaptation to enhance food security, safeguard livelihoods, and reduce import dependence.

The NCCP was updated in 2023 as an action in NEAP to facilitate the implementation of NAP and NDCs and to be compliant with the NEP and the PA.[14] The strategies in general cover all the sectors while adaptation strategies under food security incorporate nine actions in the agriculture sector, for instance, SLGAP, good manufacturing, and good animal husbandry practices.

Policy implementation challenges

Policy implementation responsibilities of the CSA are scattered among several ministries and institutions considering the overlapping nature of the objectives. However, the recently developed policies have adopted overlapping objectives of policies and strategies such as NDCs and SDGs into sector-specific policy actions. The Ministry of Agriculture and affiliated institutes including specific crop research institutes are mainly responsible for agriculture sector policy implementation while the Ministry of Environment has shared objectives over all the sectors including agriculture for CC. The Ministry of Irrigation and the Department of Irrigation are involved in agriculture irrigation infrastructure development. The Climate Change Secretariat was established under the Ministry of Environment as the focal point for communicating UNFCCC, Kyoto Protocol, and the Paris Agreement decisions to the country. The Ministry of Finance and the Presidential Secretariat finance the relevant ministries and institutes. The CSA objectives are widely incorporated into agriculture sector policies because of the global CC policy movement. Besides, the country needs implementation of these policies with the rising frequency and intensity of extreme climatic events. However, implementation challenges exist since external financing is necessary for scaling up the CSA practices to reach the targets. Improving climate-smart value chains, filling the technology gaps for weather and production forecasting, and AI-driven CSA practices would benefit the sector. ■

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Notes

1 IPCC. 2023. *Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva: IPCC.

2 IPCC, 2023: S*ections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* . IPCC, Geneva, Switzerland,

3 Naser, Mostafa Mahmud, and Prafula Pearce. 2022. "Evolution of the International Climate Change Policy and Processes: UNFCCC to Paris Agreement." *Oxford Research Encyclopedia of Environmental Science*, November 22, 2022.

4 United Nations. *What is the Kyoto Protocol?* https://unfccc.int/kyoto_protocol

5 United Nations. *Key aspects of the Paris Agreement*. https://unfccc.int/most-requested/key-aspects-of-the-paris-agreement

6 Ministry of Environment and Natural Resources. 2003. *National Environmental Policy and Strategies*. Colombo: Ministry of Environment and Natural Resources, Government of Sri Lanka.

7 Ministry of Mahaweli Development & Environment. 2012. *National Climate Change Policy of Sri Lanka*. Colombo: Ministry of Mahaweli Development & Environment, Government of Sri Lanka.

8 Ministry of Mahaweli Development and Environment. 2016. *National Adaptation Plan for Climate Change Impacts in Sri Lanka 2016 - 2025*. Colombo: Ministry of Mahaweli Development & Environment, Government of Sri Lanka.

9 Ministry of Environment. 2020. *National Policy on Waste Management*. Colombo: Ministry of Environment, Government of Sri Lanka.

10 Ministry of Environment. 2021. *Updated Nationally Determined Contributions under the Paris Agreement on Climate Change*. Colombo: Ministry of Environment, Government of Sri Lanka.

11 Ministry of Agriculture and Plantation Industries. 2007. *National Agriculture Policy*. Colombo: Ministry of Agriculture and Plantation Industries, Government of Sri Lanka.

12 Ministry of Environment. 2022. *National Environment Policy*. Colombo: Ministry of Environment, Government of Sri Lanka.

13 Government of Sri Lanka. 2023. *Sri Lanka Climate Prosperity Plan*. https://unfccc.int/sites/default/files/resource/SriLanka_LTLEDS.pdf

14 *ibid*. Note 7.

Fostering Clean Transition
Indian green industrial policy: Lessons for South Asia

Vertical specializations in the development of value chains for green industries would be more effective than horizontal approaches, where each South Asian country tries to build local capacities independently.

Nagesh Kumar

India has emerged from the COVID-19 pandemic as the fastest-growing large economy, having grown at 8.2 percent in 2023-24. It is currently the fifth largest economy in the world and is on track to become the third largest in a few years. As India celebrated the 75th anniversary of its independence, it adopted the vision of becoming a developed economy by 2047. The realization of Vision 2047, which aims for developed country status, requires inclusive and sustainable prosperity for all citizens. This can be achieved through the creation of decent job opportunities for India's youthful workforce. The issue of decent job creation is linked

with the structural transformation associated with economist Arthur Lewis, where workers gradually move from low-productivity activities, such as agriculture, to higher-productivity sectors, such as industry and services.

India has witnessed the transformation of an agriculture-dominated economy into a services-dominated one, bypassing the industrial sector. While the service sector has delivered robust growth rates, it has not been able to absorb workers, especially the unskilled and semi-skilled, in a proportionate manner. As a result, agriculture continues to sustain as much as 46 percent of India's workforce, despite contributing barely 15 percent of the GDP. The manufacturing sector has been bypassed, with its share in the GDP stagnating at around 16-17 percent, in contrast to an average of 30 percent in East Asian countries. The neglect of manufacturing as a foundation for structural transformation in India has cost the country dear in terms of creating decent jobs. The manufacturing sector has the highest backward and forward linkages compared to any other productive sector and generates more jobs indirectly for every direct job created.

Fostering manufacturing in a carbon-constrained world must focus on sustainable or green industrialization, which creates jobs and incomes while also helping to meet net-zero emission (NZE) targets. Late-industrializers like India, therefore, need to craft their industrial strategy focusing on green industrialization. Indeed, NZE targets have provided a new stimulus for the revival of industrial policy globally. In this context, this article reviews India's strategy towards sustainable industrialization and concludes with a few lessons from India's experiences for other South Asian countries, including recommendations for regional cooperation.

Green industrial policy in a global context

The imperative of achieving NZE has provided new legitimacy for the revival of industrial policy worldwide. The aggressive recent adoption of industrial policy by some of the most advanced economies is a case in point.[1] For instance, in the US, once the greatest champion of free markets and globalization, the Biden Administration has recently defined its industrial policy with the CHIPS and Science Act, the Inflation Reduction Act, and the Infrastructure Investment and Jobs Act. These acts are partly driven by geopolitical issues, such as reducing the domination of supply chains by China, and partly by the need to build industrial capacities for a clean transition. They aim to foster local manufacturing and innovation in semiconductor chips, electric mobility, and other new technology products through hundreds of billions of dollars in subsidies and tax breaks. The European Union has followed suit with its own set of incentives and support for local producers. The new "Green Deal Industrial Plan for the Net-Zero Age" of 1 February 2023, sets out a European approach to boost the EU's net-zero industry through measures to improve competitiveness, including the 'Net-Zero Industry Act' of 16 March 2023, which aims to simplify the regulatory framework for the production of key technologies. Additionally, the EU has imposed a Carbon Border Adjustment Mechanism (CBAM) to levy unilateral taxes on imports of certain carbon-intensive goods.

India's clean transition goals and green industrial policy

India has committed to achieving NZE by 2070 and has set ambitious sub-targets, including meeting 50 percent of its energy requirements from renewable sources and reducing the emissions intensity of its economy by 45 percent by 2030. Achieving these goals will require a major transformation of India's energy generation, transport systems, industrial processes and consumption patterns to decarbonize them. Green industries can become some of the most dynamic segments of India's industrialization process, bringing co-benefits such as reducing dependence on imported hydrocarbons, lowering pollution levels, and advancing the achievement of NZE targets.

India's new industrial policy has evolved with the Make-in-India programme announced by Prime Minister Narendra Modi in 2014, which was further reinforced by the Atmanirbhar Bharat Abhiyan in 2020 as a strategy to pull the economy out of the COVID-19 pandemic. This strategy includes a production-linked incentives (PLI) scheme to boost local production in 14 sectors, including several green industries such as electric vehicles, advanced chemistry batteries, solar PV equipment, and initiatives like the green hydrogen mission. The following summarizes the elements of this green industrial policy.

Clean energy transition

India has significantly expanded its renewable energy (RE) generation capacity over the past decade, growing from 39.5 GW in 2014 to 180.79 GW in December 2023, making it the fourth largest in the world. This includes 73.31 GW of solar, 44.73 GW of wind, 46.88 GW of large hydro, and 10.2 GW of biomass/co-generation. However, huge investments will be needed over the next 6-7 years to meet the ambitious target of 500 GW of RE installed capacity by 2030. To achieve this, India must expand its local equipment manufacturing capacity in solar and wind energy, as well as in green hydrogen (gH2).

Solar photovoltaic: The solar photovoltaic (PV) supply chain, spanning all stages of production from polysilicon to wafers, cells, modules and panels, has increasingly become dominated by China, which now accounts for more than 85 percent of global capacity. This high level of dominance by China in the supply of PV equipment is not conducive to the rapid expansion of installed capacity necessary to achieve the 2030 target. Government policy has focused on creating both the demand for and supply of solar energy equipment.

The government has incentivized solar energy deployment through long-term power purchase agreements (PPAs) and has promoted rooftop

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solar under the Jawaharlal Nehru National Solar Mission (JNNSM). By offering stable and predictable returns, including support through viability gap funding (VGF) in a reverse auction, long-term PPAs have helped attract investment in solar projects. This approach has driven not only capacity expansion but also significant cost reduction, with costs steadily decreasing from INR 12.16 per kWh in 2010 to around INR 2.50–2.87 per kWh, making solar energy 20–30 percent cheaper than the existing thermal power plants and among the cheapest in the world. In 2024, the government announced plans to solarize 10 million households.

Supply-side interventions to augment the domestic solar equipment manufacturing ecosystem have included incentivizing local production through production-linked incentives (PLI), providing protection for the infant industry, and giving preferences in public procurement. As a result of these initiatives, local manufacturing capacity and its backward integration are beginning to develop. Since 2020, the manufacturing capacity for modules has more than doubled from 15 GW to 38 GW by 2023, and is likely to expand to 110 GW by 2026, not only to meet the growing domestic demand but possibly also for exports.

Green hydrogen: Green hydrogen (gH2), produced by the electrolysis of water using renewable energy, results in a clean and emission-free fuel and is an attractive option for the transition to a low-carbon future. By replacing fossil fuels, gH2 can help decarbonize several sectors, including transportation, shipping, steel, and fertilizers, among others. Given its tremendous potential for meeting net zero targets, India has launched the National Green Hydrogen Mission with an outlay of INR 197.44 billion and a target of 5MMT production capacity of gH2 per annum by 2030. The mission will focus on creating demand in multiple sectors, substituting imports of fossil fuels and fertilizers, and tapping into its export potential. Strategic interventions for gH_2 supply will include incentives for electrolyser manufacturing and gH_2 production. The mission includes key enablers such as result-oriented R&D activities, ease of doing business, infrastructure and supply chain logistics, regulations and standards, and capacity-building, in addition to financial incentives and provisions for land and water resources. As the current cost of gH_2 is too high to be viable as an energy source, subsidization will be needed until volumes bring down costs through economies of scale, similar to the case of solar power. As part of the mission, the government invited bids for the production of 1.5 GW of electrolyser manufacturing and 0.55 MMT of gH_2 in 2023.

Wind turbines: India's wind energy sector is supported by a strong indigenous wind power ecosystem, project operation capabilities and a manufacturing base of about 15 GW per annum. The country currently has the fourth-highest wind-installed capacity in the world. The government is promoting wind power projects nationwide through private sector investment by providing various fiscal and financial incentives, such as accelerated depreciation benefits and concessional custom duty exemptions on certain components of wind electric generators.

Energy-efficient lights: Light-emitting diode (LED) technology is up to 75 percent more energy efficient than the traditional incandescent and compact fluorescent (CFL) bulbs, making it crucial for enabling electricity access with a lower carbon footprint. Helped by government policy, India's LED lighting market has grown 130-fold within five years, from annual sales of five million bulbs per year in 2014 to about 670 million in 2018, while the price dropped dramatically from INR 400 (US$6.4) in 2014 to about INR 70 (US$1). The main driver of India's rapid market creation was a policy initiative known as "Unnat Jyoti by Affordable LEDs for All (UJALA)," which procured LED bulbs for the

national market through competitive bidding. This allowed the bulbs to be sold at profitable, yet lower-than-retail prices through kiosks and registered vendors. To make LED manufacturing in India globally competitive, remove sectoral disabilities, create economies of scale, and enhance exports, the Government of India has implemented a PLI Scheme for White Goods and LED lights with a budget of INR 62.38 billion.

Decarbonizing transport sector: The Indian government has taken several significant steps to expand local production of electric vehicles (EVs), batteries, as well as to promote their adoption, including the creation of charging infrastructure.

Incentivizing the adoption of EVs: Measures to enhance the adoption of EVs include the Faster Adoption and Manufacturing of Electric Vehicles (FAME) initiative, launched in 2015 as part of the National Electric Mobility Mission Plan 2020. The incentives under FAME are provided upfront, leading to a reduction in effective price for customers for eligible vehicles produced in India. Additionally, reduced GST rates on EVs and chargers, along with a waiver of road tax, further reduce the overall initial cost of EVs for consumers.

