

# ECONOMIC AND SOCIAL SURVEY OF ASIA AND THE PACIFIC 2019

## Ambitions beyond growth





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# FOREWORD



In Asia and the Pacific and around the world, our times demand stronger multilateral partnerships in the face of profound challenges from globalization, technology and climate change.

Countries in the region have made great strides in reducing extreme poverty thanks to high economic growth from vibrant trade and investment. However, rapid growth has also generated rising inequalities and a looming environmental disaster. If present trends continue, the region is unlikely to reach most Sustainable Development Goals by the 2030 target date.

We urgently need a shift in mindset and policy direction. This means looking beyond economic growth to pursue, holistically, human well-being and planetary health. Given current economic stability and the fiscal space available to countries in the region, now is the time for a decisive push to accelerate progress towards achieving the Goals.

This year's *Economic and Social Survey of Asia and the Pacific* provides a practical guide to policymakers on a critical aspect of the 2030 Agenda for Sustainable Development: how much does it cost to achieve the Goals? The report shows that the investments required to build an equitable and green future for the region are largely affordable, especially considering the synergies among the Goals.

While the Goals are generally within reach for most countries, the least developed countries in the region face large financing gaps. To mobilize additional resources, the *Survey* stresses that – in addition to making public spending more efficient – the international community and the private sector need to step up.

The *Survey's* multidimensional policy recommendations and country examples outline a walkable path towards a prosperous and inclusive future. They serve as a basis for dialogue, not only among policymakers, but also academia and civil society. As we strive to raise ambition on climate change and make globalization and technology work for all, I recommend this timely analysis and policy advice to a wide global audience.

A handwritten signature in black ink, which appears to read 'António Guterres'. The signature is fluid and cursive, with a long horizontal stroke at the end.

**António Guterres**

Secretary-General of the United Nations

# PREFACE

As Asia and the Pacific enters the fourth year of implementing the transformative *2030 Agenda for Sustainable Development*, the news from this area of the world is mixed. The region has emerged as an economic powerhouse, but progress towards achieving socially inclusive and environmentally sustainable growth is insufficient. Despite recording rapid increases in wealth, too many people are being left behind and are poorly protected. To ensure that socioeconomic progress does not damage the environment, a giant leap is needed towards a more sustainable model, based on resource-efficient consumption and production.

What will it take to realize the “*future we want*” as set out by the 2030 Agenda? The 2019 edition of the *Economic and Social Survey of Asia and the Pacific* highlights three priorities in working towards that future.

*First*, we must raise our ambitions beyond just economic growth. Our current development path is neither sustainable nor desirable. The 2030 Agenda and its 17 Sustainable Development Goals provide a clear blueprint for raising our ambitions. It calls for a change in mindset and an economic philosophy which puts *people and the planet first*.

*Second*, we must invest more strategically to achieve the Goals. The *Survey* for 2019 looks at the investments required to accelerate progress. It concludes that an additional annual investment of \$1.5 trillion is required to attain the Goals by 2030. At \$1 per person per day, such an investment would enable 400 million people to escape extreme poverty and malnutrition. It could deliver a quality education for every child and youth; basic universal health care; improved access to transport, clean water and sanitation, information and communications technology; universal access to electricity and clean cooking fuels; increased use of renewables; more energy-efficient transport, buildings and industry; climate and disaster-resilient infrastructure; fundamental changes to the way we produce and consume; and stronger environmental protection.

*Third*, we must *develop strong partnerships and regional cooperation* to ensure that no country is left behind. Closing this investment gap is within reach for many countries, but the gap is widest in countries which can least afford to narrow it. This includes least developed countries and small island developing States, which are the most heavily affected by climate change. Guided by the *Regional Road Map*, North-South, South-South and triangular cooperation as well as strengthened multilateral financing mechanisms will be essential to accelerating the pace of sustainable development.

The *Survey's* analysis of the investment gaps which need to be closed to achieve the Sustainable Development Goals complements ESCAP's forthcoming *SDG Progress Report*. It provides tools for policymakers to translate ambitions into actions and has benefited from the contributions of regional and national think-tanks, academia and the broader United Nations development system. My hope is that its recommendations will support all ESCAP stakeholders in their efforts to promote sustainable development in Asia and the Pacific.



A handwritten signature in blue ink, appearing to read 'L. Alisjahbana'.

**Armida Salsiah Alisjahbana**  
Under-Secretary-General  
of the United Nations and  
Executive Secretary of  
ESCAP



# EXECUTIVE SUMMARY

## ***The 2019 Survey calls upon the Asia-Pacific region to prioritize ambitions beyond economic growth and invest in people and the planet***

Although the region has emerged as an economic powerhouse, increases in wealth have not been shared widely, and intensive use of natural resources has come at steep financial and environmental costs. To move towards a more harmonious path of development, characterized by synergies rather than trade-offs, the region needs to urgently address investment shortfalls in people and the planet. This would require a reallocation of capital of about 4-5 per cent of GDP, on average, in the region. Doing so would put the region on track to achieve the Sustainable Development Goals by 2030. It would also support productivity growth and improve the long-term health of the regional economy.

The 2019 Survey consists of four chapters. Chapter 1 lays out the rationale for going beyond economic growth. Chapter 2 takes stock of economic conditions and policy challenges that the region is facing. Chapter 3 estimates the investment needed in people, prosperity and the planet to achieve the 2030 Agenda, and suggests how to fulfil those ambitions through integrated planning and financing. Chapter 4 concludes, with emphasis on partnership and regional cooperation.

## ***Short-term ambitions cannot override long-term sustainability***

The Asia-Pacific region has seen tremendous economic and social progress over the last 50 years, as average income levels more than tripled and life expectancy at birth increased from 46 to 75 years. However, in the light of heightened inequality and environmental degradation, keeping the old paradigm of prioritizing GDP growth at all costs is neither feasible nor desirable. The region is now at a crossroad, and it must go beyond growth to pursue, holistically, human well-being and planetary health, through a change in mindset and policymaking.

## ***Prudent macroeconomic management is needed to address near-term risks to the economic outlook and create an enabling environment for sustainable development***

Economic health is of course the foundation for sustainable development, as without growth there is no basis for social well-being. Therefore, prudent economic management is necessary for creating an enabling environment for sustainable development, as recognized in Sustainable Development Goals 8 and 17.

The 2019 Survey finds that overall economic conditions in the Asia-Pacific region are stable, with an estimated average GDP growth of 5.3 per cent in 2018 and projections of 5 and 5.1 per cent growth in 2019 and 2020, respectively, for developing countries in the region. However, export-oriented sectors face headwinds from weaker demand in Europe and possibly the United States, as well as uncertainty over United States-China trade tensions. It was estimated in the ESCAP *Asia-Pacific Trade and Investment Report 2018* that threatened tariffs could cause a net loss of at least 2.7 million jobs in the region.

Compared with 2018, countries in the region may now have greater monetary policy space to support the economy, given the pause in monetary policy normalization in the developed world and relatively stable global oil prices. However, this should be accompanied by macroprudential measures, especially in countries with relatively high household and corporate debt, such as China, Malaysia, the Republic of Korea and Thailand, or distressed bank assets, such as India.

In general, fiscal policy should play a more proactive role in supporting near- and long-term development needs, from social expenditures to infrastructure outlays and climate action. Average fiscal balances have improved since 2016, and average public debt as a share of GDP among developing countries in the region is projected to remain at a moderate level over the next five years. Moreover, what matters most is where and what the deficit and debt are being used for, as discussed further in chapter 3 in the context of achieving the Sustainable Development Goals.

### ***Economic policies should support structural transformation towards sustainable development***

The region's medium- to long-term prospects depend on structural transformation and broad-based productivity growth. The *2019 Survey* cautions against countries shifting from an agriculture-based economy to one in which services play a dominant role, bypassing the manufacturing sector. New frontier technologies may reduce the scope for industrialization in "late entrant" developing countries, while high-value-added services require skilled workers. This is all the more reason to invest in people and enabling infrastructure. At the same time, boosting agricultural productivity and rural industries would be important for ending poverty, as discussed in the forthcoming ESCAP *Countries with Special Needs Development Report 2019*.

The next phase of structural transformation in the region must be environment-friendly. The *2019 Survey* illustrates that investments to speed up the transition to more resource-efficient systems of production and consumption would not only reduce carbon emissions by a tenth compared with the historical trend scenario, but also deliver high economic returns and over time reduce the net financial cost to zero. It would certainly be less costly compared with the cost of inaction on climate change and resource depletion.

### ***To achieve the Sustainable Development Goals by 2030, Asia-Pacific developing countries need to invest an additional \$1.5 trillion per year***

The *2019 Survey* reveals that achieving the Sustainable Development Goals by 2030 would require an annual additional investment of \$1.5 trillion for Asia-Pacific developing countries – equivalent to 5 per cent of their combined GDP in 2018, or about 4 per cent in terms of the annual average GDP for the period 2016-2030. This is based on a broad definition of investment, which includes expenditures if they deliver clear social returns. At less than a dollar per person per day, such an investment is worthwhile as it would deliver the following:

- An escape for more than 400 million people from extreme poverty and malnutrition (Goals 1 and 2)
- Basic health care for all (Goal 3)
- A quality education for every child and youth (Goal 4)
- Improved access to transport, information and communications technology, and water and sanitation (Goals 6, 9, 11 and 17)



- Universal access to electricity and clean cooking (Goal 7)
- Increased use of renewables (Goals 7 and 13)
- Energy-efficient transport, buildings and industry (Goals 7 and 13)
- Climate/disaster-resilient infrastructure (Goals 9 and 13)
- Fundamental changes in the manner of producing and consuming (Goals 8 and 12)
- Protection of nature's wealth (Goals 14 and 15).

People- and planet-related interventions would account for most of the additional investment, with \$669 billion needed to support basic human rights and develop human capacities, and \$590 billion to secure humanity's future and live in harmony with nature. The remaining \$196 billion would be for enabling infrastructure.

For a region as large and diverse as Asia and the Pacific, the composition of the investment gap would vary considerably across subregions and country groups. *Least developed countries* and *South and South-West Asia* would need to scale up investments to end poverty and hunger and reach health and education targets, whereas *East and North-East Asia* would need to step up on clean energy and climate action. Given their high vulnerability to climate change, the *Pacific island developing States* would need additional investments in disaster-resilient infrastructure.

## ***Investing in people is about realizing basic human rights and human capacities***

Ending poverty and hunger is a matter of basic human rights. The 2019 Survey proposes and costs four major interventions to reach these Goals: (a) *targeted cash transfers to eliminate poverty*, based on international poverty thresholds in accordance with target 1.1; (b) a *social protection floor for all ages*, based on national poverty thresholds and covering benefits for child, maternity, unemployment, disability and old-age pensions in accordance with targets 1.2 and 1.3; (c) *nutrition-specific interventions* to address wasting, breastfeeding, anaemia and stunting in accordance with target 2.2; and (d) *rural investments* to double agricultural productivity and small farmers' incomes, consisting of interventions ranging from primary agriculture and agroprocessing to R&D and extension in accordance with target 2.3. Taking these four areas together, the 2019 Survey estimates an investment gap of \$373 billion per year, based on costing models and studies referenced in chapter 3.

The 2030 Agenda is also about giving everyone the chance to realize their full potential in life. This entails, among other things, making substantial advances in health-care services and quality education for all. Based on the *SDG Health Price Tag* of the World Health Organization, the 2019 Survey estimates that an additional investment of \$158 billion, or \$38 per person per year, would be needed to scale up health systems ambitiously towards achieving Goal 3 targets. The package includes clinics and hospitals, doctors and nurses, supply chain and information systems, and commodities and supplies. On education, in extending the model of the United Nations Educational, Scientific and Cultural Organization to increase country coverage, the 2019 Survey estimates that an additional investment of \$138 billion per year would be needed for providing universal pre-primary to upper-secondary schooling of a certain quality, as measured by teachers' salaries and the pupil-teacher ratio. The cost also includes an additional budget for reaching the marginalized.

## ***Investing in the planet is about securing humanity's future and living in harmony with nature***

Climate change presents the single greatest threat to sustainable development. The *2019 Survey* estimates the additional investment required for climate change mitigation and adaptation. Based on the World Energy Model of the International Energy Agency, the *2019 Survey* estimates the cost of shifting from fossil fuel to renewable energy and enhancing energy efficiency in the transport, building and industry sectors, as well as achieving universal access to electricity and clean cooking. Such investment would deliver co-benefits in the form of reduced air pollution and associated premature death. Additionally, for building climate resilience into the transport, information and communications technology, and water and sanitation sectors, the *2019 Survey* applies a markup on the total capital and maintenance costs for new and existing infrastructure in those sectors. Taken together, an additional investment of \$434 billion per year would be needed for clean energy and climate-resilient infrastructure. The *2019 Survey* finds that, in the Pacific island developing States, the average annual loss associated with natural disasters is about 18 per cent of total infrastructure investment, or 9 times higher than the regional average.

The 2030 Agenda is also about environmental conservation. The Asia-Pacific region is home to the highest marine biodiversity in the world, with the longest and most diverse coral reef systems and more than half of the world's remaining mangrove areas. Based on the *Strategic Plan for Biodiversity 2011-2020* and associated targets, the *2019 Survey* estimates that an additional investment of \$156 billion per year would be needed to conserve and restore ecosystems and biodiversity in the region, based on an underlying assumption of the business-as-usual approach in other segments of society. If progress is made on other Goals, including climate action, the financial needs can be reduced substantially.

## ***To maximize impact, countries could harness synergies and prioritize Goals based on progress made and the investment required***

How can various investments be translated effectively into desired outcomes? The answer will depend on countries' ability to harness synergies and address trade-offs through integrated planning. Health outcomes, for instance, depend not only on health-care services but also on nutrition, water, sanitation and air quality; thus, investments in these other areas could deliver health co-benefits. With good governance, such positive interactions are likely to intensify, resulting in a reduction in the long-term investment needed for achieving the Goals. At the same time, unless countries ensure that progress in one area does not come at the expense of another, long-term investment needs may increase.

Establishing priorities would require an understanding of where the region is on track, lagging or regressing vis-à-vis the Goals, and how much in the way of additional investments would be required in those respective areas. Based on the forthcoming *ESCAP SDG Progress Report*, Goals 1 to 4 are achievable but require sustained effort and targeted investment in certain aspects. Goals 7 and 13-15 are largely off-track and would require significant scaling up of investment – which is also likely to be the case for Goals 6 and 11, although precise requirements are less clear for urbanization. In comparison, progress in such Goals as reducing economic, social and gender inequality (Goals 5 and 10) and safeguarding peace and justice (Goal 16) hinges more on changes in vision, culture and other non-financial interventions.

## ***Financing the investment gap requires a concerted effort driven by the assessment of fiscal space and leveraging the private sector***

Some Goals are by their nature reliant on public funding, such as education, health, climate change adaptation and conservation, while others offer greater potential for private financing - infrastructure sectors, such as information and communications technology, power and renewable energy.

Public investment can be supported by increased tax collection or prudent sovereign borrowing. Given that the Asia-Pacific region has one of the world's lowest tax-to-GDP levels, better tax administration could increase those levels by 5-8 per cent in countries such as Cambodia, Myanmar and Tajikistan, for example. Wealth-based taxes and environmental taxes could contribute not only to revenues but also directly to the achievement of the Goals. While public debt levels are generally manageable, the *2019 Survey* reveals that countries with relatively wider investment gaps have limited access to international capital markets and face higher borrowing costs.

Aside from raising more fiscal resources, funds for the Goals can be increased by improving investment efficiency. Based on peer benchmarking, the *2019 Survey* estimates that Asia-Pacific developing countries can achieve similar levels of output and outcome in the health and education sectors using 30 per cent fewer resources than currently. Such inefficiencies arise, for instance, from the disconnect between schooling years and acquisition of basic skills. Potential savings are even higher in infrastructure sectors, at more than 50 per cent, where project appraisal, selection and management, coordination among government branches and a steady flow of resources for maintenance are important.

In terms of private financing, given the large amount of assets managed by the private financial sector – some \$51 trillion in the developing Asia-Pacific region – the challenge would be to redirect funds to sustainable development projects through innovative financial instruments, such as green bonds, and promoting new investor classes, such as in impact investment. Countries could also arrange risk-sharing through public-private partnerships. To maximize impact and mitigate drawbacks of private investment in the Goals, a strong regulatory framework and standards would be important, as would effective stakeholder engagement.

## ***The journey towards sustainable development is affordable, if countries work together through development partnership and regional cooperation***

While the financial requirement for sustainable development is within reach for many countries, others face daunting challenges. The *2019 Survey* reveals that the funding gap is as high as 16 per cent of GDP for *least developed countries* and 10 per cent for countries in *South and South-West Asia*. Similarly, the *Pacific island developing States* face additional challenges given their high vulnerability to climate change, for which they are not responsible. Strong development partnerships can ensure that these countries are not left behind. Guided by the ESCAP *Regional Road Map* for implementing the 2030 Agenda, North-South, South-South and triangular cooperation, as well as strengthened multilateral financing mechanisms, will be essential to accelerating progress towards sustainable development in all of Asia and the Pacific.

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The *Survey* is produced under the direction of the Executive Secretary and the Editorial Board of ESCAP, with contributions of staff from its substantive divisions and subregional offices. It draws on expertise available from across the United Nations system.

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# EXPLANATORY NOTES

Analyses in the *Economic and Social Survey of Asia and the Pacific 2019* are based on data and information available up to 1 March 2019.

Groupings of countries and territories/areas referred to in the present issue of the *Survey* are listed alphabetically as follows:

**ESCAP region:** Afghanistan; American Samoa; Armenia; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; China; Cook Islands; Democratic People's Republic of Korea; Fiji; French Polynesia; Georgia; Guam; Hong Kong, China; India; Indonesia; Iran (Islamic Republic of); Japan; Kazakhstan; Kiribati; Kyrgyzstan; Lao People's Democratic Republic; Macao, China; Malaysia; Maldives; Marshall Islands; Micronesia (Federated States of); Mongolia; Myanmar; Nauru; Nepal; New Caledonia; New Zealand; Niue; Northern Mariana Islands; Pakistan; Palau; Papua New Guinea; Philippines; Republic of Korea; Russian Federation; Samoa; Singapore; Solomon Islands; Sri Lanka; Tajikistan; Thailand; Timor-Leste; Tonga; Turkey; Turkmenistan; Tuvalu; Uzbekistan; Vanuatu; and Viet Nam.

**Developing ESCAP region:** ESCAP region excluding Australia, Japan and New Zealand.

**Developed ESCAP region:** Australia, Japan and New Zealand.

**Least developed countries:** Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, Lao People's Democratic Republic, Myanmar, Nepal, Solomon Islands, Timor-Leste, Tuvalu and Vanuatu. Samoa was part of the least developed countries prior to its graduation in 2014.

**Landlocked developing countries:** Afghanistan, Armenia, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Mongolia, Nepal, Tajikistan, Turkmenistan and Uzbekistan.

**Small island developing States:** Cook Islands, Fiji, Kiribati, Maldives, Marshall Islands, Micronesia (Federated States of), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu.

**East and North-East Asia:** China; Democratic People's Republic of Korea; Hong Kong, China; Japan; Macao, China; Mongolia and Republic of Korea.

**North and Central Asia:** Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan.

**Pacific:** American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

**Pacific island developing economies:** All those listed above under "Pacific" except for Australia and New Zealand.

**South and South-West Asia:** Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka and Turkey.

**South-East Asia:** Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam.

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Mention of firm names and commercial products does not imply the endorsement of the United Nations.

Many figures used in the *Survey* are on a fiscal year basis and are assigned to the calendar year which covers the major part or second half of the fiscal year.

Growth rates are on an annual basis, except where indicated otherwise.

References to dollars (\$) are to United States dollars, unless otherwise stated.

The term "billion" signifies a thousand million. The term "trillion" signifies a million million.

In the tables, two dots (..) indicate that data are not available or are not separately reported; a dash (–) indicates that the amount is nil or negligible; and a blank indicates that the item is not applicable.

In dates, a hyphen (–) is used to signify the full period involved, including the beginning and end years, and a stroke (/) indicates a crop year, fiscal year or plan year.

# ACRONYMS

AAL	average annual loss
ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BEPS	base erosion and profit-shifting
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
CBD	Convention on Biological Diversity
CGE	computable general equilibrium
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CFL	compact fluorescent
CPI	consumer price index
CPS	Current Policy Scenario
CSN	countries with special needs
ENEA	East and North-East Asia
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FTA	free trade agreement
GDP	gross domestic product
GEF	Global Environment Facility
GHG	greenhouse gas
GNP	gross national product
GLOBIOM	Global Biosphere Management Model
GST	goods and services tax
GTEM	Global Trade and Environment Model
GVC	global value chain
HIV	human immunodeficiency virus
ICT	information and communications technology
ICL	incandescent lamp
ICMA	International Capital Market Association
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
IIASA	International Institute for Applied Systems Analysis
ILO	International Labour Organization
IMF	International Monetary Fund
IoT	Internet of Things
IRP	International Resource Panel
IT	information technology
ITF	International Transport Forum



ITU	International Telecommunication Union
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LCCR	low-carbon, climate-resilient
LDC	least developed country
LLDC	landlocked developing country
LTV	loan-to-value
MNEs	multinational enterprises
MDGs	Millennium Development Goals
NCA	North and Central Asia
NCDs	non-communicable diseases
NDCs	nationally determined contributions
NIS	National Nutrition Intervention Scenario
NPL	non-performing loan
NPS	New Policy Scenario
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PPP	public-private partnerships
P2P	peer-to-peer
4Ps	Pantawid Pamilyang Pilipino Program
SAARC	South Asian Association for Regional Cooperation
SDGs	Sustainable Development Goals
SDS	Sustainable Development Scenario
SEA	South-East Asia
SIDS	small island development State
SSWA	South and South-West Asia
TiVA	trade in value added
TFP	total factor productivity
TVET	technical and vocational education and training
UHC	universal health coverage
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
UN-Women	United Nations Entity for Gender Equality and the Empowerment of Women
VAT	value added tax
WEF	World Economic Forum
WEM	World Energy Model
WFP	World Food Programme
WSS	water and sanitation







# Chapter 1

## Beyond economic growth

### *We are living in a world of contradictions ...*

The famous opening sentence of one of the best-known works of English literature, *"It was the best of times, it was the worst of times"*,<sup>1</sup> could not be truer today. The world in the first quarter of the twenty-first century finds itself in contradictory circumstances, much like those Charles Dickens saw in western Europe in the last quarter of the eighteenth century.

These are, indeed, the best of times because, in many ways the world is experiencing the highest level of economic and social prosperity ever. In 1915, 3 of every 4 individuals lived in extreme poverty (i.e. on less than a dollar a day) and could expect to live only 31 years. In 2010, only 1 of every 4 people lived in extreme poverty, and the average person could expect to celebrate at least 67 birthdays.<sup>2</sup> The improvements are even more staggering when one looks at the reductions in infant and child mortality and death from malnutrition, inadequate health care, wars and natural catastrophes.

Yet, these are also the worst of times because all this progress over the last century has come at a steep cost, evident in a considerable decline in life satisfaction, linked to rising inequalities of opportunities and outcomes, worsening environment and a climatic disaster that is undermining future economic growth and threatening mankind's very survival on this planet.

The Asia-Pacific region too has seen tremendous economic and social progress over the last 50 years, as average income levels more than tripled and life expectancy at birth increased from 46 to 75 years. Close to 1.1 billion people have been lifted out of poverty since 1990. However,

<sup>1</sup> From the book *A Tale of Two Cities* by Charles Dickens, originally published in 1859.

<sup>2</sup> Numerous sources on life expectancy are available at <https://ourworldindata.org/life-expectancy#note-3>.

economic prosperity has not always increased broader human well-being. Rather, it has come at a massive social and environmental cost: income inequality has increased since 1990 - the top 10 per cent of people accounted for more than half of income and wealth in 2017 (ESCAP, 2018e); greenhouse gas emissions have increased sixfold, from 0.9 to 5.8 metric tons per capita; and the region is home to 5 of the world's 10 economies most affected by climate change in the past 10 years (Bangladesh, Nepal, Sri Lanka, Thailand and Viet Nam) (Eckstein, Hutfils and Wings, 2019). On the five indicators of well-being, the Asia-Pacific region lags the world on two of them: *purpose and social well-being* (Gallup, 2015),<sup>3</sup> highlighting the social cost of economic growth.

### ***In the journey towards development***

At the turn of the century, Governments across the globe and the world's leading development institutions adopted the eight Millennium Development Goals, which ranged from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015.

While much was achieved under those Goals, more needed to be done. Hence, 2015 ushered in the bold and transformative *2030 Agenda for Sustainable Development*. It consisted of 17 Sustainable Development Goals that form a shared vision of humanity – *people, planet, prosperity, peace and partnership*. This development paradigm is much more ambitious as it includes economic, social and environmental goals with 169 targets and 235 indicators, and is more focused on the quality of development rather than

just the quantity. For instance, instead of having a target on school enrolment as in the Millennium Development Goals, the Sustainable Development Goals' target on education includes minimum proficiency in reading and mathematics. In addition, the latter Goals emphasize a broader vision of sustainability, which includes various aspects of the environment as well.

### ***Remove the bumps in the road – just change the mindset and economic philosophy ...***

Reducing the wide economic, social and environmental deficits in the region is key to implementing the bold and transformative 2030 Agenda for Sustainable Development anchored to the three pillars of “people, planet and prosperity”, alongside “peace and partnership” serving as the necessary underpinning. This requires a change in mindset, moving away from the single-minded emphasis on economic growth advocated by international financial institutions with primacy given to markets over Governments.

This preoccupation with increasing the size of the pie – GDP – was rooted in the belief that the maximization of consumption, or GDP, is equivalent to maximization of welfare. A pure economist's perspective ignores the multiple dimensions of well-being.

The emphasis placed by the economist's utilitarian approach, on the greatest happiness of the greatest number, overlooks the non-egalitarian nature of this principle. In Amartya Sen's words, “*maximizing the sum of individual utilities is supremely unconcerned with the interpersonal distribution of that sum*” (Sen, 1973).

Keynes described economics as “*essentially a moral science*”. While moral philosophy has moved beyond utilitarianism, economics apparently has not. Welfare criteria in economic theory should evaluate political and economic institutions according to their contributions to humanity's well-being. Public policy, as the basis of society's welfare, should be based on the principle that inequalities in a society should work for the greatest benefit of the least advantaged (the *difference principle* of Rawls (1971)) and on Sen's *capabilities approach*, which emphasizes the freedom that people need in order to function in key dimensions.<sup>4</sup>

In addition, economists emphasize efficiency, Pareto-efficiency to be precise, in assessing changes in welfare. Pareto efficiency refers to a situation where it is impossible to make someone better-off/happy without making someone else worse-off/unhappy. This

<sup>3</sup> The five well-being indicators are: purpose, social, financial, community and physical.

<sup>4</sup> For a detailed discussion of observations in this paragraph, see Sen (1999) and Atkinson (2009).

criterion tends to undermine any public policy that would attempt to address inequality directly, that is, transferring resources from the rich to the poor. In addition, the policy literature has assumed that redistribution hurts growth (Okun, 1975). However, recent literature shows that inequality reduces the duration of growth-spells, hence hurting long-term growth (Berg and Ostry, 2011).

It is not to say that there were no clarion calls on the downsides of emphasizing economic growth. In fact, as early as 1972, Nordhaus and Tobin wrote about the disillusionment with economic growth, when *"critics indict[ed] both economic science and economic policy for blind obeisance to aggregate material 'progress,' and for neglect of its costly side effects. Growth, it is charged, distorts national priorities, worsens the distribution of income, and irreparably damages the environment"* (Nordhaus and Tobin, 1972).

