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Leveraging services, including infrastructure services, to achieve the Sustainable Development Goals

Note by the UNCTAD secretariat

Summary

Achieving the Sustainable Development Goals will be particularly challenging in developing countries that rely on the production and export of a few products or a single product. A lack of economic diversity increases a country's vulnerability to external shocks, whether natural or anthropogenic, and inhibits achievement of the Goals. Diversification is necessary in order to increase wealth over the long-term and this rule applies equally at the individual and national levels. How countries can successfully manage economic diversification continues to be debated.

This note provides an analysis of leveraging services, including infrastructure services, to achieve the Goals, in order to assist deliberation at the eighth session of the Multi-year Expert Meeting on Trade, Services and Development. Services have increasingly become the main economic sector worldwide, due mainly to the servicification of production. Some countries have made some shifts in the production of goods to the production of services, to diversify and reduce dependence on a few products or a single product. As shown in this note, some services contribute more than others to the economy, by serving as inputs to other sectors and thereby becoming indispensable in economic diversification. The note concludes with a discussion of how countries might make such services available for economic diversification.



I. Introduction

1. Economic and environmental vulnerabilities increase the impacts that external events might have on the economy, which then have the potential to affect livelihoods. The United Nations economic vulnerability index measures a country's structural vulnerability to economic and environmental shocks.¹ A high index score indicates major structural impediments to achieving sustainable development.
2. Economic diversification is an important tool in diminishing economic vulnerability. It is a cornerstone of economic resilience and a key component of the Goals. In particular, Goal 8 on economic growth and employment aims for higher levels of economic productivity through diversification and Goal 9 involves ensuring a conducive policy environment for, inter alia, industrial diversification.
3. Many developing countries are dependent upon the export of a few commodities or a single commodity.² Most non-commodity dependent small island developing States also lack diversification in exports.³ A lack of economic diversification exposes countries to various vulnerabilities arising from external shocks such as natural disasters and economic crises and makes sustained long-term development difficult.
4. The services sector has grown rapidly and become a major sector in developed countries and is increasingly becoming a major sector in developing countries. The sector offers an opportunity for developing countries to expand upon and strengthen their agricultural and manufacturing bases through the enhanced provision of services. Doing so can help achieve increased income and employment, including among women, and many of the Goals under which access to services is included in the targets, such as Goals 1, 2, 5–9 and 11, in addition to directly contributing to the achievement of the Goal 17 target on increasing exports from developing countries and the least developed countries.
5. This note provides an analysis of leveraging services, including infrastructure services, to achieve the Goals. It focuses on diversifying economies through services, particularly telecommunications and information and communications technology (ICT) services and transport and financial services, and thereby building resilience to economic vulnerabilities. Particular attention is given to commodity-dependent developing countries and small island developing States.

II. Services sector development trends: Key features

6. The services sector has become increasingly important in driving economic and trade growth in the past decades, in all countries. Four notable features may be observed in this regard.
7. First, there is a long-term trend of an increase in the share of services in economies, leading to the tertiarization of economies. In 1980–2017, the share of services in GDP increased for all income categories, from 61 to 76 per cent in developed economies and from 42 to 56 per cent in developing economies. In 2017, among small island developing States, services represented on average 70 per cent of GDP, compared with around 60 per cent in 1980. The contribution of services value added to GDP in commodity-dependent small island developing States is relatively low, usually below 60 per cent; in non-commodity dependent small island developing States, it generally reaches more than 65 per cent, rising to over 85 per cent in some countries, for example the Bahamas, Palau and Saint Lucia. In 1980–2017, international trade in services expanded rapidly,

¹ The index considers data under the following eight indicators: population; remoteness; merchandise export concentration; share of agriculture, forestry and fisheries in gross domestic product (GDP); share of population in low-elevation coastal zones; instability of exports of goods and services; victims of natural disasters; and instability of agricultural production.

² UNCTAD, 2019, *Commodities and Development Report: Commodity Dependence, Climate Change and the Paris Agreement* (United Nations publication, sales No. E.19.II.D.18, Geneva).

³ TD/B/C.I/48.

particularly after 2005, leading to strong growth in 2018, with total exports increasing to \$5.8 trillion.⁴

8. Developing economies have achieved strong growth in services exports, boosting their share in world services exports, from 23 per cent in 2005 to 30 per cent in 2018. The least developed countries also witnessed a faster growth in services exports compared with in goods exports, albeit still with a low share in world trade in services, of less than 1 per cent. In 2005–2018, services exports from the least developed countries grew by 11 per cent annually, leading to an increase in the share of services in their total exports, from 14 to 19 per cent. This may suggest that services are contributing to economic diversification in the least developed countries. In many small island developing States, services were the major export sector and represented over 80 per cent of total exports in half of these economies in 2018.⁵

9. Employment in the services sector has been on the rise since 2000, when it accounted for 38 per cent of global employment. In 2017, the share of the services sector in total employment reached 75 per cent in developed countries and 46 per cent in developing countries. As of 2017, the services sector has accounted for 51.1 per cent of global employment and been the main area of new job creation. The sector has also contributed to increasing participation by women in the job market, thereby positively impacting gender equality in employment (Goal 5). In 2018, the employment of women in the services sector in the least developed countries only accounted for 28 per cent of working women, yet accounted for over 50 per cent in developing countries as a whole. In contrast, the share was 87 per cent in developed countries.⁶

10. The generally significant growth of services in output, trade and employment is a result of increasing servicification, through which services, in particular infrastructure services, such as telecommunications and ICT services and transport and financial services, act as inputs for the production of goods and services. A large number of other services activities are also distributed throughout value chains such as for research and development and among professional services such as engineering, management consulting, distribution and aftersales support. The expanding use of services in economic activities is demonstrated through trade data, which, in value added terms, show that services value added accounts for close to half of the value of international goods and services trade.

11. Globally, distribution, financial, telecommunications and computer-related and transport services are the leading four traded services, with shares of 19.9, 18.6, 13.2 and 11.8 per cent, respectively, of total world services trade in 2017. Since 2005, trade in computer-related services and research and development services has recorded rapid growth, of 10 per cent and above on average annually, and professional services and management consulting services have expanded by 8 per cent on average annually.⁷

12. In the era of digital transformation, servicification will increase significantly, with the application of ICT through the Internet of things and artificial intelligence, which may broaden business areas such as optimization, customer relations and more efficient manufacturing and farming. According to a survey conducted in 28 countries, digitalization can increase efficiency by 4.1 per cent annually, while reducing costs by 3.6 per cent annually.⁸

13. Second, services outputs and exports have been more resilient than goods outputs and exports. In both developed and developing economies, the services sector was more resilient during the global economic and financial crisis of 2008/09 than the manufacturing sector and, in developing countries, it was more resilient than the agriculture sector

⁴ UNCTAD calculations, based on data from UNCTADStat. See also <https://unctad.org/en/Pages/DITC/Services/Measurement-of-services-value-added-in-exports.aspx>.
Note: All websites referred to in this note were accessed in February 2020.

⁵ UNCTAD calculations, based on data from UNCTADStat.

