

**Economic and Social Commission for Asia and the Pacific****Seventy-ninth session**

Bangkok and online, 15–19 May 2023

Item 4 (h) of the provisional agenda*

Review of the implementation of the 2030 Agenda for Sustainable Development in Asia and the Pacific and issues pertinent to the subsidiary structure of the Commission: trade, investment, enterprise and business innovation**Harnessing trade, investment, innovation and technology transfer for climate action****Note by the secretariat***Summary*

While globalization has lifted millions of people in the Asia-Pacific region out of poverty, economic growth has come at a significant environmental cost. In its latest report, the Intergovernmental Panel on Climate Change unequivocally concludes that a human-made climate crisis is unfolding and that the world is at a tipping point. All possible avenues for reducing greenhouse gas emissions need to be considered.

The present document contains information on the roles of trade, investment, innovation and technology transfer in addressing climate change. Strategic foresight is employed to provide policymakers with advice relating to new and emerging issues that will require attention in the future. It provides an overview of how trade policies can promote environmental sustainability and contribute to attaining the goals of the Paris Agreement. The present document outlines the trends, opportunities and challenges related to foreign direct investment in climate change mitigation and adaptation and how public-private partnerships in sustainable infrastructure financing and private sector initiatives can address climate change. Technology transfer too has a role to play in efforts to address climate change and in supporting Governments in Asia and the Pacific to meet their national commitments and objectives under the Paris Agreement. Concrete measures should be taken in the areas of technology innovation, transfer and diffusion in order to accelerate and scale up climate action. The present document concludes with a list of policy recommendations that take into account existing, emerging and potential future challenges.

The Economic and Social Commission for Asia and the Pacific may wish to take note of the present document and the policy recommendations contained therein and provide guidance on the future work of the secretariat in that regard.

* ESCAP/79/1/Rev.2.

I. Introduction

1. International trade, investment, innovation and technology transfer are key means of implementing the 2030 Agenda for Sustainable Development. They are indispensable engines of growth for both developed and developing economies, in particular in Asia and the Pacific. At the same time, the rapid economic development that trade and investment have enabled is increasingly seen to be unsustainable, and the social and environmental dimensions of development need to be more fully taken into consideration. It is therefore important to implement sustainable development-targeted supplementary policies to ensure that trade and investment more directly contribute to sustainable development. Furthermore, current or potential policies and events in the region and beyond may require special attention, adaptability and flexibility from policymakers. The main focus of the present document is on how supplementary policies can help to address climate change and relevant trends. Section II focuses on trade-related measures. Section III explains how foreign direct investment (FDI) can be used for climate action. Section IV contains a discussion on the contribution of public-private partnerships and private sector networks in delivering sustainable infrastructure and climate action. Section V focuses on the role of technology transfer in addressing climate change. The present document concludes by providing a list of policy recommendations that take into account existing, emerging and potential future challenges.

II. Trade-related action

A. Liberalizing trade in environmental goods

2. Liberalizing and facilitating trade in environmental goods and services is a key aspect of how trade policies can help to address climate change. While it is implicitly understood that, in the context of climate change, “environmental goods” are goods (and perhaps the materials they are made of) that positively contribute to climate change mitigation and adaptation, there is no commonly agreed list of such products. In the ongoing negotiations on the agreement on climate change, trade and sustainability, more than 80 products have been added to the list of environmental goods, with potentially more to be included. This list is partly drawn from the list of environmental goods developed in 2012 by the Asia-Pacific Economic Cooperation forum, which consists of 54 products and is used for negotiations on the Environmental Goods Agreement of the World Trade Organization.¹

3. The average applied tariff on environmental goods in economies in the Asia-Pacific region in 2019 was 5.78 per cent, lower than the average tariff on all goods (6.12 per cent in the same economies) and slightly lower than in 2015 (5.82 per cent). The averages ranged from 14.46 per cent in Pakistan to 0 per cent in Singapore. The variation within countries with respect to specific product groups is slight, but, in general, the lowest tariffs are placed on environmental monitoring, analysis and assessment equipment (with a simple average of 5.7 per cent), and the highest are placed on “natural resource protection” (with a simple average of 7.24 per cent).

4. Reducing tariffs on such products can accelerate progress towards addressing climate change and can be achieved through unilateral actions or as

¹ For additional information, see *Asia-Pacific Trade and Investment Report 2021: Accelerating Climate-smart Trade and Investment for Sustainable Development* (United Nations publication, 2021).

part of trade agreements. Indeed, having zero tariffs on environmental goods is the cornerstone of the ongoing negotiations on the Environmental Goods Agreement. Using the same list of environmental goods, members of the Asia-Pacific Economic Cooperation forum aim to reduce applied tariff rates to 5 per cent or less. Similarly, in negotiations on the agreement on climate change, trade and sustainability, Governments are seeking to eliminate tariffs on environmental goods (albeit with an expanded list that is based on the list developed by the Asia-Pacific Economic Cooperation forum). It is likely that, in the context of current trade agreements, as well as wider ongoing multilateral and regional dialogues and plans, the focus will be intensified (in terms of the scope of products and the amount of attention given to them), and policymakers need to be aware of the issues.

B. Non-tariff measures

5. During the past two decades, applied tariffs in the Asia-Pacific region have been halved. At the same time, the number of non-tariff measures, including sanitary and phytosanitary measures and technical barriers to trade, has risen significantly. Both in relative and absolute terms, the impact of non-tariff measures vis-à-vis tariffs as an impediment to trade has increased.

6. Non-tariff measures can be used to alter the characteristics of goods traded in a way that helps to address climate change. Non-tariff measures are policy measures other than ordinary customs tariffs that can potentially have an economic effect on the international trade in goods, changing quantities traded, or prices or both. Non-tariff measures as policy instruments are not inherently good or bad. Indeed, they often serve legitimate and necessary purposes, such as the protection of human, animal and plant health or the protection of the environment, and they can be important instruments in achieving the 2030 Agenda, including the climate-related objectives.

7. At the same time, a key characteristic of non-tariff measures is that they generate costs for the producers and traders who adhere to them. Such costs may raise prices, thus inhibiting international trade. Non-tariff measures are often more complex, less transparent and, due to their technical nature, more difficult to monitor and more challenging than tariffs. The key is to balance the positive intended purposes of the regulation while minimizing the costs of compliance, for example, by basing non-tariff measures on international standards and improving digital trade facilitation.²

8. Examples of climate-smart non-tariff measures are provided in the table. More than 80 per cent of non-tariff measures that are imposed based on climate-related objectives are technical measures. With regard to non-technical measures, most States parties to the Montreal Protocol on Substances that Deplete the Ozone Layer have non-tariff measures addressing trade in ozone-depleting substances, which are also potent greenhouse gases. There are also a few measures regulating trade in timber and timber products and addressing the issue of illegal timber trade, which contributes to deforestation and consequently to climate change through greenhouse gas emissions and reduced rates of carbon sequestration.

