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Summary of the Asia-Pacific Countries with Special Needs Development Report 2017

Note by the secretariat

Summary

Infrastructure provides wide economic, social and environmental benefits and is thus critical for development. Infrastructure is particularly relevant for the development of countries with special needs, as it enables them to overcome structural bottlenecks. Its importance is recognized in the 2030 Agenda for Sustainable Development, as it directly and indirectly affects several Sustainable Development Goals. The Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024, the Programme of Action for the Least Developed Countries for the Decade 2011-2020 and SIDS Accelerated Modalities of Action (SAMOA) Pathway also highlight infrastructure as a priority area for development.

In the present document, which is based on *Asia-Pacific Countries with Special Needs Development Report 2017: Investing in Infrastructure for an Inclusive and Sustainable Future*, the focus is on physical infrastructure, covering transport, energy, information and communications technology and water supply and sanitation. The access to physical infrastructure index is presented, which was developed by the Economic and Social Commission for Asia and the Pacific to highlight the multidimensional concept of infrastructure and to provide a tool for infrastructure development policies that support sustainable development.

Countries with special needs have large infrastructure deficits which are constraining their development. Closing infrastructure gaps and maintaining existing infrastructure, however, requires significant financial resources, especially considering the rising demand for infrastructure stemming from gradually increasing incomes, growing populations and rapid urbanization in countries with special needs. Yet, resource availability is limited in most of these countries. The present document points to the most important infrastructure sectors for the development of least developed countries, landlocked developing countries and small island developing States respectively.

The Commission may wish to consider the analysis and recommendations contained in the present document and provide guidance to further facilitate the adaptation of the 2030 Agenda for Sustainable Development in Asia-Pacific countries with special needs.

* E/ESCAP/73/L.1.

I. Introduction

1. Infrastructure provides wide economic, social and environmental benefits. It enables the provision of services to people and empowers and connects them to each other and to markets. Investing in infrastructure supports productivity growth, by boosting aggregate demand through increased construction activity and by creating employment in the short run, and by enhancing supply capacity of the economy in the long run. Developing infrastructure is therefore critical for development, particularly for countries with special needs – least developed countries, landlocked developing countries and small island developing States – as infrastructure enables them to overcome structural bottlenecks.

2. The importance of infrastructure to development is highlighted by the priority that is accorded to it in internationally agreed development goals. For instance, Sustainable Development Goal 9 of the 2030 Agenda for Sustainable Development is to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. The Goal emphasizes the development of reliable, inclusive, sustainable and resilient infrastructure to support economic development and human well-being. In the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, member States agreed to establish the Global Infrastructure Forum to bridge the infrastructure gap, highlight opportunities for investment and cooperation and work to ensure that investments are environmentally, socially and economically sustainable. Infrastructure is also given a high priority in the Programme of Action for the Least Developed Countries for the Decade 2011-2020, the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024 and the SIDS Accelerated Modalities of Action (SAMOA) Pathway.

3. The present document covers the development of physical infrastructure and its economic, social and environmental consequences. In section II, the current state of infrastructure in countries with special needs is examined and their infrastructure deficits highlighted. In section III, the access to physical infrastructure index is presented and the impact of infrastructure on economic and social indicators is analysed using the index. As infrastructure gaps in the countries with special needs are significant, section IV contains an examination of what resources are required to close these gaps and an analysis of how and through which mechanisms countries with special needs can raise the required resources and overcome challenges in doing so.

II. Current state of infrastructure

4. The availability, quality and type of infrastructure vary among the countries with special needs owing to different economic conditions, geographic characteristics and demographic features. These countries also have varying institutional capacities, which are critical in prioritizing and sequencing infrastructure development and maintenance, and in selecting the most appropriate modality of financing these needs. In general, inadequate development of infrastructure and poor maintenance of existing infrastructure have resulted in large infrastructure deficits in these countries.

5. This document focuses on four dimensions of physical infrastructure that are particularly important to development: transport, energy, information and communications technology (ICT) and water supply and sanitation. Infrastructure development in these four sectors has direct implications on economic activities, social development and environmental sustainability.

A. Transport

6. Well-developed transport networks reduce transportation costs and strengthen backward and forward economic linkages, which are crucial for connecting domestic markets with regional production networks. They also enhance resource allocation efficiency. Sustainable transport systems therefore play a critical role in development by providing access to economic and social opportunities, facilitating the movement of people, goods, labour, resources, products and ideas, creating market opportunities, enabling manufacturers to take advantage of locational strengths and allowing the expansion of supply chains across borders. Key transport sectors (roads, railways, seaports, airports, dry ports and other transport infrastructure) are a prerequisite for economic growth.

7. Physical links across the region have improved in recent years. In part this has been through investment in the Asian Highway network and through the facilitation of land transport projects, which have resulted in the development of a network of 143,000 km of roads and highways across the region. However, road density is quite low in many countries with special needs. Except in Azerbaijan, Bangladesh and Samoa, road density falls below the regional average of developing countries.