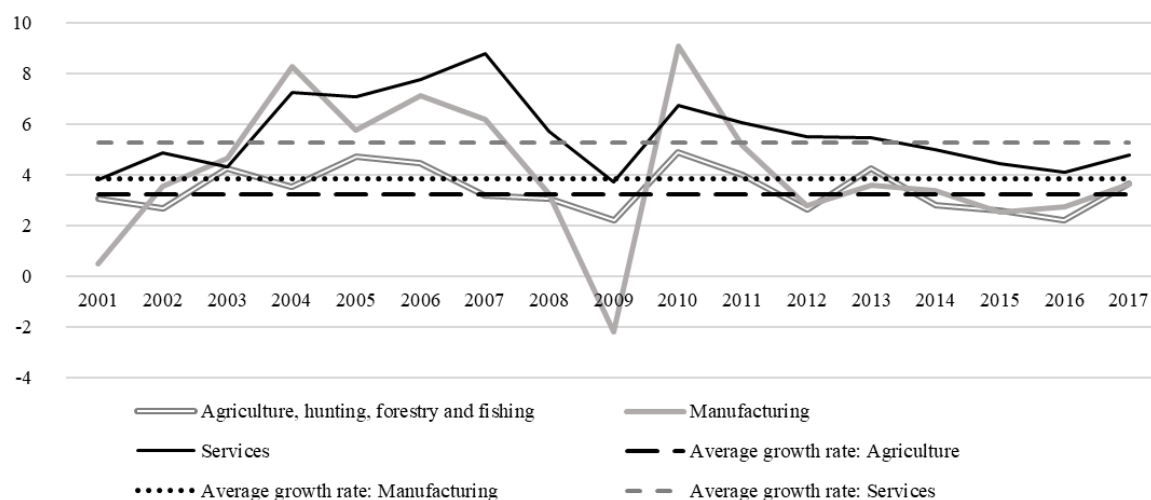
⁶ UNCTAD calculations, based on data from International Labour Organization labour statistics database.

⁷ World Trade Organization, 2019, *World Trade Report: The Future of Services Trade* (Geneva).

⁸ Pricewaterhouse Coopers, 2016, 2016 global industry 4.0 survey.

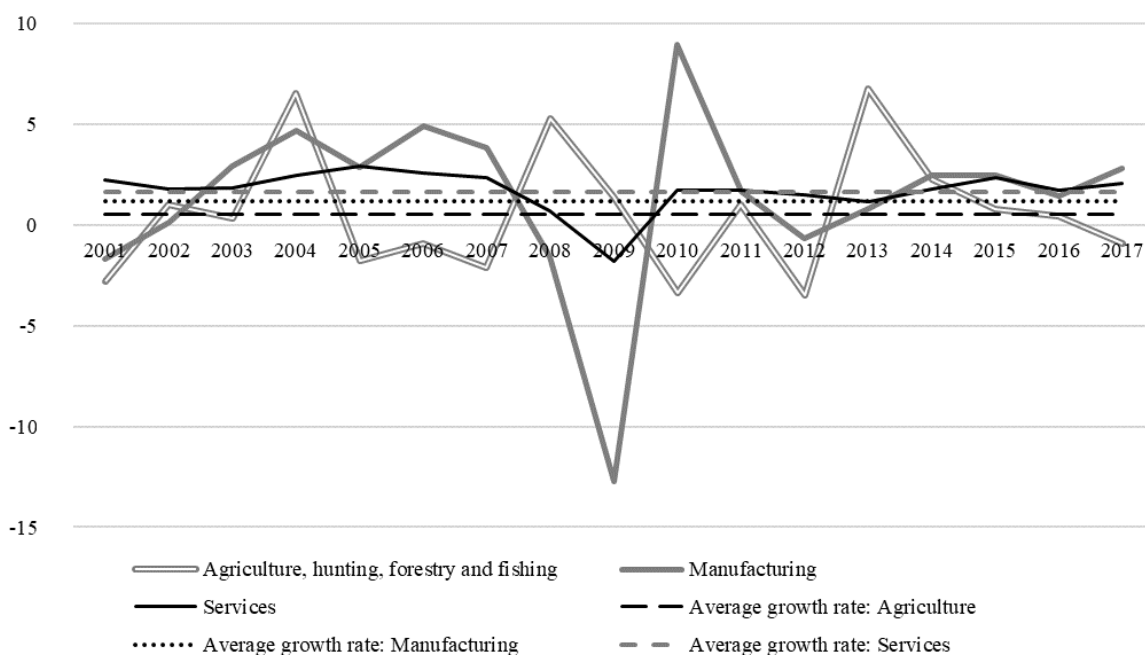
(figures 1 and 2). In 2001–2017 in developing countries, the services growth rate varied between 3.9 and 8.8 per cent. The rates for manufacturing were more volatile, ranging between -2.2 and 9.1 per cent. The rates for agriculture ranged between 2.2 and 4.9 per cent. In the same period, developed countries experienced contractions in all sectors at some point in time, while in developing countries this occurred solely in the manufacturing sector. In developing countries, both the agriculture and services sectors experienced continuous growth, with services maintaining the strongest growth. Therefore, developing countries could consider enhancing their services sectors to ensure increased protection against vulnerabilities arising from global economic crises.

Figure 1
Developing countries: Change in share of selected sectors in gross domestic product
 (Percentage)



Source: UNCTAD calculations, based on data from UNCTADStat.

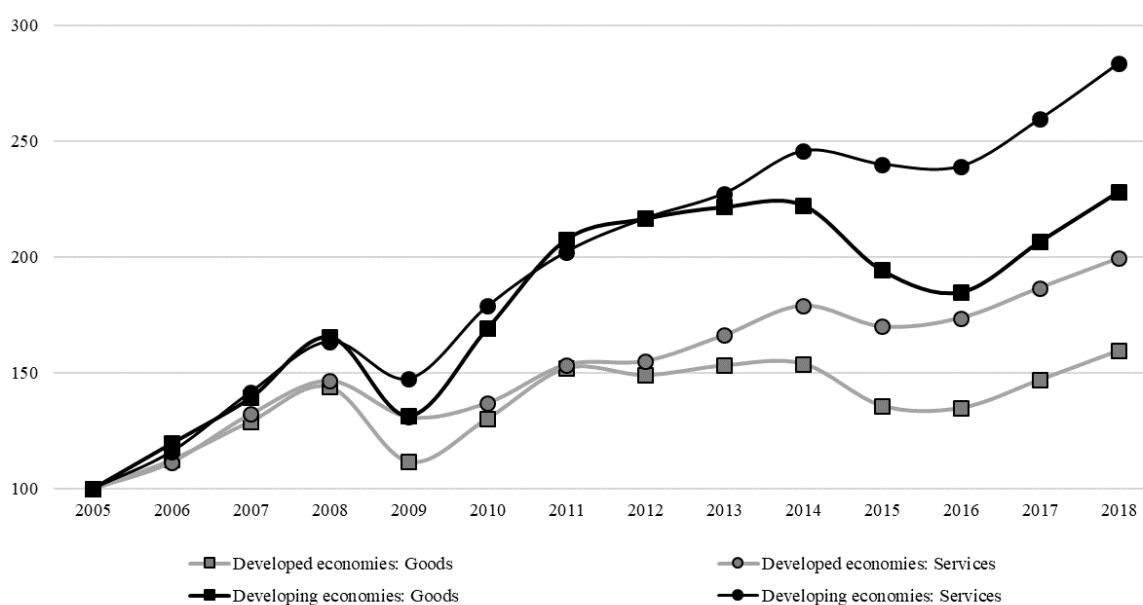
Figure 2
Developed countries: Change in share of selected sectors in gross domestic product
 (Percentage)



Source: UNCTAD calculations, based on data from UNCTADStat.

14. Services exports remain more dynamic than goods exports in both developed and developing economies (figure 3). In 2005–2018 in developing economies, services exports grew by 8.3 per cent annually and goods exports grew by 6.5 per cent annually (figure 4). The contribution of services to total exports in developing economies increased from 14 to 17 per cent, mirrored by a 3 per cent decrease in the contribution of goods exports. Services exports have also been more resilient than goods exports, with lower declines during both the global economic and financial crisis of 2008/09 and the trade downturn in 2015. The growth of services exports in 2005–2018 was 2.9 per cent higher annually in developing economies than in developed economies. This pro-development additional growth also occurred among goods exports, but the particularly inclusive potential of services is shown in an analysis of exports among small and big exporters. In 2005–2017, the export growth of goods was negative in countries with smaller export revenue, increasing their distance to other countries. However, the export growth of services in these countries was positive, albeit smaller than in other countries. Notably, services exports increased more in economies with medium-level export revenue, somewhat reducing their gap with larger services exporters.⁹ Finally, some specific services subsectors have proven resilient during economic downturns, such as those financed partially or wholly by States, such as education, health care and social services, and those in which companies or individuals seek to transfer risk, such as insurance services, hedging and futures contracts.

