



United Nations Conference on Trade and Development

Distr.: General
16 September 2019

Original: English

Trade and Development Board

Trade and Development Commission

Eleventh session

Geneva, 25–29 November 2019

Item 4 of the provisional agenda

Trade and vulnerability

Note by the UNCTAD secretariat

Summary

The present background note has been prepared by the secretariat to facilitate the deliberations of member States on trade and vulnerability. In the note, the topic is discussed with a focus on the sub-themes of small countries and big challenges, specifically small island developing States; commodity dependence as a vulnerable state; and addressing multifaceted vulnerability, in particular trade and transport facilitation.



Introduction

1. Vulnerability, with its facets of exposure and dependence, represents a major challenge for the sustained and beneficial integration of developing countries into international trade. As countries open up and deepen their integration into the global economy, their economies become interdependent but also exposed to external risks. Combined with the absence of alternative means, the process of integration could lead to a state of vulnerability for countries dependent on particular forms of trade, finance, products, markets, suppliers, transport routes and infrastructure, due to their natural endowments and specialization patterns, which could have profound implications for their economic welfare and development paths. There is a need to effectively address the causes and effects of multifaceted vulnerabilities, including the imminent threats posed by climate change, to buttress economic resilience for sustainable development.

2. The present note addresses the issue of trade and vulnerability with focus on the sub-themes of small countries and big challenges, specifically small island developing States; commodity dependence as a vulnerable state; and addressing multifaceted vulnerability, in particular trade and transport facilitation.

I. Small island developing States: Small countries, big challenges

3. Small island developing States (SIDS) are a heterogeneous group of countries.¹ Despite being “small” and islands, the size and economic profile of these countries differ significantly on several measures. For example, as a group, SIDS include nine least developed countries (LDCs) and extend to all income categories, including six countries classified as high income by the World Bank. Nauru covers 20 km² while Solomon Islands covers 28,000 km² in land area.² In 2017, the total population ranged from 11,000 both in Nauru and in Tuvalu, to 2.9 million in Jamaica.³ Gross domestic product (GDP) was the lowest in Tuvalu at US\$65 million and the highest in Trinidad and Tobago at US\$21 billion. Per capita income ranged from US\$1,330 in the Comoros to US\$29,825 in the Bahamas.

4. Despite the asymmetries, SIDS face special development needs arising from their unique vulnerabilities, including in the context of achieving the Sustainable Development Goals. Since the adoption of the Programme of Action for the Sustainable Development of Small Island Developing States (Barbados Programme of Action) in 1994, United Nations Member States have recognized the special challenges facing SIDS and called for improved and additional measures to more effectively address the unique and particular vulnerabilities and development needs of SIDS. The successor SIDS Accelerated Modalities of Action (SAMOA) Pathway in 2014 further reaffirmed SIDS as “a special case for sustainable development in view of their unique and particular vulnerabilities”.⁴

Economic vulnerability

5. “Smallness” carries implications of scarce land areas and limited labour and capital for agriculture and manufacturing production, and, consequently, high production costs and low output volumes. The small market size of SIDS does not allow these countries to benefit from economies of scale, which severely constrains their productive and export capacities, with knock-on effect on the entire economy. Insularity often implies remoteness from major markets, import sources and transport hubs. The transport and mobility costs for

¹ Among the world’s SIDS are 38 United Nations Member States, including 16 in the Caribbean Sea, 13 in the Pacific Ocean and 9 in the Atlantic Ocean, Indian Ocean, Mediterranean Sea and South China Sea.

² World Bank, World Development Indicators database.

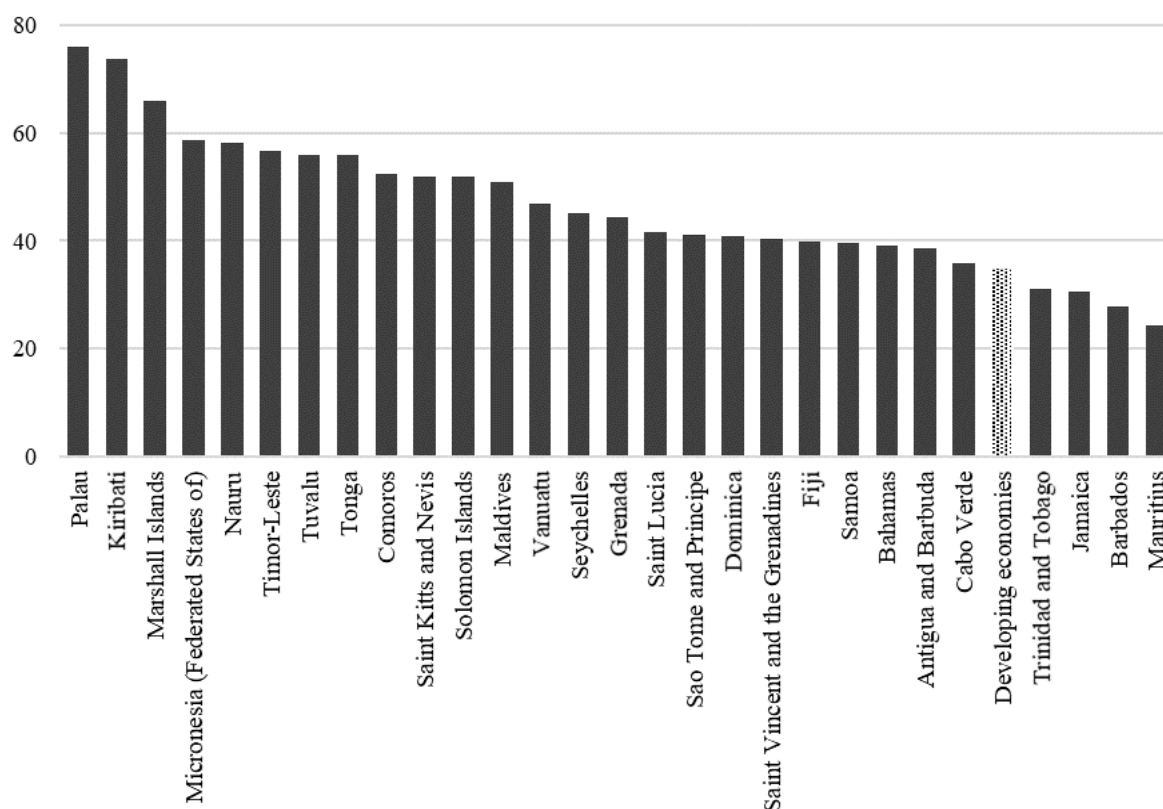
³ All data in this section are from the UNCTADstat database, unless otherwise specified.

⁴ A/RES/69/15, annex, para. 5.