The past decades have witnessed excessive reliance on self-correcting market mechanisms with single-minded pursuit of growth.<sup>5,6</sup> After the Latin American debt crisis in the 1980s, the so-called Washington Consensus became the universal doctrine, whereby developing countries were told to liberalize their trade and financial markets. During the period of the *Asian Miracle*,<sup>7</sup> the State played a central role in guiding industrial policy with an emphasis on maintaining social cohesion. However, the international financial institutions' advice in the early 1990s to liberalize rapidly led to excessive hot money inflows and collapse of the financial system. Asia underwent a massive financial crisis in 1997. Research shows that all recessions lead to a permanent fall in output (Cerra and Saxena, 2005a), and the large recession in the aftermath of the 1997 crisis was no exception. While growth subsequently picked up to pre-crisis levels, output never recovered (Cerra and Saxena, 2005b). Investment never picked up to support growth, a phenomenon that plagues the region even now (as evident in the macroeconomic analysis in chapter 2).

Growth by itself does not guarantee either abiding by resource constraints or an equitable distribution. Certain environment-friendly actions do not increase GDP; for instance, driving a car that creates pollution adds to GDP, while walking does not. Similarly, certain economic policies that have a positive impact on economic growth (economic and financial liberalization) can have a negative impact

on distribution (Ostry, Berg and Kothari, 2018). The analysis in chapter 3 shows that *Goal 8 (economic growth and decent jobs)* and *Goal 12 (responsible consumption and production)* have very few synergies, confirming the need to decouple economic growth from excessive resource use and environmental degradation.

Too much emphasis on the ability of markets to deliver outcomes that are beneficial for society and an excessive reliance on money also create a moral vacuum. Anthropologists and behavioural economists have shown that money changes *intrinsic behaviour*, but by giving markets a central role in solving problems, economists have ignored larger issues that revolve around ethics and morality. With a market for everything and with money that can buy everything, people feel alienated and experience a loss of a sense of belongingness – the lack of a civil society. According to Michael Sandel, a political philosopher at Harvard University, when money pervades all aspects of life, inequality stings even more because access to education and basic services gets limited to those with money (Sandel, 2012). This can be disruptive for peace, justice and strong institutions.

### **We are at a crossroad and we have a choice to make!**

While economic growth remains robust for the region, its prospects seem somewhat uncertain. Countries encountering high and growing levels of inequality and environmental degradation have choices to make. Should they continue on the old path of economic growth - all choices are determined by markets; environment and social equity are disregarded - or should they make a paradigm shift - give a proper role to Governments in regulating markets to ensure that social and environmental

5 Even Former United States Federal Reserve Chairman, Alan Greenspan admitted that the case for free markets advocated in the spirit of self-interest is flawed. For the details, see video presentation entitled "Gillian Tett asks if banking culture has really changed". *Financial Times*, 28 August 2018. Available at [www.ft.com/video/0e20f113-f559-4f8e-85b3-6773e96c75b0?emailId=5b852708bbc37b0004d4166f&segmentId=13b7e341-ed02-2b53-e8c0-d9cb59be8b3b](http://www.ft.com/video/0e20f113-f559-4f8e-85b3-6773e96c75b0?emailId=5b852708bbc37b0004d4166f&segmentId=13b7e341-ed02-2b53-e8c0-d9cb59be8b3b).

6 The emphasis of international financial institutions on growth and over-optimism for growth prospects may also be driven by their desire to justify their help to countries in need. See Ho and Mauro (2016) for over-optimistic growth forecasts when IMF programmes are imminent.

7 This refers to rapidly growing economies in East Asia, namely, Hong Kong, China; the Republic of Korea; Singapore; and Taiwan Province of China.



goals are met? This means taking into account the multifaceted social and environmental impacts of economic growth. As India's Prime Minister Narendra Modi said: *"The imbalances between our greed and necessities have led to grave ecological imbalances. We can either accept this, go ahead with things as if it is business as usual, or we can take corrective actions"*.<sup>8</sup> The steps towards achieving that objective include internal consciousness for social equality, public awareness and more research and innovation on subjects related to the environment.

### **Envisioning a better future ... mindful policymaking**

The problems facing the world are grave, but solutions are also plentiful. Desperate times call for desperate measures. A bold policy agenda is needed. The new agenda needs to do the right thing for the right reasons:

1. *Providing meaningful jobs*: As the human race rides a technological wave, with millions of jobs on the brink of extinction and the future being unclear, there is considerable discussion about providing a *universal basic income* to help everyone, including those who will become structurally unemployed. What was once conceived of as a safety net for all citizens is now offered as a way to soften the transition to a world without work. The discussion should be focused on the wider meaning and purpose of employment. A job provides a livelihood, but it also provides dignity, meaning and purpose to people in their lives. Policymakers will have to grapple with the meaning of work and its place in a good life. Governments as well as the private sector need to join forces to

find solutions that are focused on providing gainful employment to all and developing social safety net systems in line with the changing nature of work.

2. *Choosing oneness of life and the environment*: Fifty years ago, Robert F. Kennedy had said that *"GNP measures everything, except that which makes life worthwhile"*. Fifty years later, it is still expected that countries will transcend the boundaries imposed by nature and continue to grow forever. Economic growth cannot be decoupled from the resource use required to sustain it. Hence, economic growth is necessary but not sufficient for well-being. Unfortunately, humanity is constrained by limited natural resources. According to Oxbridge economics professor, Kate Raworth, *"From your children's feet to Amazon forests, nothing in nature grows forever. Things grow, and they grow up. And they mature. And only by doing so they can thrive for a very long time"*.<sup>9</sup> Thus, it is necessary to seek a balance within social and ecological boundaries.

It is time that economics borrows ideas from other disciplines (sociology, psychology, anthropology) that place emphasis on internal values, that is, on things that make life worthwhile. Research by psychologist Tim Kasser has shown that *people with primarily materialistic values lack empathy and are unhappier, have fewer friends and are even in poorer health than those who grant greater importance to internal values*. These internal values are *compassion, cooperation and altruism*. Unlike money, these internal resources can be generated without limit, without endangering planetary boundaries.

3. *Creating a shared global economy*: In 1930, in a paper entitled "Economic possibilities for our grandchildren", John Maynard Keynes projected what life would be like "for our grandchildren" in 2030 – 100 years thence (coinciding with the 2030 Agenda). He supposed that *"in 100 years' time we all will be 8 times better off in economic terms than we are today, given technical progress and capital accumulation"*. When [this] economic problem is solved, *"for the first time since his creation man will be faced with his real, his permanent problem – how to use his freedom from pressing economic cares, how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well"*. Almost 90 years later, despite economic growth and progress, human beings are far from having any leisure time on hand. People are working harder than normal and barely making ends meet. When four companies (Google, Apple, Facebook and Amazon) have more market capitalization than the world's seventh largest economy (India), everyone can agree that "we have a problem". Just in China alone, three top companies (Alibaba, Baidu and Tencent) have a market capitalization of \$1 trillion – about

<sup>8</sup> Statement made on 3 October 2018 when the Prime Minister received the "Champion of the Earth" Award from United Nations Secretary-General António Guterres.

<sup>9</sup> In a Ted Talk delivered in April 2018, "A healthy economy should be designed to thrive, not grow." Available at [https://www.ted.com/talks/kate\\_raworth\\_a\\_healthy\\_economy\\_should\\_be\\_designed\\_to\\_thrive\\_not\\_grow?language=en](https://www.ted.com/talks/kate_raworth_a_healthy_economy_should_be_designed_to_thrive_not_grow?language=en).



40 per cent of India's GDP. In 2018, only 26 people owned the same wealth as the 3.8 billion people who make up the poorest half of humanity (Oxfam, 2019). With income and wealth concentrated at the top 1 per cent around the world, it is clear that the rising tide has not lifted all boats. In fact, the system appears rigged against social mobility and the mantra of "leaving no one behind".

In such a situation, Governments have an enormously important role to play – both in terms of designing reforms and policies that level the playing field and create equal opportunities for all, and through a more aggressive use of fiscal redistribution. This means that the rich must contribute their fair share to sustain economic development. While this reckoning with distribution is slowly taking place at some international institutions, there is still not much talk about how to square the circle with making economic growth both people- and planet-friendly. This requires a shift in mindset – *putting the well-being of people and the planet first*.

There is a Chinese adage, "*The greatest ideal is to create a world truly shared by all*". Fortunately, the Asia-Pacific region has leaders who adhere to this principle. For example, Indian Prime Minister Mr. Narendra Modi's views on inclusive growth<sup>10</sup> and New Zealand Prime Minister Ms. Jacinda Ardern's approach to measuring GDP by more than just economic progress<sup>11</sup> are steps in the right direction.

### **The 2030 Agenda: taking the unfinished business ...**

The forthcoming *SDG Progress Report for Asia and the Pacific* shows that the progress achieved so far on the 17 Sustainable Development Goals is mixed. Although good progress has been made since 2000 on Goals 1 (poverty eradication), 3 (health), 4 (quality education) and 7 (reliable and clean energy), efforts still need to be accelerated to achieve those Goals by 2030. However, even more work needs to be done in such areas as water and sanitation (Goal 6), decent work (Goal 8) and sustainable consumption and production (Goal 12) where the region has regressed.

### **To the finishing line.**

The question remains: "How do we get to the finishing line?" In order to take the first steps, policymakers need to know what interventions they need to make to achieve the Goals, as well as how much that would cost. This is a monumental task. This *Survey* undertakes a comprehensive assessment of the investment needs for achieving the Sustainable Development Goals in Asia and the Pacific. It provides a blueprint for policymakers to systematically chart out a path to implement the 2030 Agenda. Its estimates suggest that developing Asia-Pacific countries need an additional annual investment of \$1.5 trillion, or just under a dollar per person per day (see the infographic at the end of the chapter).

After all, the **2030 Agenda** is a shared vision for a better future for all. It asks for everyone to look beyond themselves and beyond national boundaries because their actions today have an impact on the environment for future generations and the impact of greenhouse gas emissions and loss of biodiversity and ecosystem destruction cuts across borders. For the interconnected world that all live in, this means everyone must contribute his or her fair share in creating an *equitable and green future*. This can be done if efforts are made to build a civil society where purpose maximization replaces profit maximization and maximizing well-being takes precedence over maximizing economic growth.

<sup>10</sup> More details on his philosophy of "*sabka saath, sabka vikas*" (collective efforts, inclusive growth) are available at [www.narendramodi.in/sabka-saath-sabkavikas-collective-efforts-inclusive-growth-3159](http://www.narendramodi.in/sabka-saath-sabkavikas-collective-efforts-inclusive-growth-3159).

<sup>11</sup> At the World Economic Forum in Davos, Switzerland, in late January 2019, she described her Government's "well-being budget initiative" in that broader context of economic growth.

The good news is that countries in the region have been and are moving in this direction and away from primary reliance on GDP as a measure of national well-being. For example, in 1972, Bhutan declared that “gross national happiness” is a better indicator of national prosperity than GDP. In 2019, New Zealand introduced its “Well-being Budget Initiative” (see box 1.1).

Such a society also calls for action by all citizens for the greater good of society. Rousseau (1762) said: “As soon as public service ceases to be the chief business of the citizens, and they would rather serve with their money than with their persons, the State is not far from its fall”. Hence, an appeal needs to be made to the full range of human emotions, “love and honour and pity and pride and compassion and sacrifice”.<sup>12</sup> People have always responded to these calls and they will continue to do so.

The former Secretary-General of the United Nations, Mr. Kofi Annan, once said: “We share a common destiny. We can master it only if we face it together”<sup>13</sup>. Together, we can!

### Box 1.1

#### Well-being first – New Zealand Budget Initiative

New Zealand's Government has set ambitious goals to address citizens' well-being. Under Prime Minister Jacinda Ardern's leadership, New Zealand is prioritizing human flourishing, equal opportunities and the transition into a low-emissions economy (Robertson, 2018a).

To identify substantive opportunities to improve New Zealand's well-being, the Government uses two sources: (a) the OECD multidimensional Living Standards Framework supplemented with indicators tailored to New Zealand's unique cultural identity (McLeod, 2018); and (b) the General Social Survey developed by the University of Chicago. These opportunities for improving well-being are refined in a collaborative process with sector experts, officials and government science advisors. The five budget priorities for 2019 are:

- (a) Creating opportunities for productive businesses, regions, *iwi*, that is, the Māori tribes, and others to transition towards a sustainable and low-emissions economy;
- (b) Supporting a thriving nation in the digital age through innovation, social and economic opportunities;
- (c) Lifting Māori and Pacific incomes, skills and opportunities;
- (d) Reducing child poverty and improving child well-being, including addressing family violence;
- (e) Supporting mental well-being for all New Zealanders, with a special focus on under-24-year-olds (Robertson, 2018b).

The Well-being Budget Initiative is focused on *leaving nobody behind*. It does not stop at ambitious goal setting but makes fundamental changes in the government budgeting processes. To facilitate evidence-based policymaking, all ministries are required to justify expenditures along the lines of well-being priorities that include the economic, social and environmental aspects of life. Consequently, policies are evaluated according to their impact on well-being.

The 2019 well-being budget is a cross-government agency effort to better align Government policies with New Zealand's socioecological priorities. It considers GDP growth only as one among many means to achieve well-being and not a goal in itself, and is an innovative approach to economic and fiscal policymaking.

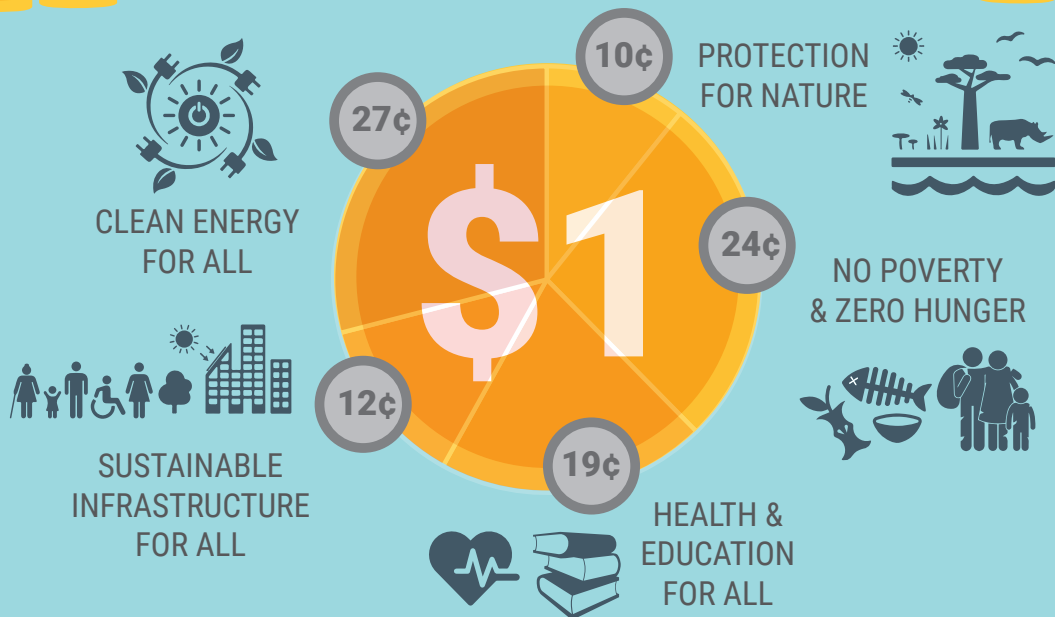
12 William Faulkner stated those words in his speech in December 1950 on the occasion of winning the 1949 Nobel Prize for Literature. Available at [www.nobelprize.org/prizes/literature/1949/faulkner/speech/](http://www.nobelprize.org/prizes/literature/1949/faulkner/speech/).

13 He made the statement in a message on the eve of the new millennium (30 December 1999).

To realize the dreams of  
**4.3 billion people**  
in Asia and the Pacific,  
it will cost an additional



**\$1.5 trillion per year**  
**≈ \$1 per person per day**



For South Asia and  
Least Developed Countries

**\$2 to \$3**  
per person per day



**It's affordable,  
if we all work together!**



Society



Environment



E

# Chapter 2

## Economic outlook and policy challenges

### 1. Economic resilience has come at a price: social and environmental costs

The tenth anniversary of the start of the global financial crisis in September 2008 was a sombre reminder of the Asia-Pacific region's strengths and weaknesses. The region's remarkable economic resilience, which helped to anchor the global economy over the past decade, has come at a price.

The mindset to prioritize economic growth has overlooked its social and environmental costs. As a consequence, the gains of that economic growth are being extended to only relatively few people. Intensive resource use has engendered significant environmental and health costs, while undermining prospects for achieving the Sustainable Development Goals of the 2030 Agenda.

Bold and wise policy choices are therefore needed in the face of an increasingly uncertain global environment, in order to make the economy of the region more inclusive and sustainable.

### 2. Economic performance and outlook

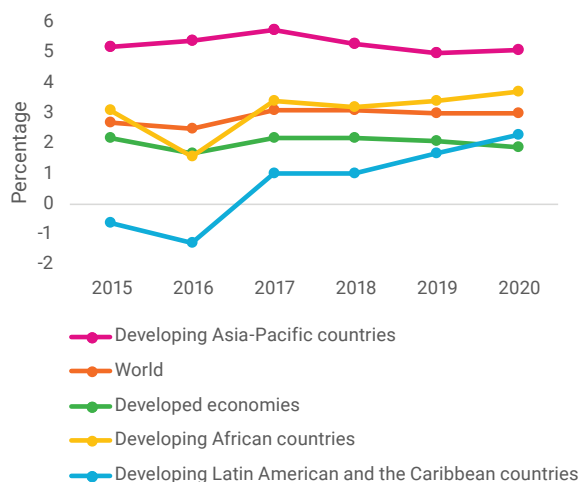
#### 2.1. Global context - steady growth faces downside risks

**On the surface, global economic growth appears to be steady.** The global economy is estimated to have grown by 3.1 per cent in 2018, the same rate as in 2017, and is projected to grow by 3 per cent in 2019 and 2020, respectively (figure 2.1).



**Figure 2.1**  
**Growth of developing Asia-Pacific region remains stronger than rest of world**

Real GDP growth year-on-year



Source: Estimates by the United Nations Department of Economic and Social Affairs, and ESCAP.

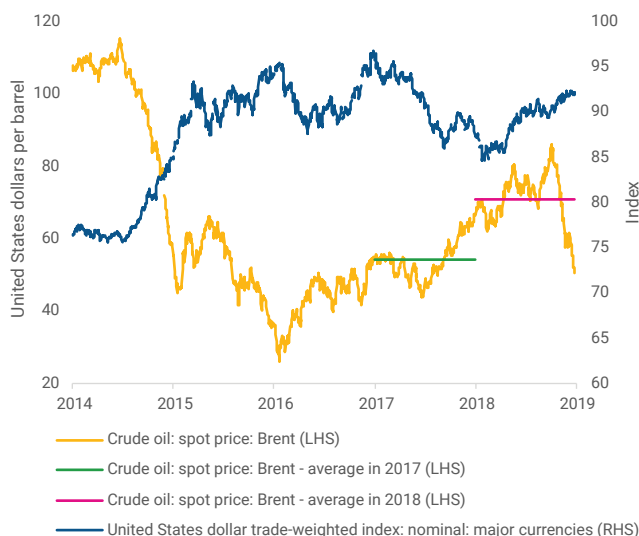
### However, the headline figure masks uneven economic progress.

Growth in 2018 was largely due to a pro-cyclical, fiscal stimulus-driven *United States* economy, offsetting slower-growing economies in *Argentina*, *Canada*, *China*, *Japan*, the *Islamic Republic of Iran*, *Turkey* and the *European Union*. For developing countries in *Central*, *Southern* and *Western Africa* as well as in *Latin America and the Caribbean*, per capita incomes declined in 2018.

### The rapid pace of global economic expansion that began in 2016 may have peaked in 2018.

In 2019, growth in the *United States* is projected to decelerate as the effects of fiscal stimulus measures wane. The *European Union* too faces downside risks amid uncertainty over Brexit (United Nations, 2019).

**Figure 2.2**  
**Movement of oil prices and the United States dollar**  
Oil prices and United States dollar index



Source: CEIC Data (accessed on 13 January 2019).

Note: LHS = left-hand side axis; RHS = right-hand side axis.

### The global economy faces a confluence of risks with the potential to disrupt wider development progress.

In the short term, rising trade tensions between the world's largest economies could escalate, thus discouraging investment, pushing up consumer prices and lowering business confidence. Added to this, uncertainties about global financial conditions or a shift in sentiment could exacerbate financial stress. Meanwhile, increased demand for safe assets has led to a stronger United States dollar, adding to financial vulnerability in developing countries due to capital flight. Swings in future oil prices are expected: on one hand, the December 2018 announcement by OPEC that it would cut oil output in 2019 could push up prices; on the other, diminishing global growth could lower oil demand and prices (figure 2.2). The possible failure of policymakers to finalize post-Brexit legal and regulatory arrangements in a timely manner and emerging market crises in *Argentina* and *Turkey* have led to fears of contagion.



**In the long term, uneven growth poses risks.** Although massive gains have been made in reducing global poverty levels, widening socioeconomic inequalities would have an adverse impact on future poverty reduction efforts, as well as longer-term growth prospects (Berg and Ostry, 2011). Climate-induced disasters threaten decades of development gains as rising temperatures produce unfavourable macroeconomic effects, especially for low-income countries (IMF, 2017c).

## 2.2. Asia-Pacific region - growth moderated in 2018 but outlook remains broadly stable

Although **growth in the developing countries of the Asia-Pacific region abated in 2018, it continued to drive the global economy** (figure 2.1). The region's economy is expected to have expanded by 5.3 per cent in 2018 compared with 5.7 per cent in 2017, with about half of the economies having experienced a deceleration in growth between 2017 and 2018.

### Highlights

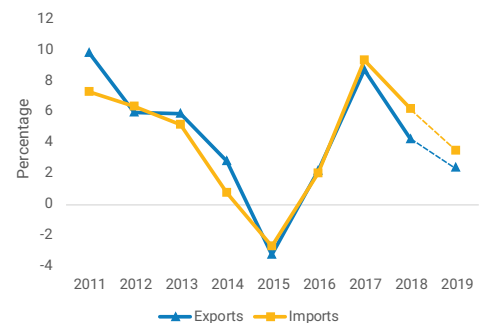
- **Slower growth in South-East Asia as well as South and South-West Asia** due to fiscal consolidation from cancellation of major infrastructure projects in *Malaysia*, monetary tightening in the *Philippines*, weakened electronic exports from *Singapore*, reimposition of sanctions on the *Islamic Republic of Iran* by the *United States* and macroeconomic volatility in *Turkey*.
- **Higher growth in India and oil-exporting countries** due to robust private consumption and a supportive fiscal stance in *India*, and higher oil prices in 2018 benefiting *Indonesia* and the *Russian Federation*.
- **China's growth rate was in line with the ESCAP forecast last year** as the country continued to rebalance and deleverage, amid trade tensions with the *United States*.
- **The economies of least developed countries in the region grew** by 7 per cent in 2018, higher than 6.8 per cent in 2017, reaching the GDP growth target of Sustainable Development Goal 8 on decent work and economic growth. Of the 12 least developed countries in the region, 10 have already met the criteria to graduate from the least developed country category (United Nations, 2018).

### Weakening trade and private investment

**Rising trade tensions impeded growth in trade.** Although the region's value of goods exports and imports grew on average by double digits throughout 2018, that increase was mainly due to higher global prices as the growth in trade volume had slowed in 2018 (figure 2.3).

**Figure 2.3**

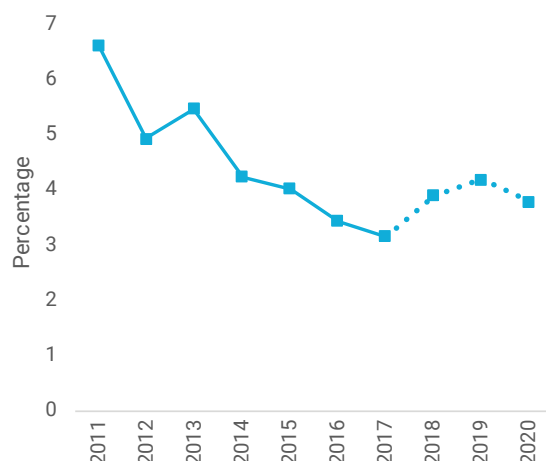
**Rising trade tensions impeded growth in trade**  
Growth in volume of trade in goods year-on-year



Source: United Nations, Economic and Social Commission for Asia and the Pacific, *Asia-Pacific Trade and Investment Report 2018*. Sales No. E.19.II.F.3.

**Figure 2.4**  
**Headline CPI edging up in developing countries in Asia-Pacific region**

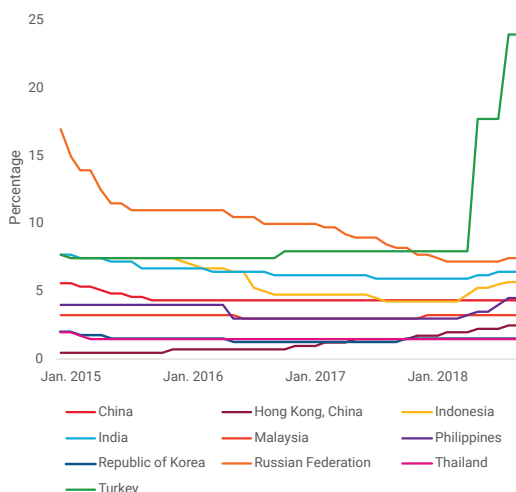
CPI in Asia-Pacific region



Source: ESCAP estimation.

**Figure 2.5**  
**Policy interest rates: mostly on hold or raised in 2018**

Policy interest rates



Source: Bank for International Settlements (accessed on 10 February 2019).

### Uncertainty related to trade tensions has an adverse impact on investor confidence.

This situation resulted in lower private investment in the *Republic of Korea* (reduced construction) and the *Philippines* (due to higher financial costs). Even foreign direct investment (FDI) declined by 4 per cent in the first half of 2018 (ESCAP, 2018a). However, a pickup in government investment compensated for the decline in private investment in a few countries, driven by spending on infrastructure (*Brunei Darussalam*, *India* and the *Philippines*) and mining (*Mongolia*).

### Inflation remains relatively low

**Inflation across developing countries in the Asia-Pacific region edged up but remains relatively low.** The headline consumer prices index (CPI) is increased to 3.9 per cent in 2018, from 3.2 per cent in 2017 (figure 2.4), mainly propelled by higher oil prices and currency depreciation. Core CPI inflation remained low as that measure excludes energy and food prices. Despite a pickup in 2018, inflation remains below target for most economies in the region, except for the *Philippines* and *Turkey*.

### Macroeconomic policies supported economic stability

Amid trade tensions and rising uncertainties, **more than half the countries (with available data) eased<sup>14</sup> their fiscal policy stances.** For example, the *Republic of Korea* increased government spending on social welfare and job creation; *India* introduced fiscal stimulus to benefit farmers and countryside small businesses; *China* and *Indonesia* cut tax rates, with the former having targeted domestic firms and households, and the latter trying to attract foreign investment. Meanwhile, **policy interest rates were mostly on hold or raised in 2018:** to accommodate inflationary pressures (*India*, *Kazakhstan* and the *Philippines*); to strengthen weakening currencies (*Indonesia*, *Pakistan* and *Turkey*); and to respond to the United States Federal Reserve Bank's interest rate hikes (*Hong Kong, China*) (figure 2.5).