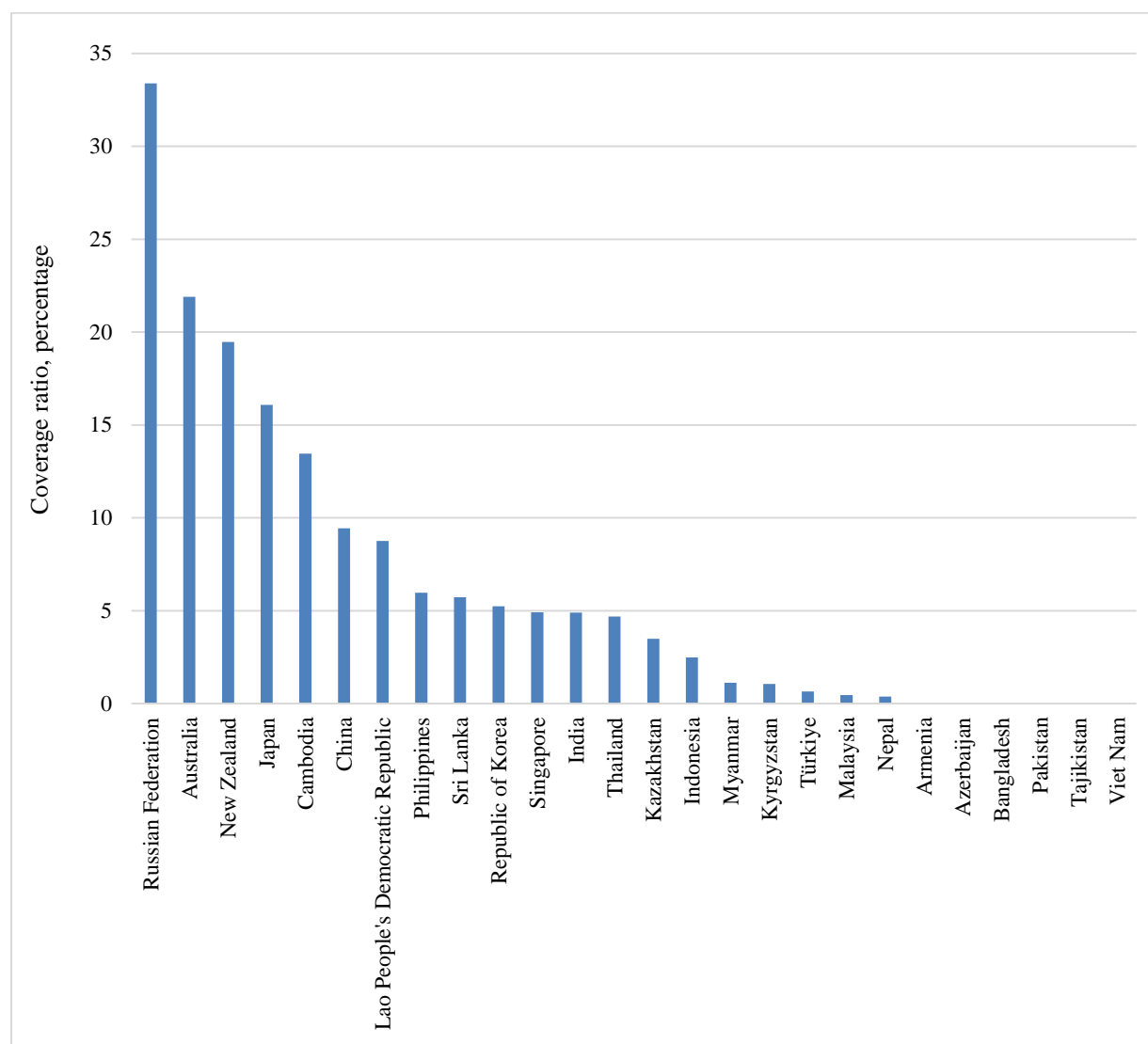
² For additional information, see chapters III and IV of *Asia-Pacific Trade and Investment Report 2019: Navigating Non-tariff Measures towards Sustainable Development* (United Nations publication, 2019).

Examples of climate-smart non-tariff measures

<i>Imposing economy</i>	<i>Category of objective</i>	<i>Description</i>
Afghanistan	Greenhouse gas emissions	Chlorofluorocarbons and products containing them, and certain halons and products containing them are banned from import to Afghanistan.
Australia	Emissions from machinery and vehicles	Requires the application of fuel consumption labels and energy consumption labels on vehicles.
Brunei Darussalam	Deforestation	Prohibition on felling certain trees.
China	Energy efficiency, other	Technical requirement regarding the minimum allowable level of energy efficiency of self-ballasted fluorescent lamps has been specified.
New Zealand	Greenhouse gas emissions	The levy applies to a range of imported goods, including refrigerators, freezers, heat pumps, air conditioners and refrigerated trailers. It is linked to the price of carbon and varies among items to reflect the amount of gas, the specified gas and its global warming potential.

9. Analysis carried out by the Economic and Social Commission for Asia and the Pacific (ESCAP) suggests that six of the economies examined do not have climate-related non-tariff measures in place covering existing trade (see figure I). In 2019, the economies examined, on average, applied one or more climate-related non-tariff measures to only 6.2 per cent of their imports, and the share of climate-related import non-tariff measures in the bulk of all import non-tariff measures was on average 1.6 per cent.

Figure I
Coverage ratio of climate-smart non-tariff measures affecting imports in
Asia and the Pacific, 2019



Source: ESCAP calculations based on data from United Nations Conference on Trade and Development, Trade Analysis and Information System database. Available at <https://trainonline.unctad.org/> (accessed on 1 November 2021).

10. As noted above, a common technical requirement is the labelling of energy efficiency and emissions standards. Other notable examples are the phasing out of the usage (and import) of incandescent lighting in lieu of more efficient light bulbs. In addition to carbon dioxide, it is important to consider other greenhouse gases. One avenue with a potentially significant impact is ensuring the proper disposal of appliances and machinery containing fluorinated gases, such as air conditioning equipment (including in motor vehicles) and refrigerators. Fluorinated gases are tens of thousands times more potent than carbon dioxide but are generally improperly disposed of in developing countries. As such, requiring importers to ensure the availability of mechanisms for the proper disposal of such gases during a product life cycle could be a straightforward method to address greenhouse gas emissions.

11. Looking ahead strategically, it is likely that non-tariff measures will play an increasingly prominent role in addressing climate change in the Asia-Pacific region, as well as affect the exports of Asia-Pacific countries. Many

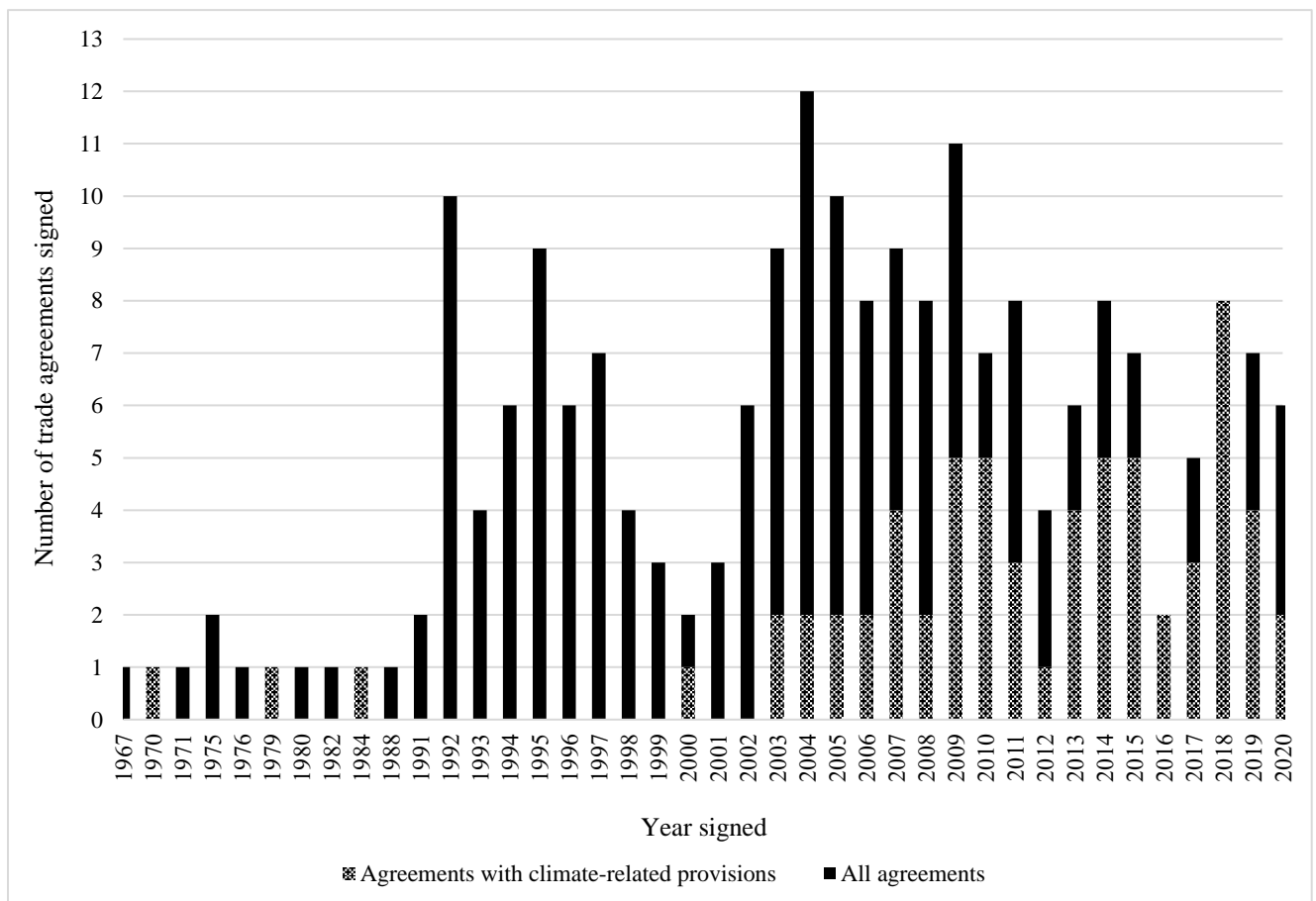
Governments are setting targets to phase out vehicles with internal combustion engines and replace them with electric types; this is precisely a type of non-tariff measure that addresses climate change. It is estimated that, by 2030, 40 per cent of all new cars sold globally will be electric, leaping to virtually 100 per cent by 2040.