SIDS are high, as they are excluded from major transport networks. Located in the Caribbean Sea, the Mediterranean Sea, the South China Sea and the Atlantic, Indian and Pacific Oceans, SIDS are at high risk of extreme weather events and natural disasters and of the effects of climate change in the long term.

6. The economic vulnerability index developed by the United Nations is a composite index that incorporates multiple dimensions of vulnerability, measuring exposure to shocks (exposure index); population size (size index); remoteness (location index); population in low elevated coastal zone (environment index); concentration of merchandise exports; and share of primary sector in GDP (economic structure index).⁵ The index also includes dimensions that measure vulnerability to shocks (shock index); number of victims of natural disasters and instability of agricultural production (natural shock index); and instability of exports of goods and services (trade shock index). According to this measure, almost all SIDS have an economic vulnerability index above the average for developing economies, with several SIDS registering a particularly high economic vulnerability index, including Palau, Kiribati and Marshall Islands (figure 1).

Figure 1
Economic vulnerability index, 2018
(index = 100)



Source: United Nations, Department of Economic and Social Affairs.

7. SIDS are generally open to and highly dependent on international trade. As their domestic markets cannot afford large-scale industries subject to economies of scale, SIDS tend to lack competitive export products that could drive an entire economy. Conversely, they tend to rely heavily on imports of energy and a wide range of food, capital and consumer goods to fuel their economies and meet subsistence needs. The trade-to-GDP ratio reaches 100 per cent in half of these countries and is above 90 per cent in 75 per cent

⁵ Economic vulnerability index = exposure index (50 per cent) + shock index (50 per cent), where exposure index = size index (25 per cent) + location index (25 per cent) + environment index (25 per cent) + economic structure index (25 per cent); and shock index = natural shock index (50 per cent) + trade shock index (50 per cent).

of SIDS. Consequently, SIDS register large current account deficits. In 2016, SIDS ran current account deficits of 5.8 per cent of GDP on average, reaching 20 per cent in some cases. Persistent deficits translate into external finance needs, which have mainly been addressed through external debt.

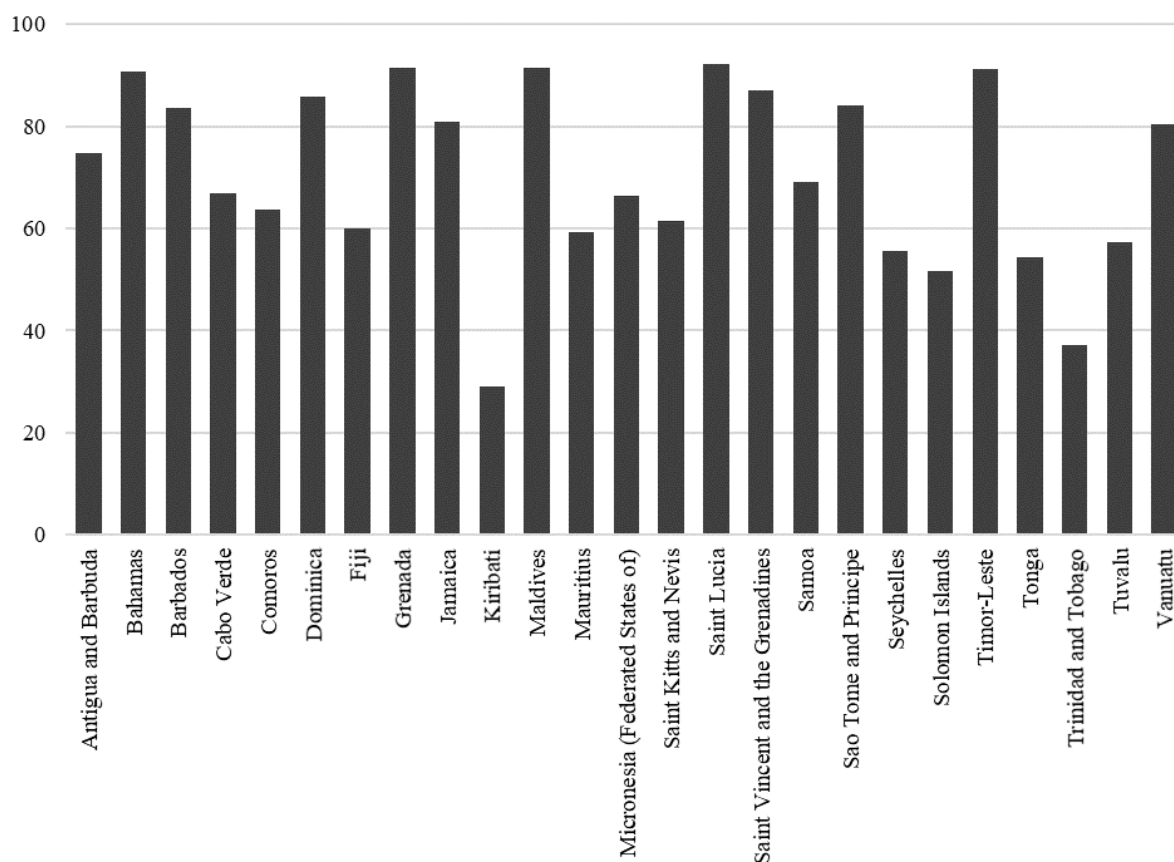
8. Debt dependence and sustainability are indeed a common and longstanding issue in SIDS, particularly in the Caribbean. In 2014, the debt-to-GDP ratio of SIDS stood, on average, at 57 per cent of GDP; the majority of this debt-to-GDP ratio (45 per cent) was external.⁶ While concessional loans are vital sources of development funding, the share of official development assistance flows to SIDS steadily has declined as the relatively high income level of many SIDS has made them ineligible for concessional finance. In the absence of concessional finance, non-eligible SIDS have relied heavily on private finance and capital markets. This has exposed them to market volatility and the risk of reversals in financial flows.

9. Lack of economic diversification, and dependence on a few export commodities and markets, has gradually compromised the participation of SIDS in international trade. Since 2000, their share in world merchandise exports fell from 0.15 to 0.10 per cent. Exports of traditional cash crops such as coffee, fruits and sugar, as well as apparels, dwindled as new competition emerged and preferential market access conditions gradually eroded. This has happened despite the continued importance of these products, for several SIDS, as a source of foreign exchange. For instance, fishing activities provide 30–80 per cent of exports of SIDS located in the Pacific. Despite the rise of China as an export destination, particularly for Pacific countries, the exports of SIDS remain concentrated in the traditional markets of developed countries in Europe, North America and Oceania.

10. With geographical conditions discouraging agriculture and manufacturing activities, many SIDS have become remarkably focused on services. In 2017, services represented on average 70 per cent of GDP across SIDS, accounting for more than 85 per cent in the Bahamas, Palau and Saint Lucia. In 2018, services were the major export sector for many SIDS and represented more than 80 per cent of total exports of half of these economies.