Production-linked incentives for local manufacturing of EVs: The PLI Scheme for the automotive sector, launched in September 2021 with a budget of INR 259.38 billion, aims to foster domestic manufacturing of advanced automotive technology products and attract investments in the automotive manufacturing value chain. Several Indian companies have started manufacturing EVs, including cars, buses, and two- and three-wheelers.

Public charging infrastructure and manufacture of advanced batteries: To expand and fortify the public EV charging infrastructure nationwide, the government has issued guidelines and standards that involve private players in the installation of EV charging stations. There is also a PLI Scheme for the National Programme on Advanced Chemistry Cell (ACC) Battery Storage, launched in 2021 with a budget of INR 181 billion. This scheme aims to attract investments of INR 450 billion in the creation of Giga-scale ACC manufacturing facilities in India, capable of producing 50 GWh of batteries.

Supported by incentives, EV penetration is increasing. In particular, e-two-wheelers are gaining popularity as their prices have become competitive with the provided incentives, as evidenced by a 34.4 percent growth in their sales in Q3 2023-24: compared to Q2. The Indian government aims for EV adoption to reach 40 percent for buses, 30 percent for private cars, 70 percent for commercial vehicles, and 80 percent for two-wheelers by 2030.

Lessons for South Asia

To summarize the above discussion, the Indian government is vigorously fostering the net-zero transition of the economy through a combination of policies. These include measures to create demand for clean energy products and processes, as well as augmenting their supply by incentivizing domestic manufacturing through green industrial policy interventions.

As South Asian countries face similar challenges to India in terms of industrialization and green transition,[2] the Indian experience in fostering green industrialization may offer valuable lessons for them. This can also benefit regional and subregional cooperation, as summarized below.

Industrial policy is critical for a clean transition: Given the considerable market failures arising from diverging private and social returns and significant externalities, industrial policy or strategic interventions are essential to drive the agenda of a clean transition. This is evident from recent policy shifts in advanced countries.

Green industrial policy needs to address both supply and demand side: India's experience in fostering green industries has highlighted the importance of addressing both supply and demand side challenges. Given that new green products and processes tend to be more expensive than their traditional counterparts, industrial policy needs to intervene on the demand side as well, rather than focusing solely on supply-side interventions as in the past.

Scale economies point to potential of regional cooperation: Most new green industries—from solar PV manufacturing to batteries to LEDs to EVs—are highly scale-sensitive. Therefore, there are significant opportunities for South Asian countries to develop coordinated strategies for the development of their ecosystems. This means that vertical specializations in the development of value chains for green industries would be more effective than horizontal approaches, where each South Asian country tries to build local capacities independently. Depending on their specializations and resource endowments, South Asian countries can coordinate their value-chain strategies with India and other partners.

Harnessing hydroelectric potential for clean energy transition: While Bhutan and India have pioneered subregional cooperation in harnessing hydropower, Nepal and India have begun tapping into Nepal's immense hydropower resources, with Bangladesh expressing interest in importing hydropower from Nepal through India via a trilateral agreement. This subregional cooperation holds significant potential for the clean energy transition of the subregion. ■

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Notes

1 Kumar, Nagesh. 2023. "Manufacturing-led Transformation for Realizing India's Development Aspirations in the Context of a Fractured Trading System: Challenges, Opportunities and Strategic Interventions". *ISID Working Paper 270*. New Delhi: Institute for Studies in Industrial Development, https://isid.org.in/wp-content/uploads/2024/02/WP270.pdf

2 Kumar, Nagesh and Shiladitya Chatterjee. "Harnessing the Potential of Sustainable Industrialization in South Asia: Some Policy Lessons for Advancing SDG-9". *ISID Working Paper 275*. New Delhi: Institute for Studies in Industrial Development, https://isid.org.in/wp-content/uploads/2024/02/WP275.pdf

Climate change and development concerns in South Asia

Climate action is not a one-period game; it is a multi-period game. If other countries do not follow their targets, South Asian countries will also deviate from their mitigation targets.

Nitya Nanda

South Asia is one of the regions most vulnerable to climate change, despite having one of the lowest per capita emissions in the world. This vulnerability arises from several factors such as fragile ecology, low availability of per capita resources, and per capita income being among the lowest in the world. The region also lags in achieving the sustainable development goals (SDGs). Poor performance in several SDGs is a manifestation of high climate vulnerability and low adaptation capability. It is well documented that climate change is likely to adversely impact progress on the SDGs, particularly in developing countries.

Agriculture and allied activities will be most affected by climate change, making it more difficult to achieve SDG 1 (poverty reduction) and SDG 2 (food security). Rising temperatures due to climate change will adversely impact people's health, making it more challenging to achieve SDG 3 (health). It is well recognized that poorer people are more vulnerable to climate change, and within poorer communities, women are particularly vulnerable. Hence, climate change poses a significant challenge to achieving SDG 5 (gender equality) and SDG 10 (reduced inequality).

In South Asia, climate change is causing glaciers, major sources of fresh water, to melt. It also makes rainfall more erratic, adversely affecting SDG 6 (water security). There is a strong water-energy nexus, not only for hydropower but also for other modes of energy generation. So, climate change will impact SDG 7 (energy for all).

As South Asian countries still heavily depend on agriculture and allied sectors, which are climate-sensitive, and with many people deriving their livelihoods from these sectors, climate change will negatively affect SDG 8 (jobs). Reduced water availability due to climate change will lead to higher pollution levels (SDG 11), threatening aquatic life (SDG 14). Additionally, climate change will force poor, vulnerable people to migrate, affecting a sense of harmony in the migrating areas (SDG 16).

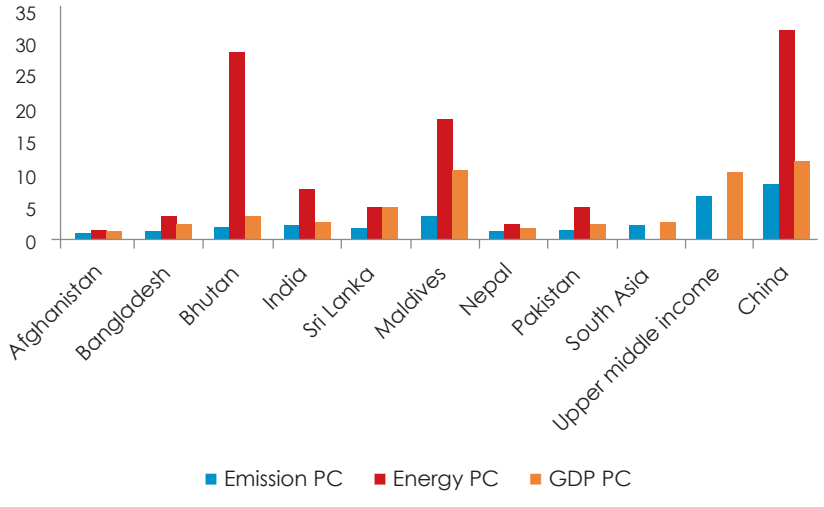
Mitigation efforts generally have positive impacts on the SDGs, with some exceptions like job losses in polluting sectors that might be phased out over time, provided there is no diversion of resources from social development and adaptation. Climate change is already impacting South Asia, with a substantial increase in extreme weather events in the region, which are likely to become more frequent and intense in the future. Hence, these countries need to boost their adaptation efforts. Above all, South Asia needs rapid economic development to generate the resources required for mitigation and adaptation measures, as well as for reducing people's vulnerabilities.

Development imperatives

No country can achieve economic development without industrial development. But in South Asian countries, industrial development is relatively low. India's effort to leapfrog from a primary to a service sector-based economy failed, although it succeeded in the Maldives, mainly because it is a small country that could utilize its tourism potential well. Larger countries like India, Pakistan, Bangladesh, and even Nepal and Afghanistan cannot improve their economic fortunes without boosting their industrial sectors. India has achieved a substantial reduction in the energy and emission intensity of its GDP over the last two decades (Table 1). However, one of the reasons for this is that India's GDP has become increasingly dominated by the service sector. Now, India is working hard to increase the share of industry, particularly manufacturing, in its GDP. The "Make in India" programme and the production-linked incentive scheme are designed to achieve this goal.

Let us assume that South Asian countries will strive to achieve an upper middle-income status over the next one and a half decades. In South Asia, only the Maldives has achieved this status (Figure 1). However, the Maldives is a very small country, so its achievement did not significantly impact the region as a whole. Nevertheless, to understand the potential implications of other South Asian countries reaching this status, it is important to examine the Maldives' experience in terms of energy consumption and emissions.

Figure 1 **Per capita GDP, energy use and emission in South Asia and Comparators**



Note: CO2 emission in metric tons (2022), Energy Use in 1000 kilowatt hour equivalent (2021-22), and GDP PC in 2015 US dollars (2021).

Sources: World Bank World Development Indicators and International Energy Agency Database.

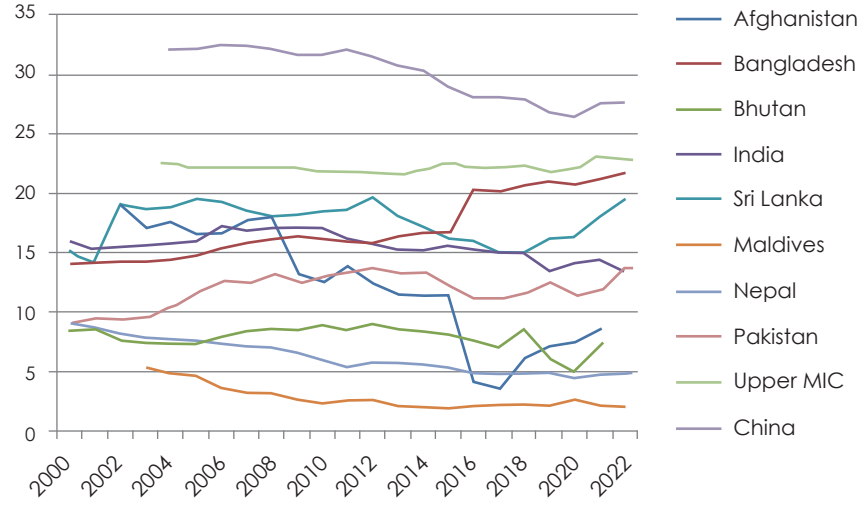
It is also useful to consider the averages for middle-income countries as well as China, which recently achieved this status. The Maldives has much higher energy consumption and emissions compared to other South Asian countries, except for Bhutan, where energy consumption is higher. However, Bhutan's emissions are lower because its energy generation is entirely based on hydropower. The emissions of average middle-income countries and China are far higher than those of all South Asian countries. China's and middle-income countries' higher emissions levels compared to the Maldives exist mainly because the Maldives is not industrialized, with its prosperity based on tourism. Consequently, energy consumption in China is much higher than in the Maldives for the same reason.

As indicated earlier, if South Asian countries want to achieve upper middle-income status, they must industrialize. As seen in Figure 2, the share of the manufacturing sector in GDP has been between 20 and 25 percent in upper middle-income countries over the last two decades. China is relatively more industrialized, with its share of manufacturing in GDP exceeding 30 percent up until 2014, though it has declined since then. Among South Asian countries, only Bangladesh has surpassed the 20 percent level in terms of the share of manufacturing in GDP, while Sri Lanka has come close to that level.

China increased its share of manufacturing rapidly, but as it reached an upper middle-income status, it began to reduce the share of manufacturing. This trend aligns with the well-established conjecture that developing countries will increase their share of manufacturing, but after reaching a certain level, it will remain stagnant for some time and then decline. It is widely believed that India has experienced premature deindustrialization. Here, deindustrialization does not mean a reduction in the absolute level of industrial output but rather a reduction in the share of manufacturing in GDP and in total employment, which has been the case in India, especially since around 2010.

Also the region suffers from substantial energy poverty, with many people not receiving the minimum energy they require, except in Bhutan and the Maldives (Figure 1). These two are relatively smaller countries. So, if the people of the region are to have adequate energy, overall energy consumption must increase substantially. For example, India's per capita energy consumption is higher than Sri Lanka's, but its per capita residential/personal/household energy consumption is lower. This figure is relatively much higher in developed countries. Ensuring economic development and providing adequate clean energy to all will be a major challenge in many South Asian countries.

Figure 2 Share of manufacturing in GDP in South Asia and comparators



Source: World Bank World Development Indicators.

Climate inter-dependence

Most experts agree that, given the commitments made by the international community, it will not be possible to limit the temperature rise to within 1.5 degrees Celsius; it may even breach the 2 degrees Celsius level. This is evident from the Nationally Determined Contributions (NDCs) and their achievements in major countries (Table 1). While the NDCs and net-zero targets are not ambitious enough, there are also concerns that the promises made might not be followed through. If other countries do not meet their targets, South Asian countries will face double jeopardy. Mitigation efforts could mean diverting funds from adaptation, poverty reduction, and health, etc., yet they will still suffer severe impacts from climate change due to other countries not meeting their commitments. Climate action is not a one-period game; it is a multi-period game. If other countries do not follow their targets, South Asian countries will also deviate from their mitigation targets.