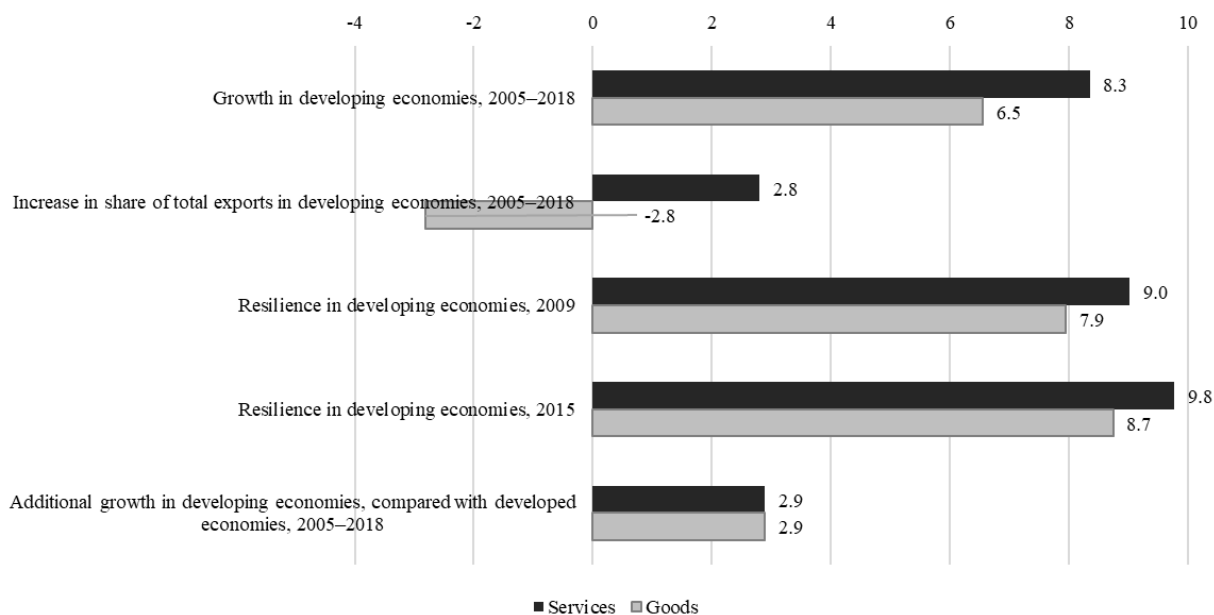
Figure 3
Services and goods exports
(2005=100)



Source: UNCTAD calculations, based on data from UNCTADStat.

⁹ United Nations, 2019, *World Economic Situation and Prospects 2019* (United Nations publication, sales No. E.19.II.C.1, New York).

Figure 4
Performance of services and goods exports
 (Percentage and resilience index)



Source: UNCTAD calculations, based on data from UNCTADStat.

Note: The resilience index considers change from the value 10 in the previous year.

15. Third, close to two thirds of the growth of services value added in exports is due to an increase in services embodied in exports from all sectors. This indirect role of services shows that the services sector is not an alternative to agriculture or industrial development, but rather provides the key means to complement and strengthen agricultural and industrialization strategies. Servicification therefore contributes to diversification not only by providing services but also by enabling more and better primary and industrial products.¹⁰

16. Fourth, services have been increasingly liberalized under multilateral, plurilateral and regional trade agreements. By the end of 2018, a total of 152 regional trade agreements had been notified to the World Trade Organization. Most World Trade Organization members active in services trade are part of regional trade agreements covering services liberalization. Developing countries are also active in entering such agreements; only 8 per cent of agreements covering services liberalization do not involve developing countries. Since 2016, two thirds of agreements on services have been concluded between developing countries.¹¹ The liberalization of services markets in combination with the development of telecommunications and ICT services has enabled many services to become tradeable services.

17. The increasing servicification of production in goods and services and the expanding liberalization of services markets make it critical to implement coherent approaches to domestic policymaking, regulations and trade liberalization in both the goods and services sectors.

¹⁰ For more information on services value added in exports, see <https://unctad.org/en/Pages/DITC/Services/Measurement-of-services-value-added-in-exports.aspx>.

¹¹ UNCTAD calculations, based on data from the World Trade Organization regional trade agreement database.

III. Development of services: A viable option for economic diversification

18. Economic diversification is imperative in most developing countries. If most of the economic activity of a country is based on commodities, then the entire economy becomes volatile. Two thirds of developing countries are commodity dependent; 9 out of 10 countries in sub-Saharan Africa are commodity dependent; and 80 per cent of the least developed countries are commodity dependent. Most of the landlocked developing countries are also highly commodity dependent, with around 80 per cent of exports stemming from primary commodities.¹² Commodity-dependent developing countries are vulnerable to commodity price shocks and price volatility in international markets that are beyond their control. The lack of economic diversification in most small island developing States makes them vulnerable to global external financial and economic shocks.

19. Diversification may be achieved either horizontally, by producing new goods and in new sectors to reduce dependence on a narrow range of products, or vertically, by increasing the value of products.¹³ Given the growing role of services, the increasing contribution of services to other sectors and the resilience that services have shown during economic crises, services development should be included in the strategies of commodity-dependent developing countries and small island developing States to diversify and transform their economic structures. By reducing costs and increasing efficiency, the availability of good quality key services activities, such as telecommunications and computer-related, transport, financial and research and development services, could change the relative prices of goods in an economy. Such changes in relative prices can, in turn, induce changes in decisions related to consumption, production, employment, investment and international trade, thereby stimulating structural transformation and economic diversification, which are key to achieving the Goals.¹⁴

20. There have recently been attempts in some commodity-dependent developing countries, including commodity-dependent small island developing States and, in particular, energy-dependent countries, to diversify away from their main exports, either horizontally or vertically, through the services sector. Non-commodity dependent small island developing States, in which the share of the services sector in the economy is the highest, are attempting to reduce dependence on a single services activity such as tourism, to promote more services activities, particularly higher value services. Multiple paths towards economic diversification are therefore possible. Some examples are provided in box 1.

Box 1

Diversification of exports

Bahamas

In the Bahamas in the first decade of the twenty-first century, offshore financial services, in addition to tourism services, played an important role in increasing the share of services in GDP to over 80 per cent and the share of total exports to over 80 per cent.

Botswana

Botswana is the world's largest producer of diamonds by value. The mining sector in Botswana, dominated by diamond extraction, accounts for roughly 85 per cent of national foreign exchange earnings, one third of government revenue and one quarter of GDP. Diversification is necessary because the diamond industry is facing oversupply and longer-term threats from more affordable laboratory-grown diamonds. The downstream sector features services activities, such as cutting, polishing, trading and distribution, that connect producers with customers. In 2011, the Government of Botswana and De Beers, the

¹² UNCTAD, 2019.

¹³ Ibid.

¹⁴ UNCTAD, 2017, *Services and Structural Transformation for Development* (United Nations publication, New York and Geneva).

world's leading diamond company, of which Botswana is a 15 per cent shareholder, agreed on two ways to add value. First, De Beers would move the supply and sale of diamonds to Gaborone; this transfer was completed in 2013, with about 160 positions relocated to Botswana and half of the new jobs provided to locals. Second, Botswana would supply some \$800 million in rough diamonds annually to local cutters and polishers. The cutting and polishing industry in Botswana currently employs over 3,500 people. Maximizing the value derived from diamonds across the value chain drives demand for education and training services such as ongoing skills training, ranging from artisan levels to the highly skilled professional level. The aim of the local industry is to create a centre for both rough and polished diamond trading, to complement cutting and polishing activities. Opportunities can also be created by supporting new ventures that provide ancillary services to mainstream diamond businesses.