⁶ G Hurley (2015), Financing for development and small island developing States: A snapshot and ways forward, Discussion paper, United Nations Development Programme and United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

Figure 2
Contribution of travel services to total services exports, 2018 or latest available year
 (Percentage)



Source: UNCTADstat database.

11. Within the predominant services exports, tourism services are the most important category for almost all SIDS. In 2018, travel services accounted for 75 per cent or more of total services exports in half of SIDS and reached more than 90 per cent in the Bahamas, Grenada, Maldives, Saint Lucia and Timor-Leste (figure 2). Furthermore, tourism services remain one of the fastest growing categories in services exports for SIDS.

Challenges posed by remoteness

12. SIDS are intrinsically disadvantaged in international trade owing to their insularity and remoteness. Many SIDS are located away from main transportation routes and face significant challenges in connectivity, as they have to rely on infrequent transport services for their small volume shipments. Such constraints arising from remoteness are particularly pronounced in SIDS in the Pacific, such as Fiji, Samoa, Tonga, Tuvalu and Vanuatu.

13. The liner shipping connectivity index suggests a growing “connectivity divide” between the best- and least-connected countries, as the best-connected have enhanced competitiveness through improved hard and soft port and trade facilitation infrastructures. The least-connected, including SIDS, have not found the resources for such investments and have thus not been able to attract additional regular container shipping services. Since 2006, the best-connected country, China, improved its liner shipping connectivity index by 51 per cent, while the least-connected countries in 2006 saw little improvement.⁷

⁷ For more information, see <https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92>.

14. Pacific island economies are among those with the lowest container shipping connectivity. For instance, based on 2019 statistics, in Vanuatu, Port Vila receives about one container ship every three days, with only four companies providing regular shipping services to the country. In Kiribati, only one operator offers regular liner shipping services, with one ship arriving about every 10 days, connecting the country to only four other ports. SIDS in the Pacific are particularly confronted with a vicious cycle, in which low trade volumes discourage shipping companies and ports from investing in better maritime transport connectivity and, in the face of low shipping connectivity, trade in goods becomes costly and uncompetitive.⁸

Environmental vulnerability

15. The inherent vulnerability of SIDS has intensified with greater threats of extreme weather events and natural disasters in a changing climate. For many SIDS, their territorial waters and exclusive economic zones far exceed their land mass. With populations, agricultural lands and infrastructures tending to be concentrated in coastal zones, any rise in sea levels will have significant and profound effects on settlements, living conditions and island economies. These socioeconomic situations make SIDS even more vulnerable to climate change. Rising sea levels have submerged five islands of Solomon Islands, an archipelago in the Pacific Ocean, with six more islands under threat.

16. Annual rainfall levels are affected by climate change, which in turn affects crop yields and, by extension, can threaten agricultural trade and food security. The effects of climate change pose significant risks to biodiversity, including changes in fish migration paths, and threaten coral reef species, while eroding the valuable buffer that coral reefs provide, protecting coastal communities. Rising sea levels result in displacement of coastal communities and increase the risks of salinization of fresh groundwater.

17. These consequences for the environment also threaten critical economic sectors of SIDS, such as tourism, agriculture, fishery and forestry, as well as vital communication and transport infrastructure. Extreme weather events and natural disasters such as hurricanes have also become more frequent and have intensified. In 2015, Dominica endured Tropical Storm Erika, causing damage totalling 90 per cent of the country's GDP. Within two years, category 5 Hurricane Maria ravaged the island, resulting in damage estimated at 226 per cent of GDP.⁹

18. The challenges posed by climate change exacerbate already high levels of external economic vulnerability, placing great stress on critical productive sectors and institutions. Widespread damage to critical infrastructure can curtail trade facilitation efforts and suppress exports. Trade issues are thus intrinsically linked to climate change adaptation, disaster risk prevention and disaster recovery processes for SIDS.

Integrating into the global economy

19. The vulnerabilities of SIDS are significant and represent constraints on their development. Lack of diversification in production, high degree of trade openness and dependence, heavy indebtedness and excessive reliance on a few export categories and transport routes make SIDS highly vulnerable to exogenous shocks. The critical dependence of SIDS on tourism and marine resources, and on long-distance shipment and coastal transport infrastructure, compounds these vulnerabilities in the face of environmental risks. Reducing the risk of vulnerabilities to foster economic resilience is critical for beneficial integration of SIDS into the global economy.

20. SIDS have pursued regional integration to create a wider market that enables economies of scale and regional value chains, by addressing tariffs and non-tariff barriers that segment national markets. Opportunities could be created by deepening market

⁸ UNCTAD, 2014, *Closing the distance: Partnerships for sustainable and resilient transport systems in SIDS* (United Nations publication, New York and Geneva); UNCTAD, 2017, *Review of Maritime Transport 2017* (United Nations publication, Sales No. E.17.II.D.10, New York and Geneva).

⁹ Caribbean Export Development Agency, 2018, *Caribbean Export Outlook*, 3rd ed., Caribbean Business Publications, Saint Thomas (Barbados).

integration, regulatory harmonization and development cooperation within the framework of the Caribbean Community, Pacific Island Countries Trade Agreement and other subregional, regional and interregional platforms. Wider integration with larger neighbouring partners could also be explored, such as between continental Africa and SIDS in the Atlantic and Indian Oceans, between Central and Latin America and SIDS in the Caribbean Sea and between East and South-East Asia and SIDS in the Pacific Ocean.

21. An open, rules-based, non-discriminatory multilateral trading system has provided a global public good to guarantee transparency, predictability and stability of international trade, thereby particularly benefiting small countries without market power.¹⁰ Uncertainties regarding the functioning of the multilateral trading system created by heightened trade tensions are therefore a cause for concern for SIDS. These countries have major stakes in a robust and functional rules-based system. The recent debate on World Trade Organization reform to modify the design of the special and differential treatment principle could have an important bearing on SIDS. At issue is whether or not to limit the eligibility for special and differential treatment provisions by the application, *inter alia*, of the criterion of a country's per capita income. This is a reminder of the important policy question of how the special vulnerabilities of SIDS should be measured and addressed in international policymaking processes.

22. Multilateral trade policy coordination remains important for SIDS that are exposed to negative externalities originating in other countries. Ongoing World Trade Organization negotiations on disciplining harmful fishery subsidies are a case in point. The negotiations are pertinent to SIDS that rely on commercial and artisanal fishing and instrumental for the preservation and sustainable use of marine resources, consistent with Sustainable Development Goal 14.