8. Transport infrastructure is often of poor quality as policies and funding for new transport infrastructure usually take priority over those for maintenance. As a consequence, a large proportion of road networks in these countries is unpaved. For instance, in all seven least developed countries with available data, less than 60 per cent of road infrastructure is paved. In contrast, landlocked developing countries, with the exception of Mongolia, have a higher percentage of paved roads than the regional average of other developing economies in the region. While data on small island developing States is limited, most have conditions similar to least developed countries.

9. Rail transport also plays a crucial role for developing countries, particularly for landlocked developing countries that are major exporters of mineral resources. Owing to its relatively larger size, Fiji is the only small island developing State with a railway line while the majority of least developed countries have few railway lines.[1] Moreover, the efficiency of rail transport is often hampered by different technical standards and several critical missing links in the region's rail infrastructure, preventing the rail network from functioning as a continuous system.[2] Indeed, there is currently an estimated 10,900 km of missing links in the Trans-Asian Railway network, representing 9.3 per cent of the network. With 42 per cent of the missing sections, the Association of Southeast Asian Nations (ASEAN) subregion is the least rail-connected, though all subregions are affected to some degree by missing links, and in particular in landlocked developing countries.

[1] Several rail link projects are currently being implemented in the region, including a high-speed rail link between Kunming, China, and Vientiane.

[2] Economic and Social Commission for Asia and the Pacific (ESCAP), *Bridging Transport, ICT and Energy Infrastructure Gaps for Seamless Regional Connectivity* (ST/ESCAP/2703). Available from www.unescap.org/sites/default/files/LLDCs%20paper.pdf.

B. Energy

10. The availability of energy is a prerequisite for economic growth, just as energy services contribute to social development by, for instance, improving education and health outcomes. Having access to basic energy means having access not only to electricity for lighting, but also to clean fuel for cooking and heating. Modest increases in per capita electricity use are usually associated with much larger improvements in human development, demonstrating that energy plays a more significant role in countries at an intermediate stage of economic development than in those that are fully developed.

11. Unfortunately, almost half of the population living in the region's countries with special needs – 45 per cent, equivalent to approximately 140 million people – does not have access to electricity, including 60 million in Bangladesh, 36 million in Myanmar, 17 million in Afghanistan and 10 million in Cambodia. Providing access to energy is particularly challenging for small island developing States owing to their archipelagic character. For example, in Papua New Guinea, which comprises more than 600 islands, the national electrification rate is only 18 per cent, and in Solomon Islands, where 350 islands are inhabited, the rate is 23 per cent. While there are also wide disparities between landlocked developing countries, only three of the region's 12 least developed countries – Bhutan, Nepal and the Lao People's Democratic Republic – have access rates above 60 per cent, the average rate for all countries with special needs, and they are also landlocked developing countries. In terms of electric power consumption, per capita consumption is much higher in Asian landlocked developing countries than in least developed countries. One reason why levels of electricity usage are low in least developed countries is the low rate of electrification.

C. Water supply and sanitation

12. Water supply and sanitation infrastructure is required for people to access clean water and safely dispose of waste. Accessibility to this infrastructure is crucial to improve social well-being, as lack of access to water supply and sanitation leads to economic loss and health problems. For instance, in Bangladesh, an estimated $4.2 billion is lost annually owing to inadequate sanitation, equivalent to 6.3 per cent of the country's gross domestic product (GDP). Access to a clean water supply not only has an immediate health benefit, but also frees up the time and resources spent on coping with poor water resources for other productive activities. While countries have little control over the natural availability of water, infrastructure and institutions can help to ensure that this resource is used more efficiently and effectively.

13. Access to a water supply and sanitation differs widely among countries, with some benefiting from much better water supply and sanitation services than others. Some countries, such as Afghanistan, Mongolia and Papua New Guinea, perform relatively poorly in providing access to improved water supply and sanitation relative to their level of income, while others, such as Armenia, Bangladesh and Bhutan, perform relatively well. In general, access to improved water and sanitation is usually more restricted in rural areas than in urban areas. Thus, while an average of 90 per cent of the population between 2013 and 2015 had access to improved water supply in urban areas of countries with special needs, access rates were significantly relatively lower in rural areas.

D. Information and communication technology

14. The spread of ICT has great potential to accelerate human progress, bridge the digital divide and develop knowledge societies. ICT is key to accelerating achievement of the Sustainable Development Goals. For example, increased mobile and broadband Internet penetration with reduced costs can transform the way public services such as health and education are delivered. One indicator of ICT development is access to telephone services. While the number of subscriptions for fixed telephone has been decreasing with the rise of mobile/cellular services, fixed telephone subscriptions remain a critical infrastructure indicator as they provide a basis for fixed broadband infrastructure. In this regard, a relevant indicator would be the number of fixed and mobile telephone subscriptions. Telephone penetration is particularly low in many least developed countries, although there have been significant increases in recent years. In contrast, in a number of landlocked developing countries, growth in mobile penetration has slowed owing to high rate of penetration already achieved.