<sup>14</sup> Defined as a deterioration of the general government fiscal balance as a share of GDP.

In particular, Turkey raised its policy interest rate by 16 percentage points in 2018 to deal with sharp currency depreciation.

### Outlook remains broadly stable

**The near-term economic outlook for Asia and the Pacific remains broadly stable.** The developing countries in the Asia-Pacific region are forecast to grow by 5 per cent and 5.1 per cent in 2019 and 2020, respectively (figure 2.1 and table 2.1). Still relatively robust domestic demand is expected to offset the negative impacts from trade tensions and sluggish external demand. At the subregional level, South-East Asia and South and South-West Asia will continue to lead the region's economic growth, followed by East and North-East Asia.

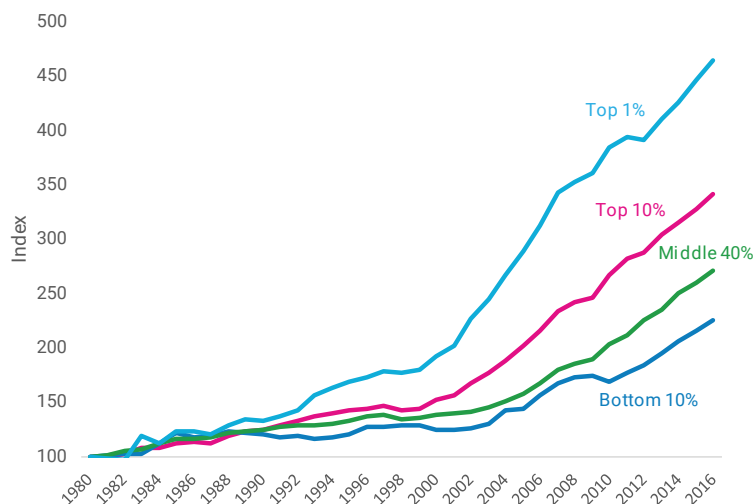
**Inflation in the developing Asia-Pacific region is forecast to rise moderately in 2019** to 4.2 per cent before dropping to 3.8 per cent in 2020. However, potentially higher tariffs against the backdrop of trade tensions and rising uncertainties, currency depreciation and unfavourable weather could push up consumer and food prices. If higher oil prices materialize, that will drive inflation in oil-importing countries as well as worsen their current account balance, adding pressure to currency depreciation; on the contrary, oil exporters will experience the opposite effect (ESCAP, 2018b).

### 2.3. Beyond growth - economic performance has not been people- and planet-friendly

#### The rising tide has not lifted all boats

**The gains of economic growth have not been shared by all** (ESCAP, 2018e). In Asia, the average income or wealth of the top 1 per cent income group has increased by more than 4.5 times since 1980, while that of the bottom 10 per cent grew by less than 2.5 times during the same time period, and that too from a low base (figure 2.6).

**Figure 2.6**  
**Economic growth not inclusive in region**  
Average income or wealth in Asia, 1980=100



Source: World Inequality Database (accessed on 31 January 2019).

Note: "Middle 40 per cent" refers to income group in 50-90 percentiles.

**Table 2.1**  
**Rates of economic growth and inflation, 2017-2020**

(Percentage)	Real GDP growth				Inflation <sup>a</sup>			
	2017	2018 <sup>b</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2017	2018 <sup>b</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>
<b>Total Asia-Pacific region</b>	<b>4.7</b>	<b>4.1</b>	<b>3.9</b>	<b>4.0</b>	<b>2.5</b>	<b>3.2</b>	<b>3.4</b>	<b>3.2</b>
<b>Developing Asia-Pacific economies<sup>d</sup></b>	<b>5.7</b>	<b>5.3</b>	<b>5.0</b>	<b>5.1</b>	<b>3.2</b>	<b>3.9</b>	<b>4.2</b>	<b>3.8</b>
<b>Developed Asia-Pacific economies<sup>e</sup></b>	<b>2.0</b>	<b>1.1</b>	<b>1.3</b>	<b>1.2</b>	<b>0.8</b>	<b>1.2</b>	<b>1.4</b>	<b>1.6</b>
<b>East and North-East Asia<sup>f</sup></b>	<b>4.7</b>	<b>4.1</b>	<b>4.0</b>	<b>3.9</b>	<b>1.2</b>	<b>1.7</b>	<b>1.8</b>	<b>1.9</b>
<b>East and North-East Asia (excluding Japan)<sup>f</sup></b>	<b>6.3</b>	<b>6.0</b>	<b>5.7</b>	<b>5.7</b>	<b>1.6</b>	<b>2.0</b>	<b>2.1</b>	<b>2.1</b>
China	6.9	6.6	6.3	6.2	1.6	2.1	2.2	2.2
Democratic People's Republic of Korea	..	..	..	..	..	..	..	..
Hong Kong, China	3.8	3.0	2.8	3.0	1.5	2.4	2.5	2.5
Japan	1.9	0.7	1.0	0.8	0.5	1.0	1.1	1.4
Macao, China	9.7	4.8	2.5	3.0	1.2	3.0	2.5	2.6
Mongolia	5.1	6.9	7.2	6.6	4.3	6.8	7.8	6.5
Republic of Korea	3.1	2.7	2.6	2.6	1.9	1.5	1.5	1.6
<b>North and Central Asia<sup>f</sup></b>	<b>2.0</b>	<b>2.1</b>	<b>2.1</b>	<b>2.4</b>	<b>4.8</b>	<b>3.5</b>	<b>4.7</b>	<b>4.3</b>
<b>North and Central Asia (excluding Russian Federation)<sup>f</sup></b>	<b>3.9</b>	<b>4.0</b>	<b>3.9</b>	<b>4.0</b>	<b>9.5</b>	<b>6.3</b>	<b>6.7</b>	<b>5.8</b>
Armenia	7.4	5.8	4.5	4.7	1.0	2.5	3.5	3.0
Azerbaijan	0.1	1.1	2.5	3.1	12.9	2.3	3.5	3.0
Georgia	4.8	4.8	4.6	4.7	6.0	2.6	3.0	3.0
Kazakhstan	4.0	3.9	3.4	3.3	7.4	6.0	6.0	5.5
Kyrgyzstan	4.6	3.5	4.0	4.2	3.2	1.5	1.3	1.5
Russian Federation	1.5	1.7	1.7	2.0	3.7	2.9	4.2	4.0
Tajikistan	7.1	7.0	6.0	6.0	7.4	3.9	5.0	5.0
Turkmenistan	6.5	6.2	5.6	5.1	5.6	6.0	4.8	4.0
Uzbekistan	4.5	5.1	5.5	6.0	18.8	14.3	15.6	12.4
<b>Pacific<sup>f</sup></b>	<b>2.4</b>	<b>2.8</b>	<b>2.7</b>	<b>2.7</b>	<b>2.0</b>	<b>2.0</b>	<b>2.5</b>	<b>2.5</b>
<b>Pacific island developing economies<sup>f</sup></b>	<b>2.9</b>	<b>1.1</b>	<b>3.7</b>	<b>3.1</b>	<b>4.7</b>	<b>4.6</b>	<b>4.2</b>	<b>4.4</b>
Cook Islands	3.5	7.0	6.0	6.0	-0.1	0.5	1.0	1.0
Fiji	3.0	3.2	3.4	3.3	3.4	4.0	3.5	3.0
Kiribati	2.5	2.3	2.3	2.3	2.2	3.0	2.7	2.5
Marshall Islands	4.0	2.5	2.5	2.3	0.5	1.0	1.0	1.2
Micronesia (Federated States of)	2.0	2.0	2.0	2.0	0.5	1.0	1.0	1.0
Nauru	4.0	-3.0	0.5	1.0	5.0	2.0	2.0	1.5
Palau	-3.7	1.0	1.0	1.3	0.9	1.5	1.5	1.5
Papua New Guinea	3.0	0.5	4.0	3.2	5.4	5.0	4.7	5.0
Samoa	2.5	0.9	2.0	2.1	1.6	3.7	4.0	4.0
Solomon Islands	3.2	3.2	3.0	3.2	0.1	2.5	3.0	3.1
Tonga	2.8	0.4	1.9	1.0	7.4	5.5	3.0	3.0
Tuvalu	3.2	3.8	3.5	3.8	4.4	4.0	3.4	3.2
Vanuatu	3.5	3.2	3.0	3.3	3.1	3.0	2.5	2.0

(Percentage)	Real GDP growth				Inflation <sup>a</sup>			
	2017	2018 <sup>b</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2017	2018 <sup>b</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>
<b>Developed countries in the Pacific subregion<sup>f</sup></b>	<b>2.4</b>	<b>2.8</b>	<b>2.7</b>	<b>2.7</b>	<b>2.0</b>	<b>2.0</b>	<b>2.4</b>	<b>2.4</b>
Australia	2.4	2.8	2.7	2.7	2.0	2.0	2.5	2.5
New Zealand	2.7	2.9	2.7	3.0	1.9	1.6	2.0	2.0
<b>South and South-West Asia<sup>f,g</sup></b>	<b>6.4</b>	<b>5.1</b>	<b>4.5</b>	<b>5.2</b>	<b>6.3</b>	<b>9.5</b>	<b>9.9</b>	<b>8.1</b>
Afghanistan	2.7	2.3	2.7	3.2	5.0	3.7	5.2	5.4
Bangladesh	7.3	7.9	7.3	7.1	5.4	5.8	6.1	6.1
Bhutan	6.0	6.0	6.4	6.1	4.3	3.7	3.1	4.0
India	6.7	7.2	7.5	7.6	3.6	3.3	4.5	4.6
Iran (Islamic Republic of)	3.7	-0.4	-3.1	0.1	9.8	29.0	40.0	23.5
Maldives	6.9	8.7	6.5	6.1	2.8	-0.1	0.5	0.3
Nepal	7.9	6.3	6.5	6.4	5.1	4.0	4.3	4.1
Pakistan	5.7	5.4	4.2	4.0	4.2	3.9	6.5	6.3
Sri Lanka	3.3	3.3	3.8	4.1	7.7	2.2	3.0	3.5
Turkey	7.3	2.6	1.3	2.5	11.1	16.3	10.2	10.0
<b>South-East Asia<sup>f</sup></b>	<b>5.1</b>	<b>5.0</b>	<b>4.9</b>	<b>4.9</b>	<b>2.8</b>	<b>2.6</b>	<b>2.5</b>	<b>2.8</b>
Brunei Darussalam	1.4	-0.5	2.0	3.0	-0.2	0.1	0.6	0.9
Cambodia	7.0	7.1	7.0	6.6	2.9	2.5	3.0	3.0
Indonesia	5.1	5.2	5.2	5.2	3.8	3.2	3.3	3.5
Lao People's Democratic Republic	6.9	6.5	6.8	7.0	0.8	2.0	2.3	2.5
Malaysia	5.9	4.7	4.7	4.6	3.8	1.0	1.0	2.1
Myanmar	6.9	6.9	7.2	7.2	4.6	6.9	6.0	6.0
Philippines	6.7	6.2	6.5	6.6	3.2	5.2	4.0	3.5
Singapore	3.6	3.3	2.4	2.5	0.6	0.4	1.0	1.3
Thailand	3.9	4.1	3.8	3.9	0.7	1.1	1.0	1.5
Timor-Leste	-1.8	0.8	5.0	4.8	0.6	2.3	2.8	2.2
Viet Nam	6.8	7.1	6.7	6.5	3.5	3.5	3.5	3.9
<b>Memorandum items:</b>								
<b>Least developed countries</b>	<b>6.8</b>	<b>7.0</b>	<b>6.8</b>	<b>6.7</b>	<b>4.8</b>	<b>5.4</b>	<b>5.5</b>	<b>5.5</b>
<b>Landlocked developing countries</b>	<b>4.1</b>	<b>4.2</b>	<b>4.1</b>	<b>4.2</b>	<b>8.8</b>	<b>6.1</b>	<b>6.5</b>	<b>5.7</b>
<b>Small island developing States</b>	<b>2.8</b>	<b>1.8</b>	<b>4.1</b>	<b>3.6</b>	<b>4.0</b>	<b>3.8</b>	<b>3.7</b>	<b>3.7</b>

Source: ESCAP.

<sup>a</sup> Changes in the consumer price index.

<sup>b</sup> Estimates (as of 1 March 2019).

<sup>c</sup> Forecasts (as of 1 March 2019).

<sup>d</sup> Developing Asia-Pacific economies consist of all countries and areas listed in the table, excluding Australia, Japan and New Zealand.

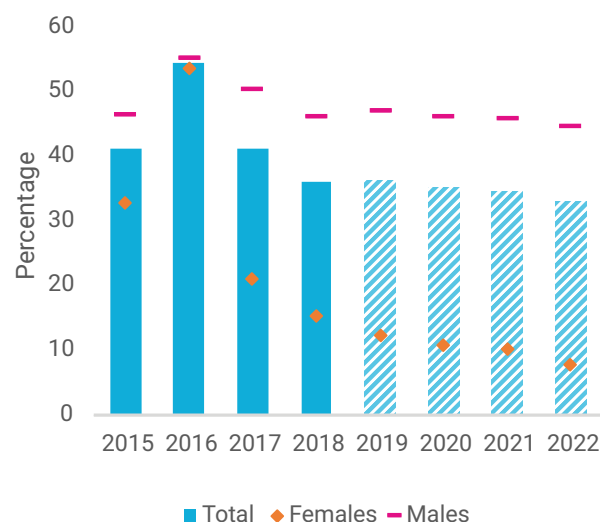
<sup>e</sup> The group of developed Asia-Pacific economies consists of Australia, Japan and New Zealand.

<sup>f</sup> Aggregate growth rate calculated using 2015 GDP in 2010 United States dollars as weights.

<sup>g</sup> The estimates and forecasts for countries relate to fiscal years. These are defined as follows, with 2018 referring to the fiscal year spanning: 1 April 2018 to 31 March 2019 in India; 21 March 2018 to 20 March 2019 in Afghanistan and the Islamic Republic of Iran; 1 July 2017 to 30 June 2018 in Bangladesh, Bhutan and Pakistan; and 16 July 2017 to 15 July 2018 in Nepal.

**Figure 2.7****Labour market performance in Asia and the Pacific****(a) Asia-Pacific region contributes considerably to global employment creation...**

Asia-Pacific region's share of global employment creation

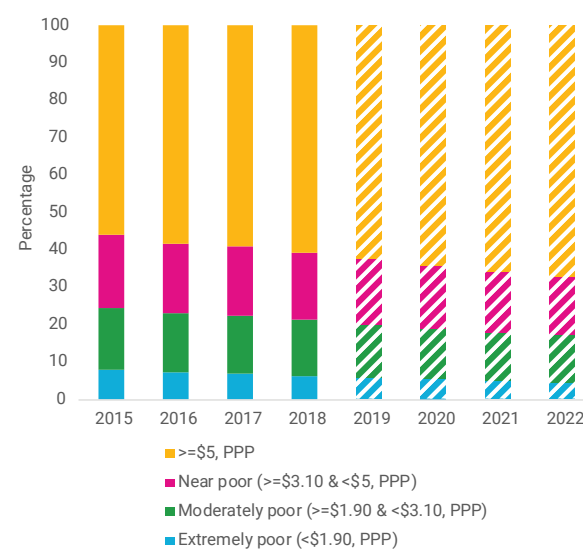


Source: ESCAP calculation based on ILOSTAT data (accessed on 28 November 2018).

Note: Employment creation data for period 2018-2022 are ILO projections.

**(b) ... but getting a paid job may not translate into decent work**

Employment by income levels



Source: ESCAP calculation based on ILOSTAT data (accessed on 27 December 2018).

**Economic growth also has not generated adequate decent work or gender equality in the labour market**

The Asia-Pacific region contributes considerably to global employment creation (figure 2.7a). However, more than two thirds of workers in the region were in the informal sector (as of 2016), with no access to employment benefits and little job security. In 2017, over 40 per cent of

the more than 900 million workers in the Asia-Pacific region lived in conditions of extremely, moderately, or near poverty<sup>15,16</sup> (figure 2.7b).

A further concern is that female labour force participation rates in the region have fallen (ILO, 2018). Less than half the countries in the region have banned gender-based discrimination in hiring, and less than 20 per cent have mandated equal pay for equal work. Less than half of the countries that provide maternity leave guarantee that the mothers will be given an equivalent position in their workplace after they have taken that leave. In addition, the perception that women cannot do the same jobs as men prevails in many countries as does the low acceptability of women working outside their home (ILO, 2018; World Bank, 2018b, 2019b).

15 The term "extremely poor" for the working population refers to workers who earn less than \$1.90 (PPP) per day; "moderately poor", to those who earn less than \$3.10 (PPP) per day; and "near poor", to those who earn less than \$5 (PPP) per day.

16 Despite having a job, these workers continue to be vulnerable to household crises – injury or death of a breadwinner, loss of job, natural disaster, crop failure etc. – that threaten to push them back into poverty (ILO, 2018).

**Escalating trade tensions exacerbate social and environmental burdens**

**Threatened tariffs<sup>17</sup> (as of end 2018) could cause a net loss of at least 2.7 million jobs in the region;** that figure could rise to 8.9 million jobs if the confidence of investors and consumers is affected significantly. Jobs that require low skills are more likely to be adversely affected (ESCAP, 2018a), which is worrying for the region because of the predominance of low-paid medium- and low-skilled jobs in Asia and the Pacific. According to ILO, less than 20 per cent of the jobs in the region require high skills.<sup>18</sup>

**The threatened tariffs are also expected to increase the carbon intensity of economic growth** (defined as carbon dioxide emissions per unit of GDP),<sup>19</sup> even though the total emissions could decrease as a result of declining trade and the consequent negative impacts that would have on *China's* economy. Trade tensions could further impede the spread of environment-friendly technologies, thereby also raising carbon intensity.

**Too much emphasis on economic growth does not deliver sustainable development**

As emphasized in chapter 1, too much emphasis on economic growth has not delivered on the 2030 Agenda, as inequality and the environment have deteriorated over time. **However, even those who care only about economic growth should be concerned about rising inequality and environmental degradation, which will have adverse impacts on future growth.** Research has shown that inequality can be destructive for economic growth, for example by amplifying the risk of a crisis or making it difficult for the poor to invest in education (Berg and Ostry, 2011). Those researchers also found that increased inequality may shorten the duration of economic growth. Similarly, climate change produces adverse impacts on growth, especially for low-income countries. In such countries, a rise in temperature lowers per capita output in both the short and the medium term by reducing agricultural output, suppressing the productivity of workers exposed to heat, slowing investment and damaging health (IMF, 2017c).

**3. Macroeconomic risks and medium-term challenges****3.1. Trade tensions**

**Global trade tensions are expected to continue.** Since the beginning of 2018, the *United States* initiated several trade remedy procedures, unilaterally raising tariffs on targeted products from the region. It also imposed 25 per cent tariffs on Chinese goods and is threatening to impose more. Countries in the region have retaliated by filing WTO dispute cases against the *United States* and by imposing higher tariffs on that country's goods.

**However, the direct impact of these trade tensions in the region - other than on China - has been limited.** While the *United States* applied a wide variety of tariffs on imports from *China*, it imposed tariffs only on steel and aluminium, solar panels and washing machines for other economies as of end 2018. Exports of these products to the *United States* represent only 0.8 per cent of the total exports by the Asia-Pacific region in 2017 (ESCAP, 2018a).

17 "Threatened tariffs" are those mentioned in the economies' official communiqués, news etc., as of December 2018 but not yet implemented. These include potential tariffs on cars and car parts (as a consequence of the additional Section 232 investigation initiated on 23 May 2018 under the United States Trade Expansion Act of 1962 on imports of automobiles and related parts) as well as further application of escalating retaliatory tariffs between China and the United States.

18 High-skill employment includes managers, professionals and technicians, and associate professionals.

19 Calculation based on ESCAP (2018a).

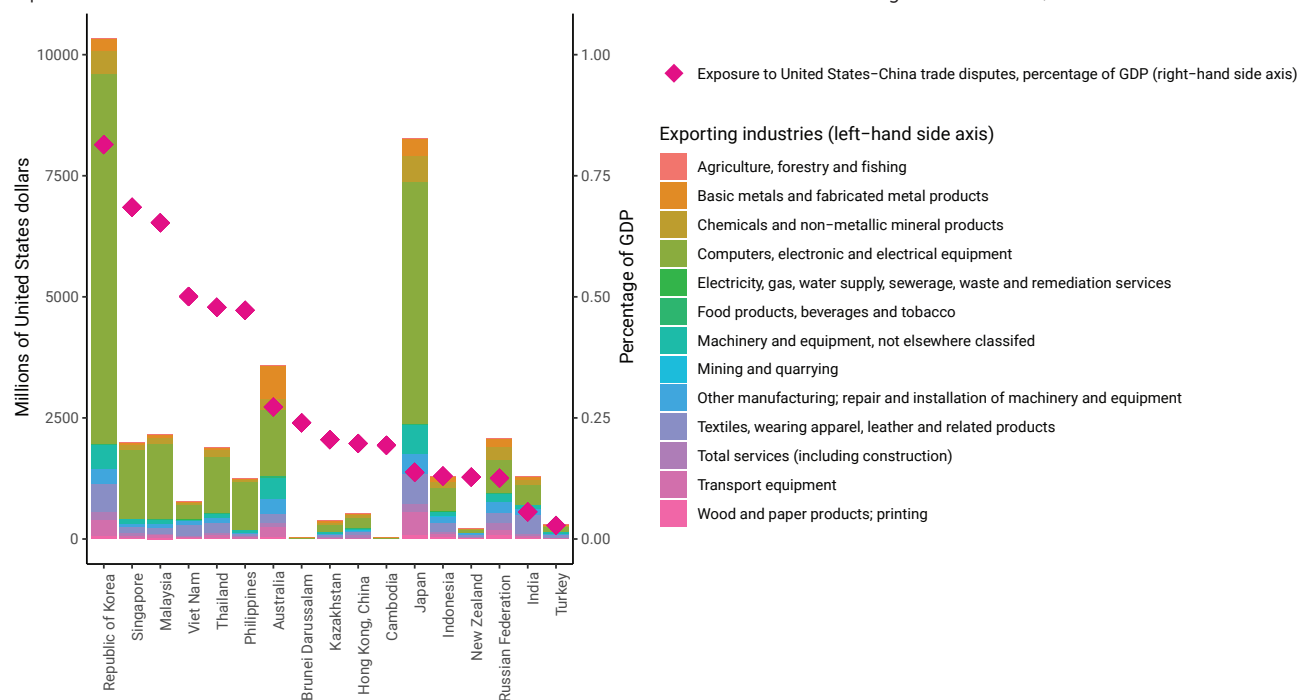


**Nonetheless, there could be a much stronger indirect impact because of regional integration through global value chains (GVCs).** Many economies in the region are integrated deeply with *China* through GVCs. Economies exporting raw materials and intermediate products used in *China's* exports of final goods are most vulnerable, such as *Australia*, *Mongolia* and

the *Republic of Korea*. For instance, higher tariffs on *China* could put about 24 per cent of *Mongolia's* mining exports immediately at risk (ESCAP, 2018a). For the *Republic of Korea*, its vulnerability is mainly due to the GVC-related exports to *China* of electrical and optical intermediate products. South-East Asian economies, such as *Malaysia*, the *Philippines*, *Singapore* and *Thailand* face a moderate degree of vulnerability to the United States-China trade tensions thanks to their relatively more diversified intermediate export markets (figure 2.8).

**Figure 2.8**  
**Exposure to United States-China trade tensions varies across region**

Exposure of selected Asia-Pacific economies to United States-China trade tensions through value chains, as of 2015



Source: OECD.Stat Trade in Value Added (TiVA) database (accessed on 19 January 2019).

Note: The exposure of regional economies to United States-China trade disputes is measured by their origin of value added in *China's* exports to the United States.

In addition to disrupting GVCs, **sustained trade tensions could further undermine confidence, hurt financial markets and discourage investment and trade, which could have adverse impacts on economic growth prospects.** In ESCAP (2018a), it was estimated that, if the tariffs that were threatened in 2018 materialize in 2019, Asia-Pacific GDP could fall by \$59 billion (or 0.17 per cent). In the case of a prolonged trade war in which investor confidence declines significantly, the cost of adverse impacts on the regional GDP could increase to about \$117 billion (or 0.33 per cent). Meanwhile, exports and imports are expected to decline by 1.5 per cent and 0.7 per cent in value terms, respectively. As mentioned previously, 2.7 million jobs could be lost (box 2.1).

Indeed, **some economies might actually benefit from the United States-China trade tension, although policy uncertainties could offset those gains.** As importers in *China* and the *United States* look for alternative suppliers, new opportunities will open up for countries that can leverage their competitiveness to attract redirected trade and investment. Although the relocation of production will not be completed overnight and will cause short-term pain in all countries involved in GVCs, ESCAP (2018a) suggests that ASEAN members, especially *Viet Nam*, could become the largest potential beneficiaries. The retaliatory tariffs imposed by *China* and other countries on *United States* exports of agricultural and industrial commodities could also increase export opportunities for some commodity-based economies. However, GVC redirection and trade flows induced by trade tensions are neither an optimum nor a stable solution. Policy distortions affecting decisions of multinational enterprises to relocate may create inefficiency-related losses as production moves to second-best locations, for instance where environmental standards could be lax. Trade tensions may also lead investors to postpone investments until policy uncertainties are resolved.

### 3.2. Financial instability

#### External factors

**In many countries in the region an increase in financial vulnerability was witnessed in 2018 as investor confidence weakened due to rising uncertainty.** *First*, the current account deficit in the region increased at the aggregate level (figure 2.9a), as trade deficits widened (see section 2.2). *Second*, foreign exchange reserves to cover short-term external liabilities have fallen in many countries (figure 2.9b). *Third*, net portfolio investment inflows declined in the first three quarters of 2018 compared with the same period in 2017, although

they remained positive (figure 2.9c). Decreases in net portfolio investment inflows into two regional financial centres (namely *Hong Kong, China*; and *Singapore*) reflected risk-aversion behaviour. On the positive side, the inclusion of Chinese stocks into the MSCI Emerging Markets Index<sup>20</sup> contributed to strong portfolio inflows into *China* during 2018.

Moreover, **the ongoing trade disputes and geopolitical tensions are triggering capital flight to safe assets.** This situation is reflected in depreciation of currencies against the United State dollar (figure 2.9d). Weakening currencies can further trigger capital outflow as investors search for safe havens. External headwinds coupled with idiosyncratic factors increased financial stress in some countries. In *Turkey*, for example, higher tariffs imposed by the *United States* triggered capital withdrawal and a sharp currency depreciation. However, rapid policy responses in *Turkey* and the region limited the contagion effect.

#### Rising private debt

**Overall public debt sustainability is not a major concern for countries in the region.** Among developing Asia-Pacific economies, the average public debt level is projected to remain at a moderate level of less than 46 per cent of GDP during the period from 2018 to 2023.<sup>21</sup> However, some economies may be subject to higher contingent liabilities due to such events as natural disasters or banking crises, which can reduce the fiscal space to undertake the investments needed for achieving sustainable development (ESCAP, 2018b).