23. Given their specialization in services, opportunities exist for SIDS to capitalize on this vital sector to promote diversification and structural transformation. In addition to tourism and financial services, telecommunications and information and communications technology (ICT) services are particularly important for SIDS, as these services help mitigate physical distance, reduce transaction costs and enhance productivity in all economic sectors where they are used as inputs. ICT-enabled business services could also facilitate the integration of SIDS in production processes in global value chains, while ICT-enabled digital trade could promote trade by small and medium-sized enterprises. UNCTAD supports such services-led structural transformation through services policy reviews, which could be useful for SIDS in assessing and designing policies and regulatory frameworks aimed at services sector development.¹¹

24. In view of their rich endowment in ocean-derived resources, SIDS could consider exploring the concept of a blue economy to foster economic diversification, capitalizing on the sustainable use and management of marine and coastal biodiversity, ecosystems and genetic resources. UNCTAD has identified 12 promising ocean economic sectors, including fisheries, seafood manufacturing, maritime transport, port and logistics services and coastal and maritime tourism, as well as aquaculture, fisheries services and blue biotrade.¹² UNCTAD assists some SIDS in analysing the scope for diversifying their production base

¹⁰ For more information, see United Nations, *World Economic Situation and Prospects 2019* (Sales No. No. E.19.II.C.1, New York) and United Nations, 2018, *International trade and development: Report of the Secretary-General, A/73/208*, New York, 17 August.

¹¹ UNCTAD services policy reviews are available at <https://unctad.org/en/Pages/DITC/Trade-in-Services.aspx>.

¹² UNCTAD, 2019, UNCTAD sector definition, indicators and data source for oceans-based sectors for the Oceans Economy and Trade Strategies Project, draft working document. Available at <https://unctad.org/meetings/en/Contribution/ditc-ted-22022018-Oceans-Barbados-Draft-Working-Doc-2.pdf>.

for selected green and blue value added product export¹³ and in developing a coherent policy and regulatory framework on trade and law of the sea.¹⁴

25. In addressing particular trade logistics constraint, efforts are warranted for SIDS to: foster the efficiency and connectivity of their ports, including ports' liner shipping connectivity through, for example, digitalization and port modernization; advance trade and transport facilitation; factor in sustainability concerns; promote low-carbon and sustainable shipping; and monitor transport performance.¹⁵ UNCTAD research and technical assistance on transport and trade logistics, as well as UNCTAD *Review of Maritime Transport* series and online statistical information aim at supporting countries in this respect.¹⁶

26. As ports and coastal airports are lifelines for external trade, food, energy and tourism for SIDS, climate change adaptation for coastal transport infrastructure is critical, in particular in the light of projected impacts of future climate change. UNCTAD has assisted SIDS in the Caribbean in assessing the potential operational disruptions and risk of marine inundation to eight coastal international airports and seaports of Jamaica and Saint Lucia, as well as in the development of a transferable methodology to assist in adaptation planning for SIDS in the Caribbean and beyond.¹⁷

27. In light of this, some questions that may be addressed at the Trade and Development Commission include the following:

(a) What are the particular vulnerabilities of SIDS? How should they be measured for the purposes of trade and development policy of SIDS?

(b) What are the key elements of trade and development strategies for SIDS to address the unique vulnerabilities they face and build resilience? In what ways can SIDS ensure that trade strategies are climate resilient?

(c) What challenges and opportunities arise for SIDS in exploring services economy, tourism, ICT services and digital trade, blue economy, transport and trade facilitation as ways to address structural constraints?

(d) How should the special development needs of SIDS be addressed in regional and multilateral processes that involve trade, development, finance and environmental policies?

II. Commodity dependence: A vulnerable state

The state of commodity dependence

28. Primary commodity-producing countries that face declining and often volatile prices, on the one hand, and have to import manufactures produced in high-wage countries and in industries where entry barriers are high, on the other, could suffer from decreasing

¹³ UNCTAD national green export reviews are available at <https://unctad.org/en/Pages/DITC/Trade-and-Environment/Green%20Economy/National-Green-Export-Review.aspx>.

¹⁴ Information on the Oceans Economy and Trade Strategies project of UNCTAD and the United Nations Division for Ocean Affairs and the Law of the Sea is available at <https://unctad.org/en/Pages/DITC/Trade-and-Environment/Oceans-Economy-Trade-Strategies.aspx>.

¹⁵ Benamara H, Hoffmann J, Rodriguez L and Youssef F, 2019, Container ports: The fastest, the busiest and the best connected, available at <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2162> (accessed 13 September 2019).

¹⁶ Particularly notable are the recent UNCTAD technical assistance project entitled "Building the capacities of developing countries to shift towards sustainable freight transport including Caribbean SIDS" and UNCTAD capacity-building programmes on trade facilitation implementation and transparency for six island member States of the Organization of Eastern Caribbean States and nine Pacific islands signatories to the Pacific Agreement on Closer Economic Relations Plus.

¹⁷ Information on the project entitled "Climate change impacts on coastal transport infrastructure in the Caribbean: enhancing the adaptive capacity of small island developing States" is available at <https://SIDSport-ClimateAdapt.unctad.org>.

terms of trade and be trapped in a state of commodity dependence characterized by an “unequal exchange” with commodity-importing industrialized nations.

29. According to the most recent UNCTAD data,¹⁸ 102 countries were commodity dependent (at least 60 per cent of the value of their merchandise exports is accounted for by commodities) in 2013–2017, an increase from 92 in 1998–2002. Two thirds of developing countries’ exports are dependent on commodities. Commodity dependence is almost exclusively a developing country phenomenon that especially affects vulnerable country groups. It affects 85 per cent of LDCs, 81 per cent of landlocked developing countries and 57 per cent of SIDS. Geographically, 89 per cent of countries in sub-Saharan Africa are commodity dependent, which is the hardest-hit region. There is a negative relationship between commodity dependency and the level of development of a country, as measured by GDP per capita. Ninety-one per cent of low-income countries are commodity dependent, compared with less than one third of high-income countries.

30. At the same time, the number of countries dependent on agricultural exports fell from 50 in 1998–2002 to 37 in 2013–2017, while the number countries dependent on mineral exports rose from 14 to 33 and the number of fossil fuel-dependent countries increased slightly, from 28 to 32. Relative price changes among the different commodity groups contributed to changes in the dominant product groups exported, as the prices of energy and minerals increased much more than those of agricultural and manufactured goods. For example, the Plurinational State of Bolivia and Mozambique switched from being agriculture dependent in 1998–2002 to being fossil fuel-dependent in 2008–2012.