Hardly any country has provided a clear roadmap and strategies for achieving net-zero targets. The EU has outlined a roadmap up to 2030 but not for 2050. Moreover, the European roadmap for net-zero emissions was heavily reliant on Russian gas, and the Russia-Ukraine conflict has disrupted these plans. Most countries do not even have a clear roadmap for 2030. Predicting emissions and energy consumption is challenging due to fluctuating economic growth and structural changes. While a clear roadmap would be useful for monitoring progress, it is difficult to predict 30–50 years ahead because technology can be disruptive.

Table 1 Climate commitments and progress in major economies

		2015 NDC (target for 2030)	2022 NDC (target for 2030)	Progress as of 2022-23	Net-zero year
US	GHG emission reduction (compared to 2005)	26-28% by 2025	50-52%	17-24%	2050
EU	GHG emission reduction (compared to 1990)	At least 40%	At least 55%	32.2%	2050
Brazil	GHG emission reduction (compared to 2005)	43%	50%	NA	2060
Russia	GHG emission reduction (compared to 1990)	25–30%	30%	20%	2060
South Africa	GHG emission target (1990)	398–614 Mt CO2e (-28 to 17%)	366–436 MtCO2e (excl. LULUCF*) (22-34%)	-29% (1990) 12%(2010)	2050
China	Carbon intensity reduction (compared to 2005)	60–65%	over 65%	51%	2060
India	Carbon intensity reduction (compared to 2005)	33–35%	45%	28%	2070

*Source: Author's compilation from various sources * Land Use, Land Use Change and Forestry (LULUCF).*

For developed countries, GDP growth rates have been around 2 percent, making long-term projections easier, and they also have a better understanding of emerging technologies. For developing countries, predicting GDP growth rates is more difficult, making it even harder to provide a clear roadmap, especially for South Asian countries. In the long run, the worst case scenario is that we are all doomed—who will keep the promises? This is particularly relevant for the US, as it is uncertain what will happen to its roadmap if the government changes.

Meanwhile, the first synthesis report of the global stocktake by the United Nations Framework Convention on Climate Change (UNFCCC), 2023, has confirmed that the world as a whole is not on track to meet the Paris Agreement. Therefore, South Asia, being the most vulnerable region, will require substantial financial commitments towards adaptation. However, as noted in the global stocktake, adaptation efforts have been "fragmented, incremental, sector-specific, and unequally distributed across regions." The report also emphasizes the need for transparent reporting on adaptation to enhance understanding, implementation, and international cooperation, as well as to minimize and address 'loss and damage' and support for adaptation.

The stocktake report has also recognized the substantial financial requirements for transitioning to renewable energy. Hence, the crucial question before South Asia is balancing mitigation and adaptation efforts. One important aspect is the dependence on technology to achieve climate goals — how much to rely on technology and how much to depend on a paradigm shift and adopting an ecology-oriented approach. For example, India has set a buffer of about 20 years for achieving net-zero emissions. If developed countries can manage this by 2050, then by that time, there will likely be technologies available that will make it easier for India to adopt and achieve its net-zero target within the next twenty years. This also highlights the issue of access to technology.

Conclusion

While both mitigation and adaptation are important for South Asian countries, adaptation might become their priority due to the compulsion that globally, not enough mitigation efforts are being made. Mitigation is also challenging because of the South's development imperatives, such as industrialization and economic growth, on the one hand, and achieving sustainable development goals, including ensuring adequate energy access for all, on the other. The adaptation needs and serious resource constraints will make it difficult for South Asian countries to fully prioritize their mitigation efforts.

Their requirements for adaptation efforts would be lessened if global mitigation efforts were strengthened. Hence, they expect developed countries to establish clear roadmaps for net-zero targets and diligently follow through on them.

South Asian countries require significant financing for building resilience, which will also necessitate access to technologies. Often, the same technologies are effective for both mitigation and adaptation, making them their priorities. In terms of mitigation, the focus should be on technologies with co-benefits, meaning that they will assist in achieving multiple SDGs. Elaborate long-term planning is necessary, including needs assessment, viability analysis, and capacity building. Regional cooperation will also be helpful—in fact, imperative—in this regard. ■

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A just energy transition: Perspectives from Pakistan

Pakistan can enhance its energy security, reduce its carbon footprint, and achieve sustainable economic development by harnessing solar, wind, and hydro resources.

Saima William

Stockvault

As the world grapples with the pressing challenges of climate change, energy security, and sustainable development, the global energy landscape is undergoing a profound transformation. Countries around the world are increasingly prioritizing renewable energy sources to mitigate environmental impacts, reduce greenhouse gas emissions, and ensure a reliable and affordable energy supply. This shift towards a greener energy future is crucial not only for addressing climate change but also for fostering economic resilience and sustainable growth. However, the transition to renewable energy must be equitable, ensuring that all communities benefit from cleaner energy solutions.

In this context, Pakistan, like many countries in South Asia, faces a unique set of challenges and opportunities. With its high dependence on fossil fuels, Pakistan has experienced significant economic and environmental strains, including energy shortages, high import bills, and severe pollution. The country's energy crisis has adversely affected its economic performance, while its reliance on fossil fuels has contributed to climate change and environmental degradation. Despite these challenges, Pakistan has vast potential for renewable energy generation, which presents a critical opportunity for a just and sustainable energy transition. By harnessing its abundant solar, wind, and hydro resources, Pakistan can enhance its energy security, reduce its carbon footprint, and achieve sustainable economic development.

A just energy transition in Pakistan is essential for the country's sustainable economic development. Reliable, clean, and affordable energy is crucial to ensure uninterrupted supply and mitigate the adverse impacts of fossil fuel dependency. Over the years, Pakistan's economic performance has suffered due to energy shortages and high energy-related import bills, exacerbating the balance-of-payments situation. The country's reliance on fossil fuels contributes significantly to climate change, leading to more frequent natural disasters and environmental degradation, such as widespread smog in winters and deteriorating air and water quality, which have serious implications for public health. According to the Air Quality Life Index 2021, air pollution has reduced the average life expectancy of Pakistani citizens by 3.81 years.

Climate change in Pakistan is largely attributed to its dependence on fossil fuels. This dependency has resulted in extreme weather events, including the catastrophic floods of

2010 and 2022, which caused the loss of hundreds of lives and damaged crops and properties worth billions of dollars. Despite Pakistan's relatively low contribution to global greenhouse gas emissions, it remains highly vulnerable to climate-induced impacts. Without effective measures to reduce reliance on fossil fuels, Pakistan's share in global emissions will increase, especially if the economy grows. This scenario necessitates both short-term and long-term strategic planning to enhance reliance on renewable energy sources, thereby improving the environment, reducing the import bill, and ensuring a sustainable and clean energy supply for economic growth.

Pakistan has significant potential to generate renewable energy. The country can produce an estimated 120,000 MW of electricity through wind power and has immense potential for solar power generation. According to the World Bank, utilizing just 0.071 percent of Pakistan's area for solar power can meet the current electricity demand. Additionally, Pakistan can generate about 44,334 MW annually through hydro plants. Despite this potential, renewable energy sources, including hydro, solar PV, wind, and bagasse-based plants, constitute 34 percent of the energy mix, while 66 percent comes from thermal projects using local gas, coal, imported coal, Residual Fuel Oil (RFO), Regasified Liquefied Natural Gas (RLNG), and nuclear power. In 2021-22, renewable energy output was only 29 percent, with solar, bagasse, and wind plants contributing barely four percent. Studies suggest that with moderate grid system upgrades and policies promoting local power generation, the share of solar, bagasse, and wind energy can increase to 35 percent, saving up to US$1 billion annually.

Given its potential, it is imperative for Pakistan to harness its abundant renewable energy resources. This will enhance energy security, improve the balance of payments, and address climate change and environmental degradation. To achieve these goals, Pakistan must devolve power generation, transmission, and distribution in line with Article 157 of the Constitution. The country should aim to increase the share of green and clean renewable energy (excluding large hydro plants) to at least 35 percent by 2030. Providing subsidies and concessional bank loans to households, public and private offices, businesses, industries, educational institutions, and agricultural tube wells for adopting renewable energy solutions is crucial. Additionally, developing and enforcing energy-efficient building codes and standards for electric and gas appliances will conserve energy and promote climate change adaptation.

Incentivizing local exploration, mining, and refining of relevant minerals, as well as manufacturing equipment like solar panels and lithium batteries, will reduce consumer costs, decrease dependence on imports, and promote local industry and employment. Achieving 100 percent electrification of villages and neighborhoods through grid or off-grid solar, wind, or small hydroelectric power plants is essential. Facilitating the transition of existing brick kilns to zigzag technology will also enhance energy efficiency.

The transport sector is a major consumer of energy, relying heavily on diesel, petrol, and gas. In December 2021, Pakistan had 6,628,063 registered vehicles, with around 250,000 new registrations annually. However, only 8,000 of these vehicles are electric. The world is rapidly transitioning to electric vehicles due to their higher energy efficiency and lower environmental impact. Political parties must commit to facilitating this transition through reduced import duties, registration fees, and incentives for local manufacturing. The goal should be for electric vehicles to account for up to 30 percent of new vehicle purchases by 2030. Strict enforcement of vehicle fitness certification is necessary to conserve fuel consumption and protect the environment.

The transition to renewable energy sources must be fair and just, particularly for poor and vulnerable communities. This includes ensuring that energy transition policies do not adversely impact these groups by disrupting livelihoods, work environments, or access to affordable energy. The selection of viable renewable sources should be made with the consensus of local communities, provincial governments, and technical experts. Engaging these stakeholders will ensure that the transition is sustainable and equitable.

To achieve these objectives, Pakistan must develop a comprehensive strategy that includes policy measures, financial incentives, and public awareness campaigns. Collaboration among government, industry, and civil society is essential to drive the energy transition forward. The government should create an enabling environment for investment in renewable energy by providing clear policy direction, regulatory frameworks, and financial incentives. Private sector involvement is crucial for developing and implementing renewable energy projects, while civil society organizations can play a vital role in raising awareness and advocating for sustainable practices.

The benefits of a just energy transition are manifold. It will reduce Pakistan's carbon footprint, improve public health, and enhance energy security. Moreover, it will create new economic opportunities and jobs in the renewable energy sector. By investing in renewable energy, Pakistan can position itself as a leader in sustainable development and contribute to global efforts to combat climate change.

In conclusion, a just energy transition is not only a necessity but also an opportunity for Pakistan. It requires a holistic approach that considers economic, social, and environmental dimensions. By harnessing its renewable energy potential, Pakistan can ensure a sustainable and prosperous future for its citizens. The journey towards a just energy transition is challenging, but with the right policies, commitment, and collaboration, it is achievable. Pakistan must seize this opportunity to build a resilient and sustainable energy future, ensuring that no one is left behind. ■

Ms. William is a climate expert based in Pakistan.

Primer on Trade and Economic Partnership Agreement between India and EFTA

India's latest economic partnership agreement seeks reliable and robust supply chain allies that provide investment, technology access, and sustainable trade.

Sapana Danai

India concluded the Trade and Economic Partnership Agreement (TEPA) with the European Free Trade Association (EFTA), comprising Iceland, Liechtenstein, Norway, and Switzerland as member states, on 10 March 2024. The agreement is expected to enter into force in 2025 once ratified by the parties. This is the fourth such economic partnership India has signed since withdrawing from the Regional Comprehensive Economic Partnership (RCEP) in 2019. India has already signed economic partnership agreements with Mauritius, Australia, and the United Arab Emirates (UAE). In addition, India is robustly engaging in trade negotiations with the United Kingdom (UK), the European Union (EU), Oman, and Peru. These agreements can be considered as India's attempt to integrate into the global value chains to achieve its ambitious export target of US$2 trillion by 2030.[1]

TEPA is India's first economic partnership with the Western bloc, marking the strategic shift to expand its emerging economy by exploring

Griffin Wooldridge

developed-country markets. India's new trade agreement strategy seeks reliable and robust supply chain allies that provide investment, technology access, and sustainable trade.[2] TEPA reflects how India is using frree trade agreements as instrument not only to create preferential market access for its goods and services but also to increase foreign direct investment (FDI) by securing a commitment of US$100 billion and addressing unemployment concerns by including a commitment.

Scope and coverage

TEPA comprises 14 chapters covering economic and trade-related matters such as trade in goods and services, investment promotion and protection, non-tariff measures, intellectual property rights (IPR), market access and competition, government procurement, and dispute settlement. Despite covering a wide range of economic and trade-related matters, the scope and coverage of TEPA are limited in comparison to India's earlier economic partnership agreements as TEPA does not include bilateral cooperation on pharmaceutical products[3], digital trade[4], and micro, small, and medium enterprises (MSMEs)[5] that are part of the India-UAE Comprehensive Economic Partnership Agreement (CEPA). However, TEPA is a significant step towards trade and sustainable development as for the first time the economic partnership agreement signed by India includes a comprehensive chapter on trade and sustainability.