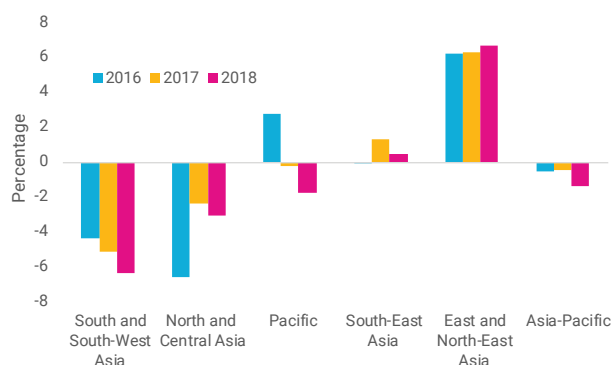
20 The index covers 24 countries representing 10 per cent of global market capitalization.

21 Source: ESCAP calculation based on IMF data (accessed on 12 November 2018).

**Figure 2.9**  
**Financial instability increases in Asia-Pacific region**

**(a) Current account balance deteriorated in the region...**

Current account balance, as a share of GDP

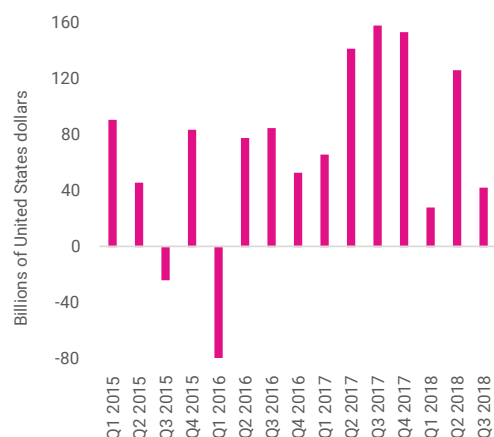


Source: ESCAP calculation based on IMF data (accessed on 19 February 2019).

Note: The regional and subregional average current account balances (as a share of GDP) are calculated by taking a simple average of the related countries' current account balances. In the region, 50 economies are covered.

**(c) Net portfolio investment inflows declined...**

Net portfolio investment inflows in Asia-Pacific region

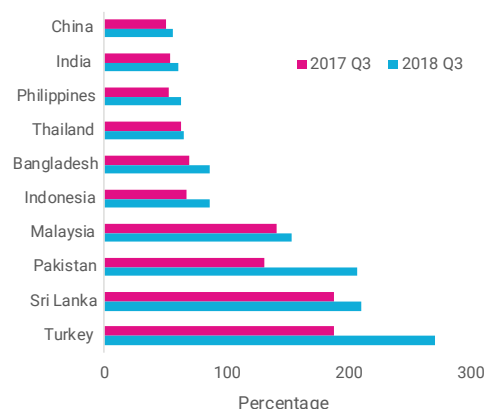


Source: ESCAP calculation based on IMF data (accessed on 21 February 2019).

Note: In the region, 37 economies (with available data) are covered.

**(b)...with less foreign exchange reserves to cover short-term external liabilities**

Vulnerability yardstick as a percentage of foreign reserves in selected Asian economies

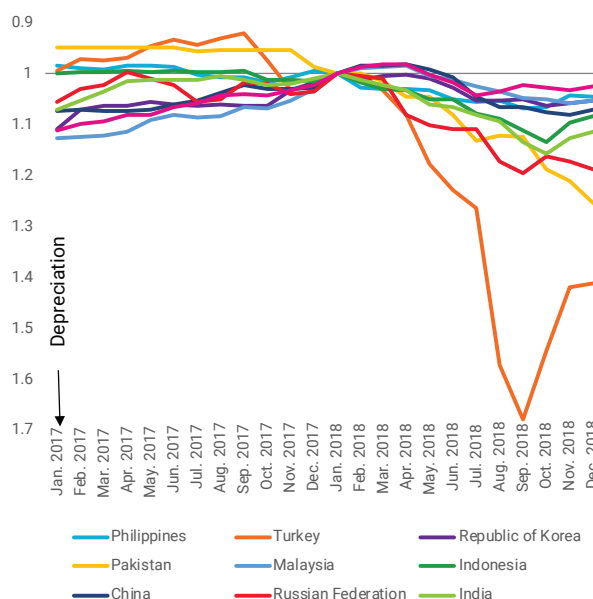


Source: ESCAP calculation based on CEIC and IMF data (both accessed on 19 February 2019).

Note: Financial vulnerability is measured by the sum of short-term external debt, total imports of goods and services and net portfolio investment flows, as a percentage of foreign reserves in selected Asian economies.

**(d) ... and currencies depreciated against the United States dollar amid rising uncertainty**

Exchange rate against United States dollar index, January 2018 = 1



Source: ESCAP calculation based on Bank for International Settlements (accessed on 25 January 2019).

**Box 2.1****Economic, social and environmental impacts of global trade tensions on Asia and the Pacific**

The year 2018 was marked by rising trade tensions between the United States and other economies. ESCAP estimated its potential economic, social and environmental impact on the region using a computable general equilibrium (CGE) model around five scenarios assuming: **Scenario 1:** Continuation of tariff hikes by the United States and retaliations that have either already occurred or been notified to WTO in 2018. **Scenario 2:** Implementation of tariff hikes threatened but not yet undertaken in 2018. **Scenario 3:** Introduction of a 5 per cent negative shock to expected rate of return on investment and a further 5 per cent demand shock in economies experiencing declines in GDP due to trade tensions, on top of scenario 2. **Scenario 4:** Removal of all tariffs within upcoming or potential trade agreements in the region, e.g. European Union-Japan Free Trade Agreement, and Comprehensive and Progressive Agreement for Trans-Pacific Partnership. **Scenario 5:** A combination of Scenarios 3 and 4.

**ECONOMIC IMPACTS:** Under Scenarios 1, 2, and 3, the GDP of the Asia-Pacific region is estimated to fall by \$43-\$117 billion, with China accounting for most of this loss. Sectors most likely affected in China include electronic equipment, lumber and construction.

However, many economies in the region are likely to gain, with Viet Nam being the main beneficiary. Although Viet Nam's exports to China, the European Union, Japan and the Republic of Korea could decline, such a decline is expected to be fully offset by its increased exports to the United States, including exports of lumber, electrical machinery and electronic equipment, and textile.

To counterbalance, regional integration (Scenario 4) promises a substantial boost to regional GDP, even when combined with further escalation of trade tensions (Scenario 5). Such regional integration could boost regional exports and imports by 2.9 per cent and 4.4 per cent, respectively.

**SOCIAL IMPACTS:** Model results suggest a net loss of 2.7 million jobs in the Asia-Pacific region if threatened tariffs are implemented (Scenario 2). This figure could increase to 8.9 million if the continued trade conflicts impact investor and consumer confidence significantly (Scenario 3). Thirteen economies could face job losses under Scenario 3. Sectorally, job losses are more significant in motor vehicle and parts industries. In the current tariff scenario (1), unskilled workers are likely to be affected disproportionately. As the trade conflict deepens under Scenario 2 and 3, both skilled and unskilled workers will be negatively affected. It is notable that regional integration (Scenario 4) could add as many as 12.5 million jobs, and when combined with the worse scenario (Scenario 5), overall the region adds more than 3.5 million jobs.

**ENVIRONMENTAL IMPACTS:** The impact on carbon emissions in the first two scenarios is limited. In scenario 3, due to declining trade levels and a significant economic contraction in China, carbon emissions could drop. In contrast, regional integration (Scenario 4) is expected to boost emissions as regional trade increases, even if the trade conflict with the United States worsens (Scenario 5). As such, higher economic activity with no emission mitigation policies will inevitably lead to higher emissions; thus, complementary environmental policies will remain essential in channelling trade into sustainable development.

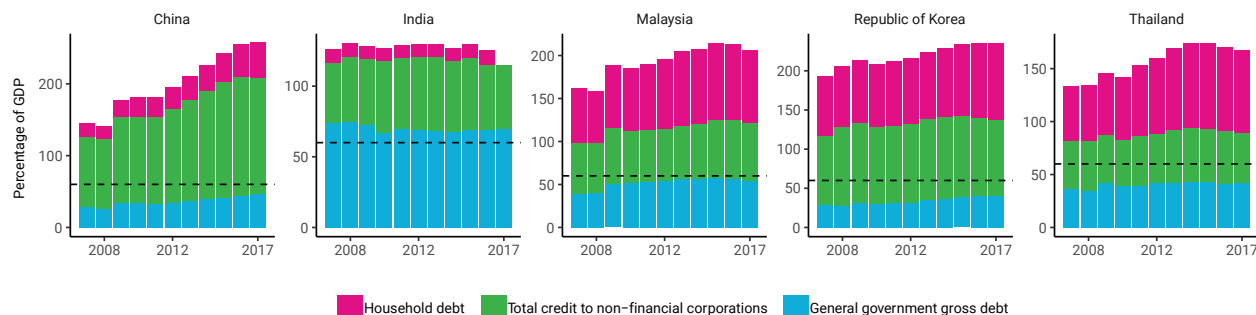
*Source:* United Nations, Economic and Social Commission for Asia and the Pacific, Asia-Pacific Trade and Investment Report 2018. Sales No. E.19.II.F.3.

**Rising household and corporate debt calls for policymakers' attention.** The private sector in emerging markets borrowed heavily after the global financial crisis, which created a favourable opportunity characterized by low global interest rates. However, the cheaper money has had a downside. Large and rising household debt is now a growing concern in *Malaysia*, the *Republic of Korea* and *Thailand*, as is fast-expanding corporate debt in *China* (figure 2.10). For household debt, despite increases in financial assets, household incomes fall short of covering debt liabilities. Nonetheless, corporate financial

leverage in most countries has remained largely stable in the past two decades. This contrasts sharply with a surge in leverage before the Asian financial crisis that started in mid-1997. In *China*, due to the Government's deliberate efforts, the leverage ratio of non-financial corporate debt has decreased gradually since 2016, mainly driven by the State-owned sector (Huang and Xia, 2018).

**Figure 2.10****Upward trend for private debt in selected Asia-Pacific economies in past decade**

Debt, by composition, for selected countries in region

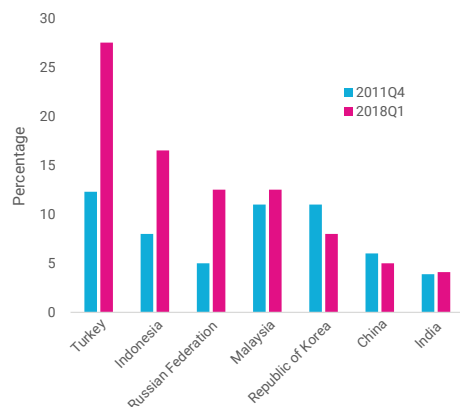


Source: IMF and Bank for International Settlements data (accessed on 26 July 2018).

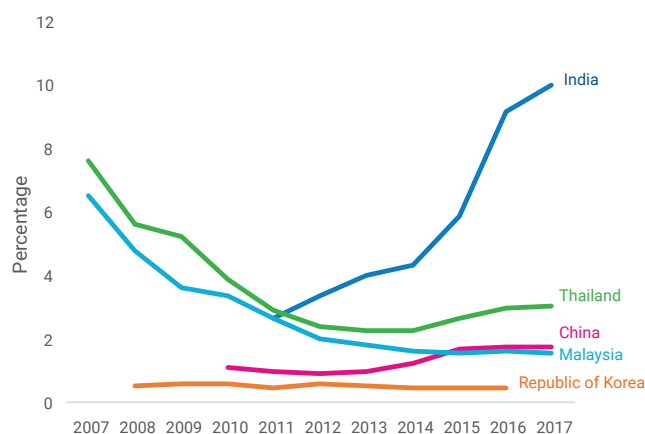
Note: The dotted lines denote 60 per cent of GDP.

**Figure 2.11****United States dollar-denominated credit to non-bank borrowers increases in several countries in the Asia-Pacific region**

Dollar-denominated credit to non-bank borrowers as a share of GDP

Source: United Nations, *World Economic Situation Prospects 2019*. Sales No. E.19.II.C.1.**Figure 2.12****Non-performing loans remain at relatively low level**

Bank non-performing loans to total gross loans



Source: World Bank data (accessed on 26 January 2019).

**Financial fragility in several developing countries in the region has also been exacerbated by the rise in dollar-denominated debt, especially after the global financial crisis.** The United States dollar-denominated debt to non-bank borrowers as a share of GDP in *Indonesia*,

the *Russian Federation* and *Turkey* doubled between 2011 and 2018 (figure 2.11). Further strengthening of the United States dollar and potential interest rate hikes could increase the burden of these countries in servicing their debt, thus creating additional financial vulnerability, given their high exposure to refinancing and currency mismatch risks (United Nations, 2019).

### Elevated levels of private debt have adverse implications for financial stability and may eventually harm economic growth.

Debt expansion can boost economic growth in the short term as firms and households take on more debt to invest or consume. However, such positive effects on GDP are short-lived (IMF, 2017a). Highly indebted firms and households may need to cut back on spending to repay their loans. Moreover, excessive leverage can inflate asset prices. For example, in the *Republic of Korea* rising household debt is highly skewed towards mortgage loans, which served as one of the major factors of property price dynamism (Kim, Son and Yie, 2017). However, if an abrupt correction of housing prices occurs, firms and households would need to further cut back on investment and consumption to repair their damaged balance sheets, while banks and other financial institutions would suffer a surge of non-performing loans and thus lend less, hurting investment and consumption (Park, Shin and Tian, 2018). Non-performing loans (NPLs) in most countries with higher private debt risks in the region have remained at a relatively low level, especially when compared with the situation during the global financial crisis (figure 2.12). However, NPLs in *India* have surged rapidly due to defaults on corporate bonds and syndicated loans (ESCAP, 2018b).

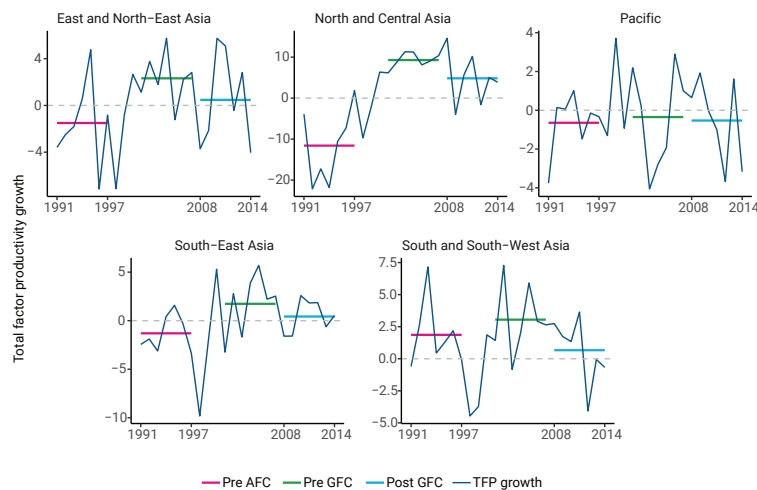
### The emergence of non-bank online consumer loans generates new risks.

Internet giants in *China*, such as Alibaba, leverage their successful e-commerce and online mutual fund platforms to attract investors. Big data technology is used to conduct due diligence on individual borrowers based on their transaction history. Small-scale peer-to-peer (P2P) lending platforms grew rapidly by issuing small open-end loans that are used to finance day-to-day consumption. Such consumer loans are often uncollateralized and on average have higher default rates than mortgage loans. Research would suggest that in *China* 3-6 per cent of P2P loans were non-performing in 2016, a rate significantly higher than the 1.2-2.7 per cent for bank-originated consumer loans (Li, 2018).

**Figure 2.13**

#### Productivity growth has slowed in recent years

Productivity growth in Asia-Pacific subregions since 1990s



Source: Penn World Table database (accessed on 30 December 2018).

Note: PreAFC = average total factor productivity (TFP) growth during pre-Asia financial crisis years (1991-1997); PreGFC = average TFP growth during pre-global financial crisis years (2001-2007); PostGFC = average TFP growth during post-global financial crisis years (2008-2014).

### 3.3. Slowing productivity growth

#### There has been a trend decline in productivity growth in recent years.

Productivity growth accelerated in the years following the 1997/98 Asian financial crisis, as countries improved their macroeconomic policies and undertook structural reforms. However, the emphasis after the global financial crisis that began in 2008 was on maintaining growth or avoiding a slowdown instead of undertaking needed structural reforms. This situation led to broad-based productivity slowdowns in recent years (figure 2.13).



**Emerging issues, such as premature deindustrialization, challenge productivity growth.**

Many countries in the region are shifting from an agriculture-based economy to one in which services play a dominant role, bypassing the high-productivity manufacturing sector. New frontier technologies, such as robotics and artificial intelligence, increase the possibility of returning production and manufacturing plants to advanced economies, which may reduce the scope for industrialization in some developing countries. Arguably, many services are highly productive and tradable, such as IT and professional services. They could help developing economies to converge to the level of developed economies, as manufacturing has traditionally done. However, the high-productivity service sector requires highly skilled workers and does not have the capacity to absorb - as manufacturing did - the type of labour that low- and middle-income economies have in abundance (Rodrik, 2015). Therefore, early deindustrialization in the region could weaken overall productivity growth further.

In addition, the **trade tensions between the United States and China** have spread to the technology sphere, which **could discourage technology transfer, slow future innovation and undermine productivity.**

Moreover, **the region is going through profound and rapid demographic changes, which could adversely affect the region's labour supply and productivity.** As fertility and mortality rates continue to decline, the proportion of young people decreases, raising the proportion of older persons in the total population. By 2050, the dependency ratio

(ratio of the population aged 65+ years per 100 population aged 15-64) is projected, on average, to be 29 in the region, that is, every three to four working-age persons will have to support one older person. Of course, population ageing does not always lead to lower productivity. Depending on the type of work to be done, a relatively older workforce can be more productive because of experience and accumulated knowledge. To leverage their comparative advantage, employment opportunities need to be provided for older persons who are still able and willing to work, although in many countries, older people work out of necessity (ESCAP, 2017b).

**3.4. Technology-induced challenges****Monetary and financial policies**

**Financial technologies, or fintech, while enhancing financial inclusion and improving efficiency of the financial system, challenge traditional monetary and financial policies** in three ways:

- *Monetary policy transmission:* Increased digital payment platforms and alternative forms of digital currencies lower the demand for cash while opening new sources of credit, which could undermine central banks' ability to influence money demand and supply through traditional transmission channels, such as banks (Prasad, 2018).
- *Lack of regulation:* Financial transactions or crediting from online platforms are often not under prudent regulations as traditional financial intermediaries are. Therefore, such operations could pose higher default risks or be used for illicit activities, such as money laundering, tax evasion or financing terrorism. The global nature of online financial activities can also result in shocks being rapidly transmitted across other regions (He and others, 2017; Lagarde, 2018).
- *Replacement of fiat money:* The rise of cryptocurrencies raises concern that digital currency will be a desirable replacement of fiat money. However, in the foreseeable future, cryptocurrencies will not shake the foundation of national currencies, because their prices are highly volatile, and they do not fulfil the basic functions of money (He, 2018; Ingves, 2018).



**Box 2.2****Technological progress: a boon for fiscal policies**

Technological progress has opened opportunities to improve fiscal space and to strengthen tax administration. From the **revenue side**, digitalization helps expand fiscal space by broadening the tax base and improving taxpayers' compliance. Technology has brought with itself new economic activities, such as e-commerce, shared economy and social media; if taxed, these types of activity can broaden the tax base and thereby increase overall tax revenue. In addition, technologies such as e-filing, e-payments and e-customs initiatives make it easier for tax authorities to collect information, improve resources management and lower taxpayer's compliance costs (Bird, 2010). Some countries have started to benefit. For example, in *Malaysia*, e-filing and e-payments have improved the compliance ratio by nearly 30 per cent and increased tax revenue by 1 per cent of GDP during the period 2006-2011 (World Bank, 2013). The e-value added tax (VAT) system of the *Russian Federation* increased VAT revenue by more than 12 per cent in 2015 (Dobell, 2017).

From the **expenditure side**, technology improves the efficiency of public services and distribution. For example, in *India* Aadhaar, the world's largest biometric identification system, links various subsidies with bank accounts directly, preventing claims from going to ghost beneficiaries and preventing multiple claims (Gaspar and Rhee, 2018). In *Indonesia* and the *Philippines*, digital social registry systems were established to enable direct cash transfers to households in need, which largely improves transparency and the credibility of social protection programmes (Indonesia, Secretariat of the Vice President, 2015; Philippines, Department of Social Welfare and Development, 2018). Even in countries where digitalization is in its infancy, initiatives are on the rise. The Government of *Afghanistan*, in partnership with mobile operator Roshan, has implemented a mobile money service that enables funds to be transferred over the operator's network to remote parts of the country (Villasenor, West and Lewis, 2016).

**Fiscal policies****Digitalization helps expand fiscal space and strengthen tax administration (box 2.2). However, how to fully harness such benefits remains a question.**

Conceptually, current tax laws rest upon the basic principle that commercial activity should be taxed in the location where it takes place. Yet, new technologies enable companies to be active in one country without maintaining a physical presence, such as through online platforms. As a consequence, although the potential for additional tax bases exists, such economic activities remain undertaxed. Technically, international tax conventions lack clarity on how to tax cross-border intangible assets, such as data analysis. Therefore, in practice multinational enterprises (MNEs) are able to artificially shift their profits from high-tax to low-tax jurisdictions. This may not be illegal, but can result in tax base erosion and MNEs being effectively undertaxed.

**Labour market**

**The technological revolution will make employment generation even more challenging.** During the process of technology adoption, some workers, especially those involved in routine tasks that are "codifiable", are vulnerable. Given the large share of low- and medium-skilled workers in the region (see discussion in section 2.3), technology-induced disruptions in the labour market are a real possibility.

### 3.5. Costs of inequality and environmental degradation for the poor

#### Rising inequality

**While strong economic growth has, since 1990, lifted more than 1.1 billion people out of extreme poverty** (those living on less than \$1.90 per day), more than 400 million people still live in extreme poverty. Using the moderate poverty line (amounts below \$3.20 per day), the incidence of poverty increases threefold to more than 30 per cent of the region's population, indicating that **those raised out of extreme poverty remain vulnerable to falling back into poverty** (ESCAP, 2018l).

**Rising income inequality undermines poverty reduction.** If the income gains of the poor are smaller, economic growth marginalizes them further. Rising income inequality impairs both the quantity and the quality of education for the poor thus adversely affecting intergenerational mobility (Kanbur, Rhee and Zhuang, 2014).

#### Environmental degradation

**Costs as a result of climatic disasters have been on the rise.** Between 1970 and 2016, the region incurred losses and damage equivalent to \$1.3 trillion due to disasters, including floods, storms, droughts, earthquakes and tsunamis. The impact of these disasters on the region's economy has risen from approximately 0.1 per cent of GDP in the 1970s to about 0.4 per cent in recent decades (ESCAP, 2017b). Pollution and climate change adversely affect the agricultural sector due to declining soil productivity, groundwater depletion and increased incidence of pests. Rising air pollution poses a grave threat to health in the region (WHO, 2018a).

**Environmental and climate challenges affect the poor and low-income countries disproportionately.** Poor and marginalized communities and countries with special needs are less resilient to environmental hazards and natural disasters. Moreover, environmental degradation threatens the health, livelihood and well-being of disadvantaged groups, further deepening inequalities both within and among countries. A recent study estimated that average mortality rates caused by disaster events during the period 2000-2015 were four to five times higher in developing countries than in developed countries (ESCAP, 2018c).

## 4. Economic policy considerations

### 4.1. Monetary and financial policies - maintaining financial stability

**Economic activity has not been responsive to accommodative monetary policy in recent years.** Possible reasons include relatively weak growth in real wages on the consumption side and uncertainty and excess capacity on the investment side (ESCAP, 2017g). As discussed in the *Survey for 2018*, policy rate reductions have not translated into lower commercial lending rates due to banking sector problems, such as NPLs in *India*, or they have contributed to high household debt (*Republic of Korea* and *Thailand*). Hence, rate cuts did not boost economic activity. If at all, they are more likely to exacerbate financial instability. In addition, ageing populations and increasing inequality have the potential to reduce the demand to invest while increasing the propensity to save, thereby lowering the natural rate of interest<sup>22</sup> and narrowing the scope for central banks to secure price stability and maintain output at its full potential (Summers, 2014; Arslanalp, Lee and Rawat, 2018).

Given the limited impact of interest rate reductions on aggregate demand and the rising financial vulnerabilities (private debt, NPLs and exchange rate volatility, as discussed in section 3.2), **a prudent approach to monetary policy would be to focus on maintaining price and financial stability.** Such stability can help reduce uncertainty and thus indirectly facilitate investments that are critically needed to effectively pursue the 2030 Agenda. Central banks could consider the trade-offs and effectiveness of using different tools to ensure financial stability and address asset price booms and busts (Cerra and Saxena, 2017).

22 The rate at which real GDP is growing at its trend rate while inflation remains stable.

**Table 2.2**  
**Macroprudential measures targeting demand for and supply of credit**

Tools affecting the demand for credit	Tools affecting the supply of credit
<ul style="list-style-type: none"> <li>• Loan-to-value ratios</li> <li>• Margin requirements</li> <li>• Loan maturities</li> <li>• Tax policy and incentives</li> </ul>	<ul style="list-style-type: none"> <li>• Lending rate ceilings</li> <li>• Interest rate ceilings</li> <li>• Reserve requirements</li> <li>• Capital requirements</li> <li>• Portfolio restrictions</li> <li>• Supervisory pressure</li> </ul>

Source: United Nations, Economic and Social Commission for Asia and the Pacific, *Economic and Social Survey of Asia and the Pacific 2018* Sales No. E.18.II.F.16.

- **Interest rates:** With inflation remaining relatively low, there is a tendency for central banks to keep interest rates low. However, such accommodative monetary policy - responding to low inflation risk - contributes to the boom and bust cycles that end in financial crises and output losses.
- **Macroprudential policies and regulation:** Developing economies in Asia have been at the forefront of macroprudential policies. Since the early 2000s, these economies have adopted various tools to cope with different potential threats to financial stability (table 2.2). For example, *Hong Kong, China*; and *Singapore* have predominantly relied on housing-related loan-to-value (LTV) restrictions. The *Republic of Korea*, in addition to housing measures, imposed a levy on bank non-deposit foreign currency liabilities and a ceiling on banking foreign-exchange derivative positions. *China* and *India* have been heavy users of reserve requirements.

**Macroprudential measures have helped curb housing-related credit growth, inflation and bank leverage in the region.** Some effective instruments include LTV ratio caps, housing tax measures and foreign currency-related measures (Zhang and Zoli, 2014). Countries in the region are developing macroprudential policies and frameworks to address household debt. For instance, in the *Republic of Korea*, LTV and debt-to-income ratios continued to be tightened in 2017 and 2018; and the country introduced a debt-service ratio to assess borrowers' ability to repay loans.

#### 4.2. Fiscal policy - focusing on sustainable development

**Fiscal policies should step up investment in sustainable development for short-term growth as well as long-term prosperity.** Policymakers can reprioritize investments into the Sustainable Development Goals while improving the efficiency of expenditures and raising revenues (see more detailed discussion in chapter 3).