Chile

Chile upgraded its traditional commodity-dependent exports of copper, to include the development of ancillary and logistics supporting services, and also diversified into agricultural exports, for example of salmon and wine.

Costa Rica

By entering into regional value chains through the provision of medical devices and ICT components embedded with high-value services content such as engineering and programming, Costa Rica diversified away from a previously established position as an exporter of bananas and unprocessed coffee.

Malaysia

Malaysia was a primary commodity-based economy exporting rubber, tin and palm oil and diversified its economy by integrating its products into various global value chains in a wide range of industries, from health and medical services to the automotive industry. For example, the medical services sector is expanding into the medical tourism market, with an estimated 2 million visitors to Malaysia in 2020.

Saudi Arabia

In 2017, Saudi Arabia announced its plan to diversify its economy, under Vision 2030. In addition, Saudi Arabia has recently developed an electronic visa for a number of countries in order to spur tourism.

Trinidad and Tobago

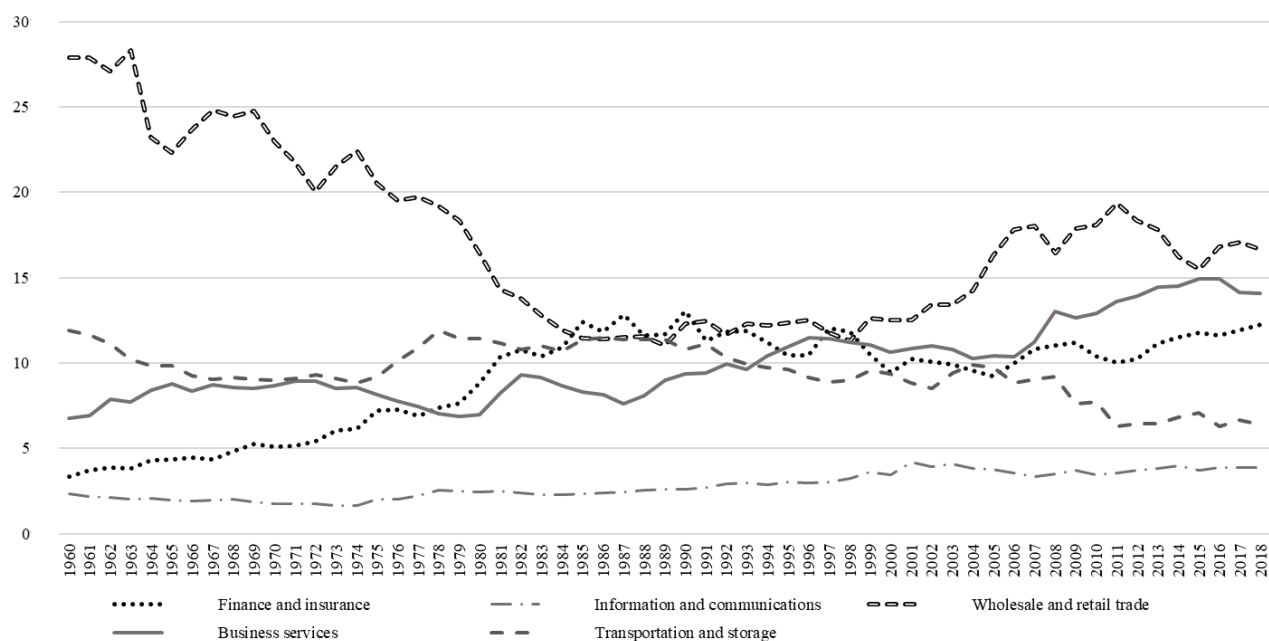
Trinidad and Tobago increased its share of non-commodity exports by adding value in the downstream sectors of oil and natural gas. In addition, in 1998–2017, the country expanded the export of chemicals, from 19 to 28 per cent. At present, the leading three exports are mineral fuels, including oil (\$5.8 billion, or 53 per cent of total exports); organic chemicals (\$1.9 billion, or 17.4 per cent); and inorganic chemicals (\$1.3 billion, or 12 per cent). Services such as engineering and construction, as well as technical services, including inspection, calibration, laboratory testing and analysis, operations and maintenance, have accompanied the diversification of exports.

Sources: Asia-Pacific Economic Cooperation, 2017, *Case Study on the Role of Services Trade in Global Value Chains: Health and Medical Services in Malaysia* (Singapore); How We Made It In Africa, 2014, A diamond in the rough: Adding value to Botswana's minerals, 4 March; Mining Weekly, 2019, Diamonds continue to do good for the people of Botswana, says Okavango Diamond Company, 25 June; Mmegi Online, 2019, Safdico sees Botswana as world's next international diamond centre, 13 September; PR Newswire, 2019, Saudi Arabia announces tourist visa, 27 September; TD/B/C.I/48; World Trade Organization and Organization of Economic Cooperation and Development, 2019, *Aid for Trade At a Glance 2019: Economic Diversification and Employment*; World's Top Exports, 2019, Trinidad and Tobago's Top 10 Exports, 1 July.

21. Singapore has also diversified its services sector. Wholesale and retail trade and transportation and storage, which together represented about 40 per cent of GDP in 1960, were reduced to half that amount in the 1980s, after Singapore shifted resources to

developing other services subsectors. Since then, there has been a gradual shift in the contribution of various services subsectors to GDP, from low value added and low skill towards high value added and high skill (figure 5).

Figure 5
Singapore: Share of selected sectors in gross domestic product
(Percentage)



Source: UNCTAD calculations, based on data from the Singapore Department of Statistics.

22. Care must be taken to not concentrate solely on the services sector or on one subsector. Leveraging the services sector to diversify an economy does not mean that the sector should take precedence over other sectors. Plans to promote the agriculture or manufacturing sector should also include the development of accompanying services. A carefully designed sectoral development strategy is necessary to avoid premature deindustrialization. Tertiariation of the economy is increasing in most developing countries, as measured by the share of services in GDP, exports and employment, yet there is concern about premature deindustrialization, whereby developing countries may turn into services economies without having gone through an experience of industrialization. Premature deindustrialization may increase a country's vulnerability because, as manufacturing shrinks, there are fewer products with regard to which services may be offered.¹⁵ In addition, low-skilled workers may be the most affected, as the growing services sector cannot absorb job losses without the retraining of the workforce. A number of issues warrant careful examination, including the fundamental cause of deindustrialization in developing countries. As the landscape of production and trade is changing significantly worldwide due to technological advancement and the global deployment of resources and value chains, national development strategies should focus on growth paths in which sectoral priorities are based on smart specialization strategies, the potential for diversification and upgrading and the types of backward and forward linkages within each sector.

¹⁵ See D Rodrik, 2016, Premature deindustrialization, *Journal of Economic Growth*, 21:1–33.

IV. Good-quality infrastructure services: Essential for economic diversification

23. The close relevance of infrastructure services, such as telecommunications and ICT services and transport and financial services, to economic diversification is attributed to their dual roles in an economy, as both essential standalone economic activities and indispensable inputs for other economic activities. Therefore, the capability of a country to supply such services at a good quality level and affordable price can greatly facilitate the diversification of the economy. Telecommunications and ICT services are particularly indispensable in making innovative and creative goods and services.