Tariff concessions

India and EFTA have agreed to eliminate or reduce tariffs on several products. TEPA offers tariff elimination country-wise. Each EFTA member is granting tariff concessions to India individually. Switzerland provides tariff concessions on 128 sub-sectors, Norway on 114, Liechtenstein on 107, and Iceland on 110 to India.[6]

India is also extending tariff concessions to the EFTA members separately. For example, India is offering tariff reductions on wine imported from Switzerland while the same concession is not extended to other EFTA members. India offers concessions on 105 services sub-sectors to the EFTA.[7] EFTA grants tariff concessions on 92.2 percent of its tariff lines which cover 99.6 percent of India's exports while India is granting concessions to 82.7 percent of its tariff lines which cover 95.3 percent of EFTA exports.[8]

As the agriculture sector is important for both EFTA and India, they have taken a protectionary approach towards this sector. India has excluded sectors like coal, dairy, soya, and sensitive agricultural products from the tariff concessions. India has managed to maintain the existing tariff regime of 10 percent for gold which is the major import from Switzerland amounting to 80 percent of total import value despite extending a 1 percent duty concession on a bound rate of 40 percent.[9]

> EPA's approach aims to address India's trade deficit with EFTA by linking investment commitments to concessions, potentially influencing future economic partnership agreements.

Despite the tariff liberalization in products, there are limitations attached to the tariff concessions under TEPA. Unlike India, EFTA does not get immediate access to the Indian market for its products. India is gradually reducing and eliminating tariffs over 10 years from the entry into force of this agreement. The major EFTA exports, such as machinery, pharmaceutical products, electronics, optical instruments, clocks, and watches, can benefit from tariff concessions from 5 to 10 years contingent upon the fulfillment of the investment commitment under TEPA.

For the first time in the trade agreement history, TEPA has linked tariff concessions with goal-oriented investment commitments. EFTA members will not benefit from tariff concessions under TEPA if they fail to fulfill their investment commitments. In addition, EFTA members only receive these concessions if their exports comply with the rules of origin under the TEPA.

Switzerland is offering duty-free market access to all manufacturing products of any country from January 2024.[10] As the majority of India's exports to Switzerland are manufacturing products, TEPA does not give India additional benefits not advanced to other countries in terms of tariffs. Another limitation of TEPA is product diversification as it only focuses on eliminating tariffs on the major products exported by EFTA and excludes other products.

Trade in services

TEPA liberalizes Mode 1 (cross border trade), Mode 3 (commercial presence), and Mode 4 (presence of natural persons) of trade in services with a positive-list approach. It promotes enhanced commitments for sectors like information technology, audiovisual services, financial services, and skilled professionals for India. India has removed the 74 percent investment ceiling for the commercial establishment of medical and dental services, which would give full market access to medical sectors in India.[11] The investment ceiling in telecommunications and the financial sector[12] has been increased to 74 percent from 49 percent.

The additional benefit of trade in services commitment is the recognition of qualified service providers which would benefit Indian professional services providers. This recognition will offer a better market access for Indian professionals like architects, nurses, and chartered accountants in EFTA, though automatic access is not guaranteed as all professionals must meet local qualification requirements, procedures, technical standards, and licensing criteria. In specific fields, language proficiency is also necessary. Indian professionals must request recognition of their qualifications, with

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possible additional requirements such as further training or exams if deficiencies are identified. However, the full benefit requires a Mutual Recognition Agreement (MRA) between India and EFTA. Though India has MRA provisions in other trade agreements, there are hardly any success stories except MRA in nursing with Singapore.[13]

Investment commitment and tariff concessions

TEPA represents a significant shift from India's traditional economic partnership agreements, which focus mostly on tariff reductions. TEPA uniquely ties investment commitments to trade concessions, marking it as the first agreement to include investment and job creation goals as binding commitments. Under TEPA, EFTA unilaterally commits to bringing US$100 billion excluding foreign portfolio investments within 15 years and creating 1 million jobs.[14] By getting such commitments, India has presented the TEPA as an agreement that will bring in investment, create jobs and provide exporters access to quality inputs.[15]

Investment commitments are a prerequisite for EFTA states to benefit from TEPA's concessions. The investment sub-committee will regularly review progress, and India can withdraw concessions if commitments are not met, with a grace period of three years. The failure to meet the commitment after the grace period leads to the temporary suspension of concessions. Investment commitments are outside the general dispute settlement mechanism and subject to a three-tier government-to-government consultation process, with India holding the authority to suspend concessions if EFTA fails to comply.

However, TEPA lacks provisions for situations where EFTA's failure to meet investment commitments resulting from India's inability to create a favourable investment environment. Without a bilateral investment treaty, EFTA investors may face challenges, and the consultation process mainly protects India's interests. TEPA's approach aims to address India's trade deficit with EFTA by linking investment commitments to concessions, potentially influencing future economic partnership agreements.

Data exclusivity and generic medicine producers

TEPA provides the highest level of protection for intellectual property rights (IPR), equivalent to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)-level protection with some TRIPS-plus provisions. A key inclusion is data exclusivity, which is standard in EFTA's free trade agreement but not required by TRIPS. Data exclusivity offers benefit to EFTA's pharmaceutical industry by delaying the registration of generic versions of new medicines. The data exclusivity clause impacts the generic drugs manufacturers as they must wait for the exclusivity period to end or generate their own clinical data to manufacture generic versions of non-patented drugs.

Data exclusivity exceeds the current patent laws, raising concerns about its impact on India's generic drug industry. TEPA includes prima facie rejection of patent opposition which is not available under Indian IP law and India proposed amendments to some provisions of the Patent Act, 1970 in line with TEPA IPR sections. The TRIPS-plus IPR protection under TEPA has generated mixed reactions in India. Indian officials see it as balancing IPR concerns while the pharmaceutical sector worries about hindering generic drug manufacturing. India still has room to address concern on data exclusivity to protect the interest of its generic

manufacturers after the implementation of TEPA. Both EFTA members and India `agree to enter into consultation for implementing data exclusivity to discuss issues relating to the protection of undisclosed information from unfair commercial use.[16]

Trade and sustainable development

India has traditionally resisted incorporating environmental and sustainability concerns in trade regulations. This is reflected in India's past trade agreements, which typically lack significant environmental and sustainability provisions. However, in recent economic partnership agreements, India has shifted its position and moved toward trade sustainability. India-Australia CEPA includes environment and sustainability in the preamble. TEPA is a breakthrough as it includes a comprehensive chapter on trade and sustainable development. India and EFTA commit to fostering sustainable trade upholding international treaties on gender equality, labor, and climate change.

However, India avoids binding commitments to environmental and labour standards and excludes trade and sustainable development chapters from the ambit of dispute settlement. Making binding commitments on trade-related aspects of labour and environment may not immediately yield the desired results for India, specifically when it comes to promoting inclusive growth and integrating micro, small, and medium enterprises in global supply chain.[17] The flexibility in compliance, using cooperation and dialogue rather than mandatory measures, suits India under TEPA but contrasts with the EU's stringent approach to binding commitment and dispute settlement. As India is engaging in trade negotiations with the EU, it will be challenging for India to avoid the EU approach towards sustainability as in TEPA with the loose end. It will be interesting to see how India handles the EU Carbon Border Adjustment Mechanisms and Deforestation Regulation.

Conclusion

India is liberalizing its market and entering into new economic cooperation agreements with different countries to achieve its ambitious goal of exports to US$1 trillion by 2030. TEPA extends beyond tariff reduction to provide preferential market access, attract US$100 billion in investments, and create jobs for a million people, addressing the trade gap through alternative economic activities. In addition, the commitment for recognizing the qualified professionals improves the market access for the service providers. The inclusion of sustainiability showcases India's commitment towards sustainable trade practices. Overall, TEPA represents a critical step for India towards greater global integration, necessitating strategic policies to maximize its benefits and ensure sustainable trade growth. ■

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Notes

1 Business Standard. 2021. "India Set to Achieve Services Export Goal of $1 Trn by 2030: Piyush Goyal". *Business Standard*, November 9, 2021. https://www.business-standard.com/article/economy-policy/india-set-to-achieve-services-export-goal-of-1-trn-by-2030-piyush-goyal-121110901524_1.html

Nikunj Dalmia. 2023. "India's Exports: What Worked and How Can We Achieve the $1 Trillion Target?" *The Economic Times,* May 27, 2023. https://economictimes.indiatimes.com/small-biz/trade/exports/insights/indias-exports-what-worked-and-how-can-we-achieve-the-1-trillion-target/articleshow/100543120.cms?from=mdr

2 East Asia Forum. 2023. 'What Went Wrong with India's FTAs?". *East Asia Forum*, September 19, 2023. https://eastasiaforum.org/2023/09/19/what-went-wrong-with-indias-ftas/

3 Annex: 5A Bilateral Cooperation on Pharmaceutical Products, 'Comprehensive Economic Partnership Agreement (CEPA) between the Government of the Republic of India and the Government of the United Arab Emirates (UAE)' <https://commerce.gov.in/international-trade/trade-agreements/comprehensive-economic-partnership-agreement-between-the-government-of-the-republic-of-india-and-the-government-of-the-united-arab-emirates-uae/> accessed 10 May 2024.

4 Chapter-9 Digital Trade, *ibid*.

5 Chapter-13 Micro, Small and Medium-Sized Enterprises (SMEs) *ibid*.

6 'Press Release from Ministry of Commerce & Industry, India'. https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2013169.

7 *ibid*.

8 *ibid*.

9 Appendix 2.C.3 Commitments of India on Goods Originating In Switzerland, 'EFTA-India Trade and Economic Partnership Agreement' <https://commerce.gov.in/international-trade/trade-agreements/india-efta-tepa/> accessed 1 April 2024.

10 Federal Gazette 2021-2330, State Secretariat for Economic Affairs SECO, 'Abolition of Industrial Tariffs'. Abolition of tariffs on all industrial products, including chemicals, consumer goods, vehicles, clothing, and more, as covered in HS chapters 25 – 97. This tariff removal does not extend to fishery and agricultural products. .

11 Appendix 6.F.1 to Annex 6. F, India – Schedule of Specific Commitments

12 Appendix 6.F.1 to Annex 6. F, India – Schedule of Specific Commitments; Consolidated FDI Policy Circular of 2020 has increased the limit of foreign investment in the private bank. This circular allows 49 percent percent of foreign investment through the automatic route and from 49 percent to 74 percent of foreign investment could enter the private bank through the government route.

13 Arpita Mukherjee. 2024. "India's Latest Low-Ambition FTA". *Hinrich Foundation*, April 23, 2024. https://www.hinrichfoundation.com/research/article/ftas/india-deal-with-the-europe-an-free-trade-association-efta/.

14 'EFTA-India Trade and Economic Partnership Agreement' (n 10) Article 7.1(3)(a): 50 billion USD within 10 years of entry into force of TEPA investment in India and an additional 50 billion USD in succeeding years. Article 7.1(3)(b): EFTA shall aim to facilitate the generation of 1 million of jobs within 15 years resulting from the FDI inflows from EFTA Investors.

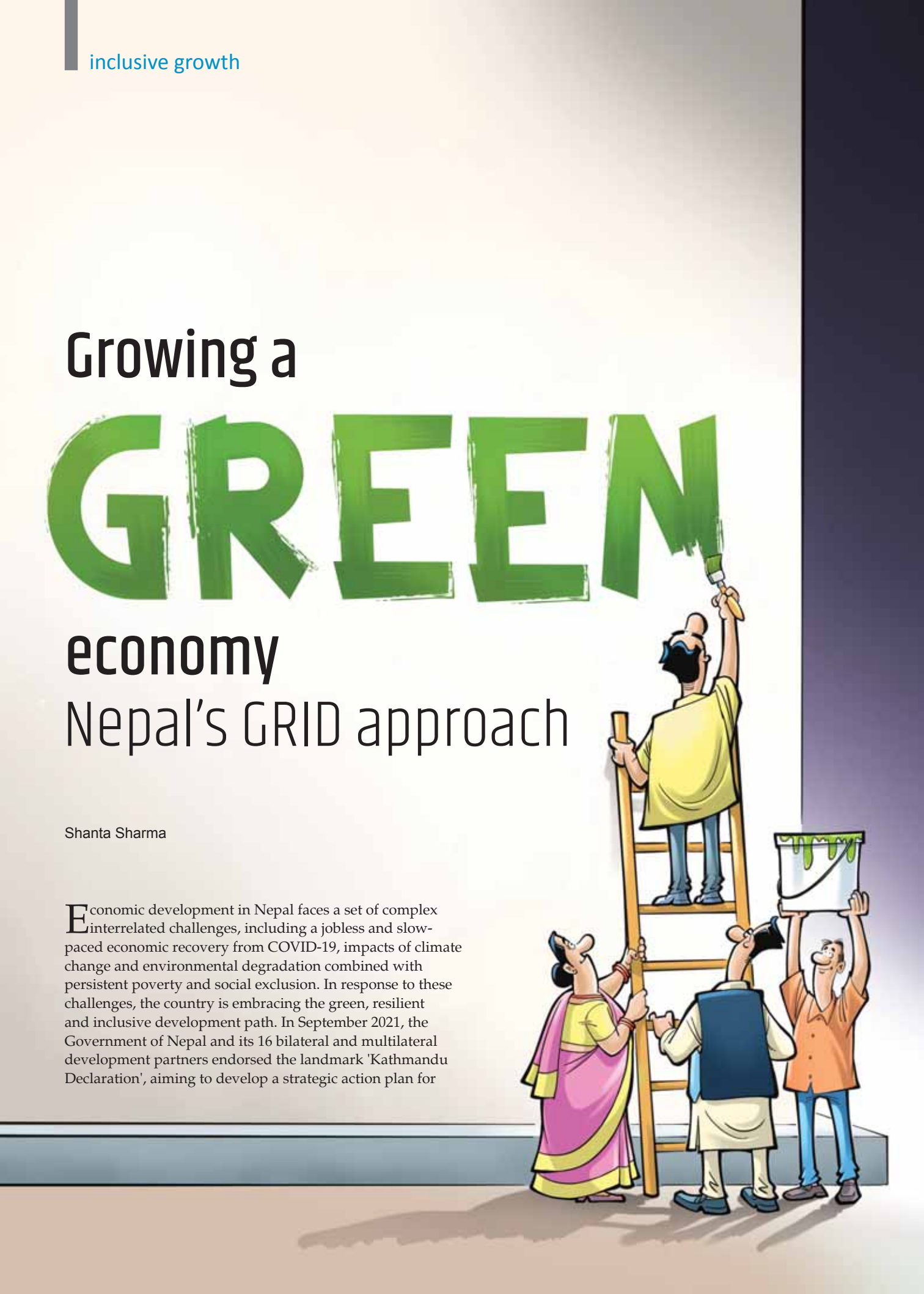
15 *ibid*.