31. The magnitude of the positive terms-of-trade shock during the commodity boom period is reflected in commodity price changes (see table). The index for all commodities increased by 228.8 per cent during the boom phase until 2008–2012, while the manufacture unit value increased by only 36.9 per cent during the same period. The boom was especially strong for mineral and energy prices, which increased by 285.4 per cent and 259.6 per cent, respectively, over the period, while agricultural prices increased by 102.4 per cent. During the bust phase, though, commodity-dependent developing countries suffered from negative commodity price shocks and commodity price volatility. Average commodity price levels in 2013–2017 were substantially below their peak in 2008–2012.

Changes in terms-of-trade between 1998 and 2017

| Commodity group | Five-year average commodity prices (Index base 2015 = 100) | | | | Price changes (%) | |
|--|---|-----------|-----------|-----------|----------------------|----------------|
| | 1998–2002 | 2003–2007 | 2008–2012 | 2013–2017 | Boom change | Bust change |
| Energy | 48.0 | 108.2 | 172.6 | 132.1 | 259.6 | -23.5 |
| All commodities | 47.6 | 94.0 | 156.5 | 124.8 | 228.8 | -20.3 |
| Minerals | 34.9 | 66.8 | 134.5 | 116.0 | 285.4 | -13.8 |
| Agriculture | 61.9 | 75.9 | 125.3 | 109.4 | 102.4 | -12.7 |
| Manufacture unit value index ^a | 76.5 | 89.8 | 104.7 | 105.2 | 36.9 | 0.5 |

Source: UNCTAD, 2019b, *Commodity Dependence: A Twenty-Year Perspective* (United Nations publication, Sales No. E.19.II.D.16, Geneva).

^a The manufactured unit value index is a weighted average of export prices of manufactured goods for 15 major developed and emerging countries. It is used as a proxy for the price of developing country imports of manufactures to assess cost escalation for imported goods.

32. Between 1998 and 2017, several energy exporting commodity-dependent developing countries diversified vertically, towards value added that uses crude oil or gas as inputs (e.g. petrochemicals such as alcohol, fertilizers and plastics), and into energy-intensive alumina processing. All of these countries increased their share of chemicals in total

¹⁸ UNCTAD, 2019a, *State of Commodity Dependence Report 2019* (United Nations publication, Sales No. E.19.II.D.8, Geneva).

exports: Egypt (8.2 per cent), the Islamic Republic of Iran (9.1 per cent), Oman (8.5 per cent), Saudi Arabia (5.8 per cent) and Trinidad and Tobago (7.2 per cent).

33. Over the same period, several fossil fuel-dependent countries, such as Algeria, the Islamic Republic of Iran, Kazakhstan, Qatar, Saudi Arabia and the United Arab Emirates, expanded their production of processed petroleum and gas products through an increase in their refining capacities. Similarly, Bahrain, Oman, Qatar, Saudi Arabia and the United Arab Emirates diversified into producing energy-intensive aluminium production.

34. For yet other fossil fuel-exporting developing countries, the share of downstream valued added products fell. Some fossil fuel mineral-dependent countries managed to diversify into agricultural exports, namely Armenia (tobacco, alcoholic beverages, fruits and vegetables), Tajikistan and Liberia. Several other commodity-dependent developing countries that are exporters of minerals or energy, including Cameroon, Chile, Ghana and Peru, expanded agricultural exports.

35. In some commodity-dependent developing countries, exports of manufactures grew, but at a slower pace than commodity exports. Among these countries are Brazil, Colombia and Indonesia. In Brazil, the share of commodity exports increased from 44.3 per cent in 1998–2002 to 62.8 per cent in 2013–2017. Agricultural products grew the most, by 930 per cent. Manufacturing exports included cars, iron and steel products and aircraft. In Colombia, commodity dependence increased from 66.5 to 80.6 per cent in 2013–2017, while non-commodity exports grew by 110 per cent. Agricultural exports increased by 116 per cent due to coffee. Indonesia, a major exporter of fossil fuels (25 per cent), diversified into agricultural exports and expanded its manufactures exports (footwear, cars, wood products, paper and furniture).

Commodity dependence and economic and social vulnerabilities

36. At the theoretical level, Alvarez and Fuentes (2006)¹⁹ have studied the development paths of commodity-dependent developing countries taking into account specialization driven by the factors of production available to a country. Their research shows that the pattern of gaining comparative advantage in manufacturing goods as a country depends not only on the abundance of natural resources, but also on the type of natural resources. The type of natural resources in abundance will heavily influence the structure and dynamics of comparative advantage. Empirically, evidence shows that commodity dependence can have a negative impact on development through terms-of-trade shocks and price volatility, with macro and micro effects, particularly at the household level for small-scale farmers, miners and the poor.

37. At the macroeconomic level, commodity-dependent developing countries are vulnerable to negative commodity price shocks and commodity price volatility. Commodity price volatility comes from a succession of shocks that are asymmetric and unpredictable. This leads to random fluctuations in supply (e.g. agricultural products) and random fluctuations in demand for industrial products (used in primary commodity production). The impact of these fluctuations can be amplified when commodity prices exhibit a high frequency of sharp positive shocks (peaks) and long bottoms, or downward trends. These price shocks and volatility are detrimental to exporters.

38. For example, average commodity price levels in 2013–2017 were substantially below their peak of 2008–2012. This contributed to an economic slowdown in 64 commodity-dependent developing countries, with several going into recession. As growth decelerated, the fiscal situation in many commodity-dependent developing countries deteriorated, resulting in the accumulation of public debt, often in the form of an increase in external debt. The external debt of 17 commodity-dependent developing countries increased by more than 25 per cent of GDP between 2008 and 2017 (UNCTAD, 2019a).

¹⁹ Alvarez R and Fuentes R, 2006, Paths of development, specialization and natural resources abundance, Working Paper No. 383, Central Bank of Chile.

39. Also, a commodity export earning boom could lead to real exchange appreciation, which in turn creates a situation of inefficient resource allocation and a loss of competitiveness of non-commodity sectors, often described as “Dutch disease”. While the share of natural resources in GDP has been found to have a positive impact on growth performance, volatile commodity prices lead to volatile output and investment, which in turn depresses per capita GDP growth.²⁰ Price shocks play an important role driving macroeconomic fluctuations in African economies.²¹ The link between external shocks explains 50 per cent of the volatility in agricultural output and 86 per cent of agricultural investment.²²

40. At the microeconomic level, export earnings uncertainty has an impact on savings and investment decisions. In developing countries, investors are often risk-averse and face liquidity constraints amid poorly functioning capital markets. This could force economic agents to make precautionary savings. Through this channel, income instability could negatively impact investment. Risk occurring from export revenues instability is likely to modify long-term growth, as economic agents could refrain from investing in technical progress.