C. Regional trade agreements

12. The present section focuses specifically on current and anticipated ways in which regional trade agreements, including economic partnership agreements, can be harnessed to contribute to, and coordinate more effectively, international collaboration on climate change concerns.

13. The number of regional trade agreements incorporating climate-related provisions is increasing (see figure II). Almost half of the Asia-Pacific regional trade agreements with climate-related provisions contain a dedicated chapter on the environment, climate action or sustainable development. Two agreements – the European Union-Armenia Comprehensive and Enhanced Partnership Agreement (signed in 2017) and the European Union-Georgia Association Agreement (signed in 2014) – include specific chapters on climate action, the environment, trade and sustainable development.

Figure II
All regional trade agreements compared to regional trade agreements with climate-related provisions in Asia and the Pacific



14. Of the 208 regional trade agreements concluded between 1967 and 2020 involving an Asia-Pacific economy, 65 (31 per cent) contain at least one climate-related provision. Of those regional trade agreements, 8 per cent were signed after 2005. Only 23 of the 65 regional trade agreements include explicit references to the term “climate”, and most of those entered into force after 2015. Some of the most recent regional trade agreements that directly refer to climate change are between China and Mauritius, the European Union and Viet Nam, Japan and the United Kingdom of Great Britain and Northern Ireland, and Australia and Peru. In some regional trade agreements, the term is used narrowly, such as in reference to the United Nations Framework Convention on Climate Change; others, such as the agreements between Japan and the United Kingdom and between the European Union and Viet Nam, contain wide-ranging provisions that directly address climate change.

15. Among the agreements signed in or after 2014, 60 per cent are between developed countries (North-North), and 40 per cent were signed by developed and developing countries (North-South). No South-South agreement is listed in the top 10 in terms of the amount of focus on the environment. All of the top 10 agreements include a chapter dedicated to the environment, sustainable development and/or climate action, and all but three regional trade agreements explicitly reference the term “climate”.

16. Most of the climate-related articles found in Asia-Pacific regional trade agreements signed since 2014 refer generally to climate action (34 per cent) or relate to environmental goods, services and technology (27 per cent), sustainable energy (20 per cent) or greenhouse gas emissions (17 per cent). Few of them refer to fossil fuel subsidies, carbon taxes or carbon market mechanisms. This breakdown is similar to that of the regional trade agreements concluded between 1948 and 2020.

17. The scope and specificity of climate-related provisions vary significantly across agreements. Most climate-related provisions include “soft language”, such as statements of intent that reaffirm commitments made elsewhere or provide a broad basis for cooperation, while others, such as the free trade agreement between Peru and the Republic of Korea, incorporate commitments to adopt policies and measures with concrete examples.

18. One prominent initiative in this area is the ongoing negotiations on the multilateral agreement on climate change, trade and sustainability among Costa Rica, Fiji, Iceland, New Zealand, Norway and Switzerland. Through the agreement, Governments specifically envisage removing barriers to trade in environmental goods and services, eliminating fossil fuel subsidies, and developing and implementing eco-labelling on consumer products (a further example of climate-smart non-tariff measures).

19. Based on the trends described above, it is clear that current trade negotiators will need to pay particular attention to climate-related issues in the next generation of trade agreements and ensure that they have sufficient capacity to take full advantage of the opportunities offered through such provisions in trade agreements.

20. The implementation of the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific, a United Nations treaty under the auspices of ESCAP, could save about 13 million tons of carbon dioxide emissions annually, equivalent to the carbon absorbed by 400 million trees.

D. Carbon pricing and carbon border tax adjustments

21. One of the most pertinent issues that will have strategically important ramifications in the near future in the region and beyond is carbon pricing and related trade measures.

22. Two common carbon pricing policies are implemented by Governments: emission trading schemes and carbon taxes. Both are aimed at internalizing the costs associated with carbon emissions, with the goal being to incentivize a reduction in emissions. Often referred to as a “cap-and-trade system”, emission trading schemes cap the total greenhouse gas emissions in an economy, allowing low-emission producing industries to sell their surplus quota to high-emission producers, creating a capped marketplace for carbon.

23. A carbon tax, on the other hand, puts a price directly on the carbon content of fossil fuels, which means that a payment per ton for carbon emissions is required, creating financial incentives to lower emissions and encourage investment in innovative clean energy and efficient production infrastructure.³ As of February 2023, approximately 23.5 per cent of global greenhouse gas emissions were covered by a pricing initiative; the global average price was estimated at \$2 per ton of carbon dioxide.⁴ In comparison, according to estimates, carbon prices need to be at least \$50–\$100 per ton of carbon dioxide by 2030 to reduce emissions cost-effectively in line with the temperature goals of the Paris Agreement.⁵ Current prices vary widely, from less than \$1 to more than \$100 per ton of carbon dioxide. Though less discussed, the coverage of emissions is important. For example, a scheme in Japan covers more than 75 per cent of total emissions, whereas existing subnational State-level schemes in the United States of America cover only 5 per cent of the country’s emissions.

24. A potential consequence of carbon pricing policies implemented in a country or region is carbon leakage. Carbon leakage occurs when high-emission production activities are moved to countries with less stringent carbon policies. This may cause overall global emissions to increase, despite a reduction of emissions in the region where the more stringent carbon policies are introduced. To combat carbon leakage, some jurisdictions, such as the European Union,⁶ are either discussing or proposing the introduction of carbon border tax adjustments, with the aim of reducing the amount of carbon leakage. Carbon border tax adjustment mechanisms are also intended to deal with the concerns of producers that become less competitive because of domestic carbon pricing if overseas competitors are not similarly taxed.

25. The proposed European Union carbon border adjustment mechanism is the most advanced border tax adjustment in terms of planning.⁷ There are several pending issues associated with the actual implementation of border tax adjustments. First, calculating the correct border tax adjustment to be applied

³ Carbon Pricing Leadership Coalition, *Report of the High-Level Commission on Carbon Pricing and Competitiveness* (Washington, D.C., World Bank, 2019).

⁴ World Bank, Carbon Pricing Dashboard database. Available at <https://carbonpricingdashboard.worldbank.org/> (accessed on 1 February 2023).

⁵ Carbon Pricing Leadership Coalition, *Report of the High-level Commission on Carbon Pricing and Competitiveness*.