16 Record of Understanding Relating to The Annex on Intellectual Property Rights ibid.

17 Nikunj Dalmia. 2022. "India-EU FTA Negotiations – How Deep Can We Go?". *The Economic Times*, June 25, 2022. https://economictimes.indiatimes.com/small-biz/trade/exports/insights/india-eu-fta-negotiations-how-deep-can-we-go/articleshow/92450413.cms.

Growing a GREEN economy

Nepal's GRID approach



Shanta Sharma

Economic development in Nepal faces a set of complex interrelated challenges, including a jobless and slow-paced economic recovery from COVID-19, impacts of climate change and environmental degradation combined with persistent poverty and social exclusion. In response to these challenges, the country is embracing the green, resilient and inclusive development path. In September 2021, the Government of Nepal and its 16 bilateral and multilateral development partners endorsed the landmark 'Kathmandu Declaration', aiming to develop a strategic action plan for

Nepal toward green, resilient and inclusive development (GRID). In a programme organized in November 2023, all the 16 development partners expressed their commitment to work together for an effective outcome of GRID in Nepal.

The GRID Strategic Action Plan aims to coordinate international and domestic financing for priority investments in Nepal's recovery from the crisis caused by the COVID-19 pandemic. It has identified a set of 10 priority actions including: managing land, water, and forests in a more productive, sustainable, and integrated way for more resilient infrastructure, ecosystems, and food systems, and equipping people with new skills and resilient livelihoods.

Other areas include greening urban development; scaling up water supply and sanitation, reducing air pollution and managing solid waste; scaling up renewable energy; boosting the sustainability and resilience of transport; strengthening disaster risk management; and enhancing social protection and health systems to be more responsive to shocks.

The Strategic Action Plan aims to mobilize government reveneue and external financing, such as subsidized loans and green finance, complemented by foreign and domestic private sector investment to meet GRID goals. Under the Kathmandu Declaration, Nepal's development partners have identified up to US$4.2 billion in potential future support, in addition to the US$3.2 billion in previously committed resources to support GRID.

Green ambitions

GRID is the type of growth that is expected to reduce extreme poverty, narrow structural inequalities, protect the environment, sustain the growth process, and make it more resilient. All this will help create more jobs for more people, build the resilience of the people and their livelihoods, boost environmental, climate, water, and food security, and create opportunities for a more inclusive and durable economy, according to the World Bank.

Table 1 Pledged funds for GRID

Development Partners	Pledged amount
World Bank	US$200 million
The US	US$659 million
European Union	EU€82 million
Asian Development B	US$166-million
South Korea	US$9.80 million
UK	£70 million

Source: Author's compilation from various sources

The government and development partners intend to scale up support for such areas as sustainable tourism, renewable energy, cleaner transport and resilient roads, integrated solid waste management, sustainable forest management, watershed protection and water supply, biodiversity conservation, adaptive social protection, climate-smart agriculture, and sustainable cities. Partnerships and opportunities are sought with the private sector to increase green investment and support job-creating small and medium enterprises and businesses in these and other areas.

Nepal's GRID vision also emphasizes inclusion to enable women, indigenous groups, and vulnerable and marginalized communities to realize the benefits of a green, resilient recovery. This includes skills training and education opportunities to help citizens prepare for an evolving job market in a new green economy with greater opportunities for all Nepalis.

The Nepal government, through the GRID initiative, has targeted to achieve sustainable recovery, growth and jobs creation for green, resilient and inclusive development. The government has explicitly aligned new project investments with GRID approach and priorities.

Net-zero carbon emissions goal and required investment

Nepal has set a goal to achieve net-zero emissions, one of the integral parts of GRID, from 2020-2030 and after a period of very low emissions to full net zero by 2045.

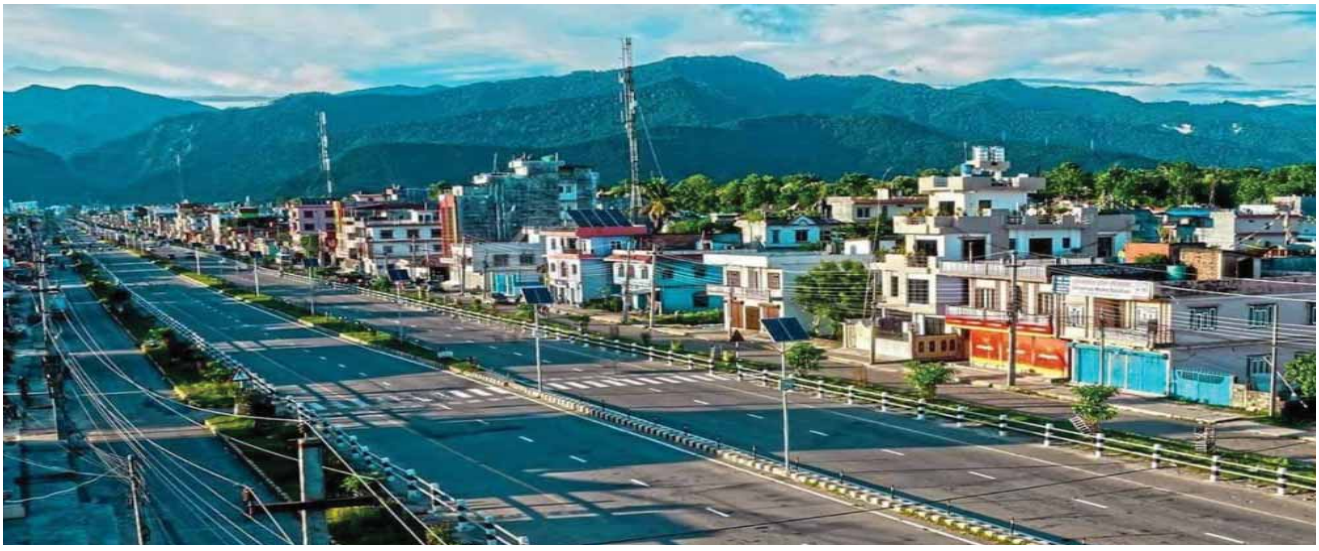
According to Nepal's Long-term Strategy for Net-zero Emissions 2021, the country's total carbon dioxide (CO2) emissions were 23 million metric tonnes (mMtCO2) in 2019 under the reference scenario. This figure is projected to increase to 34 mMtCO2 by 2030 and 79 mMtCO2 by 2050. In 2019, non-energy-related emissions constituted 46 percent of the net CO2 emissions, while emissions from the energy sector accounted for 54 percent. In the reference scenario, non-energy emissions are expected to gradually decline to 32 percent of total emissions by 2050. Land Use, Land Use Change, and Forestry (LULUCF) CO2 emissions were estimated at 8 mMtCO2 in 2019 and are anticipated to reach 17 mMtCO2 by 2050.

The Strategy projects that the annual investment requirement will be 22.05 percent of the national GDP in 2030, 14.07 percent in 2040, and 16 percent in 2050. It emphasizes the urgent need for a substantial increase in renewable energy generation. Specifically, the country's renewable power capacity targets are set at 15.2 GW by 2030, 28.5 GW by 2040 and 52 GW by 2050. The corresponding investment needs are estimated at US$5.34 billion, US$6.69 billion and US$15.05 billion, respectively.

Public and private sector initiatives

Private sector dynamism and innovative financing have been sought to power the recovery and to create economic growth and employment through investment and innovation. Public-private partnerships and key upstream policy reforms are expected to spur private investment (including FDI), support viable firms through restructuring, and enable the financial system to support a robust recovery through the resolution of non-performing loans.

As of now, Nepal Infrastructure Bank (NIFRA) has expressed its commitment to integrating sustainable practices of GRID in its operations. According to NIFRA, it attaches high



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priority to SDG 13 (Climate Action), and strives to promote sustainable infrastructure to address the direct impact of climate change on its operations. To this end, NIFRA has developed the "Climate Risk Mitigation and Adaptation Guidelines, 2023," which is an integral part of its Environmental and Social Risk Management Policy, 2020.

As part of a broader strategic plan, the government targets is to have 90 percent of all passenger vehicles to be electric vehicles (EV) by 2030. The government has adopted the EV-friendly policies. Nepal Rastra Bank (NRB), the central bank, implemented various policies to encourage green investments and incorporate environmental considerations by introducing the Environment and Social Risk Management (ESRM) framework for banks and financial Institutions in 2018.

Public sector entities like Nepal Electricity Authority (NEA) and Nepal Tourism Board are actively promoting sustainable transportation practices, committing to exclusively use EVs for transportation to encourage the public to do the same. Sajha Yatayat's 'ICE Engine to EV Conversion Project' is a substantial move toward sustainable public transportation, potentially denoting the intervention needed for equitable and accessible public mobility.

NMB Bank has established a separate Renewable Energy Department and offers tailored green finance instruments. In a groundbreaking collaboration with International Finance Corporation (IFC), NMB Bank secured a US$25 million (NPR 3.3 billion) green loan, signaling a significant green investment in Nepal. The loan recognized green loan principles and excluded hydro financing. The IFC is expected to help NMB Bank expand its SME portfolio to over US$1 billion (NPR 132.78 billion) over the next five years. It aims to potentially create up to 50,000 jobs in the process.

Further, contributing to the sustainable landscape, Dolma Impact Fund, the international private equity fund in Nepal, supports four renewable energy projects—two in the hydropower sector and two on-grid solar projects. Additionally, Business Oxygen Private Limited (BO2), an integral part of the IFC's Global SME Ventures, has been providing advisory support to help invest in small and medium enterprises by facilitating investments and fostering the development of fundamental financial systems, quality-assurance standards, and corporate governance framework.

The federal government's energy ministry has been emphasizing producing clean energy from water sources to replace imported petroleum products in order to contribute to the reduction of carbon emissions. For this purpose, their priority is to promote electric vehicles, electric stoves and natural gas.

Since the launch of the GRID initiative, the government has expressed a strong commitment for environmental protection at a number of international gatherings. Nepal will be mobilizing the Least Developed Country Fund and the Adaptation Fund that are operated under the Climate Finance via the Glasgow COP26 summit. Developed countries committed to providing US$100 billion in total for climate adaptation programs by 2025.

Challenges

Nepal is a country known for its rich cultural diversity. However, entrenched traditional beliefs at the household level and geographical disparities have marginalized certain groups from participating fully in economic development. Local governments play a pivotal role, yet their capacities and resources are often constrained. Enhancing livelihoods and local initiatives are critical for fostering inclusiveness and promoting green growth. Therefore, the response of the people to these initiatives and their active participation are crucial factors for achieving effective outcomes.

The government has been allocating an average of around NPR 15 billion to the forest and environment


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EPA's approach aims to address India's trade deficit with EFTA by linking investment commitments to concessions, potentially influencing future economic partnership agreements.

sector, showcasing its commitment to environmental conservation. However, this amount is considered inadequate given the pressing environmental challenges Nepal is confronting.

Although transport infrastructure is the main foundation for approaches to the overall sustainability, it is not enough. The government needs to address the unanswered issues like household waste management, e-waste management, air pollution and increasing encroachment of rivers.

Nepal has a limited carbon emission which is only 0.02 percent of the total emissions, compared to its neighboring country China and India, which account for 29.18 percent and 7.09 percent, respectively. Despite making pretty low contribution to the total global carbon emissions, the country sustains a growing burden of loans in the name of mitigating climate change.