15. Having access to the Internet is another important indicator of ICT infrastructure. While several of the landlocked developing countries perform quite well in this regard, Internet penetration is particularly low in least developed countries. Indeed, there is an alarming disparity in broadband connectivity within the region: in 32 countries with special needs in the region, there were fewer than five fixed broadband subscriptions per 100 inhabitants in 2015, as compared with the Republic of Korea, where broadband penetration reached 40 per cent of the population.

III. Access to physical infrastructure index

16. The multidimensional character of infrastructure makes it difficult to compare the state of infrastructure across countries and time. To overcome this, ESCAP has created a composite index, the access to physical infrastructure index, to quantitatively assess physical infrastructure in the four sectors in the region and to compare how countries with special needs compare with each other and with other developing countries in the region. The composite index can also be used as a tool for development policies in support of sustainable development.

17. The access to physical infrastructure index is based on four sub-indices, which are each composed of two indicators that highlight access to physical infrastructure in the relevant dimension. Thus, a total of eight indicators are captured by the index. The selection of these indicators is made based on their relevance to the sector and by data availability for countries with special needs in the region. In order to increase coverage of countries and data, indicators were constructed on a three-year average between 2013 and 2015.[3]

18. The index has been computed for 41 countries in the Asia-Pacific region, of which 23 are countries with special needs, 15 are other developing countries and three are developed countries (Australia, Japan and New Zealand) (table 1). These 41 countries account for 98 per cent of the region's population and 95 per cent of its GDP. Three countries with special needs are ranked among the 10 countries with the best access to infrastructure in the

[3] For more details on methodology and on the sub-indices, see *Asia-Pacific Countries with Special Needs Development Report 2017: Investing in Infrastructure for an Inclusive and Sustainable Future* (United Nations publication, forthcoming).

region: Azerbaijan, Kazakhstan and Maldives. The countries with the least access to infrastructure are all countries with special needs, seven of which are least developed countries.

19. The index scores also highlight group-specific differences among countries with special needs. Interestingly, the two largest developing countries in population terms, namely China and India, lag behind several other peers in the region. China (rank 19) is not among the top 10 performers, while India (rank 31) is in the bottom quartile of the 41 countries.

Table 1
Access to physical infrastructure index scores of countries with special needs and other country groups in the Asia-Pacific region, 2013-2015

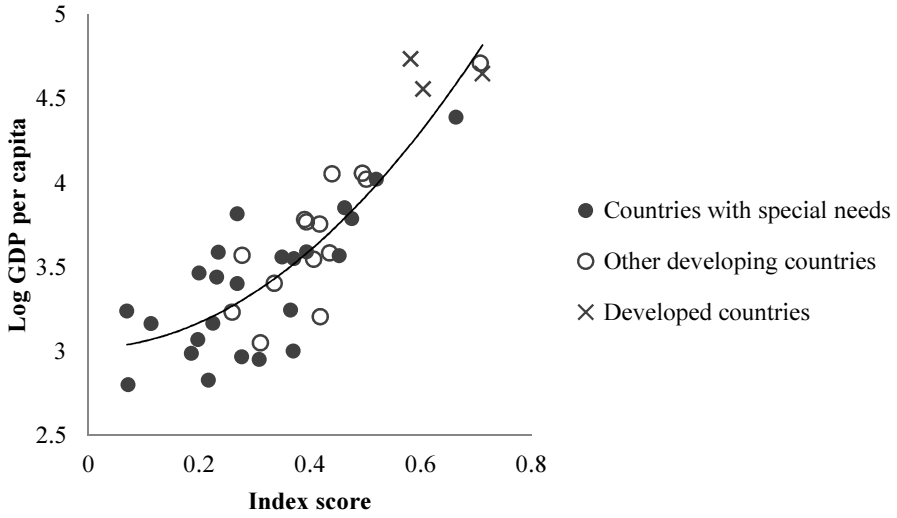
Country	*Score*
Countries with special needs	
Kazakhstan	0.520
Azerbaijan	0.476
Maldives	0.463
Armenia	0.453
Fiji	0.394
Tonga	0.371
Kyrgyzstan	0.370
Uzbekistan	0.365
Samoa	0.350
Tajikistan	0.309
Bangladesh	0.277
Turkmenistan	0.269
Bhutan	0.269
Mongolia	0.235
Micronesia (Federated States of)	0.232
Lao People's Democratic Republic	0.225
Nepal	0.217
Vanuatu	0.200
Myanmar	0.198
Cambodia	0.186
Solomon Islands	0.113
Afghanistan	0.072
Papua New Guinea	0.070
Average for all countries with special needs	**0.288**
Other developing countries in the region	**0.431**
Developed countries in the region	**0.633**

20. The average index score for countries with special needs is much lower than that for developing countries, highlighting the evident differences in access to physical infrastructure between developed countries, countries with special needs and other developing countries. Bridging infrastructure deficits in countries with special needs thus poses a significant challenge.