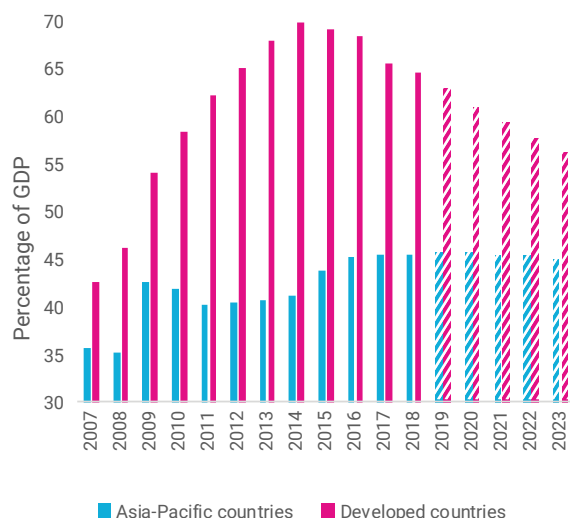
**Countries in the region have room to mobilize fiscal resources.** Although four out of five countries in the region maintain a fiscal deficit, the majority of them have kept their fiscal deficits at a manageable level. In addition, public debt levels in the region remain relatively low (figure 2.14a). Fiscal positions are expected to improve on average (figure 2.14b). In terms of specific financing instruments, public bond issuance is worth exploring. In a study by ESCAP (2018b), it was revealed that, of 47 developing countries with available data, 20 had never issued any government bonds. With tax-to-GDP levels in the region being lower on average than those in other regions of the world with a similar quality of tax administration, there is also room to improve revenues through progressive taxation. Phasing out fossil fuel subsidies and introducing a carbon tax would not only create fiscal space but also incentivize the private sector to reduce carbon emissions (see further discussion in chapter 3).

**Figure 2.14**

**Asia-Pacific countries have fiscal space for investment in sustainable development**

**(a) Comparison of public debt levels between Asia-Pacific region and developed countries globally**

General government gross debt, as a share of GDP

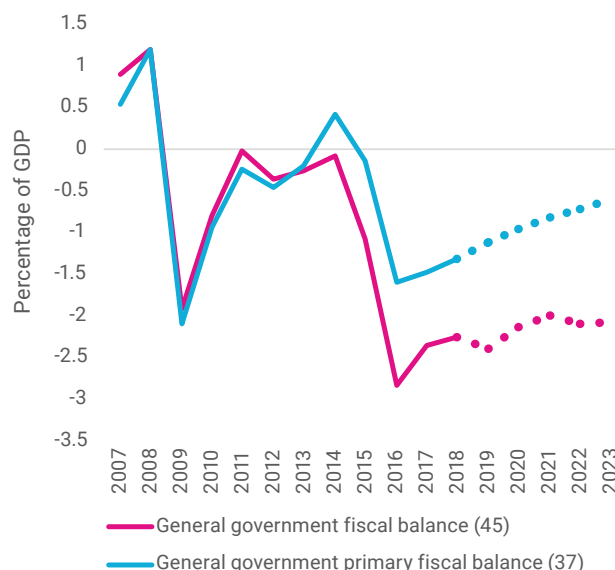


Source: ESCAP calculation based on IMF data (accessed on 1 February 2019).

Note: Public debt as a share of GDP for regional and developed countries is calculated by taking the average of the debt levels in the related countries. For this purpose, the United Nations Statistics Division's definition of developed countries is used.

**(b) Fiscal balance in Asia-Pacific region is forecast to improve**

Fiscal balance, as a share of GDP



Source: ESCAP calculation based on IMF data (accessed on 1 February 2019).

Note: A simple average was taken to calculate the regional fiscal balance. The numbers in the parentheses in the legend indicate how many countries in the region are included in the calculation.

**Fiscal and debt concerns should not necessarily be a dominant determinant of investment in sustainable development**, which enhances human, social and environmental capital. Aggregate budget deficits or public debt levels offer little indication of the long-term effects of fiscal policy on economic growth and development, although they may serve as useful indicators of short-term macroeconomic stability. What matters is where and how the deficit and debt are being spent. Policymakers need to reprioritize their investment areas as well as redefine their concepts of fiscal and debt sustainability in order to relate to long-term sustainable development rather than considering them as a goal per se (Munevar, 2018). Furthermore, significant savings can be achieved by improving the efficiency of public expenditure and investment (see further discussion on these aspects in chapter 3).

### 4.3. Global and regional cooperation - combating trade tensions, embracing new technologies and addressing population ageing

#### Combating trade tensions

**Deepening regional and interregional integration can offset the adverse consequences of rising global trade tensions.** According to ESCAP simulations, implementation of megaregional deals, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, and the Economic Partnership Agreement between the *European Union* and *Japan*, could boost regional exports by 1.3-2.9 per cent. Even with the “doomsday” trade war scenario, regional integration could increase regional employment by creating more than 3.5 million jobs (ESCAP, 2018a).

**Asia-Pacific economies should strive towards greater cooperation** by (a) finalizing regional trade negotiations, such as the Regional Comprehensive Economic Partnership; (b) proactively engaging in potentially complementary trade-related regional cooperation and integration initiatives, such as the Belt and Road Initiative; and (c) leading the pending WTO reform towards a universal, rules-based, open, non-discriminatory and equitable multilateral trading system.

**Complementary social and environmental policies are required to implement the 2030 Agenda.** Although some economies in the region could benefit from trade tensions due to supply chain adjustments, this occurrence will not happen overnight. Meanwhile, unemployment benefits and vocational training remain necessary for vulnerable workers. There is also a need to regulate the carbon intensity of production activities as they are shifted to countries with lower environmental standards.

#### Adapting tax regimes to the digital economy

**For technology-induced tax revenue benefits and countering undertaxation in the digital economy, concerted national and international efforts are needed.** At the national level, reforming the VAT and goods and services tax (GST) regimes is essential to better capture value creation in the digital economy. To levy VAT and GST from cross-border e-commerce, web-based platforms need to install online tax registration systems to assist in collecting taxes from sellers. Many countries are progressing towards imposing special taxes on digital services. For example, *India* imposed a turnover tax on digital advertisement services from non-resident companies. *Australia* introduced a diverted profit tax targeting MNEs in particular – if an MNE is proved to have artificially diverted its profits, it will be taxed at the rate of 40 per cent. However, auditing

MNEs for profit diversion could impose an additional resource burden on tax authorities.

#### International cooperation to harmonize national tax policies in the context of a growing digital economy is critical.

More than 120 countries worldwide are currently involved in international tax cooperation efforts under the OECD Base Erosion and Profit Shifting (BEPS) Project in order to better align taxation with economic activity. In Asia and the Pacific, 25 economies (as of January 2018) had joined the Inclusive Framework of the BEPS Project. Despite global efforts to harmonize national tax laws and bilateral and multilateral tax treaties, it is difficult to find a single set of international tax rules to solve increasingly complex tax issues. A multilateral consensus on taxing the digital economy must allow flexibility by taking into account country-specific characteristics so that each country can also pursue its individual priorities according to its capacities and interests.

#### Regulating fintech to minimize financial risks

**Given the challenges arising from the fintech industry, the regulatory framework would need to be adjusted to manage the corresponding financial risks.** Central banks could broaden the set of indicators in policy analyses to cover digital financial services. For example, they could incorporate information on money-holding of digital financial intermediaries and balance sheet data of digital financial institutions in the assessment of money and credit supply (Bernoth and Gebauer, 2017). An improved regulatory framework could enhance consumer protection and therefore foster financial inclusion. For example, the Bank of Thailand announced that it would set regulations for P2P



lending platforms, a measure that is expected to improve the access of small businesses to financial sources.

**Market infrastructure**, such as clearing or settlement, **can be provided to support regulatory efforts**. For instance, in 2018 *China* mandated all online payment transactions to go through a central bank-established online settlement platform. The platform monitors all capital flows of digital payment providers, therefore preventing money-laundering, bribery and other irregular financial activities.

However, fragmented regulations across countries can create competing interests and negative externalities. Hence, **international coordination will be critical to maximize the benefits of fintech**. The Financial Stability Board of the Group of 20 has suggested three areas that call for international cooperation: *first*, managing operational risk from third-party service providers; *second*, mitigating cyber risks; and *third*, monitoring macrofinancial risks that could emerge as fintech activities increase (FSB, 2017). The Financial Action Task Force (on Money Laundering) of the Group of Seven has taken steps to regulate cryptocurrency exchanges to eradicate money-laundering and the financing of terrorism. Within the region, for example, the Asia Pacific Regional Intelligence and Analysis Centre monitors cyber threats to member financial institutions in the region and recommends actions to mitigate those threats.

### Addressing population ageing

**International migration could help manage labour market gaps that can result from population ageing**, as migrants tend to be younger on average than the population of the host country. Currently, only a few countries, such as *Australia*, *New Zealand* and *Singapore*, have allowed permanent settlement of immigrants (ESCAP, 2017b), while others are gradually designing policies to allow at least temporary labour migration. For instance, in late 2018 *Japan* passed a regulation allowing more foreign workers into the country. In 2017, *China* expanded the eligibility for foreign workers to apply for permanent residency status, focusing on skilled professionals. Complementary policies, such as language training and social services, including coverage for foreign workers' children, are needed to accommodate migrants into local societies. **The Asia-Pacific region can strengthen cooperation for effective implementation of the 2018 United Nations Global Compact for Safe, Orderly and Regular Migration.**

However, **migration is not a panacea** – it cannot halt or reverse the gradual process of population ageing. For example, *Australia* would need to receive a continuous flow of immigrants equal to approximately 23 per cent of the actual workforce to maintain the same dependency ratio by 2030; for *Singapore*, that figure would be 51 per cent (IMF, 2017b). Structural reforms in the labour market, including addressing discrimination, would be required to raise labour force participation, especially for women and older persons. Moreover, social protection would be fundamental to maintain domestic consumption and prevent people in ageing societies from falling back into poverty.

## 5. Subregional growth and outlook

### 5.1. East and North-East Asia

The escalating trade tensions between China and the United States cast a shadow on the economic outlook of East and North-East Asia. The decline in exports to China, including of high-technology products, from such economies as Japan and the Republic of Korea weighs on the subregion's position in the global production value chain. With rapid population ageing, labour market reforms and more investment in social protection schemes are needed to protect people's livelihoods and welfare. However, rising debt in several countries in the subregion could undermine Governments' fiscal capacity.

In 2018, the economy of the subregion grew by 4.1 per cent, down from the 4.7 per cent growth rate in 2017, with growth in all the economies moderating, except for *Mongolia* which benefited from

mining-related investment. *China's* growth further decelerated in the fourth quarter of 2018, suggesting the effects of economic deleveraging and rising trade tensions, with the full-year growth rate in 2018 being at 6.6 per cent. In *Japan*, a series of natural disasters and decreased global demand forced factories to cut production. In the *Republic of Korea*, the construction sector contracted with across-the-board declines in residential and commercial projects as well as civil engineering works, while an increase in the minimum wage supported household incomes and private consumption. Growth in *Hong Kong, China* decelerated as the growth in goods exports slowed. Casinos in *Macao, China* suffered as the Chinese economy slowed. Geopolitical tensions related to the *Democratic People's Republic of Korea* gradually eased in 2018.

In 2019 and 2020, economic growth in the subregion is predicted to moderate to 4 per cent and 3.9 per cent, respectively. However, expansionary monetary and fiscal policy can help boost domestic demand in the short term. *China* cut its reserve requirement ratio by 1 percentage point in January 2019, with further tax cuts to take place in 2019. The *Republic of Korea* continued to hike its minimum wage and plans to increase fiscal spending on welfare, job creation and support for small and medium-sized enterprises. However, *Japan's* fiscal consolidation to contain debt, such as a planned consumption tax hike in October 2019, will temporarily reduce demand.

Inflation picked up to 1.7 per cent in 2018 from 1.2 per cent in 2017, but it is still at a low level. Except for the *Republic of Korea*, all countries saw a gradual rise in inflation due to higher oil and food prices and accommodative monetary policies. In 2019 and 2020, inflation is projected to remain below 2 per cent. Proactive fiscal and monetary policies in some countries, in the subregion, such as *China*, must minimize future financial risks, especially in view of the currently high debt levels. Owing to its rapidly ageing population, the subregion needs to step up investment in social protection. However, rising debt in several countries could undermine Governments' fiscal capacity.

The subregion could benefit from deeper international economic cooperation, with *Japan* finalizing a trade agreement with the *European Union* in February 2019, and *Mongolia* and *China* exploring an FTA.

## 5.2. South and South-West Asia

The economies in South and South-West Asia exhibited huge diversity in 2018. An increasingly uncertain global environment and rising trade tensions, together with elevated political uncertainties due to upcoming elections in some countries and mounting inflationary pressures, limit the policy space to pursue and accelerate much-needed structural reforms. The demographic transition is going to swell the ranks of the working-age population for many years to come, leading to a youth bulge. This necessitates the creation of enough decent jobs for those joining the labour force in order to prevent people being trapped in low-skilled, low-income and low-value-added forms of work.

In 2018, economic growth in South and South-West Asia decelerated to 5.1 per cent from 6.4 per cent in 2017, exhibiting huge diversity with strong performance of more than 7 per cent by *Bangladesh* and *India*; in contrast, *Turkey's* economic growth rate more than halved, and the sanctions-affected economy of the *Islamic Republic of Iran* contracted.

However, South and South-West Asia remains the fastest-growing subregion in Asia and the Pacific. In *Bangladesh*, robust public investment, private consumption and accommodative monetary policy have been the drivers of growth. In *India*, the economy has recovered from the disruptive effects of demonetization and the goods and services tax and is expected to benefit from strong private consumption driven by increasing middle-class and government-led infrastructure investment. The economy of *Sri Lanka* is recovering from weather-related shocks and is experiencing improvement in public finances and price stability. *Turkey* was affected by a sharp decline in the industrial production, geopolitical issues

and weakening investor confidence due to increased policy uncertainty. The economy of *Pakistan* is experiencing severe balance of payment difficulties, amid large fiscal and current account deficits and mounting pressures on the currency.

Economic growth is predicted to moderate further to 4.5 per cent in 2019, before picking up to 5.2 per cent in 2020. Strong growth prospects for *Bangladesh* and *India* could partially offset the worsening prospects for the *Islamic Republic of Iran* and *Turkey*. The economy of *Nepal* is expected to benefit in 2019 from ongoing infrastructure projects, earthquake reconstruction and robust private consumption supported by strong remittance inflows.

Inflation in the subregion surged to 9.5 per cent in 2018 from 6.3 per cent in 2017 as a result of sharp currency depreciation, especially in the *Islamic Republic of Iran* and *Turkey*, and higher global oil prices and rising food prices in *Bangladesh* and *India*. Inflation is projected to increase slightly in 2019 and edge down in 2020.

There is a need to ensure fiscal space to help enhance competitiveness and diversification, ensuring smooth graduation from least developed country status (such as in *Bangladesh* and *Bhutan*) and building resilience to natural disasters. The subregion needs greater trade integration and investments in energy and transport connectivity, such as the new Afghanistan-India air corridor and the BIMSTEC<sup>23</sup> electricity grid. In addition, the subregion will need to ramp up investments in human capital, skills development and social infrastructure, as well as build productive capacities through sustainable industrialization to benefit fully from its potential demographic dividend.

### 5.3. North and Central Asia

The North and Central Asian subregion accounts for a large share of the region's energy supply. However, with limited economic diversification, most economies in the subregion remain vulnerable to commodity price swings. Most countries are landlocked, posing an additional challenge for becoming integrated into the global economy. Geopolitical tensions surrounding the Russian Federation, which accounts for over 80 per cent of the subregion's output, could generate negative spillover effects into the economies in the subregion in coming years.

Growth increased marginally to 2.1 per cent in 2018 from 2 per cent in 2017. The largest economy in the subregion, the *Russian Federation*, expanded by an estimated 1.7 per cent in 2018 from 1.5 per cent in 2017, supported by higher commodity prices, robust private consumption and rising disposable incomes. Thanks to higher oil prices in 2018 and stronger export revenues, the economy of *Azerbaijan* grew to 1.1 per cent in 2018 compared with 0.1 per cent in 2017. Strong fixed investment sustained economic growth in *Tajikistan* at about 7 per cent, but the country faces major fiscal challenges, financial sector weakness and business constraints. *Armenia's* growth slowed partly due to lower remittance inflows from the *Russian Federation*.

The subregion's near-term economic outlook is relatively stable, with growth expected to be 2.1 per cent in 2019 and 2.4 per cent in 2020. On the upside, investment projects under the Belt and Road Initiative could boost FDI as well as improve market access. The main risks include geopolitical uncertainty, economic sanctions on the *Russian Federation* and the economic slowdown in *China*, the subregion's emergent investor and trading partner. Lower commodity prices and currency depreciations could increase foreign liabilities of corporate borrowers.

Inflation decelerated to 3.5 per cent in 2018, from 4.8 per cent in 2017, and the outlook is stable. The deceleration was highest in *Azerbaijan* where the impact of exchange rate depreciation wore off.

Prudent fiscal management is shielding major commodity exporters in the subregion from commodity price volatility. A revised fiscal rule in the *Russian Federation* sets aside revenue from higher oil prices to strengthen international reserves. *Azerbaijan* is planning to limit the use of oil revenues and overall expenditures in 2019.

In the medium term, substantial transformation and economic diversification are crucial to support the subregion's growth, which

23 A cooperative initiative comprising Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand as member States.

is focused on new sources of growth, improving the investment environment and strengthening innovation and human capital. Foreign direct investment is needed in non-extractive sectors, such as agroprocessing, tourism, ICT, finance and green economy, as well as in infrastructure to improve rural-urban and cross-border connectivity.

#### 5.4. South-East Asia

The South-East Asian subregion encompasses countries at dramatically different stages of economic and social development. Its favourable geographic position and openness to overseas trade and investment have fuelled the subregion's economic growth. Further investment is needed to close infrastructure gaps to improve the subregion's connectivity and to keep up with the rapid urbanization process. The young and relatively well-educated population in the subregion has provided an impetus to economic growth. However, the demographic dividend in some countries is starting to wane, such as in Thailand and Viet Nam.

In 2018, the subregion is estimated to have grown by 5 per cent compared with 5.1 per cent in 2017, with higher public expenditure and increased tourist arrivals offsetting a slowdown in the growth of manufacturing exports amid on-going trade tensions. Some countries also tightened measures to stabilize their economies. Growth was driven by strong garment exports and tourism in *Cambodia*, robust domestic demand in *Thailand* and strong agricultural and manufacturing activities in *Viet Nam*. *Myanmar* continued to grow at a rapid pace due to higher fiscal spending and solid growth in the agricultural sector. Although *Indonesia* tightened monetary policy to respond to a weakened rupiah, healthy consumption and investment in construction backed its steady growth. Trade tensions between *China* and the *United States* discouraged exports from the *Philippines* and *Singapore*. Flood-affected agricultural growth slowed the economy of the *Lao People's Democratic Republic*. *Malaysia's* cancellation of major infrastructure projects and fiscal consolidation to address its public debt issue weighed on growth. Oil and gas production was disrupted in *Brunei Darussalam*, partly due to unscheduled maintenance of facilities and partly due to the production volume exceeding targets up to the end of 2018 as agreed between OPEC and non-OPEC countries.

The subregion has a stable economic outlook, with growth forecast at 4.9 per cent in 2019 and in 2020, respectively. Robust domestic demand, driven by investment in infrastructure and social welfare schemes, is expected to sustain that growth. *Thailand* announced major infrastructure projects in 2019 and the *Lao People's*

*Democratic Republic* laid out an ambitious multisectoral convergence approach to reduce chronic malnutrition (World Bank, 2018c). In view of their abundant supply of labour, countries such as *Viet Nam* could benefit from the United States-China trade tensions to emerge as a manufacturing and export powerhouse.

Inflation in the subregion remained low at 2.6 per cent in 2018 despite higher fuel prices (vis-à-vis 2017) and weakened currencies. *Malaysia's* inflation eased with its goods and services tax set at zero since June 2018, and *Indonesia's* price levels were restrained by monetary tightening and price control measures. In 2019, the subregion's inflation is forecast at 2.5 per cent.

With countries at sharply different levels of economic and social development, the subregion's prospects crucially depend on structural transformation to enhance productivity, given that the demographic dividend is starting to wane in some countries, such as *Thailand* and *Viet Nam*. Many countries in the subregion will no longer be able to depend on labour-intensive manufacturing for export. Technology has created opportunities but also challenges, and Governments should improve the business environment and invest in research and development. *Thailand's* ambitious economic reform programme, "Thailand 4.0", is aimed at creating an innovation-based economy while improving social well-being and environmental protection. South-East Asian countries need to strengthen intrasubregional integration by further reducing trade costs and opening markets.

## 5.5. Pacific

Pacific island developing economies face many challenges, such as their small size, distance from major markets and vulnerability to natural disasters. A large proportion of people in the Pacific subregion still lack access to safe drinking water, sanitation, reliable sources of energy, education and healthcare. However, the economies have considerable potential for development, especially in certain niche industries, such as sustainable tourism, organic agriculture and fishery activities. To achieve such potential, the economies need to continue macroeconomic stability and to increase their emphasis on structural reforms aimed at expanding the economic base, improving regional and domestic infrastructure and enabling private activities.

In 2018, Pacific island developing economies are estimated to have grown by 1.1 per cent, down from 2.9 per cent in 2017. Several economies in the subregion slowed down in 2018, with a weak growth of 0.5 per cent in *Papua New Guinea*, the largest economy, accounting for over half of the developing economies in the subregion. Soft prices for mineral exports and the effects of a strong earthquake that disrupted oil, gas and mineral exports weighed down growth in *Papua New Guinea*, although this was partially offset by the economic spinoff from hosting the Asia-Pacific Economic Cooperation (APEC) meeting and from improved agricultural output. The economies of the *Marshall Islands*, *Nauru*, *Samoa* and *Tonga* also slowed for various reasons, including lower agricultural and tourism growth. The scaling back of activities of the Regional Processing Centre for asylum seekers and the closure of a large manufacturing plant led to the slowdown in *Nauru* and *Samoa*,

respectively. Improved wholesale and retail trade, construction and infrastructure upgrades supported growth in the *Cook Islands*, *Fiji*, *Micronesia (Federated States of)*, *Palau*, *Solomon Islands* and *Tuvalu*.

Inflation in the subregion is estimated to have remained stable at 4.6 per cent in 2018 and is forecast to remain above 4 per cent.

Developing economies in the subregion are predicted to grow by 3.7 per cent in 2019 and 3.1 per cent in 2020. On the upside, progress in national development priorities and commitments under the Sustainable Development Goals and the Small Island Developing States Accelerated Modalities of Action Pathway can further help sustain growth. On the downside, the subregion remains vulnerable to climate change-induced natural disasters, which can significantly damage production and livelihoods. Policymakers should focus on national systems and institutional capacities, financing for development, trade facilitation and regional cooperation.

## 6. Conclusion

**Despite the increasingly uncertain global environment, economies in the Asia-Pacific region have continued to outperform the rest of the world.**

However, **the relatively stable economic performance conceals the increasing downside risks to the achievement of sustainable development.** The gains from economic growth are not being shared by all. Available jobs do not fully translate into decent work. Intensive use of natural resources and heavy pollution add significant environmental costs to economic expansion and limit future growth potential. Meanwhile, increases in private debt due to lax global financial conditions can constrain future domestic demand as well as weigh on financial stability. Slowing productivity growth can adversely affect long-term prospects.

**Challenges to sustainable development are being met with external shocks.** Uncertainties with regard to trade tensions and global liquidity conditions could weigh on investor and consumer confidence, weaken foreign and domestic demand and impose further financial stress on the Asia-Pacific region.



In an era of uncertainty, **bold and wise policies are needed to enhance the drivers of sustainable development.**

**A prudent approach to monetary policy would be to focus on maintaining price and financial stability.** Some countries should maintain a tight and neutral monetary policy stance given inflationary pressure and financial volatility. For countries with relatively low levels of inflation, accommodative monetary policy may not be effective, as has been the recent experience, and low interest rates could contribute to the boom and bust cycles that end in financial crises and output losses. Macroprudential policies and regulation can be used to support the goal of financial stability.

**Fiscal policy should prioritize sustainable development and integrate this goal into public finance management.** With fiscal deficits and debts being manageable in most countries and expected to remain at such levels in going forward, fiscal policy should be focused on long-term development by investing in social, economic and environmental goals (as discussed in chapter 3). Effectiveness of fiscal expenditure could be enhanced through rearranging the composition of spending and enhancing the efficiency of investment.

**Global and regional cooperation are crucial to achieving sustainable development.** Deepening regional and interregional integration can offset the adverse consequence of rising trade tensions, as well as create millions of new jobs. As one of the regions significantly affected by climate change, Asia and the Pacific is in a good position to influence and enhance cooperation on environmental issues.







# Chapter 3

## The future we want: Is it affordable?

### 1. Introduction

Four of seven people in the world live in Asia and the Pacific. Achieving the Sustainable Development Goals in this large and diverse region is about realizing their hopes and dreams. It entails making bold and wise investments to end poverty and hunger and to develop human capacities through improved health and education. It requires enabling infrastructure and access to clean energy. It calls for climate-related action and environmental conservation to secure the future and to live in harmony with nature. The question which this chapter addresses is whether these goals are financially affordable for developing countries in the region.

#### *A dollar a day*

In a comprehensive and detailed assessment for Asia and the Pacific – the first of its kind ever for the region – in this issue of the Survey, it was found that the region's developing countries need to invest an additional \$1.5 trillion per year through 2030, or approximately 5 per cent of their GDP in 2018, in order to achieve the Sustainable Development Goals. In terms of cost per person per day, this amount translates into just under a dollar. For many countries in the region, the financial cost for achieving the Goals is therefore within reach.

What can a dollar a day deliver? The chapter reveals that it will take 24 cents to change the lives of nearly a half billion people now living in conditions of extreme poverty and malnutrition; 19 cents to progress towards providing universal health coverage and quality education for all; 12 cents to deliver better transport, ICT, and water and sanitation services; and 27 cents for furnishing reliable access to clean energy and climate-related action and 10 cents to protect and restore nature (figure 3.1).

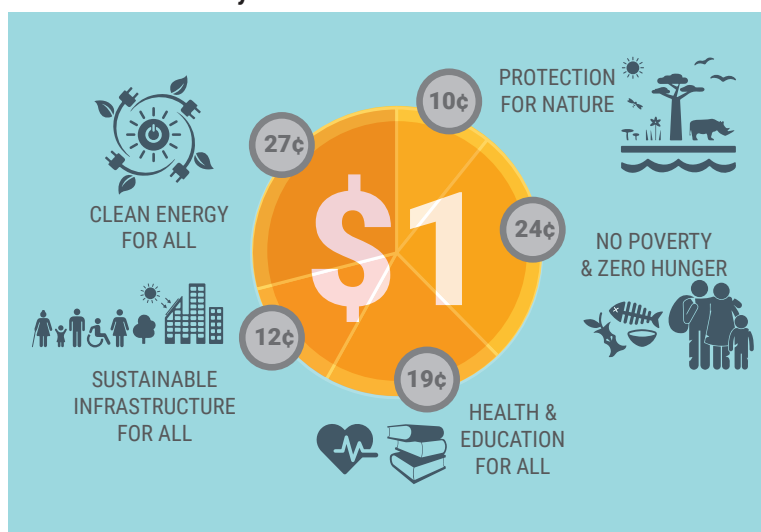
***For many countries in the Asia-Pacific region, the financial cost of achieving the Sustainable Development Goals is within reach***

With so much to gain, there is a clear investment case for achieving the Goals.

Nevertheless, meeting the investment gap will be challenging or even nearly impossible for some countries, based on current trends. The chapter finds that South Asia and least developed countries face a gap of \$2 and \$3 per person per day, respectively. Similarly, the Pacific island developing States face steep challenges due to their higher vulnerability to climate change as well as scale and remoteness. Strong development partnerships will be essential.