A. Telecommunications and information and communications technology services

24. Telecommunications and ICT services have become critical for economic diversification, whether related to market, product or process diversification.¹⁶ Digitalization allows for increased productivity, greater efficiency and reduced production, transaction and trade costs. The importance of telecommunications and ICT services is recognized in the Goals implicitly through multiple references to technology and innovation and explicitly under targets 9.c and 17.8. The experience gained or knowledge transferred through backward linkages can also lead to the support of knowledge-based services development in a country, such as through higher education services, tourism or the export of higher-end services (box 2).

Box 2

The Internet facilitates cross-border services

Export diversification is promoted by telecommunications and ICT services that create linkages between economic activities and participants in production processes and value chains. For example, a 10 per cent increase in Internet use in an exporting country increases the number of products traded between two countries by 0.4 per cent and the average bilateral trade value per product by 0.6 per cent. Recent developments in ICT have reduced information generation, transmission and storage costs, as well as the time needed to coordinate activities over long distances. Such developments have increased the potential to export knowledge-based services. Such services used to require in-person contacts between providers and users, but can now be supplied from a distance. For example, as part of the participation of the Holy See at the Venice Biennale of Architecture in 2018, architects from 10 different countries each designed a chapel.

Sources: Arch Daily, 2018, 10 architects to design chapels for the 2018 Venice architecture biennale, 16 January; World Bank, 2016, *World Development Report 2016: Digital Dividends* (Washington, D.C.)

25. Telecommunications and ICT services increase coverage and reduce the costs of trade and the dependence on economies of scale, thereby facilitating the diversification process. Such services create linkages by providing the means for different activities to interact, coordinate and contribute to all stages of productive processes, such as quality control and engineering services, as well as in preproduction, postproduction and after-sales stages.¹⁷ Progress in ICT has paved the way for new financial services, thereby illustrating how telecommunications and ICT services can contribute to product diversification. Digital financial services have significantly reduced physical and economic barriers to financial access, particularly for those in remote and rural areas. Such services build on telecommunications and ICT services to reduce infrastructure costs and increase coverage.

¹⁶ OA León, JI Igartua and J Ganzarain, 2016, Relationship between the use of ICT and the degree and type of diversification, *Procedia Computer Science*, 100:1191–1199.

¹⁷ UNCTAD, 2017.

In addition, digital financial services may offer a valuable tool for women's economic empowerment, for both women who are financially excluded and women who are financially included yet underserved, thereby helping to close gender-related financial gaps.¹⁸

26. ICT services-led digital trade is of particular relevance in small island developing States and landlocked developing countries, in particular for the integration of microenterprises and small and medium-sized enterprises into global and regional economies and trade. ICT services can help overcome disadvantages related to geographical location, improve connections to markets and improve tourism competitiveness by improving the availability of information, increasing coverage and reducing costs. Some tourism services can be provided through ICT services-enabled trade, including those related to travel agencies and destination marketing organizations. ICT services are also important in strengthening backward linkages in tourism value chains, improving inputs and reducing their costs.

27. The diversification potential of telecommunications and ICT services can facilitate the economic means by which countries can invest in adaptation measures with regard to natural shocks, including climate-related shocks. Such services can also have a more direct role in promoting climate resilience. ICT tools that are commonly used to adapt to climate change-related effects include geographic information systems, electronic governance, early warning systems and wireless communications. The first two are often leveraged for the purposes of disaster prevention and recovery.¹⁹ In addition, regional cooperation and integration in ICT services has become common among developing countries, to pool resources, share expertise and improve connectivity to facilitate business at both the regional and national levels (box 3).

Box 3

Regional connectivity project

To expand regional digital connectivity and thereby promote ICT-based social and economic development, the following countries initiated a regional cooperation and integration strategy: Belize, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama. In recognition of the importance of institutional strengthening, an agency for telecommunications services integration was established and to ensure compliance with the objectives of the agency, a complementary high-level political body, the forum of telecommunications authorities, was established, to decide and approve the programmes, projects and actions to be developed. Institutional cooperation between the countries under the Mesoamerican project also includes joint work on identifying sources of funding, on training and on other collaboration programmes. With regard to infrastructure, the Mesoamerican information highway was launched in 2015, consisting of a high capacity fibreoptic network that benefits from the previously built electrical interconnection system in Central America. The synergies between the information and energy networks optimize resources and improve returns on both investments. The information highway has a length of 1,800 km, from Guatemala to Panama, with connection points at capital cities, and permits interconnectivity between countries in the region, facilitates Internet connectivity and accessibility, reduces connection fees and promotes the use of ICT services. The information highway is accompanied by sectoral regulatory harmonization in the region and by the development of a regional telecommunications market that aims to address existing competitiveness and connectivity gaps and generate the necessary alliances to resolve such gaps, using public demand as a mobilizing factor.

Source: Economic Commission for Latin America and the Caribbean, 2015, *Una Mirada a los Países del Proyecto Mesoamérica* (United Nations publication, Mexico City).

¹⁸ See https://www.g20-insights.org/policy_briefs/financial-inclusion-for-women-a-way-forward/.

¹⁹ World Bank, 2012, *Municipal ICT Capacity and its Impact in the Climate-Change Affected Urban Poor: The Case of Mozambique* (Washington D.C.).

B. Transport services

28. Transport services, including the operation of ships and other vehicles related to both the movement of people and cargo, not only facilitate economic diversification by allowing for access to permit a country's goods to reach foreign markets, but also create demand for other services. For example, demand for transport services derives from the need to build transport infrastructure such as roads, railways and bridges, which in turn creates business opportunities for construction services suppliers such as in surveying, architectural designing, construction planning and costing. In addition, transport networks that service the needs of people and goods are often interlinked in a multitude of ways to enable alternative modes of transport. Some cities have multimodal transport networks comprising boats, buses, taxis, trains, subways and/or tramways linked together in a grid that allows for alternatives if the connection breaks between two of the nodes. Such multimodal networks facilitate the movement of people out of vulnerable areas and the movement in of goods, such as emergency supplies.²⁰

29. Transport services can generate foreign revenue if exported. For example, one of the largest fluvial transport leasing companies operating along the hidrovía waterway in Latin America is Touax Group, based in France, with a fleet in South America of around 50 vessels. Similarly, liner shipping companies, such as the Mediterranean Shipping Company, which has its headquarters in Switzerland, provides services for the trade of goods worldwide.

30. The provision of transport services also offers opportunities for Governments to meet gender perspective criteria (Goal 5) through the employment of information services providers, system technicians and computer operators, among others. However, the transport sector has vulnerabilities in the form of the risk of failure of one or more network nodes or links. This can be as a result of natural disasters such as earthquakes or, for example, due to the collapse of a bridge due to poor design. Often, vulnerabilities cannot be entirely eliminated, but the consequences of damage can be mitigated. The impact of damages may be time-related, financial or both. The recovery cost in terms of time or money is an essential part of the restoration process and needs to be properly assessed and prepared for. Resilience refers to the ability of a network to absorb changes and disturbances by adapting to the changed dynamics of a given situation.

31. The provision of a national transport network that connects to other countries in a multitude of ways enables resilience to vulnerabilities. For example, the Intergovernmental Agreement on the Asian Highway Network provides for a network of over 140,000 km of road and, if there is a blockage in one country, transport services providers can use corridors through neighbouring countries.

32. Resilience to vulnerabilities can be provided in other ways. For example, a multiplicity and quality of airports, seaports and rail and road connections to other countries can enable services suppliers to take up excess capacity from areas affected by a natural disaster or other incident. Transport services can thus be viewed like the World Wide Web, capable of delivering across a network even when individual nodes are non-operational. In addition, interconnectivity and the seamless flow of people and goods can be promoted through innovative ticketing and billing, the computerization of services scheduling and cargo space utilization procedures designed to enable maximize occupancy. Statistics of transport services tend to refer to figures such as the number of vehicles, speed and the duration of a journey. The utilization rate of transport services networks is not often calculated. This is most prevalent in the road haulage sector, in which trucks deliver cargo to a destination then remain empty on the backhaul due to a lack of information-sharing on space availability or policy restrictions such as cabotage, which may be a sensitive policy issue for many Governments. Transparency and information-sharing on space availability merits further study to improve the efficiency of transport services and reduction of harmful pollutants.