Impact of infrastructure development

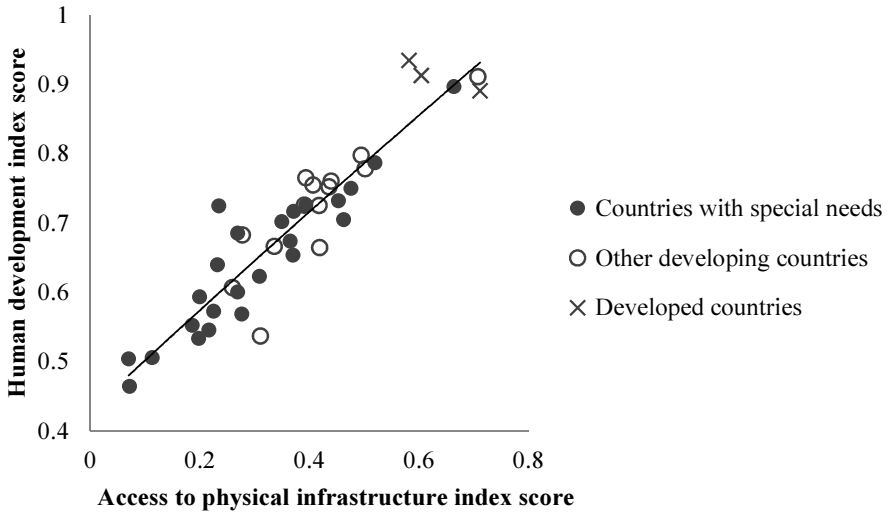
21. Infrastructure development is expected to accelerate the level of economic growth and spread the benefits of development to all segments of society, especially in countries where the level of development is still low. Improvement in infrastructure facilities is one of the key drivers of sustainable development. Indeed, there is a close relationship between access to physical infrastructure index score and levels of income (GDP) per capita in the 41 countries in the Asia-Pacific region (figure I). However, the impact of infrastructure development, measured by the index, has a stronger impact on income levels per capita in other developing countries in the region than in countries with special needs. The impact is even lower in least developed countries.

Figure I
Access to physical infrastructure index scores and GDP per capita in selected Asia-Pacific countries, 2013-2015



22. Improvements in infrastructure access also play an important role in increasing human development. Thus, in the sample of 41 countries, the index scores of countries with special needs are strongly correlated with levels of development as measured by the human development index (figure II). Here too, index scores in developed and developing countries indicate a stronger impact on human development than in countries with special needs, especially in least developed countries.

Figure II
Access to physical infrastructure index scores and human development index in selected Asia-Pacific countries, 2013-2015



23. In terms of policy, this may imply that infrastructure development should be undertaken in a more robust and systematic manner at the national level to ensure that benefits are spread across all levels of society. For instance, governance plays an important role in determining how effectively policies, including those for infrastructure development, can be administered. Indeed, in this context, the impact of infrastructure development on levels of income per capita, and on human development, is higher in countries where the quality of institutions (used as a proxy for governance) is higher.

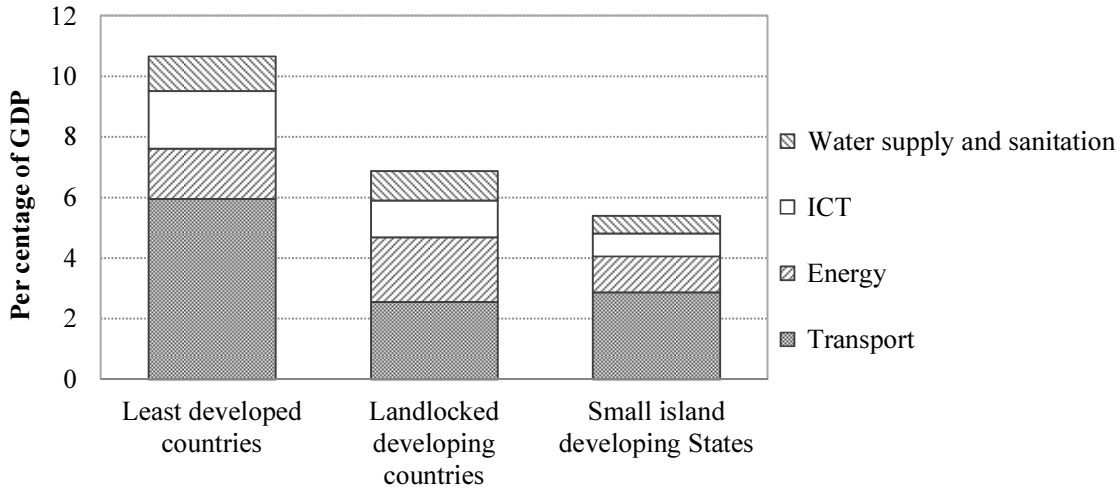
IV. Financing of infrastructure development and maintenance

A. Financing needs

24. Infrastructure financing requirements in the Asia-Pacific region are already large and will continue to increase in response to a rising demand for infrastructure stemming from the region's rising wealth, growing population and rapid urbanization. Significant additional resources are required to make infrastructure more sustainable and climate-resilient, particularly in small island developing States and other low-lying coastal areas.