***Strong development partnership is essential to ensure that no country is left behind***

**Figure 3.1**  
**What can a dollar a day deliver?**



Source: ESCAP.

For all countries, bridging the investment gap will require more than just financing. Integrated approaches based on an understanding of how the Goals are interconnected will deliver higher impact at lower cost. Establishing priorities would also require an understanding of where each country stands in terms of progress across the Sustainable Development Goals and targets, where the country is on track, lagging or regressing, and how much in the way of additional investments would be required in those respective areas.

### ***Trees and forest***

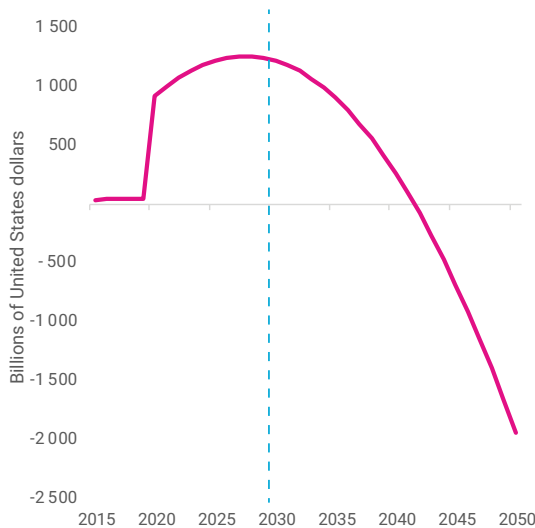
According to the forthcoming ESCAP *SDG Progress Report*, Asia and the Pacific needs to accelerate progress across all 17 Goals. While there has been relatively more progress on poverty, health, education

and energy goals, such targets as gender equity in education and the share of renewables in energy require greater effort. Therefore, attention to details and target-level interventions will be important, as emphasized in the chapter's analysis.

What is alarming is that the region has been regressing on resource efficiency targets across the Goals for water, economic growth, and responsible consumption and production, which suggests that social and economic progress is still being made at the expense of environmental degradation. Without ensuring that progress in one area does not come at the expense of another, the investment gap for achieving the Goals may only increase over time. Therefore, the chapter also contains a look at the Goals as a whole.

Specifically, sustainable development will require fundamental changes to the way the region consumes and produces. Along with better policies and changes in lifestyles, this would entail substantial investment in research and development, business incubators and the like to support a faster transition. Over time, however, these investments would deliver substantial returns which would eventually fully offset the financial cost. Figure 3.2 illustrates this in the context of achieving Goal 12, which is discussed in section 2.5.

**Figure 3.2**  
**Illustration of net costs declining over time**



Source: ESCAP.

Note: Net cost = resource efficiency investment funded by a comprehensive resource tax, adjusted for its GDP impact.

### Value added

Globally, a total of \$5-7 trillion is needed per year to implement the Goals, with the investment gap being \$2.5 trillion for developing countries (UNCTAD, 2014; Guterres, 2018). The online appendix summarizes the literature. While these estimates are all indicative and vary in scope, methodology and baselines, they all point to the need for a considerable boost to future investment to promote sustainable development.

At the same time, there is a felt need for a comprehensive and detailed assessment focusing on Asia and the Pacific. Most existing studies are either partial in their coverage of the Goals or comprehensive but lack detail and therefore cannot provide concrete guidance for action. Moreover, the most widely cited global estimates do not provide regional breakdowns.

Compared with previous studies, this chapter aims to establish a clear linkage between the Goals, the interventions and the investment needs, so that the analysis does not stop at the “price tag” but serves as a useful tool for countries operationalizing the Goals. At the same time, the chapter aims to be comprehensive, for which it brings together the costing models used by various United Nations agencies and other organizations in their respective areas of work. Finally, the chapter emphasises methods which can cover a large group of Asia-Pacific countries.

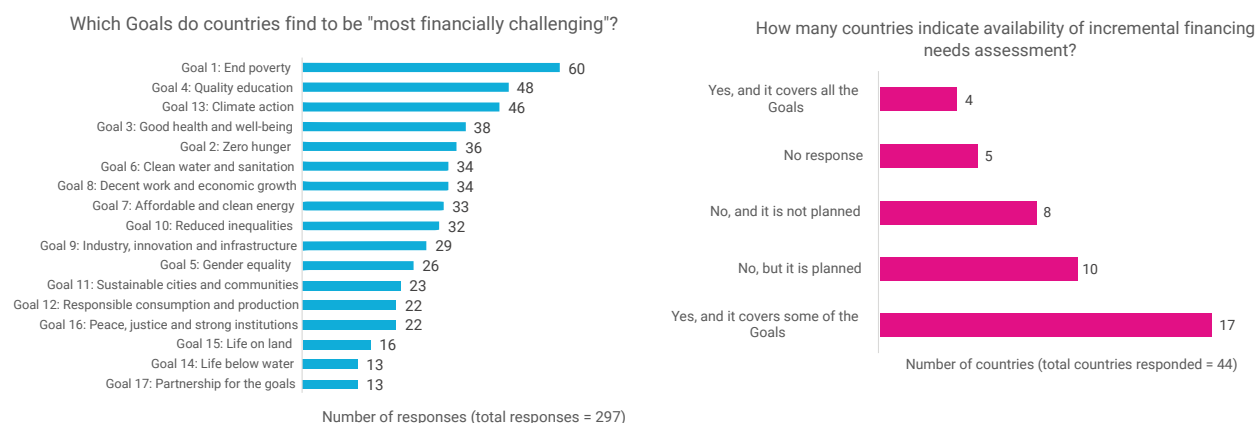
### On the ground

To complement the technical analysis of the chapter, a questionnaire was sent to policymakers and other stakeholders in the region; almost 300 responses from 44 countries were received. Questions were asked about which of the Goals are the “most financially challenging” and whether countries had conducted a financing needs assessment. Goals 1, 4 and 13 – on ending poverty, ensuring good-quality education and taking action to combat climate change, respectively – were identified as the most financially challenging (figure 3.3), which is broadly consistent with the chapter’s cost estimation results.

Responses also indicated that only four countries in the region have conducted a comprehensive assessment on the investment requirements to achieve the Sustainable Development Goals, but several countries plan to conduct one or are interested in doing so.

### **Only a few countries have a full picture of the investment needed to achieve the Sustainable Development Goals**

The chapter consists of two broad parts. The first half is devoted to estimating the investment gaps across the Goals. Given that the 2030 Agenda for Sustainable Development is not only about Goals and targets but also about integrated and innovative approaches, the second half concerns cross-cutting issues of synergies, priorities, financing and partnership.

**Figure 3.3****What do policymakers and other stakeholders think?**

Source: ESCAP.

Note: The questionnaire was sent out in October/November 2018 in the lead-up to the Asia-Pacific Forum on Sustainable Development.

## 2. Investment gaps across the Sustainable Development Goals

The chapter adopts a broad definition of investment to include expenditures if they deliver clear social returns. To establish a framework for investment, it proposes five major investment areas under which most of the Goals are addressed (table 3.1).<sup>24</sup> The first concerns *basic human rights*, for which ending poverty and hunger is essential. The second is about *developing human capacities*, with a focus on health,

education and gender equality. Then comes *enabling infrastructure*, covering transport, ICT, and water and sanitation. The fourth is about *securing humanity's future* through clean energy and climate action. The fifth is about *living in harmony* through sustainable consumption and production and conservation of nature.<sup>25</sup>

















### Five major investment areas to achieve the Goals: from basic human rights to living in harmony with nature

<sup>24</sup> In this chapter, the Goals are not grouped by "social", "economic" or "environmental", because most Goals cut across two or three dimensions. For instance, Goal 2 contains targets with social (e.g. malnutrition), economic (e.g. agricultural productivity and trade) and environmental (e.g. genetic diversity and climate resilience) dimensions.

<sup>25</sup> Although this provides for a relatively comprehensive framework for investing in the Sustainable Development Goals, some Goals or targets are not explicitly addressed, either because their achievement depends primarily on non-monetary factors (e.g. for achieving peace and justice, targets 16.a and 16.b are focused on institutional and legislative changes) or because they tend to be the result of other investments (e.g. investing in human capacities and enabling infrastructure would support economic growth and industrialization). Nevertheless, there could be important investment needs not covered by this chapter, highlighting the need to continue refining the analysis as countries implement the 2030 Agenda.



**Table 3.1**  
**What was costed?**

Investment area	Goal	What was costed? (ESCAP calculations are based on contributions of United Nations agencies and other organizations, as shown in parentheses)
<b>Basic human rights</b> End poverty and hunger		Poverty gap transfer (by international definition) and social protection floor for all age groups (by national definition, following ILO)
		Nutrition interventions (UNICEF and WHO) and investments to boost agricultural productivity (FAO)
<b>Human capacities</b> Health, education and gender equality		Gradual scaling up of population- and individual-level health service coverage to strengthen health systems (WHO)
		Good-quality education for every child and youth, adjusted for teacher salary, class size and budget for the marginalized (UNESCO)
		Gender mainstreaming across all investment areas through disaggregated data and gender-responsive budgeting (UN-Women)
<b>Enabling infrastructure</b> Transport, ICT, water and sanitation		Increased provision of safe drinking water and basic sanitation in urban and rural areas (UNICEF and World Bank)
		
		Increased provision of roads and railways to support equitable access in urban and rural areas (ADB, World Bank and others)
		
<b>Securing humanity's future</b> Clean energy and climate action		Increased provision of mobile and broadband infrastructure, to narrow the digital divide (ITU and others)
		Universal access to electricity, clean cooking; increase renewables' share; energy efficiency in transport, buildings and industry (IEA)
<b>Living in harmony</b> Sustainable consumption and production, and biodiversity		Climate-resilience in basic infrastructure (using UNISDR data) plus what has already been costed for clean energy
		Measures to promote sustainable consumption and production and make efficient use of natural resources (UNEP, IRP and CSIRO)
		
		Conservation of nature, including through addressing underlying causes of biodiversity loss (CBD, UNDP and others)
		

Source: ESCAP.

### Conceptual and practical challenges

Some Goals do not have clear numerical targets, leaving room for subjective judgement (e.g. “nationally appropriate” social protection systems in target 1.3 or “improve progressively” global resource efficiency in 8.3, as compared with “eradicate” extreme poverty in 1.1 or “ensure universal access” to modern energy services in 7.1). In some cases, even the optimum level is unclear: How many more roads are needed? These were often addressed through peer benchmarking. In the case of social protection, “nationally appropriate” was interpreted as applying national poverty lines for benefit levels, rather than the \$1.90 per day international threshold.

At the same time, establishing a clear baseline, whether in terms of how much countries are investing today or will invest through 2030 under a business-as-usual scenario, is challenging for some sectors. In terms of infrastructure, most studies rely on gross fixed capital formation, which includes non-infrastructure investments, and for many countries the amount is not disaggregated across sectors. While the latest available data and methodologies are used in the chapter to arrive at a baseline, it becomes apparent that there is a need for better classification and monitoring of investments related to the Sustainable Development Goals.

Aggregating investment needs across sectors presents another challenge because of overlaps and inconsistencies. In this chapter, those issues are addressed as much as possible. For consistency, a common reference year (2016 prices) has been adopted and United Nations projections applied for key variables, such as GDP, population and urbanization.

Quality dimensions of investment add to the challenge because they cannot be precisely or fully captured in costing. The returns to high-quality, but more expensive, technologies could increase over time and result in lower net costs. There is also significant uncertainty over the future price of such technologies. For such sectors as ICT and water and sanitation, low- and high-cost scenarios are provided to reflect different technology options and unit costs.

The following sections highlight the main costing estimation findings of the 2019 Survey. More details on the methodology and the results are available in the online technical appendix. Individual policy briefs are also available online for further discussion on the different investment areas.

## 2.1. Basic human rights – end poverty and hunger

Poverty is a violation of human rights. For the first time in history, the international community now has a realistic prospect of eradicating poverty.<sup>26</sup> At the same time, extreme hunger and malnutrition remain a huge barrier to development in many countries, with more than 90 million children under the age of five being dangerously underweight.<sup>27</sup> The results of this ESCAP study indicate that the Asia-Pacific region needs to invest an additional \$373 billion per year through 2030 in order to achieve the first two Goals, consisting of *four major interventions*: targeted cash transfers to eliminate poverty; social protection floor for all ages; nutrition-specific interventions; and investments to double agricultural productivity and small farmers' incomes (figure 3.4).

<sup>26</sup> The Universal Declaration of Human Rights adopted by General Assembly resolution 217A(III) in 1948 states that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, medical care and necessary social services".

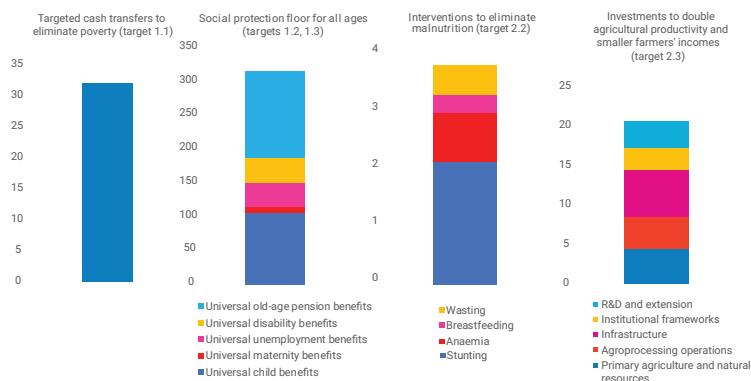
<sup>27</sup> For details, see [www.undp.org/content/undp/en/home/sustainable-development-goals/goal-2-zero-hunger.html](http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-2-zero-hunger.html).

**Figure 3.4**

### Investment needed for ending poverty and hunger

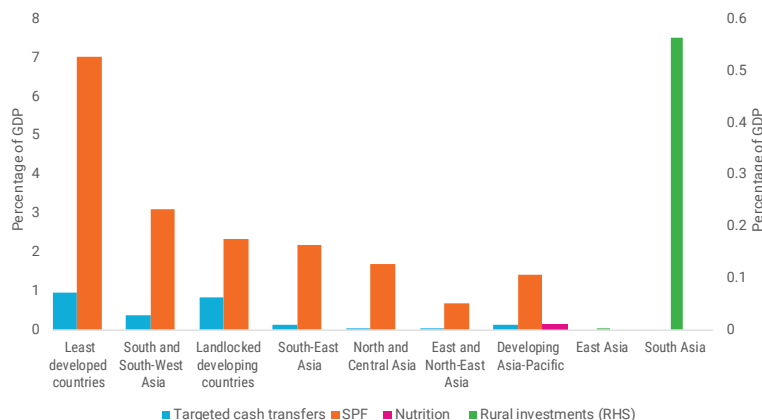
#### A. Annual average investment gap, 2016-2030

(Billions of United States dollars in 2016 constant prices)



#### B. Annual average investment gap, 2016-2030

(Percentage of GDP in 2018)



Source: ESCAP calculations, based on ILO, FAO and World Bank data.

Note: For rural investments, the East Asia and South Asia subregions are by FAO's definition.

### Goal 1 – End poverty in all its forms everywhere



Despite progress, the Asia-Pacific region remains home to some 400 million people living in extreme income poverty and to at least 931 million people in conditions of multidimensional poverty (ESCAP, ADB and UNDP, 2017).<sup>28</sup> Whereas economic growth played an important role in lifting the masses out of poverty in past decades, today's

<sup>28</sup> Multidimensional poverty is made up of several factors that constitute poor people's experience of deprivation, such as poor health, lack of education, inadequate living standard, lack of income (as one of several factors considered), disempowerment, poor quality of work and threats from violence.

landscape is more nuanced. The extremely poor often comprise the most vulnerable groups and marginalized communities of people; hence a more targeted approach is needed. However, social protection coverage remains low in the region: only 28 per cent of children, 33.4 per cent of mothers with newborns, 22 per cent of unemployed persons and 9.4 per cent of persons with a disability receive social protection benefits (ILO, 2017).<sup>29</sup>

In terms of investment needs, Sachs (2005) estimated that, to end extreme poverty worldwide in 20 years, the total cost per year would be about \$175 billion.<sup>30</sup> More recently, FAO, IFAD and WFP (2015) estimated the additional income needed to take people out of poverty at an annual average of \$67 billion during the period 2016-2030. Ortiz and others (2017) estimated the cost of establishing social protection floors and found that they are generally affordable, with funding requirements ranging from 0.9 per cent of GDP in East Asia and the Pacific to 1.7 per cent in South Asia. ESCAP (2018) estimates that, if the Asia-Pacific region's spending on education, health and social protection as a share of GDP converges to the world average, which would cost \$281 billion a year, 52 million people would be lifted out of extreme poverty.<sup>31</sup>

### Costing methodology and results

In this chapter, the cost of two types of interventions is estimated, based on targets 1.1 to 1.3. Following FAO, IFAD and WFP (2015), the first intervention is a targeted transfer aimed at closing the gap between earned incomes and the poverty line (according to international definitions). For target 1.1, the poverty line is set at \$1.25 PPP a day, but a buffer of 40 per cent is added to deal with real income shocks, unforeseen expenditure needs or price spikes. For the Asia-Pacific region, this amounts to \$32 billion per year on average during the period 2016-2030.<sup>32</sup> This method accounts for the fact that economic growth will continue to lift many, but not all, out of poverty by 2030.

The second intervention, based on Ortiz and others (2017), is to establish a social protection floor consisting of: (a) allowances for all children and all orphans; (b) maternity benefits for all women with

newborns; (c) benefits for all persons with severe disabilities; and (d) universal old-age pensions. The benefit level is set at the national poverty threshold in line with targets 1.2 and 1.3, which call for a significant reduction in poverty for all ages, according to national definitions. For the Asia-Pacific region, this amounts to \$317 billion per year. The programme cost ranges from 0.4 per cent of GDP in Mongolia to 10.6 per cent of GDP in Afghanistan, as the national poverty line relative to per capita income varies significantly (ESCAP, 2018).<sup>33</sup>

**Social protection floors  
protect all age groups - from  
children to older persons -  
from poverty**

### Policy and financing options

Establishing a nationally appropriate social protection system, including floors, requires sufficient national dialogue. Moreover, coordination across government ministries and between national and subnational levels would be important to ensure coherent delivery of entitlements and to avoid fragmentation, exclusion and overlaps (ESCAP, 2017g). Successful country experiences show that universal schemes can be affordable, through such measures as reprioritization of budgets and reducing leakage through such schemes as direct benefit transfer.

29 Currently, only 21 of 49 countries in Asia and the Pacific offer benefits to children and families, which explains the existing high levels of stunting, malnutrition and child mortality (ESCAP, 2018).

30 At the time, this represented about 0.7 per cent of total income of the OECD members. That level of aid had already been promised by the developed countries in the 2002 Monterrey Consensus.

31 Social spending was simply calculated to converge to the global average, and the impact of higher spending on poverty was simulated through a computable general equilibrium model.

32 The programme cost includes the income to be transferred and a 20 per cent markup for administrative costs and leakages. Relative to universal cash transfers, higher markups are applied for targeted transfers as there are costs associated with identifying beneficiaries as those incurred when implementing means testing of households or conducting a survey.

33 In many countries, implementing such a social protection floor would cost less than their current social protection spending. However, current composition is heavily geared towards pensions for a small group of the population and even other categories, such as child or maternity benefits, do not have a wide coverage, as noted previously. Thus, the cost for establishing a social protection floor is considered in this chapter as an additional investment.

Expanding coverage to include the large informal sector remains a challenge, although some countries, such as China and Thailand, have been able to successfully establish universal health-care and pension schemes through a combination of contributory and non-contributory approaches. There have also been innovative approaches to expand coverage, such as employment injury insurance in Bangladesh and Malaysia and the rural employment guarantee in India.

**Goal 2 – End hunger, achieve food security and improved nutrition and promote sustainable agriculture**



Some 486 million people remain undernourished in Asia and the Pacific (FAO and others, 2018). More than half of the world's malnourished children live in the region. This has serious implications as undernourishment delays physical and cognitive development and has lifelong consequences. Investment targeting the first 1,000 days of a child's life can help prevent these effects, with high benefit-cost ratios (box 3.1). Children who circumvent stunting are 33 per cent more likely to break out from poverty in adulthood.

Nutrition is part of the broader agenda on ending hunger and promoting sustainable agriculture. As the percentage of households that cannot afford diversified healthy diets is very high – ranging from 21 per cent in Cambodia to 68 per cent in Indonesia (WFP, 2015-2017) – countries need to support diverse food systems in their agricultural sectors. Investments to achieve Goal 2 will need to address the challenges of expanding populations, climate change, fertilizer overuse, competing use of land and land degradation, among others.

**Box 3.1**

**Food for thought: the investment case for nutrition**

Investments in nutrition have high human and economic returns. They are associated with better health and education outcomes, and many other co-benefits across the Sustainable Development Goals, as illustrated in the figure below. Every dollar spent in scaling up nutrition interventions targeting the first 1,000 days of life yields a return of at least \$16 (Haddad and others, 2014).



Source: MDG Health Alliance.

In a comprehensive study, Shekar and others (2017) estimated that an additional \$70 billion investment would be needed over 10 years to achieve global nutrition targets. Such investment would translate into significant developmental impacts, reducing millions of cases of stunting, anaemia and wasting, increasing the rate of exclusive breastfeeding and averting up to 3.7 million child deaths. Compared with the 2015 baseline, 30 million fewer children would be stunted, 105 million more babies would be exclusively breastfed during the first six months of life and 91 million more children under five years of age would be treated for severe wasting by 2025. The benefit-cost ratio could be as high as 35 for curbing anaemia, as shown in the table on the next page. In the long run, such outcomes would produce more productive workers generating higher earnings through higher cognitive and physical capacities.

	Stunting	Anaemia	Exclusive breastfeeding	Wasting (acute malnutrition)
<b>Development outcomes</b>	Reduce stunting of children under five by 40 per cent	Reduce number of women of reproductive age with anaemia by 50 per cent	Increase rate of exclusive breastfeeding in first six months by at least 50 per cent	Reduce and maintain acute malnutrition to less than 5 per cent
<b>Impact</b>	65 million cases of stunting prevented	265 million cases of anaemia in women prevented	105 million more babies exclusively breastfed	91 million children treated for severe wasting
<b>Child deaths averted</b>	2,800,000	800,000	520,000	860,000
<b>United States dollars</b>				
<b>Economic benefits (billions) <sup>a</sup></b>	\$417	\$298	\$110	\$25
<b>\$1 invested yields</b>	\$11	\$35	\$12	\$4

<sup>a</sup> In low- and middle-income countries over 10 years for women and over the productive lives of children benefiting from such interventions.

The investment case for nutrition is based on not only the benefits of action but also on the cost of inaction. In the Philippines, a joint UNICEF-Government study (UNICEF, 2018a; 2018b) revealed alarming statistics that 700,000 children under five years old are at risk of dying and more than 3.3 million are deprived of their full potential in life due to undernutrition. The associated economic loss was measured through pathways that may result in values foregone in future workforce, future productivity, work performance deficit and additional health-care costs. The loss would amount to \$4.5 billion per year, or 1.5 per cent of GDP (in 2015), if no action were taken to tackle undernutrition.

Based on such evidence, the Government of the Philippines has introduced an intervention package called the National Nutrition Intervention Scenario (NIS) programme. The interventions go beyond supplements, fortifications, consultations, treatment of malnutrition and breastfeeding to include education to encourage positive nutrition behaviours. The NIS programme would involve public and private primary health-care centres, nutrition workers and volunteers at the community level, the existing Pantawid Pamilyang Pilipino Program (4Ps) for low-income families, as well as the media and private industries. An estimated budget of \$113 million per year would be required for these interventions to reach coverage of 90 per cent. The benefit-cost ratio yields a return of \$12 for every dollar invested. The overall economic returns amount to \$1.5 billion per year towards the economy while 14,000 children under five years of age would be prevented from dying.

## Costing methodology and results

The literature provides a wide range of cost estimates for ending hunger and undernutrition, depending on the nature of the intervention (Fan and others, 2018). In this chapter, two of those approaches have been adopted. Under target 2.2, the first approach is a package of nutrition-specific interventions to reach the global targets of: (a) reducing stunting in children under five; (b) reducing anaemia in women; (c) increasing the prevalence of exclusive breastfeeding among infants; and (d) mitigating impacts of wasting among young children (WHO, 2014). Based on Shekar and others (2017), an additional \$3.5 billion per year is needed to achieve these targets.

**An additional \$3.5 billion per year on nutrition-specific interventions can significantly reduce child deaths**

The second approach involves the additional investment needed to boost agricultural productivity and incomes of small-scale food producers, as called for under target 2.3. These are investments in improving primary agricultural and natural resources; agroprocessing operations; rural infrastructure; institutional frameworks; and research and development, and extension (Schmidhuber, Bruinsma and Boedeker, 2011). Based on FAO, IFAD and WFP (2015), the Asia-Pacific region would need an additional investment of some \$20.6 billion per year in these areas, with the gap being much higher in South Asia compared with East Asia (table 3.2). Such investments would help reduce poverty, especially in rural areas where most of the poor reside.



**Table 3.2****Agricultural and rural investments**

(Annual average investment gap, 2016-2030, expressed in billions of United States dollars in 2016 constant prices)

	East Asia	South Asia	Total	Share of public investment
<b>Primary agriculture and natural resources</b>	0.35	4.13	4.48	
Soil conservation	0.06	0.43	0.50	30
Water conservation/improved irrigation	0.03	1.93	1.96	30
Preservation/improvement of:	..	..	..	
Crops	0.03	0.16	0.19	30
Animals	0.03	0.12	0.15	30
Fish	0.13	0.30	0.43	30
Forests	0.05	0.13	0.18	30
Mechanization	0.02	1.05	1.07	10
<b>Agroprocessing operations</b>	0.07	3.95	4.02	
Cold and dry storage	0.02	0.72	0.74	20
Rural and wholesale market facilities	0.02	1.16	1.18	50
First-stage processing	0.04	2.07	2.10	10
<b>Infrastructure</b>	0.11	5.89	6.00	
Rural roads	0.08	3.93	4.00	90
Rural electrification	0.04	1.96	2.00	80
<b>Institutional frameworks</b>	0.05	2.68	2.74	
Land titling, tenure security	0.01	0.33	0.34	90
Rural finance	0.04	1.96	1.99	50
Food safety related regulations	0.01	0.39	0.40	90
<b>R&amp;D and extension</b>	0.08	3.27	3.35	
Research and development	0.03	1.31	1.34	90
Extension	0.05	1.96	2.01	90
<b>Total</b>	0.66	19.92	20.58	64

Source: ESCAP calculations based on FAO and others (2015).

Note: Share of public investment is estimated at the global level. The East Asia and South Asia subregions are by FAO's definition.

**Policy and financing options**

Investments in nutrition will come through a mix of domestic budget allocations combined with ODA, newly emerging innovative financing mechanisms, as well as household contributions. They could leverage cost-effective interventions, such as antenatal micronutrient supplements

which prevent stunting as well as anaemia in pregnant women. At the same time, greater focus can be given towards healthy diets for all age groups, keeping in mind rural and urban settings, and exposure to cheap and convenient unhealthy processed foods, which are leading to a “double burden” of malnutrition as evident with undernourished and overweight children living in the same communities or even occurring in the same child (FAO and others, 2018).