²⁰ See goalsystems.com/en/blog-en/markets-en/multimodal-transport-for-increasingly-better-connected-cities/.

33. Regional cooperation in transport services is increasing, particularly in the movement of goods. International freight transport tends to operate end-to-end, that is, without intermediate points. For example, a train carrying apparel goods manufactured in China passes through Kazakhstan, the Russian Federation, Belarus, Poland, Germany, Belgium and France before reaching its final destination market in the United Kingdom of Great Britain and Northern Ireland.²¹ The goods are thus not shipped to intermediate points but transported through them, under the Intergovernmental Agreement on the Trans-Asian Railway Network, which entered into force in 2009.²² A similar journey by road is also possible, under the Intergovernmental Agreement on the Asian Highway Network, which entered into force in 2005.²³ In addition, the Intergovernmental Agreement on Dry Ports highlights nodal intersections through the establishment of dry ports and can facilitate a modal shift of cargo between road and rail in Asia and the Pacific.²⁴ A similar network of interconnecting corridors in Africa is being discussed.²⁵ Such arrangements require cooperation and the integration of both public and private infrastructure and transport services.

34. With regard to maritime transport, for example, bulk commodities such as iron ore are transported in bulk carriers from Brazil directly to China for unloading and processing.²⁶ Bulk goods are generally purchased for the purpose of producing another good. On the other hand, with regard to liner shipping, there is an abundance of transshipment because of the standardization of the unit of transport in twenty-foot equivalent units. For example, on the main East–West route from Asia to Europe, 95 per cent of capacity is performed by carriers under the three main alliances.

C. Financial services

35. Financial services facilitate transactions among Governments, firms and households, mobilize savings and provide capital to finance productive investment. The financial services sector, centred around capital movement, is critical to an economy. Financial services is also a sector in which economic diversification is possible, as shown in the example of Mauritius (figure 6). The economy of Mauritius was centred on the production of sugar cane, that is, the primary sector of agriculture.²⁷ In the early 1980s, Mauritius began to move away from primary sector dependence through the development of the production of textiles and apparel by redirecting surpluses from commodity production to apparel production.²⁸ In the early 2000s, the focus shifted again, to redirect the surpluses generated by the secondary sector of manufacturing towards services and the tertiarization of the economy, with the services sector gaining an increasing share in GDP. In particular, Mauritius focused on developing services with high value added content such as financial, insurance and real estate services. Tourism also became a focus of diversification efforts, with the development of high-end hotels, and is creating jobs and business opportunities and is one of the fastest growing sectors in Mauritius.²⁹ In addition, offshore banking was introduced in 1988 as a first step towards positioning the country as an international financial centre.³⁰ During the course of transformation, the primary and secondary sectors continued to grow in absolute terms. However, their relative importance and contribution to GDP gradually declined as the economy shifted towards the services sector, particularly

²¹ See <https://thediplomat.com/2017/04/from-london-to-yiwu-in-17-days-obors-british-connection>.

²² See <https://www.unescap.org/our-work/transport/trans-asian-railway/about>.

²³ See <https://www.unescap.org/resources/intergovernmental-agreement-asian-highway-network>.

²⁴ See <https://www.unescap.org/resources/intergovernmental-agreement-dry-ports>.

²⁵ See <https://www.au-pida.org/pida-programmes/>.

²⁶ UNCTAD, 2018, *Review of Maritime Transport 2018* (United Nations publication, sales No. E.18.II.D.5, New York and Geneva).

²⁷ See <http://tourism.govmu.org/English/Tourism%20sector/Pages/Overview-of-Mauritius.aspx>.

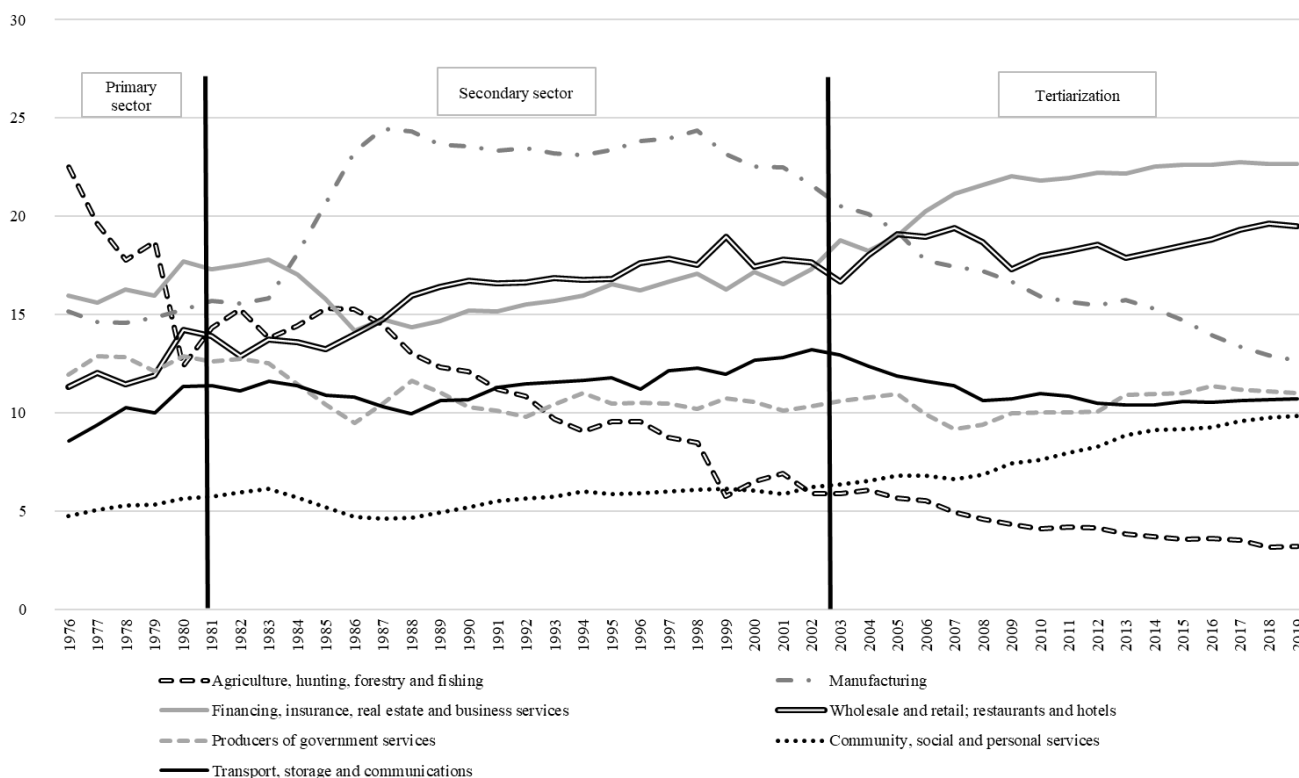
²⁸ N Treebhooon and R Jutliah, 2015, Mauritius country illustration, background paper to *European Report on Development 2015: Combining Finance and Policies to Implement a Transformative Post-2015 Development Agenda*.

²⁹ Ibid. See also <http://tourism.govmu.org/English/Tourism%20sector/Pages/Tourism-Sector.aspx>.