25. According to ESCAP estimates, countries with special needs would need to spend on average around 8.3 per cent of their GDP per annum ($48 billion in 2010 dollars) to provide universal access to basic infrastructure services by 2030. These estimates include keeping up with growing demands for new infrastructure and maintaining existing infrastructure. Across the three groups of countries with special needs, financing needs of least developed countries are by far the largest, both in terms of volume ($32 billion) and share of GDP (10.7 per cent of GDP). However, those of landlocked developing countries and small island developing States are also sizeable, estimated at approximately 6.9 per cent and 5.4 per cent of their respective GDP (figure III). At the sectoral level, the transport sector accounts for the bulk of investment needs in least developed countries and small island developing States (56 per cent and 53 per cent respectively), while one third each is needed for energy infrastructure and transport infrastructure in landlocked developing countries.

Figure III
Annual infrastructure financing needs, 2016-2030



26. Results also indicate that more than 42 per cent of infrastructure financing needs in least developed countries and more than 33 per cent in small island developing States arise from their infrastructure shortages, particularly in the transport sector and the energy sector (table 2). This indicates that providing universal access to basic infrastructure services requires large outlays of resources in these countries. For landlocked developing countries and small island developing States, more than half of financing needs is accounted for by costs of maintenance and replacement of existing assets.

Table 2
Composition of infrastructure financing needs, 2016-2030
(Percentage)

	New demand	*Maintenance*	*Universal access*
Least developed countries	25.7	31.9	42.4
Landlocked developing countries	43	51	7
Small island developing States	15.2	51.7	33.1

27. These estimates would be even larger if new demand for infrastructure with respect to climate change was incorporated, particularly as small island developing States and other low-lying coastal areas face substantial long-run costs in improving and maintaining infrastructure to mitigate losses and damages caused by the impacts of climate change or extreme weather events. On average, countries with special needs need an additional investment of 1.8 per cent of GDP per annum for new infrastructure to be climate-resilient and a further 0.4 per cent for new electricity-generating capacity to come from green sources. In sum, the total financing needs for infrastructure development in countries with special needs are estimated at 10.6 per cent of GDP per annum.

B. Financing sources and mechanisms

28. Investment in infrastructure can be financed through various mechanisms. Domestically, Governments can tap public sector resources; they can undertake collaborative initiatives with the private sector to draw upon the resources of both parties; and they can foster initiatives that are led by private investors. Externally, official development assistance (ODA) through bilateral arrangements and support from multilateral agencies, such as multilateral development banks and other regional and international organizations, can be major sources of infrastructure finance. Foreign direct investment (FDI), including through public-private partnerships, and assistance from new actors of development cooperation, such as China and India, and new regional initiatives and infrastructure funds are increasingly seen as viable solutions to meet the infrastructure needs of countries with special needs.

29. Although the composition of capital for infrastructure investment varies significantly across countries, depending primarily on country-specific policies and economic structures, public funding accounts on average for about two thirds of total infrastructure investment in countries with special needs. The private sector contributes on average around 15 per cent of total infrastructure financing. The remaining 20 per cent is financed almost equally by ODA and support from multilateral development banks. This composition of infrastructure financing is similar to that for other developing countries, but the role of ODA and multilateral development banks tends to be greater in countries with special needs, especially in least developed countries.

30. The domestic public sector has been the traditional provider of infrastructure financing, accounting for the lion's share of total infrastructure spending. Governments typically pay up front for the capital costs out of their current budgets or public borrowing and recover part of them through fees and future taxes. However, since the provision of public services usually generates greater social returns than short-run economic profits, it is deemed not necessary for such infrastructure assets to generate revenue streams that cover capital and operational costs. Since many Governments in countries with special needs continue to face challenges in attracting much-needed funds to finance their infrastructure projects, they need to play a more active role in mobilizing capital and meeting future demands for public services. Thus, domestic public finance is expected to remain a significant source of infrastructure funding in these countries in the near term.

31. Development assistance provides budgetary support to domestic public expenditure in Asia-Pacific countries with special needs, particularly in least developed countries. Countries with special needs as a whole received bilateral ODA exceeding $10 billion over each of the past five years from members of the Development Assistance Committee of the Organization for Economic Cooperation and Development, of which more than 80 per cent was directed to least developed countries. Non-member donors of the Development Assistance Committee have also undertaken South-South cooperation activities and provided financial resources to countries with special needs. Gross concessional flows for development cooperation from six Asian non-member countries (China, India, Indonesia, Russian Federation, Thailand and Turkey) doubled from $4.7 billion in 2010 to $9.3 billion in 2014, around a quarter of which was received by countries with special needs.