According to a study report of GIZ Nepal, while Nepal is the fourth most vulnerable country to the impacts of climate change, its potential for economic development is closely linked to its capacity to adapt to such impacts. Nepal aims to mobilize US$28.4 billion to meet mitigation targets outlined in its Nationally Determined Contributions (NDCs). The Himalayan country identifies a financial gap of US$4.4 billion in achieving the SDGs by 2030, which includes US$2.76 billion from the private sector.

The United Nations Development Programme has expressed its willingness to assist Nepal in bridging financial gaps by identifying non-traditional funding sources. Lending institutions like the IFC have been pushing the country to provide additional loans for green financing.

The challenges to green finance include insufficient capacity and awareness, a scarcity of long-term finance, the lack of bankable green projects with limited credit information, and the lack of transparency in climate-related disclosure and data.

Way forward

There is a need to first understand the structures and the nature of the socio-cultural fabric in order to identify the entry points. To ensure inclusive participation, various tools and methodologies have to be used, including flexibility in arranging meetings and focus group discussions to bring the voices of diverse groups.

The indigenous people and the local communities in Nepal are considered critical pillars for climate action. The GRID initiative is expected to improve their capacity to have a greater role in forest-related decisions at the community and national levels.

Various training packages are needed to enhance skills and enterprise development, particularly in handicraft businesses, food production, and hospitality sectors, among others. The creation of green jobs is crucial for economic independence and empowering people on multiple fronts.

To accelerate the localization of policies and develop or replicate local instruments, it is crucial to innovate methods for implementing measures that adapt to and mitigate the impacts of the emerging climate crisis. Recycling and reusing local resources and building local capacity to mainstream green, resilient, and inclusive development—GRID—through integrating its action plan into annual budgeting and periodic plans are essential steps.

The definition of gender is evolving, and there are excluded and vulnerable groups, such as people from marginalized backgrounds, landless individuals, and persons with disabilities. Additionally, a large number of the urban poor are emerging in informal settlements. Nepal's development initiatives must include all these groups moving forward. The more people comprehend and accept this inclusivity with greater understanding and internalization, the quicker we will see the norm of GRID in action. ■

Mr. Sharma is Kathmandu-based researcher.

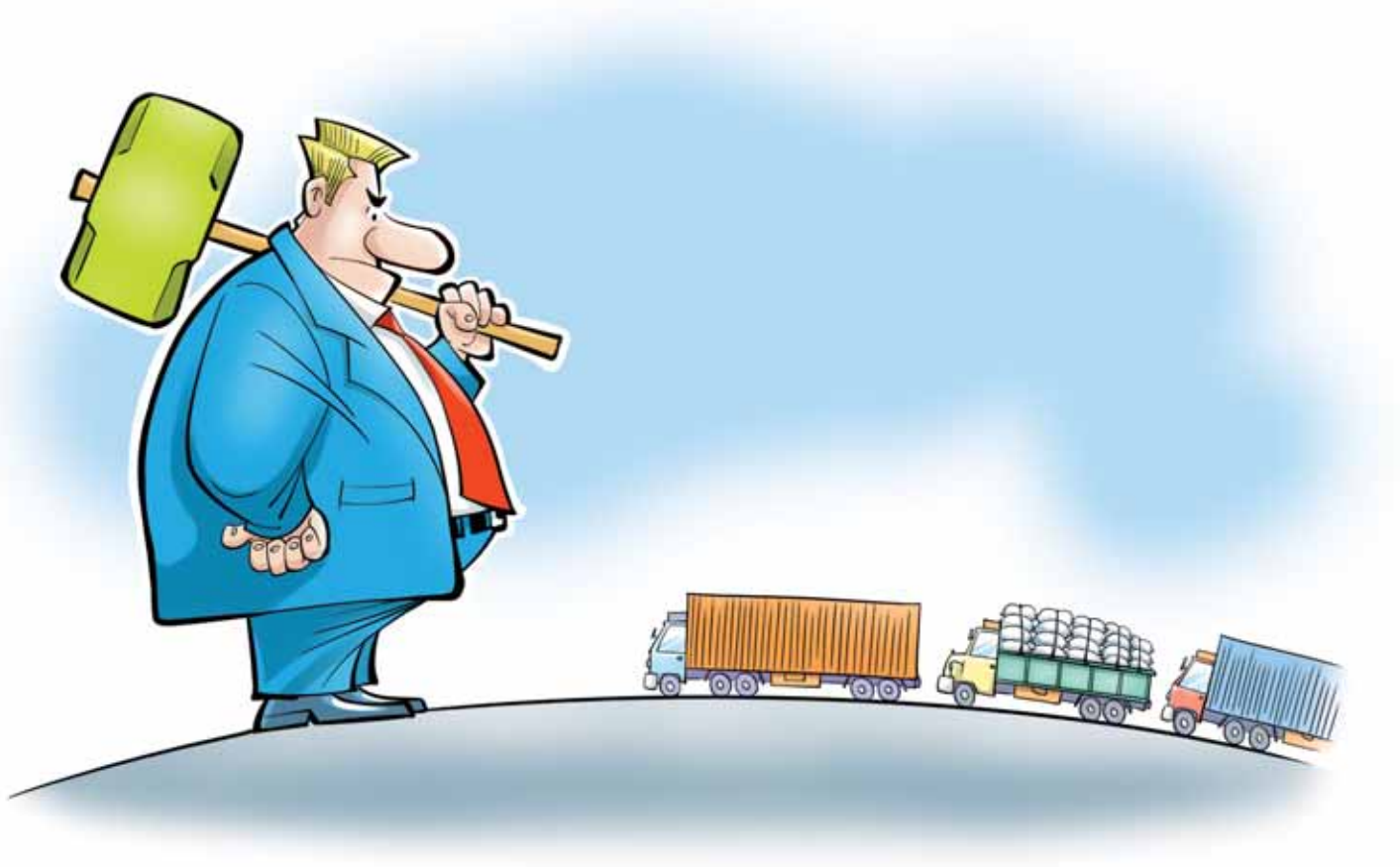
Avoiding a "Green Squeeze"

Navigating new green trade measures

New green trade measures are influencing demand for and supply of different inputs and capabilities as well as increasing demand for new services, which could increase trade costs and reshape value chain and supply networks.

Jodie Keane

It is widely acknowledged that all members of the World Trade Organization (WTO) can take the necessary measures to protect the environment and advance sustainable development. Indeed, there has always been an expectation that members would respect each other's right to regulate in line with WTO principles. Nowadays, however, new climate-related trade and industrial policy measures are resulting in increasing trade tensions. This is because they are perceived to go beyond the existing framework of rules (in relation to embedded carbon), be contrary to the existing rules (in relation to support for domestic industry), or result in new costs of compliance because of new demands related to proof of how goods have



been produced (for example, in relation to new corporate sustainability requirements, or the rules on products considered to contribute to land degradation or deforestation). Whilst the legality of many green trade measures continues to be debated, the reality is that supply chains are adapting to the new requirements. New green trade measures are influencing demand for and supply of different inputs and capabilities as well as increasing demand for new services (for example, for counting carbon or proving compliance).[1] In turn, depending on supply chain relationships and broader value chain governance structures, trade costs may rise, reshaping value chain and supply networks. In view of these developments, the term 'green squeeze' refers to both the direct effects of new green trade measures. This concept encompasses both the increased complexity and costs (in the absence of new support measures) and the indirect effects, which result from changes in prices and broader economic dynamics.

Types of green trade measures

The most prominent examples of such new trade-related policies are those associated with the EU's Green New Deal. They include the Carbon Border Adjustment Mechanism (CBAM) (implemented since 1 October 2023, with carbon credits due by 2026), the EU Deforestation Regulation (EUDR) (beginning at the end of 2024), the Corporate Sustainability Due Diligence Directive (CSDDD) (still in the troika process within EU institutions), the EU Textiles Strategy, and more tailored moves to secure critical minerals. Following the EU's lead on many green trade measures, other major economies are following suit: the UK recently announced its own CBAM (HM Treasury, 2023) and the US is expected to introduce similar measures to address carbon leakage and deforestation. Even when countries have their own compliance infrastructure in place, the EU is going beyond country-level assurances to ensure that the private sector provides proof there is no environmental harm from production (and, in the case of the CSDDD, that the firm is contributing to net-zero targets). There are concerns that, for poorer producers, there will be increasing costs of compliance, which will unleash exclusionary forces, especially in the absence of dedicated support for trade-related adjustment. Trade policy is a crucial part of the toolbox needed to support climate goals. However, there are concerns that the development dimensions of these policies, especially those of the EU, have not been given sufficient consideration.[2]

Distributional effects

Countries that fail to decarbonize production processes risk losing trade to greener counterparts.[3] Investments are needed to ensure compliance. However, it is widely recognized that investments needed for compliance can fall disproportionately on smaller, poorer, and less resourceful producers. For the least developed countries (LDCs), a group which barely accounts for one percent of global trade, even a one percent increase in compliance costs results in a transfer of hundreds of millions of euros. There are new demands for compliance infrastructure and assistance for support for changes to production methods, coming at a time when the provision of both aid for trade and climate finance continue to fall well short of demands.

Compliance costs can fall disproportionately on smaller, poorer, and less-resourced producers. This is illustrated in the case of Bangladesh, which is adapting to the Textiles Strategy and anticipating the CSDDD. According to a recent survey undertaken by the Centre for Policy Dialogue, the share of firms in the textiles and clothing value chain that have integrated sustainability issues to prevent environmental damages, or that have clear policies, is lowest for small and micro (seven percent) compared with large (90 percent) firms.[4] Under one percent have a separate manager (or officer) working on environmental compliance compared with almost 75 percent for larger factories. At the same time, the firms investing the most to comply, as a share of total investment, are micro factories (those with between 10 and 24 employees).

International business is concerned with the additional time and resources needed to undertake additional audits, over and above the usual requirements to access markets. There is also a need for better coordination, given the differences in policies being developed by the EU and the US regarding addressing deforestation.[5] More generally, there is a need to address complexity and to streamline reporting requirements. The increased focus on audits has been argued to be "increasing profits for auditors at the expense of suppliers". Within the EU, there are already multiple different focal points for the CBAM[6]; this situation is likely to be replicated across the EUDR and the CSDDD unless active steps are taken to streamline reporting requirements.

How big importers will react to the new requirements requires careful consideration and, arguably, an additional layer of corporate due diligence to change the current dynamics and foster inclusion rather than exclusion. For example, importers could be encouraged to develop longer-term supply relationships to enable investments to be undertaken and the use of model contracts. Coupled with improvements in digital platforms, increased traceability and transparency could lead to greater inclusion for poorer producers.

Changing the dynamics

While the objectives of green trade measures in terms of addressing environmental impacts and supporting ambition in climate action must be met, there is a need to carefully consider their effects on the most vulnerable producers and countries. The LDCs have not been able to achieve the Sustainable Development Goal (SDG) target to double their share of global exports by 2020. The Doha Programme of Action (DPoA) calls for a considerable increase in Aid for Trade resources, as well as a greater focus on digital trade; there are obvious synergies with the green trade agenda.

However, there have been consistent shortfalls in Aid for Trade disbursements to the LDCs. The Aid for Trade gap for LDCs remained at US$5.3 billion in 2021, leaving disbursements 28 percent short of commitments.[7] Not only must shortfalls in Aid for Trade levels be addressed but clearly there is a need for additional support.

There is a need to respond to new drives to promote low-carbon value chain development, but there also remain unfulfilled commitments on technology transfer, the demands for which are increasing, given the need to decarbonize energy systems (especially in view of the imminent carbon border adjustment measures).

Other types of technology transfer are also needed. This includes digital platforms and traceability systems that can support producers in meeting new demands for compliance. For example, Brazil (which currently holds the G20 Presidency) is heralded as potentially benefitting from the EU's new deforestation regulation because it already has traceability systems for coffee. Other producers could benefit from new types of knowledge exchange and technology transfer to support continued value chain engagement and resilience building. Lead firms and importers may need further guidance to avoid knee-jerk reactions; for example, to ensure changes in sourcing strategies are informed by facts, such as full life cycle carbon accounting across the value chain. Supporting the engagement of MSMEs through the broader agenda of resilient value chains, which requires more diversified and less concentrated support, is an important strategic approach to respond to new green trade measures. The risk is that without concerted action, smaller and poorer producers, along with those unable to make the necessary adjustments to production structures, will be shut out of high-value end markets. This is not conducive to the broader objectives of the Paris Agreement. The potential increased consolidation across value chains induced by the combined effects of new green trade measures is also contrary to the broader resilience-building agenda and lessons learned since Covid-19.

Pickpik

Implications for the multilateral trading system

There is increasing recognition of the need for more coordinated approaches to addressing issues at the climate-trade nexus. This was reflected ahead of COP28.[8] Both the EU and China submitted requests to support greater WTO engagement on new climate-related trade measures.