³⁰ A Zafar, 2011, Mauritius: An economic success story, in World Bank, *Yes Africa Can: Success Stories from a Dynamic Continent* (Washington, D.C.:91–106).

towards services activities with higher added value content. The offshore financial sector currently plays an increasingly important role in the financial services sector and is emerging as a growth vehicle for the economy. These efforts were underpinned by the Financial Services Act, 2007, which updated business practices and provided explicitly for the possibility of a company to create an offshore financial structure as long as it does not conduct any business in Mauritius and meets due diligence requirements. Finally, Mauritius has a low rate of corporate tax and is part of a number of double taxation avoidance agreements.

Figure 6
Mauritius: Share of selected sectors in gross domestic product
 (Percentage)



Source: UNCTAD calculations, based on data from Statistics Mauritius.

36. In recent years, several small island developing States, such as the Bahamas, have emerged as financial hubs, due to favourable tax regimes and the provision of offshore banking. However, international interest in increased financial transparency has made past development strategies based on offshore finance difficult to maintain. Yet the fast-paced development of the digitalized economy provides new development opportunities for small island developing States that develop their telecommunications and education infrastructures to match financial digitalization-related needs.

37. Coordination among government agencies has a significant impact on the growth of the financial services sector, as this sector features rapidly developing new and innovative services, including in financial technology. In many developing countries, coordinated development efforts are needed among different ministries; for example, a ministry of telecommunications might focus on expanding mobile coverage and could consider developing with other relevant ministries services that are natural extensions of ICT, such as mobile banking.

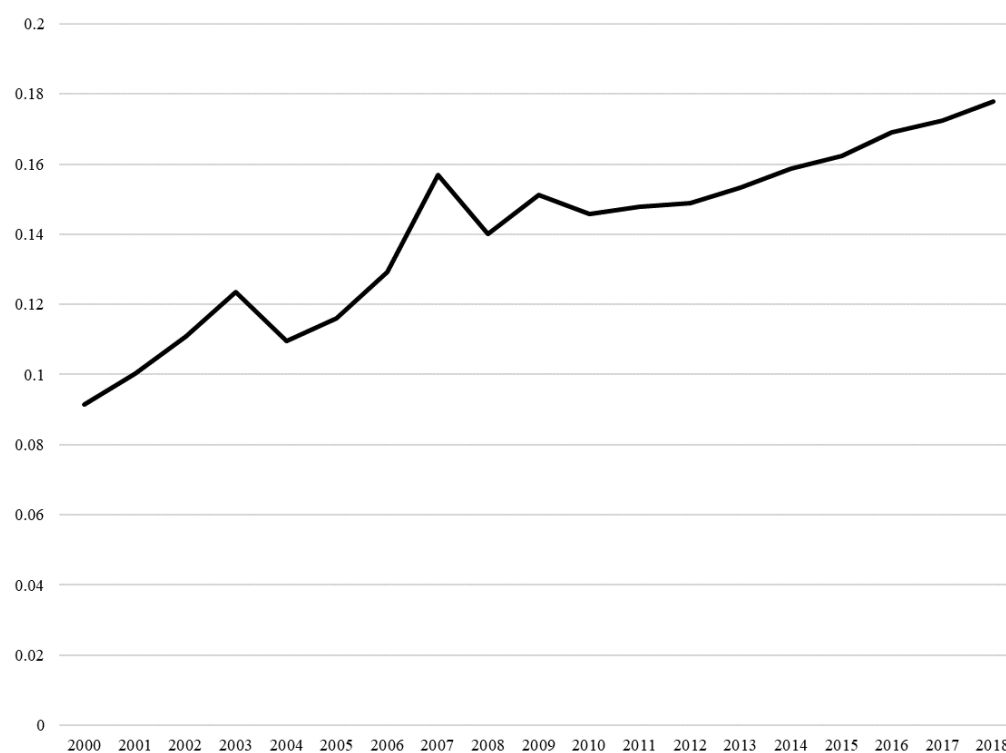
38. For example, in Singapore, the Government set up a smart nation initiative in 2014 to enhance inter-agency coordination, based on the government procurement of services

from technology start-ups.³¹ The initiative is coordinated by the Smart Nation and Digital Government Office under the Prime Minister's Office and the Government Technology Agency. Several ministers are directly involved in coordinating efforts, which encompass a wide array of subsectors, such as government services, health services and mobility, with financial technology representing an important part. The latter is also coordinated through the Monetary Authority, which serves as the financial regulator and central bank of Singapore. To spur the financial technology sector, Singapore offered low tax rates and a highly educated population,³² in addition to investment facilitation in start-ups. Singapore is now among the leading dynamic regions for financial technology, after a group of developed countries.³³ As the relatively small population is too narrow a market to speed up development of the financial technology industry, the Government has signed agreements on financial technology cooperation and trade with a number of other countries, notably Australia and the United Kingdom, to further the expansion of the industry.³⁴ Consequently, exports of financial and insurance services from Singapore doubled between 2000 and 2018, from 9 to 18 per cent, and Singapore has become a financial technology hub for the region (figure 7).

Figure 7

Singapore: Share of financial and insurance services in exports

(Percentage)



Source: UNCTAD calculations, based on data from the Singapore Department of Statistics.

39. Developing countries, including small island developing States, could pursue a similar approach, with government-led initiatives to find areas of differentiation. The example of Singapore highlights that it is crucial to put in place the right incentives and to

³¹ See <https://www.tech.gov.sg/media/technews/digital-government-smart-nation-pursuing%20singapore-tech-imperative>.

³² In Singapore, 83.3 per cent of adult men and 76.3 per cent of adult women have reached at least a secondary level of education; both figures are higher than the regional percentages in East Asia and the Pacific. See http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/SGP.pdf.

³³ Findexable Limited, 2019, *The Global Fintech [Financial Technology] Index 2020*, available at <https://findexable.com/>.

³⁴ See <https://www.mas.gov.sg/development/fintech/fintech-cooperation-agreements>.

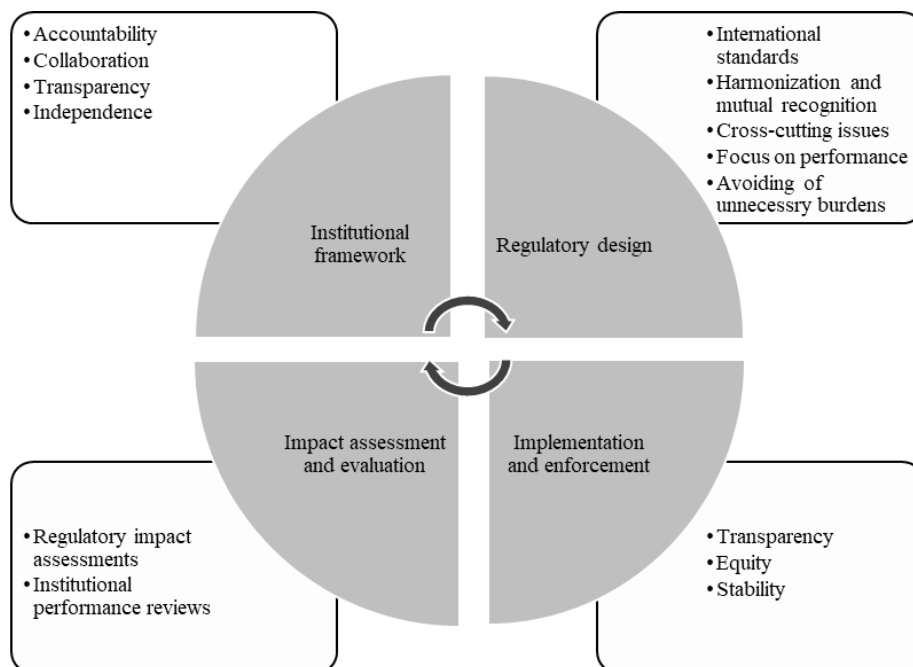
offer the necessary facilities in terms of skilled workers, investment and capital access. In an era of digitalizing economies, the downsides of small domestic markets, long distances from main markets, limited scope for increasing returns to scale and other downsides in small island developing States could be overcome through investments in ICT-related infrastructure.