⁶ The European Union proposes, in its July 2021 package to support climate targets, a carbon border adjustment mechanism to reduce carbon leakage by equalizing the carbon price between domestic and imported products in key industries.

⁷ *Asia-Pacific Trade and Investment Report 2021*, chap. VI.

is not straightforward; various methodologies have been proposed, each with advantages and drawbacks. While adjustments for energy-intensive and trade-exposed products may be more easily calculated owing to high levels of knowledge of production methods, the carbon content for consumer goods and finished products is believed to be complex and often impractical to calculate.⁸ Second, border tax adjustment implementation must not violate the rules of the World Trade Organization. Arguably, the rules allow for internal taxes to be “border adjusted”, and border tax adjustments do not have to be imposed or rebated directly on products but may be imposed or rebated on manufactured goods made using the products.⁹

26. There are a number of concerns for developing countries regarding the implementation of border tax adjustments, as the impact of the adjustments depends on the responsiveness and adaptive ability of a country. In general, businesses in developing countries are unlikely to have the resources necessary to respond quickly, so border tax adjustments will likely affect them to a greater degree. This could disproportionately disadvantage developing countries and lead to increased inequalities. The countries expected to suffer the most from border tax adjustment implementation are those that have high levels of exports in the sectors that are taxed initially – most likely the high-energy, high greenhouse gas-emitting sectors. Moreover, agricultural production is a key source of income for developing regions, and border tax adjustments placed on agricultural products exported from low-income regions could exacerbate rural poverty.¹⁰ The likely reduction in exports from developing countries as a result of border tax adjustment implementation could also lead to reduced wages and higher unemployment, especially among women.¹¹ This highlights the need to design carbon border tax adjustment mechanisms carefully in order to ensure that harm is not placed disproportionately on developing countries.

27. The economies in Asia and the Pacific that have carbon pricing schemes in place are estimated by ESCAP to experience relatively small increases in emissions due to existing pricing schemes of the European Union carbon market.¹² Nevertheless, modelling results show that border tax adjustment mechanisms are effective at stemming carbon leakages. The increases in emissions in the least developed countries that are expected to be exempted from European Union carbon market border tax adjustments total less than half a ton of carbon dioxide. A global carbon pricing scheme would make border tax adjustments unnecessary. Setting a global carbon price would reduce emissions more effectively at a lower economic cost than unilateral carbon prices in myriad unconnected schemes. Imposing a global carbon price of only

⁸ James Nedumpara and Shiny Pradeep, “Implementing carbon tax: from rhetoric to reality”, *Indian Journal of International Law*, vol. 59, Nos. 1–4 (February 2021), pp. 139–171.

⁹ Brian Flannery and others, “Framework proposal for a US upstream GHG tax with WTO-compliant border adjustments: 2020 update”, Report No. 20-14 (Washington, D.C., Resources for the Future, 2020).

¹⁰ Tomoko Hasegawa and others, “Risk of increased food insecurity under stringent global climate change mitigation policy”, *Nature Climate Change*, vol. 8 (August 2018), pp. 699–703.

¹¹ C. Soprano, “Integrating gender into the work of ESCAP’s Trade, Investment and Innovation Division”, ESCAP, Trade and Innovation Division. Draft report on integrating gender into programmatic work, April 2021.

¹² The European Union carbon market comprises States members of the European Union plus Iceland, Liechtenstein, Norway, Switzerland and the United Kingdom of Great Britain and Northern Ireland.

\$10 per ton of carbon dioxide is estimated to reduce emissions in the Asia-Pacific region more significantly than existing unilateral and regional schemes – at a cost of 0.07 per cent of real gross domestic product. Still, a global carbon price greater than \$50 per ton of carbon dioxide and covering more than half of global emissions would be necessary to keep global warming under 2°C above pre-industrial levels, highlighting the need to exploit all possible strategies to reduce emissions. Carbon pricing and the elimination of fuel subsidies will have a greater impact on the economies that rely heavily on fossil fuel and carbon-intensive manufacturing sectors. Marked decreases in the wages of low-skilled workers in the carbon-intensive fuel sectors can be expected, indicating a need for stronger social safety nets and multilateral cooperation to ensure that “no one is left behind”.

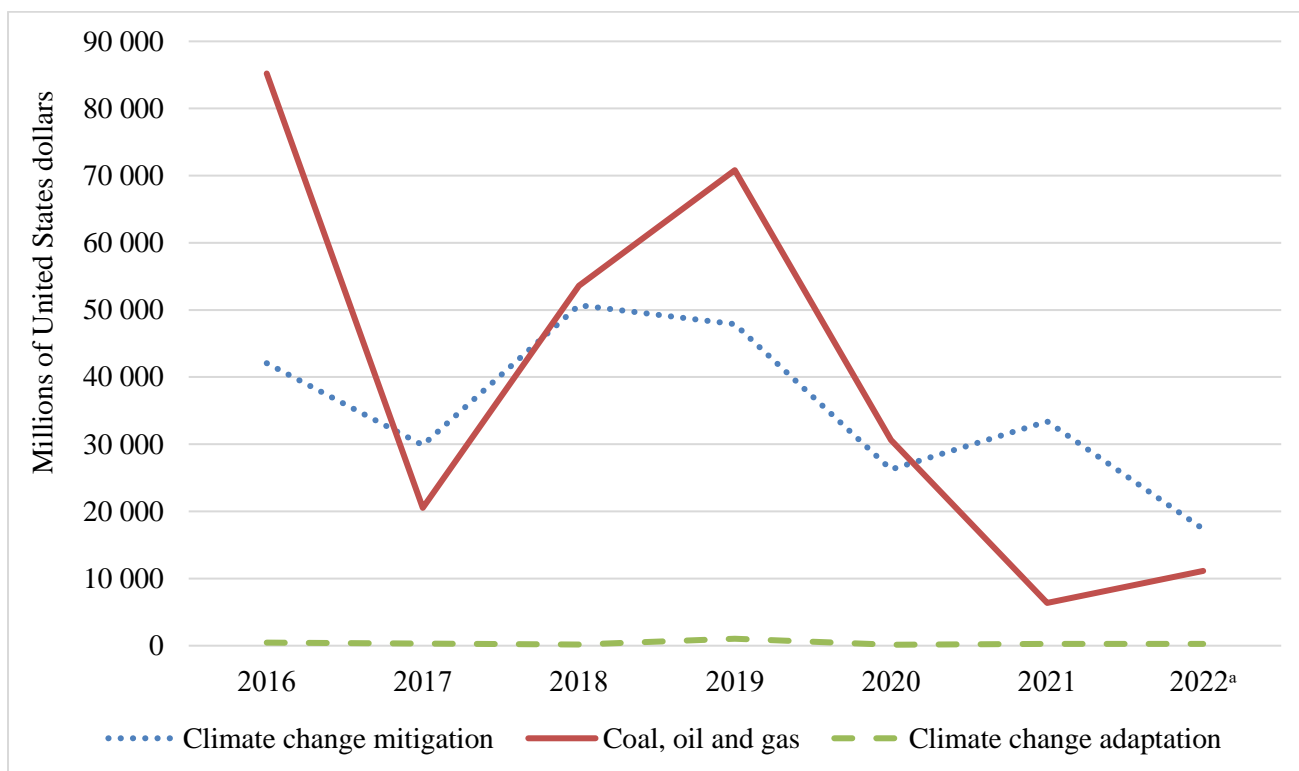
III. Foreign direct investment to address climate change

28. FDI can play an important role in limiting climate change in several ways. Foreign investors can back projects that reduce emissions, use clean technology and support climate-friendly sectors, such as renewable energy, water and waste management, and conservation and the efficient use of natural resources. FDI can also contribute to decarbonizing the construction and infrastructure sectors, two of the largest carbon emitters globally, by, for instance, integrating digital technologies to manage and distribute resources more efficiently.