32. Development assistance through multilateral agencies, including multilateral development banks and United Nations funds and agencies, are also essential for countries with special needs, particularly those with limited access to capital markets to support the financing of infrastructure projects. These multilateral agencies provide concessional loans and grants to Governments or public sector entities and issue risk guarantees and project insurance against risks. Their involvement might also attract capital from the private sector by enhancing confidence and reducing risk premiums for infrastructure projects. Multilateral development banks thus act as independent mediators between public and private parties and have the ability to promote policies that improve the investment climate or mitigate sudden changes in policies.

33. By necessity, many countries with special needs will continue to rely on domestic public and external ODA resources for financing of infrastructure development. In small island developing States, the lack of economies of scale coupled with significant financing needs translate into dependence on ODA to finance infrastructure development and maintenance. The same holds true in least developed economies, although there is scope in some of these economies for expanding domestic public resources, particularly in the larger countries. In these two groups of countries, the potential for private financing, both domestic and international, remains extremely limited.

34. Nevertheless, in recent years, private sector participation has proven to be a valuable mechanism, provided that the right conditions are put in place. Private financing can cover upfront costs of infrastructure assets if a return can be recouped through fee-based earnings. Often infrastructure that does not have any obvious revenue stream has little potential to attract private sector investment if Governments do not intervene to offer subsidies or sign long-term purchasing agreements. In countries with special needs, FDI has been an important form of private sector financing for infrastructure development, particularly in the energy and ICT sectors. There is also a growing interest among many countries with special needs in public-private partnerships in infrastructure development and investment.

35. One concern is that infrastructure FDI projects have been concentrated in only a few countries and tend to be sourced from only one or two key economies. For instance, between 2011 and 2015, more than half of the region's greenfield infrastructure FDI was received by Myanmar, and 55 per cent of total infrastructure FDI in Myanmar was led by investors from Japan and Thailand. The degree of private sector engagement through public-private partnerships also varies widely across countries with special needs, with the Lao People's Democratic Republic standing out by receiving public-private partnerships investment equivalent to an average of 18.6 per cent of GDP every year between 2006 and 2015. Armenia, Bhutan, Cambodia, Nepal and Tajikistan also received investment predominantly in the energy sector. In contrast, the majority of countries with special needs received less than 1 per cent of their GDP in private infrastructure investment, and most of such investments were for ICT infrastructure development.

36. The possibility of enhancing private sector engagement in countries with special needs is often limited by risks associated with politics, currency fluctuations and other macroeconomic instabilities, which dilute investors' interest and make it difficult to engage the private sector in infrastructure projects. As a result, foreign private investment is often prevalent only in large-scale energy projects and ICT development, enabled in part by regulatory reforms aimed at attracting private participation in these sectors

and fostered by the ability to extract returns through fees more easily in these sectors. In smaller least developed countries and small island developing States, however, small populations, low population densities and/or geographic isolation make it difficult to extract economic returns even in these sectors. Undeveloped or underdeveloped domestic capital markets and inaccessibility to international capital markets in these economies further limit options for borrowing money or issuing bonds or equities to embark on large infrastructure projects.

37. New regional initiatives and infrastructure funds are increasingly being recognized as important partners for infrastructure development in countries with special needs and beyond. Examples of such initiatives include the Asian Infrastructure Investment Bank, the ASEAN Infrastructure Fund, the Global Infrastructure Facility and the Silk Road Fund. These institutions can function as facilitators for investors but can also issue their own bonds. Since countries with special needs typically lack a local investor base, the involvement of such new initiatives may be decisive for international investors entering their markets.

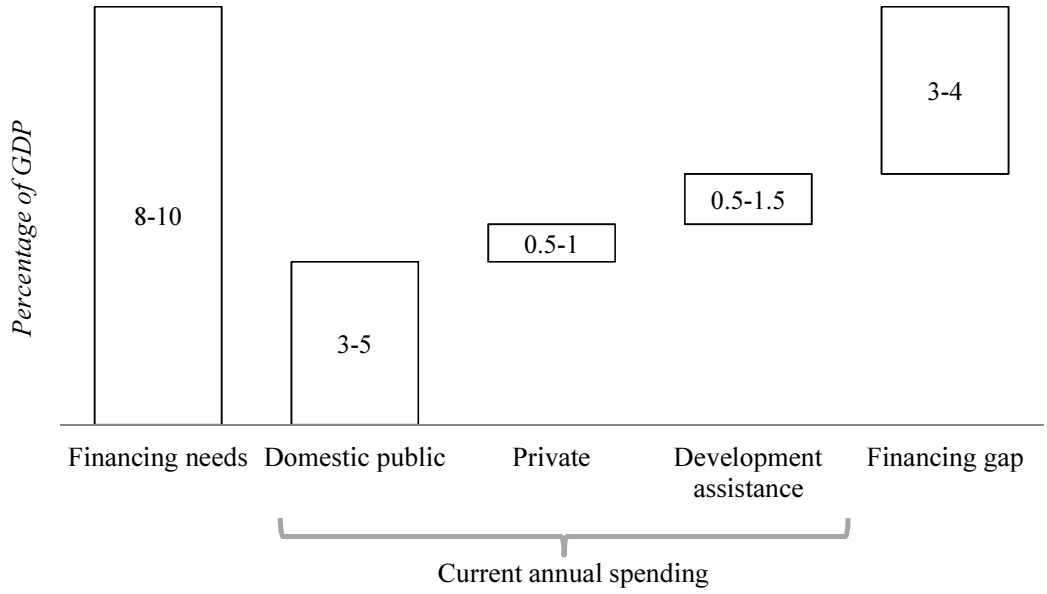
38. Accessing larger-scale resources requires strong national institutions and the ability to structure and develop projects that can take advantage of loans, equity and guarantees. However, it is worth noting that the amount that new regional initiatives and infrastructure funds are providing remains limited compared to overall investment financing needs, with total approved investment at only $1 billion for countries with special needs.