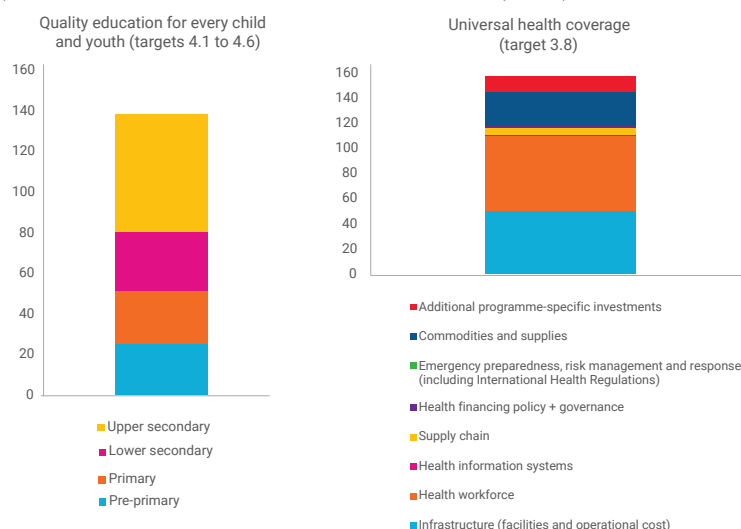
Investment in agriculture should enhance sustainable agricultural practices, including soil and water conservation, improved irrigation systems, greater water efficiency and preservation of biodiversity, as well as genetic improvements in agriculture, fisheries and forestry (FAO, IFAD and WFP, 2015). Mechanization may also be required to increase agricultural productivity. While the bulk of investment in agriculture is carried out by private agents, especially by farmers themselves, provision of certain goods and services require public investment; for instance, there are natural monopolies, such as irrigation systems, where only one network is desirable for efficiency reasons.

**Figure 3.5**

### Investment gap in health and education

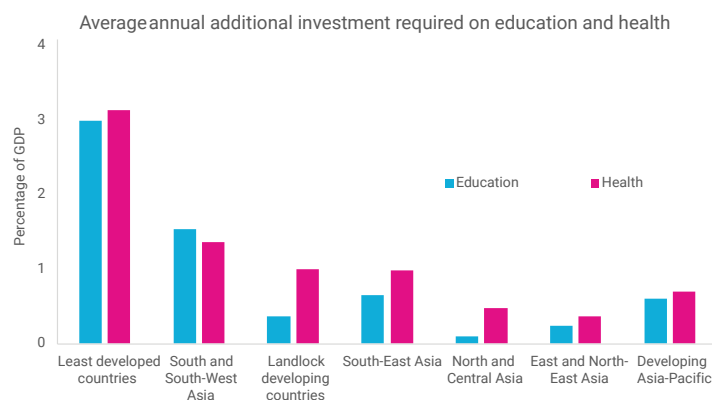
#### A. Annual average investment gap, 2016-2030

(Billions of United States dollars in 2016 constant prices)



#### B. Annual average investment gap, 2016-2030

(Percentage of GDP in 2018)



Source: ESCAP calculations, based on UNESCO and WHO data.

## 2.2. Investing in human capacity – health, education and gender equality

The 2030 Agenda calls for equal opportunities for all women and men so that they would be given the chance to realize their full potential in life. This outcome would require substantial advances in essential health-care services and good-quality education for all and the effective mainstreaming of gender equality across all investment areas. This section contains an explanation of the relevant costing methodologies and finds that the Asia-Pacific region needs to invest an additional \$296 billion per year through 2030 in human capacity (figure 3.5).

### Goal 3 – Ensure healthy lives and promote well-being for all at all ages



Good health supports productivity through less absenteeism from school or work and reduced time lost in caring for dependents, among others. However, emerging trends, such as population ageing, cross-border epidemics and climate change, will place greater demands for and capacity constraints on health-care systems.

Specifically, target 3.8 calls for universal health coverage (UHC), consisting of access to good-quality essential health-care services and financial risk protection. Levels of coverage vary widely, with East Asian countries, such as China, Thailand and Viet Nam, among those with the highest level of coverage, and several South Asian countries being on the lower end. Similarly, out-of-pocket payments range from less than 30 per cent to more than 70 per cent of total health-care expenditures, and some 13 per cent of the population face catastrophic payment, which can result in the poor using up their life savings or forgoing their children's chance for education. Globally, some 100 million people are pushed into extreme poverty due to health-care costs.

There have been several investment needs assessments in health, dating back to at least the Commission on Macroeconomics and Health (WHO, 2001), which estimated a set of essential interventions that would cost \$34 per person per year. More recent estimates include those of Jamison and others (2013), which projected the average annual need per person at \$63 in the period 2016-2025 and \$83 in the period 2026-2035.

### Costing methodology and results

In this chapter, the latest assessment from WHO is used, namely the *SDG Health Price Tag*, (Stenberg and others, 2017) which estimates the additional resources needed in 67 developing countries, including 19 in Asia, between 2016 and 2030.<sup>34</sup> Globally, investing an additional \$274-\$371 billion on health per year to scale up health systems (including health workers and facilities) and disease-specific interventions could save up to 97 million lives while increasing life expectancy by 3.1 to 8.4 years (figure 3.6). For the region, calculation of lower bound estimates (covering maternal and child health, HIV and non-communicable diseases (NCDs) but excluding tuberculosis (TB) and cancer) suggest life expectancy gains of 4.1 years in least developed countries, 3.5 years in South and South-West Asia, 2.6 years in South-East Asia and 1.9 years in North and Central Asia.

**An additional \$38 per person per year will expand access to good-quality, essential health-care services and protection against catastrophic health expenditures**

**Figure 3.6**  
**Life expectancy gains from health interventions**



Source: ESCAP, based on Stenberg and others (2017).

For the 19 Asian countries covered in the WHO study (which represent 93 per cent of the region's population and 81 per cent of the region's GDP), an additional investment of \$158 billion, or \$38 per person, would be needed on average during the period 2016-2030 in order to ambitiously scale up health systems towards achieving Goal 3 targets. The region accounts for more than half of the additional health investment required in the developing world. Within the region, South and South-West Asia requires the highest additional investment in health. Added to current spending levels, total public spending on health in the region would rise to about 5.3 per cent of GDP by 2030.

More than two thirds of the additional cost would be spent on health systems, mainly infrastructure and workforce and to a lesser extent, supply chain and information systems. The rest would consist of commodities and supplies, programme-specific investments as well as emergency preparedness, risk management and response. Overall, substantial investment in infrastructure is needed in the initial years, while workforce and supply costs would be higher at the later stage.

<sup>34</sup> This study and other similar studies do not cover Pacific island developing States.

**Box 3.2****How to save on medical bills: no silver bullet**

Evaluating and improving health spending efficiency is extremely challenging. Health systems often have multiple and sometimes competing objectives, where trade-offs can be inevitable. However, there is no universal standard on how these trade-offs should be made and what accounts for the “best” results. Adding to the problem are the complex and unclear linkages between health interventions and health outcomes, and the asymmetric information on health services. As a result, impacts of a specific health service often cannot be isolated, and price signals as measures of service quantity and quality become less reliable.

Due to these challenges, most studies on health system efficiency provide only indicative estimations. WHO (2010) estimates that 20–40 per cent of all health spending is wasted due to inefficiency. In this chapter, the efficiency frontier method is used, which indicates that slightly more than 30 per cent of health spending could be saved in Asia-Pacific developing countries.

Although there is no silver bullet applicable to all countries or all circumstances for strengthening health expenditure efficiency, there are still areas where policy actions by developing countries would be desirable.

**Spending on medicines:** Medicines, for instance, account for some 20 to 30 per cent of global health expenditure, and the use of generic medicine could save up to 60 per cent of total medicine expenditure in middle-income countries (Cameron and Laing, 2010). Greater potential savings in medicine expenditure could be achieved by eliminating distorted incentives and promoting better practices. In China, fee-for-service payments and distorted incentives contributed to the excessive prescription of drugs and use of overpriced drugs. In a WHO study (Yip and Hafez, 2015), it was found that nearly half of all prescriptions of antibiotics and medical injections in China could be deemed as unnecessary. Meanwhile, the same authors also found that drug expenditure increased at an annual rate of 15 per cent between 1990 and 2008 and accounted for close to half of the total medical expenditure in 2008.

**Right incentives for service providers and health finance providers** (such as insurance companies): Due to information asymmetry on the actual necessity and usefulness of health services, there is a strong tendency for overtreatment and excessive use of diagnosis and medicine when the income of health providers is associated with the quantity of services they provide. Insurance schemes also encourage excessive consumption of health services when there is little marginal cost for consumers. Different countries have been experimenting with different measures, such as cost-sharing, case-based payment, or strategic purchasing, according to the local context, although with no single measure demonstrating clear advantage over the rest.

**Policy and financing options**

Developing countries with limited financial and human resources can first expand coverage in primary health services, a cost-effective aspect of UHC (WHO, 2018b), by providing contraceptives and basic vaccination. Similarly, population-wide interventions or outreach services, such as on alcohol abuse, tobacco use and sugar consumption or early screening of non-communicable diseases (NCDs), also deliver high impacts for long-term health at relatively low costs. Finally, as achievement of health also depends on policies in other sectors, such as nutrition and water, sanitation and hygiene infrastructure, an integrated approach will be needed.

In terms of financing, countries that have successfully worked towards UHC, such as Sri Lanka, Thailand and Turkey, provide almost the entire population with health services free of charge, financed through general tax revenues. This approach improves equity compared with contribution-based schemes, but it also requires strategies to enhance budget efficiency and secure financial sustainability. Mechanisms such as capitation and co-payment can help to limit unnecessary services or overutilization. However, there is no one-size-fits-all solution for improving health expenditure efficiency (box 3.2). Fiscal policies can also influence public health outcomes through taxes on tobacco, alcohol and sugar while contributing to the government budget.

**Goal 4 – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

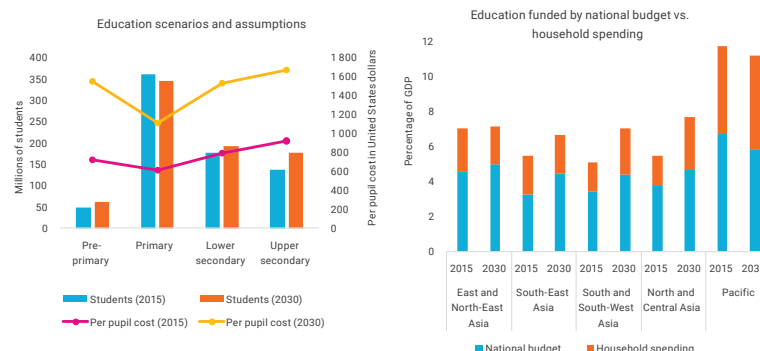


Goal 4 presents a significant broadening of the education agenda compared with that of the Millennium Development Goals; it is aimed at universal enrolment, from pre-primary to upper-secondary levels (rather than just primary), and emphasizes learning outcomes, such as literacy and numeracy skills. Good-quality education leads to better individual outcomes, such as higher labour market remuneration, but it also fosters economic growth through human capital accumulation and reduces poverty. At the same time, Goal 4 calls for equity in education opportunities, through additional support for marginalized children to gain access to school and catch up with their peers in learning. Among previous studies on education costing, the global estimate for low- and lower-middle income countries varies from \$191 billion (UNESCO, 2015) to \$311 billion (Education Commission, 2016) annually for the period 2015-2030.

### Costing methodology and results

This chapter contains an extension of the UNESCO model to include upper-middle income countries and to cover a total of 43 countries in Asia and the Pacific. It finds that total education expenditures from pre-primary to upper-secondary will increase marginally from about \$642 billion in 2015 to an annual average of \$780 billion during the period 2016-2030. This reflects an increase in the size of the student population at all levels, except for primary, such that by 2030 there will be about 230 million more students compared with the number today, including 91 million more in upper-secondary education. South and South-West Asia contributes to much of this growth, due to its large pupil population and ambitious progression targets. At the same time, per pupil costs will increase, primarily reflecting income growth but also due to smaller class size or better-paid teachers in some countries.

**Figure 3.7**  
**Education scenarios through 2030**



Source: ESCAP, based on an extension of the UNESCO (2015) costing model.

Low- and lower-income countries in the region will see relatively large increases compared with today's spending, with costs rising from \$149 billion to \$248 billion. However, for countries with limited financial resources, there are ways to achieve the education targets in a more gradual manner; for instance, while enhancing teacher training, class size could be reduced at a less ambitious pace, lowering the price tag by \$61 billion per year.

Additionally, this chapter extends the UNESCO model to include post-secondary education, both tertiary and non-tertiary, such as TVET, in line with targets 4.3 and 4.4. Indeed, post-secondary enrolment is expanding rapidly in the region and is vital for achieving Goal 8 on productivity growth and decent jobs as well as in supplying professionals, such as teachers, doctors, nurses and environmental engineers, needed for achieving various Goals. Public and private spending on post-secondary education is estimated to rise from \$716 billion in 2015 to an annual average of \$1.3 trillion during the period 2016-2030. However, based on two alternative scenarios – slower progression in post-secondary enrolment and partial online provision of education – the price tag would decline by \$236 billion and \$219 billion per year, respectively.

**An additional \$138 billion per year  
will provide universal and good-  
quality pre-primary to upper-  
secondary education**

**Box 3.3****It's time people learned**

Significant savings could be achieved through greater emphasis on education quality and outcomes, and through better allocation of educational resources to target vulnerable groups. Globally, for instance, in UNESCO (2014), it was estimated in 2014 that \$129 billion was wasted annually due to the disconnect<sup>35</sup> between schooling years and acquisition of basic skills alone.

Using an efficiency frontier approach, the chapter finds that Asia-Pacific developing countries on average could save more than 30 per cent through efficiency gains without compromising on education performance. The efficiency gaps could be even greater across individual countries. Pakistan, for instance, spends 20 per cent more than Tajikistan in per capita public education expenditure, but underperforms Tajikistan by a significant margin in all the five indicators on education coverage and quality (see table below). Pakistan could save close to 80 per cent of its current education spending to achieve the same results if it were to achieve the same efficiency level of its best performing peers.

**Efficiency scores on public spending for education, in selected countries**

Country	Input efficiency (percentage)	Primary education enrolment, net (percentage)	Secondary education enrolment, gross (percentage)	Quality of the education system, 1-7 (best)	Quality of primary education, 1-7 (best)	Quality of math and science education, 1-7 (best)	Public education spending per capita (in PPP)
Bangladesh	56	91.6	56.2	3.4	3.0	3.3	57.4
Myanmar	38	90.8	51.6	2.6	2.3	2.7	75.9
Nepal	99	97.1	62.8	3.6	3.6	3.8	80.0
Tajikistan	100	97.3	87.4	4.0	4.0	3.9	92.5
Lao PDR	58	95.7	52.4	3.9	3.6	3.7	102.3
Pakistan	21	72.7	39.2	3.6	3.0	3.5	112.4
Philippines	100	91.7	86.2	4.4	4.0	4.0	141.6
India	81	92.9	68.6	4.4	4.1	4.5	168.9
Kyrgyzstan	59	91.5	89.5	3.0	3.1	3.0	187.0

Strengthening teaching quality and teacher training is key to achieving better educational results. The Asia-Pacific region significantly increased education access and average schooling years<sup>36</sup> over the past several decades, but quality remains an issue. As of today, 92 million children in the region fail to obtain basic literacy and numerical skills even after completing primary school (World Bank, 2018a). In South Asia, it has been estimated that only one third of children reaching grade 4 were able to read basic texts compared with 96 per cent in developed regions (UNESCO, 2014).

Access to and quality of education should and can be achieved simultaneously. Setting up proper teacher governance mechanisms to address problems of misconduct, such as absenteeism, putting in place performance benchmarks and well-designed incentive schemes for teachers, and prioritizing teacher training to ensure that teachers themselves have the required skills are among the important steps towards achieving this objective. Education authorities would need to be held accountable in this process, while technology, especially digital connectivity, could be leveraged to make not only teaching but also teacher training more cost-effective.

35 A total of 250 million children are not learning basic skills, even though half of them have spent at least four years in school.

36 Over the last 50 years, Asia-Pacific countries have converged to the global average of 8 years of schooling per capita, starting from an average of 1.3 years.



Reorienting education spending and policies to prioritize vulnerable groups is another urgently needed measure for greater efficiency. In Asia and the Pacific, domestic migrants, especially rural-to-urban migrants, are a unique vulnerable group who are often excluded or neglected by public education systems. Rural-to-urban mobility restrictions<sup>37</sup> have been a main source of barriers denying the migrant population access to urban schools and other education opportunities, resulting in significant disparities and inequality. In China, for instance, the majority of migrant children have often attended unauthorized informal migrant schools as an alternative (Han, 2004). In Viet Nam, the enrolment ratio to upper-secondary school of those with temporary status is only a third of the ratio of those with permanent status (World Bank and Viet Nam Academy of Social Sciences, 2016).

Even without explicit policy discrimination, domestic migrants remain susceptible to education disruptions caused by seasonal migration, child labour and workplace hazards, and often end up in slums where access to basic services, including education, is always a challenge. In Bangladesh, for instance, merely one quarter of slums were estimated to have a government school up to 2007 (UNESCO, 2019). Similar challenges also exist for children left behind, who are more likely to underperform vis-à-vis their peers in terms of cognitive ability and school achievement, mainly due to family separation and related mental health and social relationship problems (UNESCO, 2019).

Such regressive allocation of public education resources represents a huge drag on the pursuit of education targets. Although many fruitful reforms and proactive policy measures have been undertaken by Asia-Pacific countries in recent years, the misallocation inefficiency in public education spending remains to be fully addressed.

### Policy and financing options

The efficiency of monetary investment can be enhanced through numerous non-monetary initiatives in the education system, such as child-oriented teaching methods focused on skill formation, using languages that pupils understand, teachers making full use of class time and not shirking, and responsible and responsive school management. For instance, in India attendance-monitoring using tablets and mobile-based applications resulted in a lower teacher absenteeism rate and improved outcomes in student performance (Kedia, 2018). Such factors will prove to be vital for monetary investment to contribute to achieving good-quality and equitable education for all. Moreover, strengthening expenditure efficiency will require attention to both quality and equity (box 3.3).

In general, countries already spending 6 per cent of GDP or more on education could absorb the additional needs within the existing education budget, but others would need to meet the gap through budgetary reallocation from other sectors and/or overall increase in the government budget backed by higher tax revenues. The above model places a cap on government and household expenditures, such that the residual becomes an external finance gap. Whereas the gap is only 0.4 per cent of the total education spending for the region as a whole, it is much higher in the Pacific islands at 11 per cent.

### ***It will take the Asia-Pacific region more than 70 years to achieve gender equality under a business-as-usual approach***

#### ***Goal 5 – Achieve gender equality and empower all women and girls***



Achieving Goal 5 on gender equality will require mainstreaming of gender aspects across all investment areas, including health and education, through such initiatives as gender budgeting. Moreover, behavioural and legislative changes are needed to address gender-related discrimination and violence and to enhance women's economic participation.

<sup>37</sup> Extreme examples of such restrictions include two systems in the region: China's hukou (registered residency status of an individual) and Viet Nam's ho khau (household registration book), both of which were created during the command economy era to prevent voluntary domestic migration.

Given the serious state of gender equality in the region, rapid progress is needed. Based on current trends, the gender gap (as measured by a composite index) would take more than 70 years to close in the region (WEF, 2018). Globally, women still get paid 20 per cent less on average for the same work and qualifications as men. Many women are also engaged in unpaid domestic work or in the informal sector, with little or no social protection. Globally, some 20 per cent of women under the age of 50 experience physical and/or sexual violence from an intimate partner within a year, and this figure is even higher in subregions such as the Pacific island countries and Central and Southern Asia (UN-Women, 2018).

Gender inequality in relation to ownership of land, property and assets persists as a major issue. For instance, laws in Afghanistan, Bangladesh, the Islamic Republic of Iran and Malaysia do not guarantee equal inheritance rights to widows and the daughters relative to their male counterparts, and in the worst case scenario they lack all forms of inheritance rights (ESCAP, 2018a). Amending such laws could empower women through changes in individual or social perceptions as well as by providing a form of collateral to start their own businesses. More women should be in positions of leadership and be able to actively participate in decision-making. However, women parliamentarians account for only 24 per cent of such lawmakers globally, and the proportion is even lower in all Asia-Pacific subregions (UN-Women, 2018).

Given the importance of non-monetary factors, gender aspects are mainstreamed in the chapter across all investment areas, including by the use of gender-disaggregated data where possible, instead of explicitly costing Goal 5. For instance, good-quality education for all girls could help bridge the gender gap. Girls receiving secondary education not only earn twice as much as their non-educated peers but are also much less susceptible to early forced childhood marriage. At the same time, public schools should offer appropriate facilities to accommodate girls and women, as the lack of such facilities could act as an implicit gender barrier; in Bangladesh, three of every five girls missed school during their menstruation cycles on an average of three days per month (UNESCO, 2018).

As women and girls spend approximately 125 million hours per year collecting water, the provision of clean water could allow for more productive use of time, whereby women could be learning a new form of trade to economically sustain themselves, and girls would be able to attend school and receive an education which could potentially enable them to escape from poverty (Oxfam, 2018). While the provision of the Internet could further aid in empowering women as they could form networks and learn new forms of trade online, women's Internet usage remains low relative to that of men in the region.

## **Gender budgeting could help ensure that girls and women benefit from investment in different Sustainable Development Goals**

The adoption of gender-responsive budgeting could aid in ensuring that women benefit from the increase in investment across different Sustainable Development Goals. The types of policies and the manner in which they are funded have differing impacts on women and men, and even on different subgroups of women and men based on their geographical location, age or income levels. In the region, 6 countries<sup>38</sup> have made significant progress on gender-responsive budgeting, and an additional 20 economies<sup>39</sup> are in the early stages of doing so (ESCAP, 2018b). For instance, India included gender budgeting into its ninth five-year plan, supported by increased budget transparency and civil society engagement, and proactive leadership of the Ministry of Women and Child Development. Countries could also introduce taxation frameworks reducing the net liability, which could be done by taxing individual rather than family income in order to encourage women to join the labour force (ESCAP, 2016).

### **2.3. Enabling infrastructure – transport, ICT, and water and sanitation**

Sustainable infrastructure is critical to the achievement of the Sustainable Development Goals because of its major

<sup>38</sup> Bangladesh, India, Indonesia, Nepal, the Philippines and the Republic of Korea.

<sup>39</sup> Afghanistan, Bhutan, China, Cambodia, the Cook Islands, Fiji, Kiribati, the Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Pakistan, Papua New Guinea, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Viet Nam and Vanuatu.

role in supporting overall growth and development, increasing the access of the poor to the benefits of development and in climate change mitigation and adaptation (figure 3.8). Exacerbating the need for infrastructure are the trends of population growth, migration and urbanization, which are most prevalent in developing countries. Infrastructure is represented in Goal 9 along with industrialization and innovation but also implicit in many other Goals. In this section, the investment needs in three main sectors of infrastructure are considered: transport; information and communications technology (ICT); and water and sanitation. Energy is discussed separately with climate action in the following section.

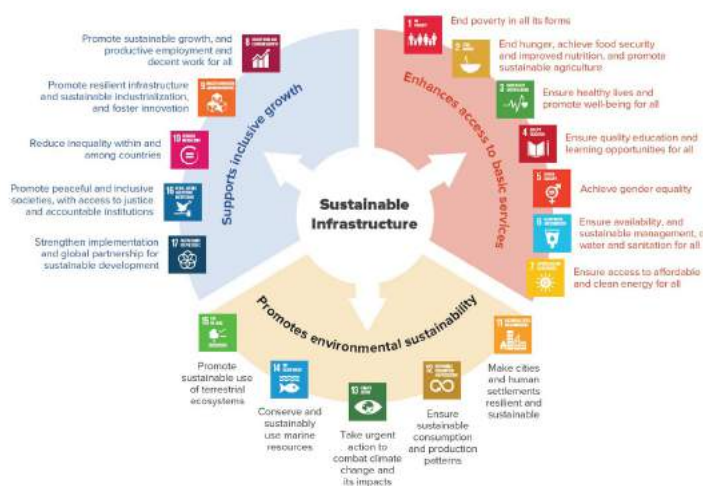
Across all three sectors, these calculations are carried out in two steps. *First*, the total investment required to provide the infrastructure stock needed to meet future demand is estimated, and maintenance and climate change-related components are then added. *Second*, the current investment levels are estimated to derive the investment gap.

The results suggest that the developing countries in the Asia-Pacific region, excluding China, the Republic of Korea and Singapore (which currently invest more than the predicted investment needed), will have to invest an additional \$196 billion, amounting to 1.3 per cent of GDP, in transport, ICT, and water and sanitation infrastructure to meet the relevant Sustainable Development Goal targets. However, the requirements are considerably higher for most countries (figure 3.9). For landlocked developing countries and least developed countries, this gap is as large as 3-3.3 per cent of GDP, while countries in the South and

South-West Asian subregion and members of the South Asian Association for Regional Cooperation (SAARC) will face a gap of 2-2.5 per cent of GDP annually. South-East Asia will require an extra 0.6 per cent of GDP. In the East and North-East Asian subregion, the gap is negative, that is, current levels exceed the levels deemed necessary. When China and the Republic of Korea are excluded from this grouping, the financing gap becomes positive.

### **Asia-Pacific developing countries need to invest an additional \$196 billion in transport, ICT, and water and sanitation infrastructure**

**Figure 3.8**  
**Sustainable infrastructure supports many Goals**



Source: New Climate Economy (<https://newclimateeconomy.report/2016/the-sustainable-infrastructure-opportunity/>).

When looking at the breakdown of the investment gap by sector, it appears that the transport sector will account for about two thirds of the financing gap, while the ICT, and water and sanitation sectors represent 29 per cent and 7 per cent of the gap, respectively.<sup>40</sup>

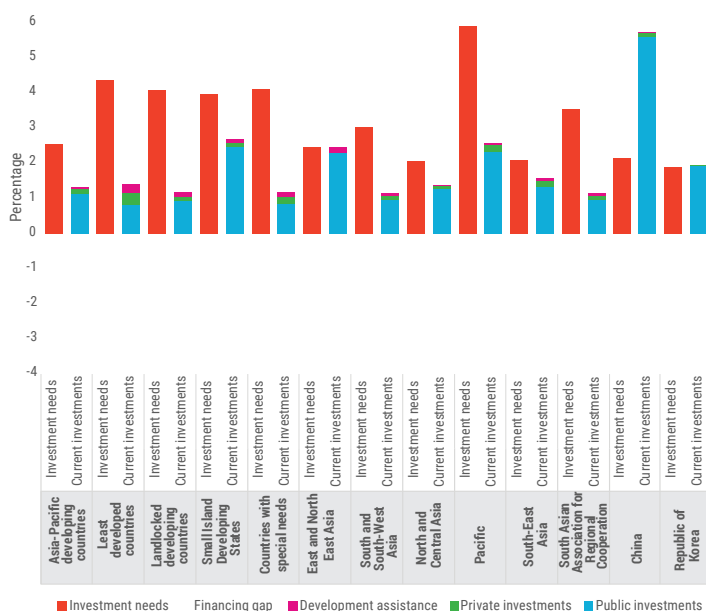
<sup>40</sup> For some country groups, such as the East and North-East Asian and North and Central Asian subregions, the investment gap for the water and sanitation sector is negative, the reason being that in those subregions capital spending is relatively high, and there is most likely room for efficiency gains.