41. For example, during the period of structural adjustment programmes implemented in Latin America and Africa in the 1980s and 1990s, marketing boards and stabilization funds for agricultural commodities were dismantled, while export taxes were removed. The phase-out of marketing boards, by removing price guarantees, increased exposure of these region’s countries to international markets shocks. Public services were abandoned, without private sector takeovers. This led to production instability amid variable yields and product quality. Farmers reduced adoption of new technologies and control of agricultural processes, leading to lower product standards.

42. With imperfect financial markets, farmers who have no access to credit cannot borrow, while input markets face information asymmetry, impacting the quality and cost of products. This leads to variability in yields and, accordingly, in farmers’ incomes. The high level of transaction costs prevents farmers from having access to insurance and risk management tools.

43. In addition, export earning instability impacts social conflicts. An economy can be prone to more rent-seeking and various groups competing for rent shares, which leads to the so-called “tardy diversification”. There is a higher risk of civil conflicts in commodity-dependent developing countries with a high commodity-export concentration. Latent social conflicts and weak institutions exacerbate the effect of external shocks to an economy.

44. Before the liberalization wave of the late 1980s to 1990s, instruments were developed and used to manage commodity price risks. For example, international commodity agreements sought to reduce volatility ex ante at the international level, while compensatory finance was used ex post (e.g. the European Union’s facilities, i.e. Sysmin (Special assistance measure for the African, Caribbean and Pacific mining), Stabex (export earnings stabilization system) and FLEX (instrument to compensate African, Caribbean and Pacific countries for short term fluctuations in export earnings); and the International Monetary Fund’s Compensatory and Contingency Financing Facility) to smooth the balance of payments revenues of Governments and producers. Nevertheless, these schemes have proved unsustainable. International commodity agreements have been found not to be compatible with incentives, as parties did not have an incentive to comply. Regarding compensatory finance mechanisms, funds have to be accumulated over a long period of time to provide compensation for one export earning shock, these mechanisms do not last.

²⁰ UNCTAD, 2012, Excessive commodity price volatility: Macroeconomic effects on growth and policy options. Contribution to the Group of 20 Commodity Markets Working Group. Available at https://unctad.org/en/Docs/gds_mdpb_G20_001_en.pdf.

²¹ Deaton AS and Miller R, 1996, International commodity prices, macroeconomic performance and politics in sub-Saharan Africa, *Journal of African Economies*, 5(3): 99–191.

²² MA Kose and R Riezman, 2001, Trade shocks and macroeconomic fluctuations in Africa, *Journal of Development Economics*, 65:55–80.

Commodity dependence and climate vulnerability

45. UNCTAD²³ finds that the countries most vulnerable to climate change are commodity-dependent developing countries (including many SIDS and LDCs). They are also among the countries least prepared to adapt to climate change; thus, climate change reinforces the need for economic diversification and transformation in commodity-dependent developing countries.

46. Climate change affects mostly agricultural producers and their capacity to produce for markets. The impacts of global warming are adding to the pressures on agriculture. There is evidence that climate change is affecting food and feed crop yields and water availability. Meanwhile, yields in low-latitude regions are projected to decrease with higher temperatures, exacerbating poverty and food insecurity in many developing countries. Climate change is also expected to increase the likelihood of extreme weather events such as floods and droughts (UNCTAD, 2019b), which increase the risk of crop and livestock losses. Farming communities will have to adapt to events that are likely to increase food insecurity. The abundance and distribution of harvested aquatic species are highly affected by increasing temperatures, even shifting national rights over stocks of different species. Changes in sea water chemistry, sea water warming, competition for water and changes in the water cycle will affect fisheries and aquaculture as well as whole ecosystems.

47. Climate change also creates new risks to production sites and related infrastructure in the energy and mining sectors. For example, oil and natural gas supply chains are vulnerable to both rapid-onset events (e.g. storms and floods) and slow-onset effects (e.g. sea level rise). Potential impacts include rising operational costs and transportation costs, disruptions, delays and downtimes, all of which reduce profitability. Developing countries dependent on fossil fuel exports face an additional challenge: the global push towards more renewables, which is likely reduce the market for fossil fuels.

48. Climate change affects forestry in an important way. Higher temperatures, changes in precipitation and the increased frequency of extreme weather events alter the genetic nature of trees and induce the loss of plant species, which threatens ecosystem functioning. Furthermore, warmer temperatures may increase the susceptibility of forests to fires, increase the prevalence of pests and disease and alter the production of forest products. These changes would negatively affect the populations living off forestry-related activities and products such as indigenous populations.

Key policy questions to build resilience and break away from a state of vulnerability

49. Key policy questions for the Trade and Development Commission to consider, in order to make recommendations to Governments, the private sector and civil society of commodity-dependent developing countries and the international community include:

(a) What are the best forms of governance of international commodity markets which are incentive compatible; how could the functioning of current international commodity bodies and study groups be improved so as to empower developing country exporters (firms and small-scale producers) and inform government policy of commodity-dependent developing countries in a timely manner?

(b) How should windfall gains be saved and invested to help Governments smooth expenditures when commodity prices are low?

(c) How should commodity-dependent developing countries build capacity, especially in terms of increasing profit sharing, improving resources governance and strengthening contract negotiation? What is the role of triangular cooperation, South–South cooperation and North–South cooperation?

(d) How could successful diversification take place in a country-specific context? How does a country develop dynamic comparative advantages to escape from the predicament of over-specialization based on its natural resource endowments, in terms of

²³ UNCTAD, 2019c, *Commodities and Development Report 2019: Commodity Dependence, Climate Change and the Paris Agreement* (United Nations publication, Sales No. E.19.II.D.18, Geneva).

improving the policy and regulatory environment (including financial markets), industrial organization and role of the State as a policymaker and provider of public goods and strategic guidance?

(e) How can commodity-dependent developing countries successfully integrate into international value chains? How can commodity-dependent developing countries address their large connectivity infrastructure gaps, which give rise to increased transport and communication costs that, in turn, can hinder the competitiveness of their value added exports?

(f) What policies should commodity-dependent developing countries pursue to increase the competitiveness of their exports, in terms of cost, quality and logistical efficiency, and maximize linkages with large multinational enterprises (off-takers, processors and large distribution networks)?

(g) What should be the practical components of technical assistance on diversification from a commodity base?

III. Addressing multifaceted vulnerability: Trade and transport facilitation

50. Transport and logistics are the backbone of globalization. They drive international trade and service value chains, while enabling deeper market integration. However, this strategic sector is increasingly at the forefront of the vulnerability debate. Its heightened exposure to disruption factors undermines the ability of transport and logistics to effectively support a trade-led sustainable development path.