29. Despite ample opportunities for FDI to contribute to addressing climate change in Asia and the Pacific, greenfield investments in both climate change mitigation and adaptation have been declining during the past several years.¹³ Both the value and the volume of climate change mitigation projects have been significantly larger than those of climate change adaptation projects. For example, since 2016, there have been 1,218 climate change mitigation projects, worth \$247 billion, compared to 83 climate change adaptation projects, worth \$2.7 billion. Alarmingly, there was a pronounced loss of momentum in terms of FDI for climate change mitigation in 2022, which was accompanied by growing investment in fossil fuels in the region (see figure III). Renewed investments in fossil fuels coincide with the current energy crisis and could further exacerbate climate change if they continue to grow.

¹³ Greenfield investments are investments in new productive activities, such as in the construction of a manufacturing facility.

Figure III
Foreign direct investment flows into climate change mitigation and adaptation versus fossil fuels in Asia and the Pacific

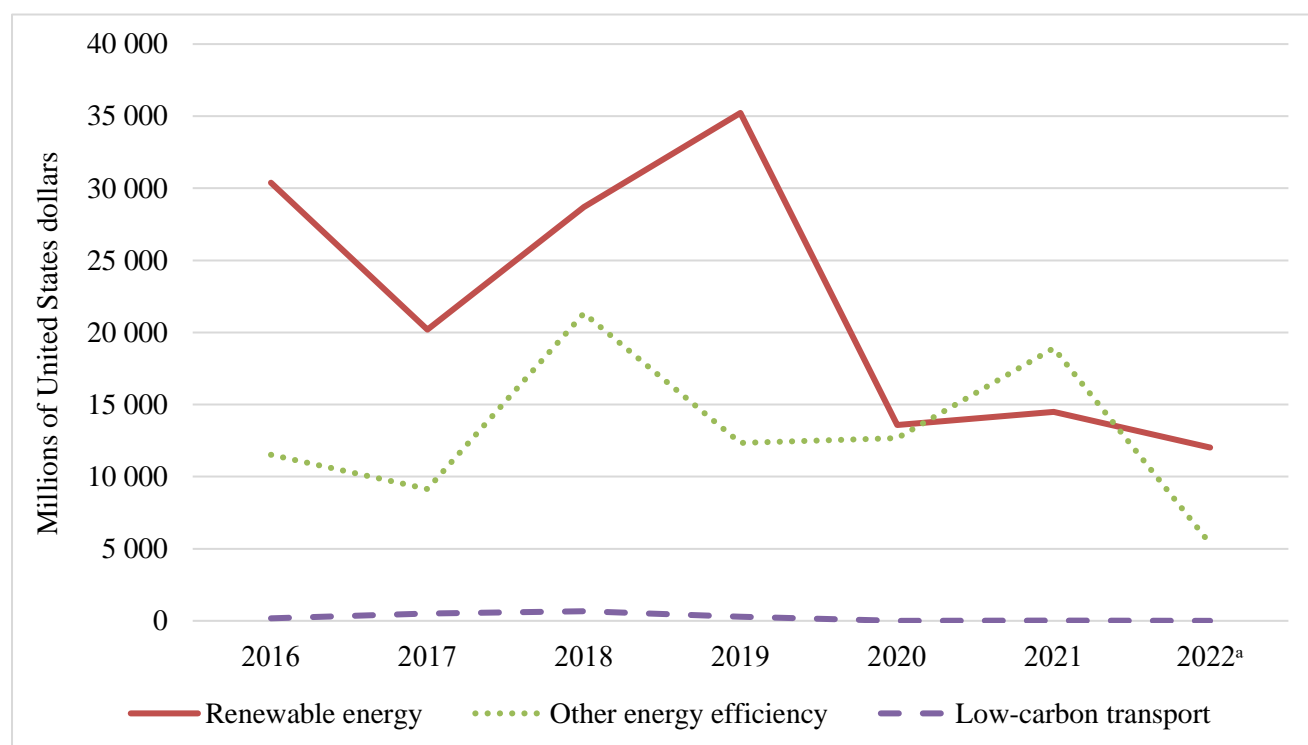


Source: ESCAP calculations based on data from fDi Markets. Available at www.fdimarkets.com/ (accessed on 15 January 2023).

^a The data for 2022 covers the period from January to November only.

30. Most FDI in climate change mitigation in Asia and the Pacific has gone into renewable energy and other energy efficiency projects (see figure IV). Some examples of projects in the region include an investment of \$138 million in 2021 by EnviTec Biogas (Germany) in China to open a biogas production plant that will produce 37,000 normal cubic metres of biogas per day; an investment of \$166 million by Canadian Solar (Canada) in Japan to establish a 53.4 megawatt-hours solar power plant; and an investment of \$176 million by Amazon.com (United States) in India to establish three solar farms to produce 420 megawatt-hours of clean energy capacity.

Figure IV
Foreign direct investment flows into climate change mitigation projects in Asia and the Pacific



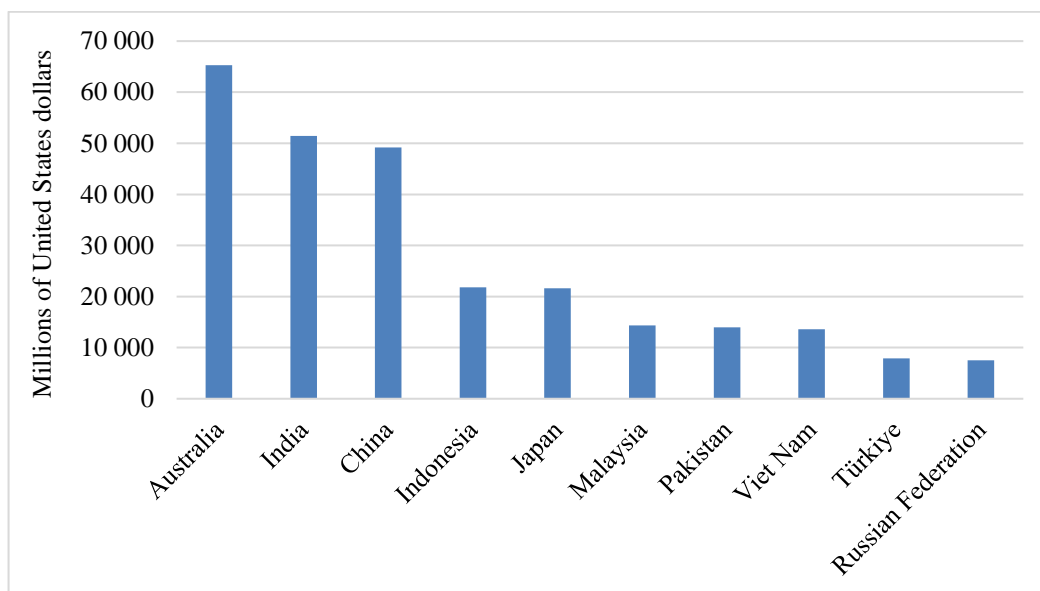
Source: ESCAP calculations based on fDi Markets. Available at www.fdimarkets.com/ (accessed on 15 January 2023).

^a The data for 2022 covers the period from January to November only.

31. The value and volume of climate change adaptation projects have been low in the region and largely focused on introducing clean technologies into foreign operations. For instance, in 2021, Teijin Polyester of Japan invested \$17.2 million and created 44 jobs in its Thai subsidiary to convert domestically produced plastic bottles into recycled polyester chips for the manufacture of high-quality polyester filament. The facility is expected to produce 7,000 tons of recycled polyester chips annually by 2025. Some examples from 2022 include an investment of \$27 million by Covestro (Germany) into China to set up a dedicated line of polycarbonate mechanical recycling and another investment by the same company in Thailand to repurpose and convert its existing compounding plant into a recycling facility.

32. FDI in climate change mitigation and adaptation has been unevenly distributed across Asia and the Pacific, with developed countries and large developing countries receiving the largest share of investments. For instance, Australia has been the top destination for climate change mitigation FDI since 2011, followed closely by India and China (see figure V). China has been the top destination for climate change adaptation projects since 2011, with Viet Nam and Australia coming in a distant second and third (see figure VI). Notably, no least developed country or small island developing State – arguably two groups of countries urgently in need of climate FDI – has received such FDI since 2011.