39. New financing vehicles and mechanisms have the potential to step in and finance long-term infrastructure projects. Institutional investors such as pension funds, insurance companies and sovereign wealth funds could play a major role in closing infrastructure gaps in countries with special needs. However, these require local capital markets, which may not always be available in countries with special needs. Co-financing can be arranged among multilateral development banks as well as national development banks and development finance institutions. Lastly, many climate finance tools and green bonds can also deliver new sources of funding for countries with special needs, especially for renewable energy infrastructure development in small island developing States.

C. Financing gaps and challenges in closing them

40. Current levels of infrastructure funding among countries with special needs fall far short of their financing needs of 8 to 10 per cent of GDP per year (figure IV). This indicates that existing sources of financing are insufficient to meet the large and growing needs of infrastructure financing in countries with special needs. It also underscores the importance of a more effective, efficient and catalytic use of existing funds to attract private finance and other emerging sources of finance.

Figure IV
Current levels of infrastructure spending and financing needs in countries with special needs



41. Least developed countries are facing major challenges in raising resources to provide universal access to basic infrastructure services. Those with a small private sector and underdeveloped capital market will need to rely on limited domestic public finance and on ODA. New financing vehicles including cooperation arrangements and public-private partnerships may offer potential sources of infrastructure financing, but only after institutional capacities have been strengthened.

42. Small island developing States also face high costs of developing infrastructure, particularly given their geographic isolation. They face the additional challenge of having to address the steady erosion of infrastructure resulting from the impacts of climate change. Mobilizing domestic private sector capital for infrastructure financing is a major hurdle for these economies as most lack substantial pools of domestic private savings in the form of bank deposits, and domestic capital markets are often non-existent. Access to external private financing is also limited as international commercial banks have small credit lines owing to the small size of their economies.

43. Landlocked developing countries, particularly those with abundant natural resources, often find it difficult to attract resources for infrastructure development that is not related to transport. They also face particular challenges associated with their lack of direct territorial access to the sea and their remoteness and isolation from world markets. As a result, infrastructure development and financing is often dependent on the infrastructure of and political relations with their neighbours.

44. In order to fill funding gaps and overcome these challenges, Governments in countries with special needs need clear financing strategies and capacity development for effective long-term planning through various modalities, such as improving public expenditure, mobilizing domestic resources, leveraging the private sector, improving access to capital markets and tapping new sources of funds such as climate finance. Given limited

resource availability, Governments in countries with special needs will have to prioritize which sectors to develop. This may be based upon where infrastructure gaps are greatest, or where the impact of additional infrastructure on sustainable development outcomes may be the largest. For instance, the sub-indices of the access to physical infrastructure index suggest that providing transport infrastructure and energy is particularly important to least developed economies.[4] More sustainable, inclusive and reliable energy (especially solar and hydroelectric power) would enable these economies to accelerate the process of expanding their productive capacities and increase levels of productivity, while the bridging of transport infrastructure gaps would be important to improve access to domestic and international markets. Doing so would translate into higher wages and contribute to reducing poverty.

45. The index points to the need to strengthen ICT infrastructure in small island developing States. Given the potential to engage the private sector in the process and considering the potential of ICT to expand the services sector in these economies, public funds can then be used for developing infrastructure with high environmental or social returns, such as water supply and sanitation infrastructure, which is particularly lacking in those economies that are also among the least developed.

46. For landlocked developing countries, the index points to a need to improve transport infrastructure. Doing so is important to connect missing links with neighbouring countries and reduce trade costs. Additional revenues from boosted export earnings could in turn be used to develop energy infrastructure and water supply and sanitation infrastructure in order to progress towards broad-based sustainable development.[5]

47. In the medium- to long-run, mobilizing domestic public finance is a critical element to providing infrastructure investment. Improved tax administration and broadened tax bases would expand Governments' fiscal space, while significant resources can also be mobilized through user charges for some infrastructure services and by adopting the polluter pays principle.[6] Increasing the efficiency of public expenditure would also expand the fiscal space available to countries with special needs. Eliminating subsidies for consumption related to fossil fuels, for instance, can generate significant resources for narrowing infrastructure financing gaps. Progress is also needed to reduce illicit capital outflows and strengthen overall accountability.