V. Ensuring good quality infrastructure services through sound regulatory and institutional frameworks

40. UNCTAD has been assisting developing countries and the least developed countries in the development of the services sector through the conduct of services policy reviews. Telecommunications and ICT services, transport and logistics services and financial services are covered in most of the reviews, upon request from a country. This demonstrates both the increasing attention that developing countries and the least developed countries are giving to such infrastructure services and the urgent need to advance growth so as to ensure their availability for the business sector, apart from ensuring universal access. Contrary to the situation in many developed countries, in which basic infrastructure services are provided by the Government, in the majority of developing countries, small and medium-sized enterprises need to undertake such provision at their own expense. Cross-cutting lessons taken from the UNCTAD service policy reviews, as well as deliberations at previous sessions of the Multi-year Expert Meeting on Trade, Services and Development, reveal the necessity of sound regulatory and institutional frameworks based on effective coordination between the services sector and other sectors, including industrial policy and trade and investment policy. The elements of best-fit regulations differ across countries, but some useful lessons may be learned from national experiences and international initiatives on smart regulation (figure 8).

Figure 8

Principles of smart regulation in a regulatory cycle



Source: UNCTAD calculations, based on data from UNCTAD services policy reviews and from National Centre for Asia-Pacific Economic Cooperation, no date, Strategic framework for regulatory coherence in Asia-Pacific Economic Cooperation, available at <https://www.ncapec.org/docs/Strategic%20Framework%20for%20Regulatory%20Coherence%20in%20APEC.pdf>; Organization for Economic Cooperation and Development, 2012, Recommendation of the Council on regulatory policy and governance; Organization for Economic Cooperation and Development, 2015, *Regulatory Policy Outlook 2015* (Paris); and World Bank, 2006, *Handbook for Evaluating Infrastructure Regulatory Systems* (Washington, D.C.).

41. The independence of a regulatory body is critical to maintaining public confidence in the objectivity and impartiality of decisions. An independent regulator is most appropriate when the decisions of a regulator can have a significant impact on particular interests. The role and the objectives of a regulating body should be clearly specified in the establishing legislation, to increase compliance by regulated entities. If an independent regulator does not report to a legislative body but to the head of a ministry in charge of the regulated infrastructure services sector, the limits of the power of the ministry to direct the regulatory body should be clearly set out, namely, with regard to what can be directed and when, along with the criteria for appointing and terminating appointments for members of a governing body, with the relevant grounds and due process.

42. It is important for regulators to acknowledge the impacts of regulatory actions and decisions. Regulatory impact assessments are a useful tool for promoting the evolution of regulatory frameworks in line with economic and social policy goals. Assessments should not focus on individual regulations but rather on the overall regulatory framework. They can contribute to providing information on the trade-offs inherent in regulations, including the distribution of risks and burdens and the risks of regulating unnecessarily or failing to regulate. In addition, there should be pre-established appropriate measurements for the effectiveness and efficiency of evaluations. Evaluations should focus on reviewing the performance of regulatory bodies, including the coherence, clarity and consistency of decisions.

43. Member States of the Organization for Economic Cooperation and Development and those in the process of accession have a strong focus on designing laws and regulations and less on enforcing and reviewing them.³⁵ Systematic approaches are not frequently used to evaluate whether the objectives of laws and regulations are achieved. In addition, oversight in most of the countries is uneven and does not cover all relevant aspects of regulatory policy.

44. In an era with technology evolving at an exponential speed, regulators need to maintain openness to new technology and demonstrate impartiality with regard to technology. They should be anticipatory in establishing regulatory rules, particularly given the fast-moving nature of the technologies involved, and find a balance between risk and innovation. Cooperation and coordination among government agencies and regulators at the national level are important in enhancing linkages between services, including digital services, and other economic sectors. For example, with regard to the telecommunications sector, regulatory and institutional frameworks are critical to enable telecommunications and ICT services and the transformative role of the digital ecosystem. Moving from rigid rules to a light-touch regulatory approach could promote proportionality and pave the way for regulatory frameworks supportive of economic and social policy goals. Increasingly, regulations have focused more on enabling the investment and business environment, encouraging infrastructure and network-sharing, spectrum pooling and supporting technology clusters.

45. Central to such efforts is the stimulation of competition and consumer protection. As the digital economy can encompass different sectors, classification issues used to delay the application of regulations to several components of the digital economy. This scenario is changing. Regulation of the digital economy is moving to new approaches whereby regulations act as partners of the regulated economic agents. Consumer protection is at the core of such collaborative regulation and government and industry resources are leveraged for consumers through consultation and collaboration. This entails regulatory frameworks driven by incentive rather than command and control. It also requires collaboration between ICT regulators and authorities in charge of competition, consumer protection and the regulation of other infrastructure services.³⁶

46. Cooperation between regulators at international, regional, national, subnational and local levels is also critical, to address regulatory divergence, particularly in the context of

³⁵ Organization for Economic Cooperation and Development, 2018, *Regulatory Policy Outlook 2018* (Paris).

³⁶ International Telecommunication Union, 2018, *Global ICT Regulatory Outlook 2018* (Geneva).

the major role of international trade and the increased importance of participating in international value chains. In a multilevel regulatory framework, cooperation at the subnational and local levels is also important, as high-quality regulation at one level of government can be adversely impacted by low-quality regulation at other levels. To pursue such collaborative coherence, multi-stakeholder consultations should be devised, towards achieving accountability and mutual learning, as well as performance benchmarking to share or promote best regulatory practices.

47. Infrastructure services are covered in most schedules of services commitments under the World Trade Organization. They are also often covered in the services commitments of countries in regional trade agreements. Given the essentially regulatory nature of measures affecting trade in services, services commitments made by a country in trade agreements inevitably have an impact on the national regulation of infrastructure services. Therefore, there is a need for close coordination between trade negotiators and regulators. At present, a group of World Trade Organization members are negotiating on disciplines concerning domestic regulation with regard to services, the outcome of which is intended to be a reference paper for participating members to inscribe in their schedules of services commitments, modelled on the reference paper on basic telecommunications.³⁷

VI. Conclusion

48. A more diversified economy can achieve greater economic resilience and a greater resilience against natural shocks. The achievement of many aspects of the 2030 Agenda for Sustainable Development depends on the development of key services activities, including telecommunications and computer-related, transport, financial and research and development services and other business services.

49. Services are often entwined with a physical commodity or product. The services sector should therefore be seen as a complementary sector and infrastructure services as inputs to agriculture and manufacturing, not as a replacement. It is necessary for all countries to complement their agricultural and manufacturing bases with services that add value.

50. A sound regulatory and institutional framework is necessary to ensure the supply of good quality infrastructure services. Smart regulations require a supportive institutional framework, with accountable regulators, including with regard to criteria related to the coherence, clarity and consistency of decisions. It is important to ensure regulatory transparency, particularly in the enforcement of laws to ensure stability, predictability and confidence.

51. The design of regulations should involve, as much as possible, the consideration of international standards and the establishment of bridges with other regulatory frameworks. Regulations are more effective if performance-based rather than prescriptive, to reduce rigidity, promote innovation and allow for lower compliance costs. It is necessary for regulatory impact assessments, implementation oversight and evaluation to be integral to regulatory design, to ensure that regulation is fit for purpose. Implementation and enforcement mechanisms should be transparent and equitable and envisage stability.

52. Services, including infrastructure services, are increasingly covered in trade agreements, which impacts the national regulation of such services. A coherent and coordinated approach to domestic policymaking, regulation and trade liberalization is necessary in order to benefit from any agreement on trade in services.

³⁷ See <http://trade.ec.europa.eu/doclib/press/index.cfm?id=2021>.