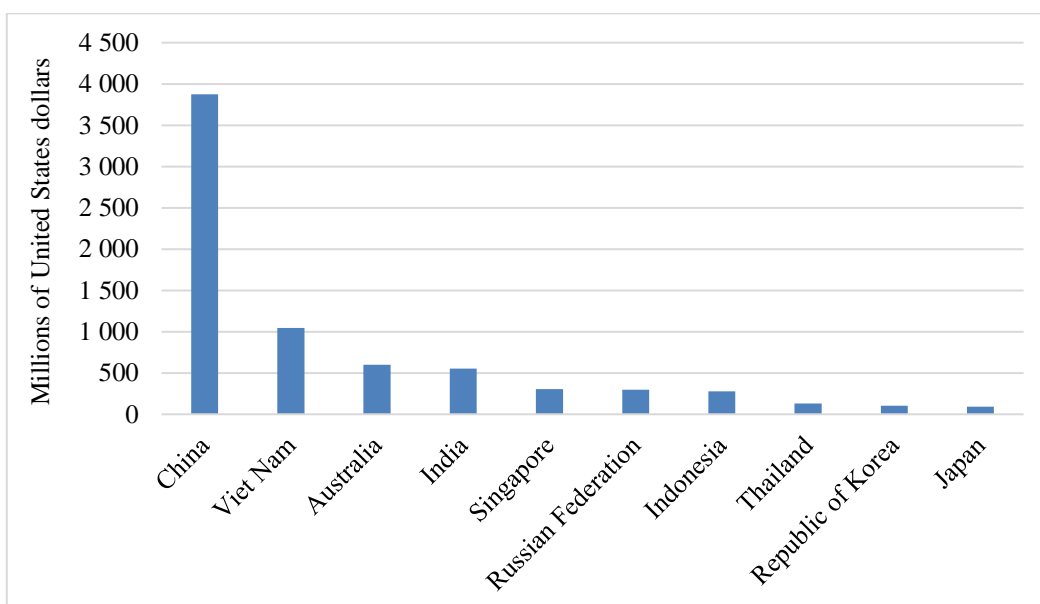
Figure V
Top 10 receivers of climate change mitigation greenfield foreign direct investment in Asia and the Pacific, 2011–2022



Source: ESCAP calculations based on fDi Markets. Available at www.fdimarkets.com/ (accessed on 15 January 2023).

Note: Greenfield investments include investments in renewable energy projects, manufacturing projects for electric vehicle production and in areas of the agriculture sector that use sustainable techniques.

Figure VI
Top 10 receivers of climate change adaptation greenfield foreign direct investment in Asia and the Pacific, 2011–2022



Source: ESCAP calculations based on fDi Markets. Available at www.fdimarkets.com/ (accessed on 15 January 2023).

33. The low level and uneven distribution of FDI to developing countries in the region underscore the urgent need to bring FDI into conversations about unlocking climate finance for developing countries. While FDI is an important

type of private sector investment with immense potential to help developing countries to fill climate finance gaps, it has until now been left out of the discussions at forums on climate finance. For example, while the participants in the twenty-seventh session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, held in November 2022, focused on ways to increase climate finance to developing countries, FDI did not even make it on the main agenda. Furthermore, none of the decisions taken during the twenty-seventh session of the Conference of the Parties¹⁴ reference FDI as a potential source of climate finance. In fact, from an investment perspective, a key issue is that “climate finance” and “investment” were understood as referring only to funds from public sources and multilateral development banks. Only in the draft decision on matters relating to the Standing Committee on Finance was mention made of private sector direct investments, although it is not clear if those investments were domestic or foreign. However, it was recognized that FDI could serve as an additional and important source of funding to assist developing countries particularly vulnerable to the adverse effects of climate change.¹⁵

34. There is an urgent need to support developing countries, especially the least developed countries and small island developing States, and their investment promotion agencies in attracting and facilitating climate FDI. Most importantly, they need support in identifying the climate projects for which their countries would have a competitive advantage in attracting FDI, in targeting investors and generating leads, and in pitching investment opportunities for foreign investors. At the policy advocacy level, developing countries also need to build their capacity to articulate to relevant ministries the need for better incentives for climate FDI and to phase out fossil fuel subsidies and incentives.

35. Beyond this, investment promotion agencies should consider incorporating tailored indicators to assess, evaluate and measure the climate-relevant characteristics of investments. The ESCAP secretariat has developed sustainable FDI indicators that would enable investment promotion agencies to do precisely this.¹⁶ The secretariat has worked with several countries in the Asia-Pacific region to incorporate the indicators into their investment monitoring and evaluation processes, including Invest Bhutan and the Philippine Board of Investments.

36. Furthermore, recognizing the urgent need of investment promotion agencies in Asia and the Pacific to attract and facilitate climate FDI, the secretariat is developing a work programme to support them. This work programme will be aimed at providing technical assistance to investment promotion agencies in developing countries to design and implement strategies to attract and facilitate climate FDI according to the countries’ needs and nationally determined contributions to reduce national emissions and adapt to climate change. The secretariat looks forward to providing support to

¹⁴ See United Nations Framework Convention on Climate Change, “Decisions taken at the Sharm el-Sheikh Climate Change Conference”, available at <https://unfccc.int/cop27/auv>.

¹⁵ See the text of the decision on funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage. Available at <https://unfccc.int/documents/624440>.

¹⁶ See ESCAP, “E-learning platform: general and sector-based indicators for evaluating the contribution of foreign direct investment to sustainable development”, available at <https://e-learning.unescap.org/thematicarea/detail?id=43>.

investment promotion agencies in developing member States in the near future in this area.

IV. Public-private partnerships and private sector networks for climate action

A. Partnerships for climate-resilient infrastructure development

37. Infrastructure development is integral to economic growth, poverty and inequality reduction, job creation and environmental sustainability. Infrastructure improves welfare and has a high social return. In order to achieve the Sustainable Development Goals, infrastructure development must be at the centre of countries' action plans. The majority of the Goals, including those relating to health, education, and access to energy, clean water and sanitation, require infrastructure development. As the region urgently accelerates the process to achieve the Sustainable Development Goals by 2030 and the goals of the Paris Agreement on climate change, the development of infrastructure is widely being acknowledged as a crucial prerequisite.

38. The development of climate-resilient infrastructure is required for environmental preservation; such infrastructure has the potential to fundamentally protect natural resources and mitigate the consequences of climate change. For example, to meet the 1.5°C climate change objective of the Paris Agreement, the transition from traditional to renewable energy sources is critical. The latter requires scaling up investment in infrastructure to produce electricity from renewable energy sources. The Asia-Pacific region offers immense possibilities for such infrastructure development; for example, bioenergy could be made the most significant energy source in South-East Asia.¹⁷ The public sector is, however, confronted with insufficient funding for infrastructure development due to tight fiscal conditions. Given the global economic downturn following the coronavirus disease (COVID-19) pandemic, private sector engagement in infrastructure development is needed more than ever to close the financing gap. However, there are challenges in raising private funding for infrastructure projects in most developing countries and particularly in the least developed countries.¹⁸ In response, many countries have embraced public-private partnerships as a financing mechanism to develop and deliver infrastructure facilities and services effectively.

39. Public-private partnerships can help by harnessing private investment to address the financing gap for infrastructure development. They can also help in optimizing efficiency in resource allocation and by enabling risk sharing between the public and private sectors. Public-private partnerships can adapt to changes in market conditions by using capital market instruments, such as securities and bonds, to build a flexible financing structure. Moreover, public-private partnerships can positively affect infrastructure governance, as they guide Governments to take action in innovative ways and to build skills and knowledge. Public-private partnerships are also an effective tool for reforming the public procurement process and public service delivery, as well as encouraging private sector engagement.