48. A clear identification of potential partners, financial instruments and necessary government support measures based on the nature of infrastructure projects would greatly improve the efficiency of the infrastructure development process. Budget provision should also identify how much infrastructure should be financed. Such information will not only help

[4] For more details on the sub-indices, see *Asia-Pacific Countries with Special Needs Development Report 2017.*

[5] This prioritization is based upon the scoring of the access to physical infrastructure index, as well as a review of national development plans and a survey of experts. For more details, see *Asia-Pacific Countries with Special Needs Development Report 2017*.

[6] Road pricing such as toll roads, for instance, has proven effective for generating revenues in high-traffic areas. They also help reduce emissions and congestion. Similarly, funding for water and sanitation projects can come from cost-recovery mechanisms, such as taxes on water pollution, tariffs on wastewater services and pollution discharge permits.

Governments clarify their development objectives and strategies, but also help their development partners align their cooperation for infrastructure development with the priorities of countries with special needs.

49. The development of capital markets has the potential to facilitate a more efficient allocation of the regional savings pool, including those in the private sector, to generate long-term financing for investment. The greater variety of financial instruments that would become available through capital markets should help countries with special needs to make infrastructure more attractive for a broader group of investors and should allow for better diversification of risks. However, developing capital markets in economies with small populations or small domestic markets may be unrealistic because of lack of economies of scale. In these cases, pursuing regional capital markets may be a more relevant strategy. Moreover, the availability and use of new financing options is unlikely to lead to better outcomes in countries with weak governance and institutional capacity.

50. Practically, the use of an integrated policy approach that combines different types of investments, in both hard and soft infrastructure, has a better chance of enhancing the impact of investments, fostering innovation and generating sustainable productivity gains.[7] The allocation of resources to promote economic and social integration and nurture seamless connectivity will provide the much-needed impetus to investment and trade flows, which are currently being held back because of infrastructure bottlenecks.

V. Conclusion

51. Countries with special needs face significant gaps in their levels of infrastructure development. These gaps differ across least developed countries, landlocked developing countries and small island developing States. To capture the multidimensional character of infrastructure, ESCAP has created the access to physical infrastructure index. This index demonstrates a strong positive relationship with levels of income per capita and development (measured by the human development index).

52. In order to close infrastructure gaps, significant financial resources will be needed: the total financing requirements to close existing gaps, keep up with growing demands for new infrastructure, maintain existing infrastructure and take into account the impacts of climate change are estimated at 10.6 per cent of GDP per annum in countries with special needs. This far exceeds current levels of infrastructure funding.

53. There are a number of financing opportunities that countries with special needs can tap for the development of infrastructure. These include the domestic public sector, ODA from development partners and multilateral development banks, the private sector and new regional initiatives and infrastructure funds, as well as new financing vehicles. However, the extent to which these are viable options for countries with special needs varies. For instance, among these countries, private investment has been more prevalent in energy and ICT infrastructure, enabled in part by regulatory reforms aimed at attracting private participation and by the potential of these sectors to generate revenues. Also, while external resources, such as ODA from development partners and through multilateral development banks financing,

[7] Organization for Economic Cooperation and Development, “Strategies for aligning stimulus measures with long term growth”. Available from www.oecd.org/general/42555546.pdf (accessed 18 November 2016).

continue to play an important role in infrastructure financing, they constitute only a small proportion of total infrastructure spending, and are limited in terms of areas of cooperation and instruments of financing by the preference and capacity of donors. New sources of long-term finance, including those from institutional investors, will therefore need to be tapped through new global and regional initiatives such as climate finance, or supported by the development of capital markets.

54. Yet, traditional resources of infrastructure financing such as domestic public finance and development assistance from abroad will remain especially important in economies with small populations and the least developed economies in the region to ensure that no one is left behind without access to basic services. Indeed, in least developed countries and small island developing States, private sector participation in infrastructure financing (including public-private partnerships) is likely to be limited in view of the lack of capital markets and absence of economies of scale. For these countries, ODA will continue to play a critical role.

55. In view of the limited resource availability, countries therefore need to identify clear priority sectors for infrastructure development by sequencing their infrastructure investment and identifying where the impact of additional infrastructure on sustainable development outcomes may be the largest. In least developed economies, this is generally likely to be in transport infrastructure and energy investment, while in a number of small island developing States it will be in ICT. Water and sanitation infrastructure is also important in small island developing States that are among the least developed countries, while landlocked developing countries in turn may wish to prioritize transport infrastructure, with energy infrastructure also being important in countries that are not resource-rich.