Some WTO members have been pushing for the WTO to adapt, as indicated by a push for a Ministerial Declaration on the Contribution of the Multilateral Trading System to Tackling Environmental Challenges.[9] However, opinions are divided as to whether existing WTO rules are sufficient. It is notable that MC13 secured a Ministerial Declaration on Technical Barriers to Trade, which refers to climate change and sustainability issues. However, MC13 also clearly identified the divide between countries that seek greater policy coordination and consideration of new issues like climate change, compared to others who prefer the WTO does not directly address climate change.

Looking ahead, the next few years are critical. Either frameworks are created that support sustainable structural economic transformation and the role of international trade as a driver, or fragmentation persists, undermining LDCs' objectives, jeopardizing the SDGs, and risking an even more hostile climate with all the related repercussions, including rising insecurity. ■

Ms. Keane is Senior Research Fellow, Overseas Development Institute. This article draws on Keane, J. 2023. The Green Squeeze: an explainer; Keane, J. and Agarwal, P. 2024. Aid for Trade and Climate Change, background paper prepared for the Asian Development Bank; and Keane, J. Mendez-Parra, M. and Stern, M. 2024. Mitigating the Green Squeeze: effectively navigating new green trade measures, T20 Submission Dealing with Neoprotectionism and the Changing Features of Global Value Chains, forthcoming.

Note

1 Keane, J. 2023. "The Green Squeeze: an explainer". https://media.odi.org/documents/ODI_The_green_squeeze-an_explainer.pdf

2 Lamy, P., Pons, G., van der Ven, C. and Azevedo, C. 2023. "GT14 – EU trade and the environment: development as the missing side of the triangle". *Europe Jacques Delors*, 1 June 2023.

3 Haddad, M., Hansl, B., Pechevy, A. 2024. "Trading in a new climate: how mitigation policies are reshaping global trade dynamics". https://blogs.worldbank.org/en/developmenttalk/trading-new-climate-how-mitigation-policies-are-reshaping-global-trade-dynamics

4 Khatun, F., M. Kamal, F.A. Kabir, N. Nawrin, and M.S. Hoque. 2023. *Securing Green Transition of the Textile and Readymade Garments Sector in Bangladesh*. Dhaka: Centre for Policy Dialogue (CPD).

5 Jones, S. 2023. *Counteracting the Green Squeeze: the role of business to support transition.* ODI: London.

6 Riddell, G. .2023. *EY Trade Talking Points*, 23 November 2023.

7 UNCTAD. 2023. "Official international assistance insufficient to reach 2030 Agenda". https://sdgpulse.unctad.org/development-financing/

8 Kleimann, D., Keane, J., Robertson, M. 2024. *Climate and Trade Cooperation After the 13th WTO Ministerial conference (TESS - Climate and Trade Cooperation after the Thirteenth WTO Ministerial Conference: Quo Vadis?*.

9 See directdoc.aspx (wto.org)

Breaking free from neo-liberal shackles

Title: The Road to Freedom: Economics and the Good Society
Author: Joseph E Stiglitz
Publisher: Allen Lane
ISBN: 9781324074373

Dikshya Singh

In his latest book, Joseph Stiglitz condemns neoliberal economic policies as the reason behind increased inequality, financial instability, and social unrest. The title of "The Road to Freedom" is a pun on Freidrich von Hayek's "The Road to Serfdom"—the seminal work of the Austrian economist that warns against the dangers of government control over economic decision-making which could lead to tyranny and erosion of individual freedom. Stiglitz has presented a strong critique of theories that advocated neo-liberal policies which dominated much of the last quarter of the twentieth century and are still dominant despite the financial crisis of the first decade of the twenty-first century.

Stiglitz challenges conventional notions of freedom, arguing that the way it has been framed by "right-wing" economists, especially Hayek and Milton Friedman, often neglects the broader implications for society. He posits that the freedom of a few can come at the expense of the many, and advocates for a more inclusive understanding of freedom that prioritizes social equity and the well-being of all individuals, not just the wealthy. Referring to Isiah Berlin's famous quote "Freedom for the wolves has often meant death to the sheep", Stiglitz argues that the freedom of some can infringe upon the freedom of others.

The book blames much of the ills in the existing economic structure on the blind pursuit of neo-liberal policies which have led to increased inequality, financial instability, and social unrest. Critiquing right-wing notions, especially those championed by US President Ronald Reagan and UK Prime Minister Margaret Thatcher, that led to massive deregulation and left everything to the market, Stiglitz argues that unregulated markets prioritize the interests of corporations and the wealthy, undermining the economic opportunities for the majority. Since markets are not inherently efficient, Stiglitz counters the neoliberal belief in the self-regulating nature of markets. He supports this claim with evidence from his research, arguing that many market outcomes are detrimental to societal welfare and that government intervention is necessary to correct these failures.

Stiglitz, a Nobel laureate economist, contends that unfettered capitalism leads to negative externalities, where the freedom of some comes at the expense of others, such as gun violence or pollution. He calls attention to one of the most terrifying externalities facing the present generation, the impact of climate change. Stiglitz argues that the freedom of businesses to emit greenhouse gases without constraint has led to climate change, which poses significant risks to society. This infringes on the freedom of others to live in a stable climate.

The author advocates for that certain forms of regulation and collective action, through coercion, can cfacilitate individuals to exercise their freedoms more fully. He cites the example of government interventions, such as taxes that fund public goods, can be seen as coercive yet ultimately serve to enhance the freedom and well-being by providing necessary services and infrastructure.

The book advocates for a model called "progressive capitalism," which seeks to balance market forces with government regulation to promote social equity and environmental sustainability. This approach includes policies aimed at addressing externalities like climate change, ensuring effective competition, and fostering collective action to benefit society as a whole.

The book has been criticized for failing to provide substantial empirical evidence to support the claim that neoliberal policies are the root of all the economic evils of the present. However, what the book lacks the most is in prescribing ways to address the existing problems that it argues have been brought about by unfettered neoliberal policies. Stiglitz's vision of "progressive capitalism" and his solutions—such as increased regulation and government intervention—are not new and lack detailed implementation strategies. Also, the book is quite US-centric and does not analyze how the neoliberal policy pursuits have impacted different kinds of economies. Moreover, Stiglitz does not address the issue of government making wrong policy decisions. His own example of the US government supporting Elon Musk's Tesla without demanding equity in return exposes limitations to government's wisdom at times. ■

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The WTO and Green Economy

The WTO can play a pivotal role in advancing the global green economy by fostering cooperation and removing barriers to trade in environmental goods and services.

Sapana Danai

Nowadays, the term green economy has become a buzzword in climate change discussions at both national and global levels. It is defined by resource efficiency, low-carbon footprint and social inclusivity.[1] The green economy focuses on renewable energy, sustainable agriculture, and environmental-friendly manufacturing. International trade is crucial in the transition towards a green economy. In this context, the role of the World Trade Organization (WTO) is paramount. The WTO is a regulatory body for international trade, ensuring smooth, predictable, and transparent multilateral trade. With the growing emphasis on the green economy, the WTO is shifting its traditional approach from merely eliminating trade barriers to promoting sustainable international trade. The WTO's ability to facilitate the trade of environmental- friendly goods has the potential to mitigate the adverse impacts of climate change and environmental degradation. Given the increasing focus on sustainable development and environmental protection, the existing WTO rules and their interpretation have significant implications for the green supply chain in international trade.

WTO rules on environment

WTO law provides rules that address the conflict between trade liberalization

and non-economic societal values and interests, including health, public morals, the environment, and national security. The law incorporates environmental considerations in various multilateral and plurilateral agreements. These provisions are designed to balance trade liberalization with environmental protection. The agreements incorporating environment-related factors are as follows.

Marrakesh Agreement

The preamble to the Marrakesh Agreement recognizes the objectives of sustainable development. It aims to balance the protection and preservation of the environment with the enhancement of the means for doing so in a manner consistent with the respective needs and concerns at different levels of economic development.[2] This preamble serves as the foundational principle for interpreting WTO agreements, emphasizing the importance of sustainable development in international trade.

GATT and GATS: General exceptions

In general, the WTO prohibits trade barriers on goods and services. However, the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS) allow member states to implement measures to protect the environment and conserve exhaustible resources. Article XX of the GATT and Article XIV of the GATS provide general exceptions, allowing members to breach trade rules if certain conditions specified in those articles are met. Specifically, Article XX(b) and Article XX(g) of the GATT, and Articles XIV(b) and XXI(g) of the GATS are applicable for environmental protection.

Article XX(b) and Article XIV(b) include measures necessary to protect human, animal, or plant life and health.[3] To qualify as an exception under Article XX(b) and Article XIV(b), (i) the measure must be deemed necessary, (ii) to protect human, animal, or plant life or health, and (iii) has to satisfy the *chapeau* of these articles, which requires that measures do not *"constitute a means of arbitrary or unjustifiable discrimination"* or a *"disguised restriction on international trade"*[4]. There is a *"necessity test"* for this exception.

Additionally, Article XX(g) and Article XIV(g) allow measures related to the conservation of exhaustible natural resources, provided they are made effective in conjunction with restrictions on domestic production or consumption.[5] To qualify for the exception under Article XX(g) and Article XIV(g), (i) the measure must be related to the conservation of exhaustible natural resources, (ii) it must be made effective in conjunction with restrictions on domestic production or consumption, and (iii) it must satisfy the chapeau of the Articles. There is a *"relating to"* test for this provision.

TBT Agreement

The Agreement on Technical Barriers to Trade (TBT) recognizes that every country has the right to take measures to ensure the quality of its imported goods, protect human, animal, or plant life and health, safeguard the environment, and prevent deceptive practices.[6] The TBT allows members to maintain technical regulations with the legitimate objectives of protection of human health or safety, animal or plant life or health, or the environment without creating unnecessary obstacles to international trade.[7]

> The WTO's ability to facilitate the trade of environment-friendly goods has the potential to mitigate the adverse impacts of climate change.

SPS Agreement

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) affirms the members' right to adopt or enforce measures necessary to protect human, animal, or plant life or health, consistent with WTO laws.[8]

SCM Agreement

The Agreement on Subsidies and Countervailing Measures (SCM) restricts member countries from granting subsidies that distort international trade. However, the SCM Agreement can provide policy space for the WTO members to support green technologies.

TRIPS Agreement

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) permits the exclusion from patentability of inventions whose commercial exploitation within their territory must be prevented to protect human, animal, or plant life or health, or to avoid serious prejudice to the environment, provided that such exclusion is not merely based on the fact that the exploitation is prohibited by their law.[9]

WTO Doha Ministerial Declaration 2001

The Declaration recognized that no country is prevented from taking appropriate measures for the protection of human, animal, or plant life or health, or the environment, subject to the requirement that these measures are not applied in a manner that would constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, and are otherwise consistent with the provisions of WTO Agreements.[10]

WTO jurisprudence on environment

The WTO Dispute Settlement Body (DSB) faces complex disputes involving environmental protection and trade restrictions. The DSB carefully interprets environmental measures in light of multilateral trade obligations and allows regulatory space for members to safeguard the environment. This interpretation is based on the general exceptions of the GATT, the GATS, and other WTO agreements.

The DSB's consideration of environmental measures focuses on the most favoured nation and national treatment principles for similar products, and distortions in international trade. Recent developments in regulatory trade measures focus on differentiating environmental-friendly goods from those linked to environmental degradation. These differences have resulted in disputes between WTO members over the unfair treatment of similar products. Members implementing environmental measures must comply with the general exceptions under the GATT.

The DSB has examined the trade restrictiveness of environmental trade measures in several disputes between members. The Appellate Body (AB) ruling on the *US-Shrimp* dispute is a landmark case in environment protection. The ruling emphasized the importance of multilateral environmental cooperation over unilateral measures. The AB noted that the optimal use of the world's resources should follow the objective of sustainable development.[11] The AB referred to principles outlined in multilateral environmental agreements, such as the United Nations Convention on the Law of the Sea, the Convention on Biological Diversity, and the Convention on the Conservation of Migratory Species of Wild Animals, to interpret Article XX(g) of the GATT. However, the AB found that the implementation of the measures was discriminatory, and not justified under the chapeau of Article XX.[12]

In the *US-Gasoline case,* the AB emphasized that WTO members have a significant degree of autonomy to determine their own environmental policies, including their relationship with trade, environmental objectives, and the legislation they enact and implement. However, they must fulfill their obligations and respect the rights of other members under the WTO Agreement while doing so.[13]

In the *China-Rare Earth case,* China imposed export restrictions on rare earth elements, citing environmental protection and resource conservation. However, the Panel ruled that China's export restrictions were inconsistent with its WTO obligations. It noted that the measures were not applied uniformly to domestic and foreign consumers.[14]


pxhere

The *Brazil-Tyres* dispute stems from environmental concerns regarding the disposal of tyres. The WTO Appellate Body upheld panel findings that Brazil's ban under GATT Article XX(b) was necessary to protect human, animal, or plant life or health.[15] However, the AB found inconsistencies in Brazil's implementation of the ban that violated the chapeau requirements of Article XX.[16]

The aforementioned disputes highlight the importance of ensuring that environmental protection measures do not serve as disguised trade restrictions and are not applied in a discriminatory manner. Recently, Indonesia filed a complaint against the European Union's Deforestation Regulation (EUDR), which mandates that relevant products[17] imported to or exported from the EU must be deforestation-free. Traders are required to conduct due diligence on the value chain to ensure compliance with the EUDR and the environmental and social laws of the country where the products are produced. A panel has been established for this case. The interpretation of the EUDR and its compatibility with WTO laws will likely carry significant weight in addressing concerns about emerging green trade policies and their impact on international trade.