¹⁷ International Energy Agency, *Southeast Asia Energy Outlook 2019* (Paris, 2019); and Association of Southeast Asian Nations (ASEAN), "ASEAN strategy on sustainable biomass energy for agriculture communities and rural development in 2020–2030", 2020.

¹⁸ *Infrastructure Financing for Sustainable Development in Asia and the Pacific* (United Nations publication, 2019).

40. ESCAP has a comparative advantage in promoting sustainable infrastructure through the use of public-private partnerships in the region, given its unique role as a regional think tank and as a representative intergovernmental body for Asia and the Pacific that facilitates the exchange of best practices and policy advocacy. In working together with the private sector, financial institutions and other international development partners, ESCAP aims to enhance member States' capacity to implement public-private partnership projects and exchange knowledge through South-South and triangular cooperation, thereby strengthening regional cooperation among policymakers and key stakeholders. ESCAP can also play a critical intermediary role by matching proposed investments with sustainable infrastructure development projects.

B. Private sector network and climate action

41. Climate change remains one of the most pressing global challenges. The Asia-Pacific region is currently regressing in terms of the targets set under Sustainable Development Goal 13 (Climate action).¹⁹ While the landmark Paris Agreement illustrates the commitment of the international community to restrict global temperature increases, it remains challenging to create the conditions and policies necessary to achieve this Goal.

42. The private sector will always be an essential contributor to positive action against climate change and for climate change mitigation and resilience. While the member States of ESCAP must lay out the national policy direction and frameworks to enable more climate-friendly activity by businesses, it is the businesses themselves that must implement greener production methods, decarbonize their transport networks and ensure sustainable operations. Businesses will be the prime movers in investing in and implementing clean energy and low-carbon technologies. Furthermore, businesses also have substantial influence on consumer behaviour through their marketing strategies and pricing decisions and can therefore shift markets to transform in a more climate-friendly direction.

43. For policymakers to align the activities of businesses to their goals for climate action, a multilevel approach is needed that incorporates policy on domestic business, trade and investment, and the environment. Governments can affect a wide range of business decisions through taxation, sectoral policies, and direct regulations and mandates. It can be difficult, however, to find the right combination of policies that achieves an appropriate scale of action without stifling business activity or prompting unfavourable side effects. For this reason, it is vital to seek the feedback and input of private sector actors to better understand the likely effects of policies on businesses and their responses to those policies.

44. Businesses are changing the way in which decisions are made in response to growing demand, from both consumers and Governments, to address the problem of climate change. For example, the growing attention given to environmental, social and governance factors by investors and businesses is resulting in greater transparency and disclosure about carbon emissions by, and the environmental footprint of, private enterprises. Tracking and reporting on environmental, social and governance factors, however, remain for the most part the domain of larger businesses, and they are often enforced through or informed by the requirements for listing on a stock

¹⁹ ESCAP, Asia-Pacific SDG Gateway. Available at <https://data.unescap.org/data-analysis/sdg-progress> (accessed on 3 February 2023).

exchange. As a result, small and medium-sized enterprises, which make up a large segment of the economy, remain to some extent outside this influence. Bringing smaller enterprises into a framework of reporting on environmental, social and governance indicators is being widely considered,²⁰ but there are ongoing challenges, including:

- (a) The lack of knowledge among smaller businesses of the difference between various reporting standards and frameworks, and the inability of these businesses to dedicate funds or expertise to produce reports;
- (b) Concerns over the legal and reputational risks of producing reports without the necessary expertise and experience;
- (c) The lack of certainty on the part of small businesses that incurring the costs and making the efforts required by environmental, social and governance reporting will produce tangible business outcomes or confer any competitive advantage.

45. The private sector, represented by high-level bodies and trade associations, has made it known that many companies are willing and capable to act on climate change, provided that certain frameworks and policies are in place. For example, the Business Advisory Council of the Asia-Pacific Economic Cooperation forum, in its annual report to leaders prepared for the summit in 2022, urged the region's leaders to "develop a collective response to climate change".²¹ Beyond just an encouragement for generic action, the Business Advisory Council, in the report, specifically calls for the creation of an enabling environment, "including appropriate carbon taxation and pricing measures". Businesses are also joining initiatives that promote transformation to a greener and more sustainable economy, such as the Asia-Pacific Green Deal for Business initiative of the ESCAP Sustainable Business Network.²² Strong frameworks and regulations delivered by Governments will allow businesses to act in concert, without individually taking actions that might negatively affect their competitive position.

46. Business networks and associations, including the ESCAP Sustainable Business Network, will play a critical role in ensuring that the broader business community commits to meaningful decarbonization and contributes to a sustainable future. As noted above, they can advocate for and work with Governments to design suitable policies that support decarbonization, provide feedback and ideas for regulations and initiatives, and promote the best practices and success stories of their members. By offering training and education programmes, they can help their members to understand the business case for decarbonization and how they can transition to more sustainable practices. Businesses that have integrated sustainability into their core practices are valuable examples, particularly for smaller businesses.

47. By supporting business networks and encouraging businesses both small and large to align themselves with private sector initiatives focused on climate action, Governments can improve the domestic and international dialogue on climate change policy. Platforms such as the Asia-Pacific Green

²⁰ International Chamber of Commerce, "Scaling MSME sustainability reporting: outline ICC report", paper submitted to the Group of 20 Sustainable Finance Working Group, 2021.

²¹ Asia-Pacific Economic Cooperation forum Business Advisory Council, *Report to APEC Economic Leaders* (2022).

²² See www.unescap.org/projects/gd.

Deal for Business can be a tool to bring about the greater alignment of businesses' actions with the climate ambitions of member States.

V. Role of technology transfer in addressing climate change

48. Technology development and transfer play a critical role in addressing climate change and meeting global and national goals. The United Nations Framework Convention on Climate Change and the Paris Agreement have highlighted the importance of technology for the implementation of mitigation and adaptation action and of strengthening cooperative action on technology development and transfer.²³

49. The achievement of climate goals will require the accelerated development, deployment and diffusion of available technologies, as well as new and emerging technologies. As reported by the World Economic Forum, the achievement of all 17 Sustainable Development Goals and 70 per cent of Goal targets can be enabled through existing fourth industrial revolution technologies.²⁴ In a recent report, the International Energy Agency revealed that, while most of the global reductions in carbon dioxide emissions through 2030 on the energy pathway can come from technologies readily available today, by 2050, almost half the reductions will come from technologies that are currently at the demonstration or prototype phase.²⁵ This makes technology transfer and diffusion imperative.

50. In recent years, there has been rapid innovation and targeted investment in low-carbon technologies to mitigate climate change. In a report of 2020, the World Bank revealed that low-income countries accounted for just 0.01 per cent of global exports and 0.3 per cent of global imports in 2015–2016.²⁶ On the other hand, high-income countries produced 80 per cent of all low-carbon innovations between 2005 and 2015. In the report, it was further noted that, although the global South had become more integrated into low-carbon technology trade networks, the world's poorest countries remained on the periphery. This further highlights the role of technology transfer, in particular by focusing dedicated networks and capacity-building and training

²³ The United Nations Framework Convention on Climate Change has incorporated technology development and transfer for climate action in countries as an essential element in its process. The climate technology mechanism, established in 2010 under the United Nations Framework Convention on Climate Change, has the objective of accelerating and enhancing climate technology development and transfer. It consists of two complementary bodies that work together, namely, the Technology Executive Committee and the Climate Technology Centre and Network. The Technology Executive Committee is the policy arm of the climate technology mechanism. It analyses policy issues and provides recommendations to support countries in enhancing climate technology efforts. The Climate Technology Centre and Network is the implementation arm of the climate technology mechanism. It supports countries to enhance the implementation of climate technology projects and programmes. The Paris Agreement established a technology framework to provide overarching guidance to the climate technology mechanism. The technology framework plays a strategic role in improving the effectiveness and efficiency of the work of the climate technology mechanism by addressing the transformational changes envisioned in the Paris Agreement and the long-term vision for technology development and transfer. For additional information, see <https://unfccc.int/topics/what-is-technology-development-and-transfer>.