51. Over recent years, multiple, interconnected concerns have arisen that have heightened the vulnerability of transport infrastructure and transport and trade facilitation services. These concerns include varied risks that span economic, social, environmental, regulatory, technological and market-related factors. Concrete examples include the rising growing geopolitical risks, environmental degradation, fossil fuel dependence, climate change, security threats, disruptive technologies, new demands on cross-border trade facilitation and cybersecurity.

Promoting sustainable transport systems and logistics

52. Many developing countries and LDCs are faced with persistent transport challenges that could be further exacerbated by heightened vulnerability. These include infrastructural transport deficits, limited connectivity to transport networks, lack of investment and of access to finance and prohibitive transport costs that weaken their trade competitiveness, economic development and social progress. The vulnerability of transport and logistics is particularly apparent in many SIDS and landlocked developing countries, which are heavily challenged by their unique geographical, economic and logistical profiles. Additional constraints facing these countries result from their geographical disadvantage, small size, limited trade volumes, limited transport options and, often, trade flow imbalances that raise transport costs and further increase the vulnerability of the transport sector to external shocks.

53. An increasingly recognized source of vulnerability threatening the sustainability of transport and logistics relates to the externalities arising from the transport sector's activities. These have the potential to erode some of the sector's own advantage. When not sustainable, the sector's practices generate external costs that are detrimental to the environment and society as a whole. Key negative externalities of the sector include natural resource depletion (e.g. fossil fuels, land), environmental degradation (pollution, contamination, noise, wear and tear), human well-being (safety, congestion) and climate change (carbon emissions and adaptation).

54. Currently, freight transport, i.e. the transport of goods, accounts for 27 per cent of all transport energy use and is responsible for about 7 per cent of the global economy-wide

greenhouse gas emissions, driven in particular by growing global trade and transport activity.²⁴ At the same time, trade-related international freight volumes are expected to grow by a factor of 4.3 by 2050 compared to 2010.²⁵ One third of trade in 2050 will occur among developing economies, compared to 15 per cent in 2010. World road and rail freight volumes are expected to increase more than three-fold and over five-fold, respectively, by 2050.²⁶ These trends underscore the challenges facing the transport sector and heighten its vulnerability to unsustainable patterns. Addressing these issues requires mainstreaming sustainability considerations into relevant planning and policymaking decisions. Mitigating the vulnerabilities weighing on transport and logistics requires, among other things, measures and actions that promote economically efficient, competitive, affordable and socially inclusive (multimodal) transport systems, while at the same time achieving greater energy efficiency and environmentally friendly objectives.

55. Designing and implementing sustainable transport and logistics systems, especially in developing regions is crucial to tackling the varied vulnerabilities facing the transport sector. Multipronged approaches are required to help developing countries build capacity to ensure that their transport and logistics are better prepared to respond to multifaceted vulnerabilities. Areas of intervention include improving understanding of risks, exposure and implications for the transport and logistics of developing countries. They also entail compiling and sharing of best practices in the field of sustainable transport, developing global standards for sustainable performance measurements, promoting cooperation among the various sector stakeholders (including private and public), enabling access to technologies, facilitating access to finance and strengthening the capacity of policymakers in developing regions to formulate sound and considered national policies and legal and regulatory frameworks.

56. Bearing in mind these considerations and recognizing the varied drivers of vulnerability and risks to transport and logistics, UNCTAD work in the field of transport and logistics has increasingly focused on promoting sustainable freight transport, including sustainable maritime transport and transport/transit/economic corridors. This work has supported in particular SIDS in the Caribbean and landlocked developing countries in East Africa.²⁷

Building resilience of transport infrastructure: Coastal transport infrastructure

57. With over 80 per cent of the volume of world trade carried by sea, international shipping and ports provide crucial linkages in global supply chains and are essential for the ability of all countries, including landlocked countries, to access global markets. Ports are likely to be affected directly and indirectly by climatic changes, such as through rising sea levels, extreme weather events and rising temperatures, with broader implications for international trade and for the development prospects of the most vulnerable nations, in particular LDCs and SIDS.

58. Particularly relevant in the context of sustainable maritime transport, ship-source pollution control and coastal zone management are Sustainable Development Goals 14, 9 and 13, as well as target 1.5 of Goal 1.

59. Given the strategic role of seaports and of other key transport infrastructure as part of the global trading system and bearing in mind the economic costs of potential climate-related delays and disruptions across global supply chains, enhancing the climate-resilience and adaptation of key transport infrastructure is a matter of strategic economic importance.

²⁴ UNCTAD Framework for Sustainable Freight Transport and Toolkit, available at <https://www.sft-framework.org/>.

²⁵ Organization for Economic Cooperation and Development, 2015, *ITF Transport Outlook 2015*, OECD Publishing/International Transport Forum, Paris.

²⁶ Ibid.

²⁷ For more information on UNCTAD work on sustainable freight transport and transport networks and corridors, see <https://unctad.org/en/Pages/DTL/TTL/Infrastructure-and-Services.aspx>; on transport networks and corridors, see <http://unctad.org/en/Pages/DTL/TTL/Infrastructure-and-Services/Transport-Networks-and-Corridors.aspx>; and on UNCTAD technical assistance, see <https://unctadsftportal.org/unctad/unctadtechnicalassistanceprogrammesandactivities/>.

UNCTAD research and technical assistance work, as well as the outcomes of a series of expert meetings, have helped to raise awareness and advance the international debate.²⁸

60. Recent UNCTAD work includes a technical assistance project²⁹ with a focus on critical coastal transport infrastructure in SIDS in the Caribbean Sea, using innovative methodological approaches. Key project outcomes include assessment of potential operational disruptions and marine inundation risk to eight coastal international airports and seaports of Jamaica and Saint Lucia, under different climate scenarios; as well as a transferable methodology to assist in adaptation planning for SIDS. Some of the project's main substantive findings³⁰ helped inform the special report of the Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C*, highlighting substantial increases in risk to critical coastal transportation infrastructure of SIDS from climate change-induced marine inundation as early as in the 2030s, unless further climate change adaptation is undertaken.

61. An ad hoc expert meeting entitled “Climate change adaptation for international transport: Preparing for the future”, held in Geneva in April 2019, brought together technical experts, key industry stakeholders and some international organizations.³¹ The meeting aimed at identifying effective ways to support action on climate change adaptation, resilience building and capacity-building, across closely interlinked transport modes and global supply chains, and to develop some policy recommendations to help inform the United Nations Climate Action Summit in September 2019. It also aimed at contributing towards progress on advancing the 2030 Agenda for Sustainable Development and explored options for an informal international transport adaptation forum.