Environmental goods and services

Trade in environmental goods and services (EGS) is an area where WTO rules intersect with the green economy. Environmental goods encompass products like renewable energy technologies, pollution control devices, and waste management equipment, while environmental services include sewage services, refuse disposal, and environmental consulting. Since the launch of the Doha Round of trade negotiations in 2001, WTO members have been working towards reducing tariff and non-tariff barriers on EGS. Negotiations are underway for the Environmental Goods Agreement (EGA), which aims to eliminate tariffs on a variety of environmental goods. Despite facing challenges, these negotiations signify a critical step towards promoting a global green economy.

Emerging green trade policies and WTO compatibility

Green trade policies are emerging with the aim of transitioning from fossil fuels, preventing carbon leakage, reducing deforestation, and promoting clean energy technologies. For example, the EU has adopted

Carbon Border Adjustment Mechanism (CBAM)[18] and the EUDR, and the United States (US) has implemented the Inflation Reduction Act (IRA). Similar policies are expected to proliferate in the future, as combating climate change becomes a global priority.

While these trade policies are intended to support the green supply chain, they have also sparked concerns about free trade. Some fear that these policies could become protectionist tools to restrict international trade. The CBAM, for instance, is designed to prevent "carbon leakage", where companies move production to countries with less stringent carbon emission regulations. It imposes a carbon price on imports of goods from outside the EU. Meanwhile, the EUDR aims to combat deforestation and climate change by preventing certain goods or commodities linked to deforestation from entering the EU market. The IRA, on the other hand, is a policy aimed at reducing inflation, lowering healthcare costs, and investing in domestic energy production to promote clean energy.

The green subsidies promoted by IRA, and the novel carbon taxation under CBAM have garnered significant attention among developing countries, least developed countries (LDCs), and stakeholders due to concerns about their compatibility with WTO trade rules. The IRA provides advantages to US domestic producers, while compliance with the EUDR and the CBAM may pose challenges for developing countries and the LDCs, as these policies may not adequately consider the economic development status of these countries.

The existing WTO trade rules lack specific provisions when addressing issues incorporated under these policies, relying instead on interpreting them within the framework of general exceptions under the GATT. A complaint against the EUDR has already been submitted before the DSB. There is a likelihood of further WTO non-compliance complaints being lodged before the DSB, involving the IRA and the CBAM, as they may be viewed as protectionist measures resulting in trade distortions. The WTO compatibility of CBAM, EUDR, and IRA will depend on how these measures are implemented and justified. Ensuring transparency, non-discrimination, and adherence to environmental objectives while minimizing trade distortion will be crucial for their defense under WTO rules.

Conclusion

The rules of the WTO regarding the green economy centre on striking a balance between promoting free trade and protecting the environment. WTO rules and jurisprudence recognize the fundamental right of member countries to adopt and implement measures aimed at environmental protection, as long as they do not result in discriminatory or unjustifiable trade restrictions. The WTO can play a pivotal role in advancing the global green economy by fostering international cooperation and removing barriers to environmental goods and services.

> Some fear that sustainability-related policies could become protectionist tools to restrict international trade.

WTO trade rules need to address the concerns regarding the WTO compatibility of green trade policies such as CBAM, EUDR, IRA, and similar future green policies. This can be achieved by establishing specific conditions for imposing carbon tariffs, allowing green subsidies to a certain extent, and introducing other possible rules to address climate change and promote a green supply chain. In the ongoing negotiations on trade and the environment, it is essential to reach specific agreements to ensure that trade policies align with global sustainability objectives. ■

Ms. Danai is researcher at SAWTEE.

Notes

1 UN Environment. 2018. "Green Economy". *UNEP - UN Environment Programme,* 23 January 2018. http://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy.

2 Preamble of "Agreement Establishing the World Trade Organization". https://www.wto.org/english/docs_e/legal_e/04-wto.pdf.

3 "General Agreement on Tariffs and Trade" https://www.wto.org/english/docs_e/legal_e/gatt47.pdf

4 Chapeau, "General Agreement on Tariffs and Trade" (n 3).

5 "General Agreement on Tariffs and Trade" (n 3).

6 Preamble, "Agreement on Technical Barriers to Trade". https://www.wto.org/english/docs_e/legal_e/17-tbt.pdf> accessed 27 May 2024.

7 *ibid.* Art. II.

8 Preamble, "Agreement on the Application of Sanitary and Phytosanitary Measures". https://www.wto.org/english/docs_e/legal_e/15-sps.pdf> accessed 27 May 2024.

9 Article 27(2), "Agreement on Trade-Related Aspects of Intellectual Property Rights" https://www.wto.org/english/docs_e/legal_e/27-trips.pdf> accessed 27 May 2024.

10 "WTO Doha Ministerial Declaration 2001" <https://www.wto.org/english/res_e/booksp_e/ddec_e.pdf> accessed 27 May 2024.

11 Para 153, Appellate Body Report, United States - Import Prohibition of Certain Shrimp and Shrimp Products WT/DS58/AB/R (1998) 58.

12 Para 184, *ibid.* 75.

13 Appellate Body Report, United States - Standards for Reformulated and Conventional Gasoline, WT/DS2/AB/R (1996) 30.

14 Para 8.15 *Panel Report,* China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum, WT/DS431/R WT/DS432/R WT/DS433/R (2014) 257.

15 Para 258 Appellate Body Reports, Brazil – Measures Affecting Imports of Retreaded Tyres, WT/DS332/AB/R (2007) 101.

16 *ibid.* Para 258.

17 It covers commodities derived from cattle, cocoa, coffee, oil palm, rubber, soya, and wood.

18 CBAM applies to iron & steel, cement, fertilizers, aluminium, electricity, and hydrogen sectors. It will enter into full implementation in 2026.

Insights into Informal Cross-Border Trade in Agri-Food Commodities in South Asia

SOUTH Asia Watch on Trade, Economics and Environment (SAWTEE) in partnership with the International Food Policy Research Institute (IFPRI) organized a workshop titled "Insights into Informal Cross-Border Trade in Agri-Food Commodities in South Asia" to disseminate the findings of their study that examined the dynamics of informal trade in agri-food commodities. The workshop centered on the dynamics of informal trade in agri-food commodities between Nepal and India and India and Bangladesh, shedding light on the nuances of trade patterns, modes, and underlying drivers.

Ms. Dikshya Singh, Programme Coordinator, SAWTEE, highlighted in her presentation that evasion of tariffs and duties, variation in prices and bans on import and export serve as key drivers of informal trade. Ms. Singh said that informal trade is highly responsive to India's ban on exports and price variations as the result of different production costs on the Nepali and the Indian sides and tariffs in the case of products such as rice and vegetables. The study found that prices of rice across the border markets could be as high as 20 percent.

Informal trade of agri-food commodities, including inputs, has increased access to those products preventing shortages and spikes in prices but that undermined the productive capacity of Nepali goods and diminished their competitiveness, she pointed out.

Referring to the IFPRI study on India-Banlgadesh infromal trade, Dr. Mamata Pradhan, Research Coordinator, IFPRI, highlighted during her presentaton the robust nexus between trade and finance, facilitated by the hundi system of informal internatonal money transfers, which significantly bolsters informal trade between India and Bangladesh. She also mentioned that 80 percent of carriers in the informal trade are women as most of the border points have no women security personnel at the border.

Dr. Posh Raj Pandey, Chair Emeritus, SAWTEE, highlighted that obstruction in the entry and exit of products, policy disruption at the domestic level and weak law enforcement at the border contribute to informal trade in Nepal. Dr. Pandey emphasized the necessity of reducing trade transaction costs to mitigate informal trade, advocating for measures such as enhancing trade facilitation, improving border infrastructure, and minimizing tariff barriers.

Ms. Sabnam Shivakoti, Joint Secretary, Ministry of Agriculture and Livestock Development, pointed out that cross-border trade that was done traditionally due to social ties across borders is not the same as the organized commercial informal trade that is happening now at a large scale that affects agriculture as well as industrial sectors as they have to compete with cheap imports.

Participants included policy makers, private sector representatives, representatives of farmers' organizations, members of civil society and experts. ■

Pakistan must not miss 'Green Hydrogen' revolution in just energy transition

THE Sustainable Development Policy Institute (SDPI)'s Network for Clean Energy Transition (NCET) organized the seminar titled "Public Private Dialogue titled 'Exploring the Potential of Green Hydrogen in hard to abate Sectors of Pakistan" on 24 February.

Dr. Abid Qaiyum Suleri, Executive Director, SDPI in his opening remarks said the hydrogen as an element is highly reactive in nature that evades isolation in nature and forms bonds with other elements that is either carbon or oxygen that makes it complicated through its nature.

The SDPI Executive Director underlined that that major challenge was the availability of electrolyzers to produce hydrogen whereas the US was producing electrolyzers globally and regionally India and China were striving to produce efficient hydrolyzers.

Mr. Sardar Mohazzam, Managing Director, National Energy Efficiency and Conservation Authority (NEECA), said the hydrogen production is the future without any doubt as it was an inevitable source of energy in the prevailing growing climate change, population rise and energy demands.

Mr. Naheed Memon from Oracle Power said green hydrogen is the direction the world is travelling in. He said that it was imperative to maintain competitiveness in the process to promote green hydrogen production and penetration into the system. ■

National Food Security Policy of Pakistan

THE consultative discussion titled "Reviewing Pakistan's Food Security Policy Amidst Climate Change and Nutrition Situation" was organized by the Sustainable Development Policy Institute (SDPI) and Global Alliance for Improved Nutrition (GAIN) to stir discourse on shortcomings in the existing policy and way forward for enhanced food security and climate resilience on 30 May.

In his opening remarks, Dr. Abid Qaiyum Suleri, Executive Director, SDPI said that the Ministry of National Food Security and Research had undergone a phase of transformation with an ambitious goal to transform it into a holistic and powerful forum which was never materialized.

He mentioned that the world was grappling with different complexities shifting policy focus from food security to sustainable production, consumption, and less carbon intensive food supply chains and the climate change casting drastic impacts on the food production, consumption and storage patterns.

He added that since the climate change had challenged all prerequisites of food security then it was imperative to make a review of the existing food security policy.

Ms. Farrah Naz, Country Director GAIN said Pakistan's food security context has transformed massively amid global happenings. Pakistan, she said has adopted many strategies like scaling up of nutrition movement and its adoption in the country that showed its sincerity towards the issue.

In his concluding remarks, Dr. Saleem Mohsan, agronomist, Ministry of Food Security and Research said that after the 18th Constitutional Amendment and devolution of powers the coordination between the federation and the provinces was not strong as per the spirit of that legislation. Despite the fact, he said that provinces were independent to formulate their policies but the federation could provide them national guidelines for a unified legislation that would include series of consultative meetings before any policy endeavor. ■

Workshop on agriculture and climate change

THE Institute of Policy Studies of Sri Lanka (IPS), in collaboration with the International Food Policy Research Institute (IFPRI), the Innovation Lab for Food Security Policy Research, Capacity, and Influence (PRCI), and the Comprehensive Action for Climate Change Initiative (CACCI), organised a two-day Workshop on "Agriculture and Climate Change" on 15—16 February in Colombo.

The workshop aimed to explore climate change's impact on Sri Lankan agricultural value chains and strategies for effective policy communication. Dr. Suresh Babu, Head of Capacity Strengthening at IFPRI, led the training sessions on both days.

The workshop aimed to enhance the capacity of researchers involved in policy-related research and foster career progression in disciplines such as food security and climate change. It also sought to break down barriers in policy communication, with the participation of over 50 attendees representing diverse institutes and universities. ■

India's trade policy must learn lessons from the past, not repeat it

India needs to be active and not reactive in international trade policy, and show greater engagement and leadership in trade rule-shaping, keeping in mind the goal of becoming a developed country, Viksit Bharat, by 2047.

This was ecpressed by trade policy experts who gathered for a closed door Roundtable on 29 March in New Delhi on India's trade policy, organised by CUTS International.

The Roundtable was chaired by Dr. Montek Singh Ahluwalia, former Deputy Chairman, Planning Commission of India and moderated by Mr. Pradeep S Mehta, Secretary General, CUTS International.

It was discussed that leadership in international trade policy requires a delicate balancing act between advancing negotiating positions, building alliances and protecting our own interests.

For example, leadership at the WTO will require deftly navigating an institution whose foundations are themselves undergoing significant evolution.

Participants felt that India will have to work hard to dispel notions that it is locked in a developing country mindset on trade. A futuristic vision combined with ground level interventions are the need of the hour. ■

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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.

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