²⁴ *Unlocking Technology for the Global Goals* (Geneva, 2020).

²⁵ *Net Zero by 2050: a Roadmap for the Global Energy Sector* (2021).

²⁶ Miria A. Pigato and others, *Technology Transfer and Innovation for Low-Carbon Development* (Washington, D.C., World Bank, 2020).

on the latest energy-related solutions.²⁷ In *Green Technology Book 2022: Solutions for Climate Change Adaptation*, the World Intellectual Property Organization advocates for increased access to finance to implement and scale up climate technology solutions, the consideration of local context before technology transfer, and the promotion of nature-based solutions and low-technology options, among others.²⁸

51. As Asia-Pacific countries move towards a low-carbon and resilient future, they will need to strengthen their efforts to identify appropriate technologies for climate change adaptation and mitigation, scaling up innovations, and piloting and developing or adopting economically viable business models.²⁹ Countries need to secure a trade and environment agenda that facilitates patent-free green technology transfers, promotes trade in environmentally sustainable products and builds technical capacities.³⁰

A. Regional initiatives to enhance technology transfer for scaling up climate action in Asia and the Pacific

52. There are several examples of initiatives at the regional, national and sectoral levels that are aimed at enhancing technical cooperation for accelerating and scaling up climate action. The Climate Technology Centre and Network has established a partnership and liaison office in the Republic of Korea with the aim of opening new avenues for collaboration on technology development and transfer to combat climate change and build resilient societies in Asia and the Pacific.³¹

53. Another promising example is the Asia and the Pacific Water Resilience Hub, which is an open platform dedicated to strengthening water security by establishing partnerships, providing training opportunities, and developing and sharing knowledge products, innovative methods, tools, data and digital technologies.

54. Yet another example is the Affordable, Accessible, Asian (“AAA”) Drought-Tolerant Maize programme, a collaborative initiative between the International Maize and Wheat Improvement Centre and Syngenta, supported and coordinated by the Syngenta Foundation for Sustainable Agriculture. This public-private partnership was designed to develop a specific breeding programme for maize. Its aim was to make hybrids of tropical maize accessible at an affordable price for Asian smallholders.³²

55. SERVIR-Mekong is a regional initiative that uses space technologies for climate resilience through a partnership between the United States Agency

²⁷ *Accelerating Implementation of the Paris Agreement in the Asia-Pacific Region: a Guide for Policymakers* (United Nations publication, 2020).

²⁸ *Green Technology Book 2022: Solutions for Climate Change Adaptation* (Geneva, 2022).

²⁹ Global Environment Facility, “Technology transfer”. Available at www.thegef.org/what-we-do/topics/technology-transfer.

³⁰ United Nations Conference on Trade and Development, *South-South Cooperation for Climate Adaptation and Sustainable Development* (Geneva, 2022).

³¹ United Nations Environment Programme, “UN Climate Technology Centre and Network launches partnership and liaison office in Korea”, press release, 21 July 2022.

³² Syngenta Foundation, “Affordable, Accessible, Asian (‘AAA’) Drought-Tolerant Maize: overview of a collaborative program between CIMMYT and Syngenta, supported and coordinated by Syngenta Foundation for Sustainable Agriculture”, website reference document, January 2023.

for International Development and the National Aeronautics and Space Administration. SERVIR-Mekong works in partnership with leading regional organizations to help the five countries in the lower Mekong region, namely, Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam, to use information provided by Earth observation satellites and geospatial technologies to manage climate risks.³³

56. The World Bank and the Solar Energy Corporation of India Limited have signed an agreement to help India to increase its power generation capacity through cleaner, renewable energy sources. The project is aimed at increasing market uptake by addressing the barriers to the deployment of new technologies on a larger scale.³⁴ Also in India, the National Green Hydrogen Mission, with a target of 5 million tons of green hydrogen production by 2030, is aimed at lowering carbon intensity and reducing fossil fuel use. Carbon Trust Singapore Pte. Limited is implementing a technical cooperation project for the Association of Southeast Asian Nations on strengthening small and medium-sized enterprises in the subregion to mitigate and adapt to climate change. The project includes developing guidelines for gender-responsive climate change mitigation and adaptation strategies for small and medium-sized enterprises using available technologies and best practices.³⁵

B. Regional cooperation and the role of the Economic and Social Commission for Asia and the Pacific

57. Recognizing the critical importance of new and emerging technologies for scaling up climate action, ESCAP has been engaged in activities to promote the development, adoption and diffusion of those technologies. Through its Asian and Pacific Centre for Transfer of Technology, ESCAP has conducted a series of consultations and capacity-building activities and has identified priority actions and opportunities for regional cooperation. Some of the key recommendations from those events include:

- (a) Establish effective policies to promote low-carbon technologies;³⁶
- (b) Strengthen institutional support systems for the scaling up of climate technologies for wide-scale deployment;
- (c) Identify practical solutions to address climate change issues at local levels, scale up or adopt innovations by augmenting appropriate financing;
- (d) Provide technical support for technology identification, feasibility studies and piloting for addressing climate change;

³³ See <https://servir.adpc.net/>.

³⁴ World Bank, "World Bank signs project to scale up innovative renewable energy technologies in India", press release, 15 December 2022.

³⁵ See Canadian Trade and Investment Facility for Development, "Strengthening ASEAN's SMEs in mitigating and adapting to climate". Available at <https://c-tif.ca/portfolio/projects/strengthening-aseans-smes-in-mitigating-and-adapting-to-climate/>.

³⁶ See Miria A. Pigato and others, *Technology Transfer and Innovation for Low-Carbon Development*. The policies include (a) carbon pricing, (b) the promotion of private investment through de-risking instruments, (c) demand-pull policies (e.g., feed-in tariffs for renewable energies), (d) technology-push policies to drive innovation, production and exports, (e) the use of multilateral trade and investment initiatives to accelerate technology transfer and (f) the adoption of new intellectual property rights agreements to accelerate the transfer of technologies (e.g., collaborative patent pools).

- (e) Identify opportunities for collaboration to scale up and commercialize potential innovations across national boundaries;
- (f) Establish multi-stakeholder partnerships and encourage collective action through the sharing of resources;
- (g) Promote cross-border public-private partnership models to boost the adoption of climate technologies;
- (h) Support countries in adopting new models of intellectual property management and practices for improved access to and sharing of climate technologies;
- (i) Support the creation of regional or national technology banks of affordable, tested and proven climate technologies;
- (j) Facilitate agreements between Governments to encourage the sharing of innovative climate technologies and related knowledge.

VI. Conclusions

58. Climate change mitigation policies will come with large benefits but also costs, affecting trade and investment opportunities and the ways in which trade and investment will be conducted. While these changes are necessary, special consideration and support must be given to developing economies. Multilateral and regional cooperation is essential to ensure that no economy is left behind. ESCAP, together with partners such as the United Nations Conference on Trade and Development and the United Nations Environment Programme, will continue to collaborate and offer analytical, capacity-building and intergovernmental platforms to facilitate progress towards climate-smart trade and investment.

VII. Issues for consideration by the Commission

59. Members and associate members of the Commission may wish to consider the recommendations included in the present document, share national experiences in leveraging trade, investment, business innovation and technology transfer to address climate action, and provide guidance on the future work of the secretariat in that regard.

60. The Commission may also wish to discuss and consider possible support for members and associate members in the following areas:

- (a) Indicate the types of support, such as training and knowledge-sharing, tools, research and advisory services, that may be required from the secretariat to promote trade, investment, business innovation and technology transfer to address climate change;
- (b) Provide guidance to the secretariat on how trade, investment, business innovation and technology transfer can be more effectively promoted nationally and regionally to better address climate change;
- (c) Identify new and priority policy issues related to trade, investment, business innovation and technology transfer that the secretariat should consider in greater detail to support members and associate members in addressing climate change.