62. There is a need for an integrated and systems-oriented approach when working on climate change adaptation and building resilience for transportation across global supply chains, as well as the need for mainstreaming of relevant considerations as part of ordinary transport operations and planning processes, and related stakeholder collaboration. Priorities in this context include improved data for risk assessment, including establishment of databases on all transport assets, land use, regional economies, weather and climate change; exchanging knowledge and experiences on building the resilience of transport infrastructure and systems; and setting up common methods for measuring success. Equally important are capacity-building for transport infrastructure practitioners and investment in human resources and skills, in particular at local levels, to enable long-term resilience planning.

63. Worth noting in this context are also the findings of a recent port industry survey on climate change impacts and adaptation, designed by UNCTAD in collaboration with global port industry associations and other experts.³² The survey aimed at improving the understanding of weather and climate-related impacts on ports and identifying data availability and information needs, as well as determine current levels of resilience and preparedness among ports. Although the majority of respondents had been impacted by weather/climate-related events, including by extreme weather events, the study revealed important gaps in relevant information available to seaports of all sizes and across regions, with implications for effective climate risk assessment and adaptation planning.

²⁸ See, for example, <https://unctad.org/en/Pages/DTL/TTL/Legal.aspx>; for information on UNCTAD at the twenty-fourth Conference of the Parties, and on climate resilience of seaports, see <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1949>; and on the need to reduce economic losses from disasters, see <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1882> (accessed 13 September 2019).

²⁹ See [SIDSport-ClimateAdapt.unctad.org](https://sidsport-climateadapt.unctad.org).

³⁰ See IN Monioudi, R Asariotis, A Becker, C Bhat, D Dowding-Gooden, M Esteban, L Feyen, L Mentaschi, A Nikolaou, L Nurse, W Phillips, DAY Smith, M Satoh, U O'Donnell Trotz, AF Velegrakis, E Voukouvalas, MI Vousdoukas and R Witkop, 2018, Climate change impacts on critical international transportation assets of Caribbean small island developing States (SIDS): The case of Jamaica and Saint Lucia, *Regional Environmental Change*, 18:2211–2225.

³¹ See <https://unctad.org/en/pages/MeetingDetails.aspx?meetingid=2092> (accessed 13 September 2019).

³² See R Asariotis, H Benamara, V Mohos-Naray, 2017, Port industry survey on climate change impacts and adaptation, Research Paper No. 18, UNCTAD.

Trade facilitation

64. Trade facilitation remains ever important for developing countries, including LDCs, in an increasingly interconnected world. Efficient trade facilitation reforms are both key to reduce a country's exposure to vulnerabilities in trade and the country's development when implemented successfully.³³ The benefits of trade reforms to developing countries are substantial. Efficient and simplified trade procedures not only reduce cost and time to trade, they also lower the barriers of inclusion of small and medium-sized enterprises in global value chains and improve government revenues. Trade facilitation reforms could also help prepare countries for the growing digital economy and e-commerce, which are expected to dominate the global trading system in the coming years.

65. At a time when trade facilitation reforms have now become an obligation for the 164 members of the World Trade Organization under the Agreement on Trade Facilitation, developing countries, including LDCs, will need to pay even more attention to trade facilitation gaps in their national trade reforms, including SIDS that are in particular need of reforms of trade facilitation and port management systems and landlocked developing countries that are particularly vulnerable in border cooperation and transit. In order to do so, trade facilitation reforms need to be implemented and applied correctly. It is important that countries implement their obligations according to their individual commitments.

66. For developing and least developed countries, many of the trade facilitation obligations under the Agreement on Trade Facilitation are challenging to implement, and many countries have yet to complete the required notifications. It will require significant political will to change, as well as policy and procedural reforms, simplification, good governance, human resources and significant investment, all in the context of trusted public-private partnerships.

67. Even though there are visible signs of progress in trade facilitation across developing countries, including LDCs, challenges remain. Emerging threats and vulnerabilities in the multilateral trading system present both challenges and opportunities to developing countries, including LDCs. Rising protectionism as well as heightened trade tensions in major economies put developing countries, including LDCs, in an increasingly uncertain position. As most of these countries are increasing trade in intermediate goods, tariffs could heighten prices and render products from developing countries uncompetitive. On the other hand, these emerging threats could present unique opportunities for developing countries to increase market share through favourable trading environments, improved trade procedures and other relevant trade facilitation reforms.

68. Reforming trade facilitation will not be completed from one day to the next; it is a continuous process. Interinstitutional collaboration, intergovernmental cooperation and private-public sector coordination are only some of the foundational institutional measures necessary for sustainable trade facilitation reforms. Thus, national trade facilitation committees in developing countries, including LDCs, must be continuously strengthened and resourced to effectively play a role in stakeholder coordination and serve as a platform for intergovernmental and inter-agency collaboration. There is growing evidence of the importance of an effective national trade facilitation committee in interinstitutional cooperation.³⁴

69. In trade facilitation reforms, it is important to set out realistic trade facilitation road maps, focusing on gaps, targets, timelines and investment needs, while monitoring and evaluating progress. To this end, it could be noted that the Agreement on Trade Facilitation provides assistance to developing countries, including LDCs, to implement trade facilitation reforms through the provisions of special and differential treatment.

70. UNCTAD also provides a multi-faceted assistance to developing countries, including LDCs, to implement trade facilitation reforms, offering capacity-building to public and private sector stakeholders at the national, regional and international levels.

³³ See <https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1625> (accessed 16 September 2019).

³⁴ See <https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1961>.

Capacity-building activities are tailored to national trade facilitation committees, assisting in the implementation of specific obligations, such as a single window, automation and transparency, as well as assisting countries in developing bankable project proposals.

71. In this respect, for over 35 years and at the request of member States, UNCTAD has been providing technical assistance on customs in developing countries, to automate and modernize their processes through the Automated System for Customs Data (ASYCUDA) programme. Currently, ASYCUDA accounts for close to half of the total technical assistance budget of UNCTAD and runs in 101 countries and territories. By automating custom processes and allowing the implementation of custom reforms for trade facilitation, ASYCUDA delivers improved transparency and faster clearance time at customs, improving the competitiveness of the private sector in developing countries. Importantly, implementing ASYCUDA also systematically increases customs tariff revenues in beneficiary countries, providing much needed domestic fiscal resources to fund development strategies.

72. Advancing and expanding international trade must be done in a sustainable manner with a view to minimizing the negative impacts that increasing trade have on our society. Therefore, trade facilitation reforms must be closely linked to compliance standards. developing countries, including LDCs, could leverage the power of new technologies that allow for streamlining of trade procedures while keeping trade risks low. Viable policies must also be enacted to protect sectors and industries vulnerable to adverse changes in international trade and foreign competition.

73. Implemented appropriately, trade facilitation reforms could ensure that developing countries, including LDCs, facilitate imports and exports, generate revenue for investments, eliminate poverty and trade into prosperity. Thus, advancing trade is a precondition for realizing the development agenda and must be included in national development agendas.