**Figure 3.9**

**Infrastructure investment needs and current investment in transport, ICT, and water and sanitation**

**A. Annual average investment gap, 2016-2030**

(Percentage of annual average GDP, 2016-2030)

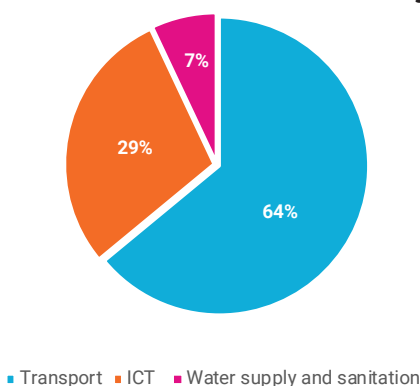


**B. Annual average investment gap, 2016-2030**

(Percentage of annual average GDP, and billions of United States dollars in 2016 prices)

Country group	Investment gap (percentage of GDP)	Investment gap (billions of United States dollars)
Asia-Pacific developing countries	1.34	196
Least developed countries	3.27	19
Landlocked developing countries	3.03	23
Small island developing States	1.39	0.2
Countries with special needs	3.15	39
East and North-East Asia	0.05	0.01
South and South-West Asia	1.98	144
North and Central Asia	0.80	26
Pacific	3.50	0.3
South-East Asia	0.62	24
South Asian Association for Regional Cooperation	2.51	125

**C. Sectoral breakdown of the investment gap**



Source: ESCAP.

Note: Calculations for the developing countries in Asia and the Pacific and East and North-East Asia exclude China and the Republic of Korea. Singapore has also been excluded from these estimates. Due to a lack of reliable estimates of the current level of public investment in infrastructure in several countries, the group of small island developing States includes only Fiji, Kiribati, Maldives and Solomon Islands. Private investments are composed of the share of PPPs in infrastructure coming from the private sector as well as greenfield FDI. Development assistance are composed of ODA flows for all country groups and includes flows from multilateral development banks for the group of Asia-Pacific developing countries only. The investment gap related to the water and sanitation sector has been calculated using the high-cost scenario for this sector.

These results are broadly in line with those of recent studies using a similar methodology, including Ruiz-Núñez and Wei (2015), Hutton and Varughese (2016), ADB (2017), ESCAP (2017e) and Rozenberg and Fay (2019). The finding in this chapter of an investment gap of \$196 billion is lower than that of ADB (2017), which estimated that annually \$308 billion would be lacking in the developing countries of the Asia-Pacific region by 2020. This is because the calculation for this chapter does not consider the energy sector but also because the estimate of current investment levels is higher after incorporating foreign direct investments and development flows, which were not included in the ADB study.

The results in the present study are also broadly in line with the above-mentioned recent studies in terms of total investment needs (table 3.3). Investment needs in the transport sector are lower than ADB estimates mainly because waterway infrastructure is not included whereas it is in the ADB numbers. For the ICT and water and sanitation sectors, the estimates of this chapter are higher due to application of higher unit costs, based on country-specific estimates and the application of low- and high-cost scenarios corresponding to the use of different technologies, compared with standard unit costs across countries and a single estimation scenario in ADB (2017). For the water and sanitation sector specifically, estimates for this chapter are larger than those calculated by Hutton and Varughese (2016), who did not account for climate change. However, the ESCAP estimates are lower than the ones calculated by Rozenberg and Fay (2019) (whose results are reported only in percentage of GDP) because they put special emphasis on more elaborate technologies and operations as well as maintenance to provide infrastructure services.

**Table 3.3**

**Comparison of total investment needs in infrastructure**

**A. Annual average total investment need, 2016-2030**

(Billions of United States dollars in 2016 prices for ESCAP, and other base years for other studies)

Sector/source of estimates	ESCAP Survey for 2019		ADB (2017)	Hutton and Varughese (2016)
	Total	Of which climate change-related component is included	Total	Total
<b>Transport</b>	442	95	557	..
<b>ICT</b>	288	41	152	..
<b>Water and sanitation</b>	83	21	53	51

**B. Annual average total investment need, 2016-2030**

(Percentage of annual average GDP)

Sector/source of estimates	ESCAP Survey for 2019		Rozenberg and Fay (2019)
	Total	Of which climate change-related component is included	Total
<b>Transport</b>			
<i>Developing countries in Asia</i>	1.30	0.3	2.4
<b>Water and sanitation</b>			
<i>South Asia</i>	0.45		1.1
<i>East Asia and the Pacific</i>	0.20		0.4
<i>Eastern Europe and Central Asia</i>	0.27		0.4

Source: ESCAP calculations.

Note: A: ESCAP and ADB numbers include climate change-related components. B: ESCAP estimates for these country groupings have been approximated as follows: South Asia was approximated by the South and South-West Asian subregion; East Asia and the Pacific was approximated by the average of the investment needs for the Pacific, South-East Asian and East and North-East Asian subregions, and Eastern Europe and Central Asia was approximated by the North and Central Asian subregion.

**Transport**

Transport infrastructure is mainstreamed across many Goals, in view of its close linkages to food security, health, energy, and cities and human settlements. Addressing transport needs in the context of the 2030 Agenda implies achieving universal access for all, as referred to explicitly in target 11.2. However, it is extremely difficult to put a price tag on such aspects of sustainable transport (box 3.4).





**Box 3.4****Finding the way to sustainable transport**

The transport sector is notorious in terms of estimating future investment needs, especially when the costing exercise is done in the context of the Sustainable Development Goals. In practice, transport needs are very country-specific and largely influenced by challenges in such areas as population density, proximity to opportunities and services, affordability and the initial starting point in terms of the existing level and quality of infrastructure provision. Such challenges are particularly significant among least developed, landlocked and small island developing countries, collectively known as countries with special needs (CSN). The Access to Physical Infrastructure index developed by ESCAP demonstrates that CSN have significant deficits, with the average index for CSN being a third lower than for other developing countries in the region (ESCAP, 2017e).

Given these challenges, the available literature and research indicate a few key strategic considerations for costing sustainable transport needs.

*First*, the conclusions from most transport investment needs assessments, based on business-as-usual scenarios, point to the high levels of investment needed, requiring doubling - if not tripling - of the current levels of infrastructure investments. For many countries in the region, this may not be possible, making the business-as-usual scenario not a very viable option. For instance, a recent analysis of future urban transport needs, assessing existing accessibility levels with the expected trends of urban sprawl, concludes that just maintaining accessibility levels would require road investments that are not financially or environmentally sustainable. In some Asian cities, the expected sharp drop in density (-19 per cent between 2010 and 2050), despite projected growth of trunk road length of 137 per cent, would require multiplying the trunk road network sixfold just to maintain road accessibility at a constant level. This situation implies a deterioration in accessibility between 2010 and 2050 unless significant changes intervene in the evolution of modal shares (ITF, 2017).

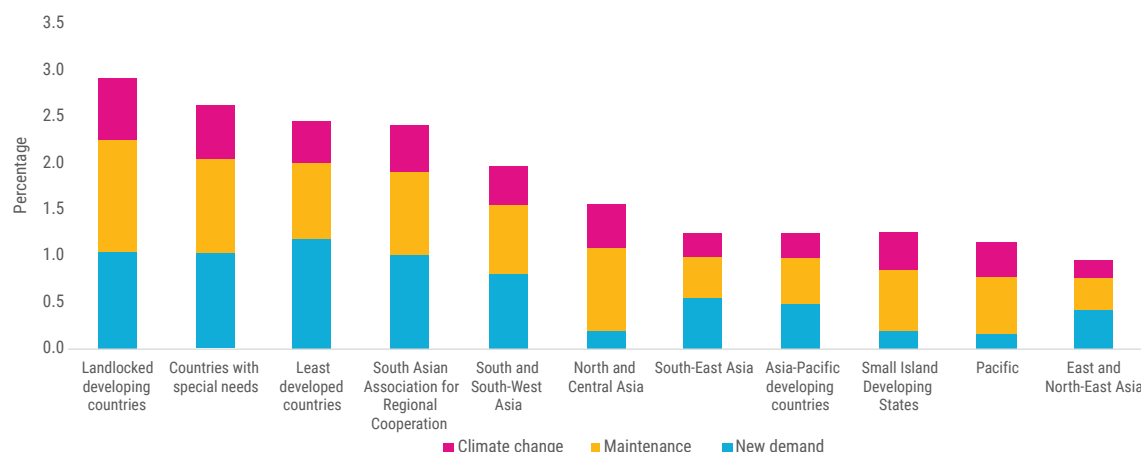
*Second*, most assessments also highlight the perennial nature of transport investment needs, as maintenance costs represent a large part of the future infrastructure needs. Such costs are essential not just for maintaining the quality of infrastructure services but their absence may result in a significant inflation of investment needs. Some estimates show that avoiding routine maintenance expenses would cost at least 50 per cent more overall due to capital replacement expenses for transport infrastructure (Rosenberg and others, 2018).

*Third*, most of the available evidence shows that the transport sector is the area where resource optimization holds a high, if not the highest, promise. It has been conclusively shown that the costs of transport development vary significantly based not only on initial conditions and development objectives but also on the means of delivery. In particular, future mobility demand could be supplied at lower costs and fewer externalities if implementation strategies capitalize on promoting a greater integration between transport and land-use policies and a more balanced modal split between transport modes. For example, some studies suggest that in urban transport, integrated transport planning, i.e. coordinating land-use and transport policies so that urban density is encouraged, could lead to providing improved mobility services with 20 per cent less investment (ITF, 2017). Similarly, implementing policies which promote a greater and more efficient use of rail and public transport, in urban or rural transport, can satisfy the future demand for mobility at the relatively low cost of 1.3 per cent of GDP versus the alternative scenario of 3.3 per cent of GDP if no such policies are in place (Rozenberg and Fay, 2019).

In this sense, the Sustainable Development Goals approach and notably its integrated approach of three sustainability dimensions and its cross-sectoral nature is a very welcome perspective for assessing transport needs to achieve sustainable development and should result in policies leading to overall cost saving rather than cost inflation of investment needs.

**Figure 3.10****Transport investment needs, by component**

(Annual average total investment need, 2016-2030, expressed in percentage of annual average GDP, 2016-2030)



Source: ESCAP.

Note: Japan is excluded from the East and North-East Asian subregion average. Australia and New Zealand are excluded from the Pacific subregion average. Weighted averages have been used.

**Costing methodology and results**

The following indicators were selected to capture the level of access: kilometres (km) of paved roads per 1,000 people; km of unpaved roads per 1,000 people; and km of rail lines per 1,000,000 people. Leaving aside ports and airports, the calculation here is focused on roads and railways, where the investment needs are largest and the linkages of which to the Sustainable Development Goals are clear.

### **Governments can use transport-related revenues to finance investment**

The estimates in this chapter would suggest that the developing countries in the Asia-Pacific region will require investment of an additional \$126 billion annually. The total investment needs are about \$443 billion annually, accounting for 1.3 per cent of the region's total GDP (figure 3.10). Providing infrastructure to

meet new demands and maintenance will account for the main share of investment while climate-proofing of the existing and future infrastructure will require an extra 0.3 per cent of GDP annually for the region.

When breaking down requirements by transport indicator, it appears that 83 per cent of the financing needs will be required for the provision, maintenance and climate-proofing of paved roads, 7 per cent for rail lines and about 10 per cent for unpaved roads. This pattern is shared across country groupings except for the landlocked developing countries and North and Central Asian subregion where rail-related financing needs account for 15 and 20 per cent of the investments required in the region against 75 and 68 per cent for paved roads and 10-11 per cent for unpaved roads, respectively.

**Policy and financing options**

In terms of public funding, there are particular transport-related revenues of which Governments can make more use, such as transport user charges (e.g. fuel surcharge, airport tax, tolls, rail tariffs through distance-related charges for passengers and freight). Another source of revenue can be charges to non-users who benefit from the presence of the transport infrastructure. An example is land betterment charges for landowners who benefit from a rise in the value of their property. Many developing countries will still need international development finance to fully bridge the funding gap

in transport infrastructure funding. However, given that traditional ODA is directed primarily to social sectors, countries may benefit from recent infrastructure-focused initiatives, such as the Silk Road Fund and the One Belt, One Road initiative of China. Multilateral development banks, including ADB and the Asian Infrastructure Investment Bank, will play an important role, including for cross-border infrastructure projects.



### **Information and communications technology**

ICT is an essential element in implementing the 2030 Agenda as it can be used to catalyse the achievement of other Goals. Examples include jobs, resilient agricultural practices, efficient health services, widening access to online education, reducing the gender divide through increasing women's access to the Internet, creating resource efficiency through smart grids, increasing productivity in the manufacturing sector and reducing greenhouse gas emissions through the use of the Internet of Things, 3D printing and electricity grids. Furthermore, ICT provides a platform to engage citizens with institutions, thus creating more transparency.

### **Costing methodology and results**

The following indicators were selected to capture the level of access in ICT: the number of fixed broadband subscriptions per 100 people and number of mobile phone subscriptions per 100 people. Setting aside fixed telephone subscriptions, the calculation used here is focused on these two areas where the investment needs are the largest and not meeting them would result in a digital divide, especially in terms of broadband for Internet connections.

While ADB uses a single unit cost for Asia-Pacific countries, different unit costs are used in this chapter for the different subregions, extrapolated from country-level unit costs provided by ITU (2016). The unit costs vary greatly across the region due to several factors, such as the degree of penetration of the existing fixed broadband network and geographical and demographic features. At the same time, given the fast evolution of technology, the growth of future demand for Internet bandwidth, together with the need for upgrading to cater to new and emerging technologies, will likely drive the cost of investment in fixed-broadband infrastructure much higher. In this chapter, therefore a high-cost scenario was also developed using the average of the two highest fibre-to-the-home construction costs per subscriber of countries in the Asia-Pacific region provided by ITU (2016).

For mobile broadband, due to limitations in data availability, the unit cost used for estimating the cost of mobile phone infrastructure includes

only 3G technology. As such, the result of the estimates may be underestimating the actual financing need for mobile-broadband infrastructure, considering that the costs of next generation networks (5G and higher) could be much higher, depending on the unique cost-structures of each country.

### **Asia-Pacific developing countries need to invest an additional \$56 billion annually in ICT infrastructure**

It is found in this chapter that the developing countries of the Asia-Pacific region would need to invest an additional annual average of \$56 billion in ICT infrastructure for the period 2016-2030. This corresponds to the average of low- and high-cost scenarios. About 82 per cent of the investment needs are required for the provision, maintenance and climate-proofing of the infrastructure related to fixed-broadband subscriptions, against 18 per cent for the infrastructure needed to provide mobile phone subscriptions. This breakdown is driven by East and North-East Asia where 87 per cent of the investments required in the ICT sector are imputed to fixed-broadband subscriptions. This ratio is lower, at two thirds, in the least developed countries and South and South-West Asia; at roughly half, in the landlocked developing countries and South-East Asia; and lower than half in the small island developing States and North and Central Asia, where mobile phone related infrastructure accounts for 58-59 per cent of ICT sector investment needs.

### **Policy and financing options**

To spur investment in the ICT sector, an effective reform of regulations through a unified licensing framework and well-planned spectrum policies are some of the

key market enablers.<sup>41</sup> Regulatory reform could catalyse inward FDI; for example India undertook reforms in spectrum harmonization, trading and sharing in 2016 that led to an increase of more than 300 per cent in inward FDI. Additionally, efficient implementation of a universal access and services fund could support the expansion of broadband to unserved and underserved areas. Regional cooperation is another way to lower costs and risks. An example is the co-deployment<sup>42</sup> of fibre optic cables along the Asian Highway or other roads, railways, pipelines and energy conduits. In ESCAP (2017d), it was found that co-deployment of a broadband network could lead to a 57 per cent cost savings in the case of Myanmar.

The digital divide is not only about access but also affordability, coverage and capacity. To attract ICT investments, policy should not only be focused on hard infrastructure but also on making broadband affordable for all. This includes classifying pricing services based on regions and income levels and subsidizing the price of devices through reduced import tariffs on mobile phone devices (ESCAP, 2017d). Strengthening digital literacy to build up human capital stock and supporting online education could also increase the demand for ICT infrastructure while enhancing the social returns to investments.

## Water and sanitation



The 2030 Agenda encompasses a broad scope of ambition for clean water and sanitation. The targets under Goal 6 call for universal access to safe and affordable drinking water and ending open defecation.

Globally, Hutton and Varughese (2016) find that \$114 billion is needed annually to achieve these targets. Beyond that, Goal 6 calls for water use efficiency, water quality and water resource management to help conserve water-related ecosystems at large – aspects which are addressed separately in section 2.5 in the context of resource efficiency and environmental conservation.

## Costing methodology and results

The following indicators were selected to capture the level of access: the percentage of urban and rural populations with access to improved water sources; and the percentage of urban and rural populations with access to improved sanitation facilities. To allow for country-specific pathways, the analysis in this chapter offers two technology options with “high” and “low” cost requirements: the low-cost scenario refers to the “basic” level of service where an improved water source is within a 30-minute round-trip, while the high-cost scenario refers to the “safely managed” level of service where water and sanitation infrastructure is within the premises, readily accessible and free from contamination.

## Asia-Pacific developing countries need an additional \$14 billion annually to provide universal access to water and sanitation by 2030

The cost to achieve a higher level of water and sanitation infrastructure is almost double that of achieving the basic level of services. It is estimated that developing countries in the Asia-Pacific region will require an additional \$14 billion annually to provide universal access to water and sanitation facilities by 2030. The total investment needs are between \$43 billion and \$79 billion (0.1 - 0.2 per cent of GDP). By including the climate change component, total investment needs increase from \$59 billion to \$106 billion per year. Countries with special needs and South and South-West Asia have higher investment needs - up to 0.4 per cent higher relative to their GDP. The provision of access to improved sanitation facilities accounts for 56 per cent of the total financing needs for the water and sanitation sector, against 44 per cent for access to water-related infrastructure.<sup>43</sup> Overall, the split in investment needs between water and sanitation is fairly balanced across all country groups.

## Policy and financing options

For policy and financing considerations, it is important to make distinctions between water and sanitation services as well as rural and urban settings. Within *urban settings*, improving management of

41 Examples include a single license for all services, spectrum policies that include, for instance, increasing the amount of spectrum available, ensuring competitive access, encouraging sharing of essential facilities and liberalizing the market for spectrum resale.

42 Co-deployment is defined as concomitant deployment of one infrastructure, commonly ducts and/or fibre optic cables, during the construction of other infrastructure.

43 Estimates correspond to the average of the low- and high-cost scenarios.

billing, fee collection, fixing leakage and making routine maintenance can help improve efficiency of funds and the reliability of water supply services (World Bank and UNICEF, 2017). Within *rural settings*, lack of community ownership and lack of incentives for households to invest in sanitation are some examples of why water and sanitation targets are not reached. Raising awareness on the risks to health posed by open defecation and investing in behaviour change related to hygienic practices have proven to be more effective than subsidies in incentivizing households to invest in latrines (World Bank and UNICEF, 2017). Making latrines cheaper or providing “toilet loans”, such as in India, have also raised household demand for latrines.

### **Promoting behavioural change in hygienic practices would help incentivize households to invest in sanitation facilities**

Unlike other sectors, such as telecommunications where access can be funded through user fees, water and sanitation in urban and rural settings requires different considerations. In the urban setting, service provider tariffs can play a larger role while in rural settings, more investments may be needed by the public sector in transitioning to piped systems. Furthermore, financing capital versus operational expenditures can often be from different sources, while households also have a large role to play in self-provision or self-investments.

## **2.4. Securing humanity's future – clean energy and climate action**

Human activity-induced climate change presents the single greatest threat to development. Its widespread, unprecedented impacts disproportionately burden the poorest and the most vulnerable. The use of fossil fuel is a major culprit in terms of carbon emissions. This is particularly relevant to the Asia-Pacific region. Due to the region's rapid and sustained economic growth, increasing population, expanding industrialization and rapid urbanization in the past decades, Asia and the Pacific has exhibited strong energy demand and has used increasing amounts of fossil fuel. Meanwhile, higher temperatures, sea level rise and extreme weather events are having a major impact on the region, harming its economies, natural and physical assets and compounding developmental challenges, including poverty, food and energy security and health. Without climate-oriented development, climate change could force more than 100 million people in the region into extreme poverty by 2030, wiping out the gains in poverty reduction achieved over the last few decades (ESCAP, 2016b).

Therefore, to secure a climate-resilient future, urgent action is needed, which entails an annual incremental expenditure of \$616 billion. This investment would help the Asia-Pacific region contribute to keeping the global temperature rise well below two degrees Celsius by the end of the century compared with the pre-industrial level, as enshrined in the Paris Agreement. It not only mitigates climate risks by increasing the use of renewable energy and improving energy efficiency, but it also adapts the economies in the region to rising climate-induced disaster events.

**Goal 7 – Ensure access to affordable, reliable, sustainable and modern energy for all**



While the Asia-Pacific region has made significant improvement in access to electricity and gradual progress in access to clean cooking and increasing energy efficiency, progress on renewable energy's share in the energy mix has been rather slow (ESCAP, 2018g; 2018i). This situation undermines the long-term goal of limiting global warming to well below two degrees Celsius.

Previous studies suggest that the annual incremental investment to achieve Goal 7 is more than \$500 billion through 2030 for the Asia-Pacific region, including \$1-12 billion for universal access to electricity, \$3 billion for universal access to clean cooking, \$100-300 billion for renewable energy transition, and more than \$200 billion to double energy efficiency (IEA, 2011; ESCAP, 2018i; SE4All, 2015; ESCAP, 2017f). However, these studies follow different assumptions and scenario settings, and do not fully take into account the link between sustainable energy and climate action.



### Costing methodology and results

Given the close link between the energy sector and greenhouse gas (GHG) emissions, the path that countries take on Goal 7 has wider environmental and social implications. This study follows the International Energy Agency's World Energy Model to estimate the capital costs to achieve three major targets under Goal 7: universal access to electricity and clean cooking; substantially increase the share of renewable energy in the energy mix; and double the rate of improvement in energy efficiency (in the transport, industry and building sectors).

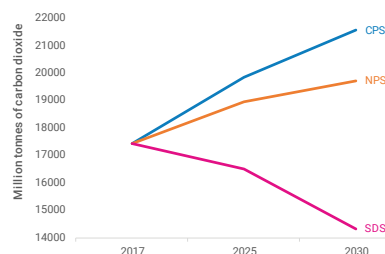
### *Increasing reliance on renewable energy and improving energy efficiency bring synergies to reduce air pollution-induced premature deaths*

The World Energy Model presents three scenarios, of which only the sustainable development scenario is consistent with Goals 7 and 13, offering considerable health co-benefits. Under the current policy scenario and the new policy scenario,<sup>44</sup> although the number of people without access to electricity or clean cooking declines, carbon dioxide emissions increase through 2030 and persistent reliance on fossil fuel and limited progress on clean cooking continue to cause several million premature deaths through air pollution (figure 3.11). In addition, although renewable energy's share in the energy mix is expected to increase gradually over time under both scenarios, fossil fuel will still remain the primary source for power generation (figure 3.12).

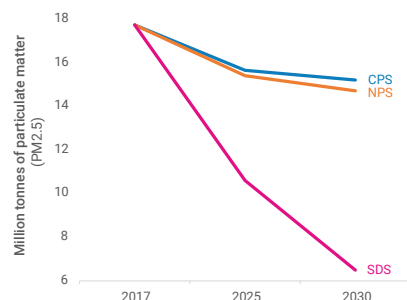
For 42 developing Asia-Pacific economies covered in the World Energy Model, an average new investment of \$434 billion per year would be needed to achieve Goal 7 between 2018 and 2030, including \$10 billion in universal access to electricity (renewable energy),<sup>45</sup> \$2 billion in clean cooking solutions, \$242 billion in renewable energy and \$180 billion in energy efficiency.

**Figure 3.11**  
Energy scenarios and their environmental and health implications

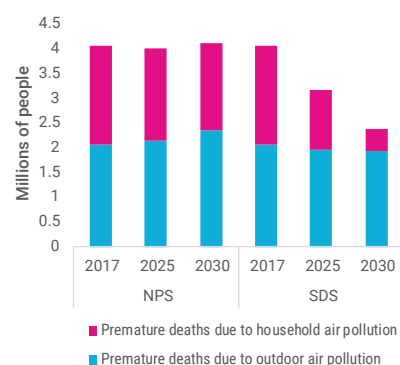
#### (a) Energy-related carbon dioxide emissions



#### (b) Air pollution (measured by fine particles with a diameter of 2.5 microns or less, i.e. PM2.5)



#### (c) Premature deaths due to air pollution



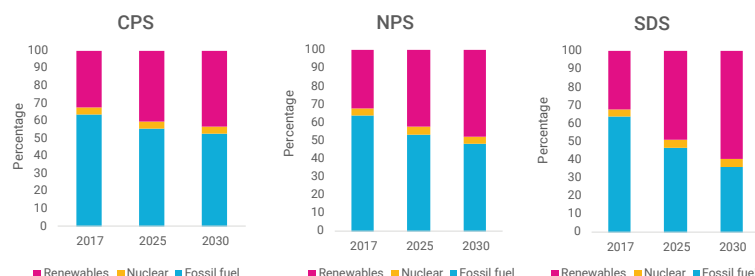
Source: IEA and ESCAP calculations.

Note: CPS = current policy scenario (baseline scenario); NPS = new policy scenario; and SDS = sustainable development scenario.

<sup>44</sup> The new policy scenario incorporates policies that have been announced, including countries' nationally determined contributions under the Paris Agreement.

<sup>45</sup> In the World Energy Model, to achieve universal access to electricity, part of the investment includes the use of fossil fuels. However, the investment in fossil fuels is not accounted for in the additional investment needs in the present study.

**Figure 3.12**  
**Energy mix for power generation under different scenarios**  
(Power generation capacity, by different energy types)



Source: IEA and ESCAP calculations.

Note: CPS = current policy scenario (baseline scenario); NPS = new policy scenario; and SDS = sustainable development scenario.

### Goal 13 – Take urgent action to combat climate change and its impacts



The Asia-Pacific region is at the forefront of climate action. It hosts not only countries that contribute to over half of the world's total GHG emissions but also those that are geographically vulnerable and highly exposed to the damaging impacts of climate change. For instance, the region is home to 5 of the world's 10 economies most severely affected by climate change in the past decade, namely Bangladesh, Nepal, Sri Lanka, Thailand and Viet Nam. Countries in the region have expressed strong political will to fight climate change; 51 signed the Paris Agreement, of which 45 ratified it and 51 submitted their nationally determined contributions as of 2018. However, both the IEA modelling results and ESCAP (2018i) analysis suggest that the level of ambition on climate action needs to be elevated.

Previous estimates on investment needs for climate action afforded only partial geographical or sectoral coverage. In World Bank (2010), the annual climate adaptation costs were projected to be \$17.9 billion to \$25.7 billion for East Asia and the Pacific. In ADB (2017), it was suggested that developing countries in Asia need climate-related infrastructure investment of \$240 billion per year through 2030. In IPCC (2018), it was estimated that energy-related low carbon investment will be about \$0.3-1.3 trillion globally.

#### Costing methodology and results

Investment needs for climate action cut across many sectors, most prominently energy transition. Other sectors, such as agriculture (Goal 2), oceans (Goal 14), and forestry (Goal 15) are sources and/or sinks for carbon emissions (box 3.5). Climate change directly or indirectly has the greatest impacts on these sectors. Strong interlinkages and

synergy in achieving the climate Goals and other Sustainable Development Goals require a systematic approach and investment to strengthen emission management throughout the carbon cycle, as well as to enhance adaptation and resilience across the board.

#### Box 3.5

##### Forests: a low-hanging fruit for climate action

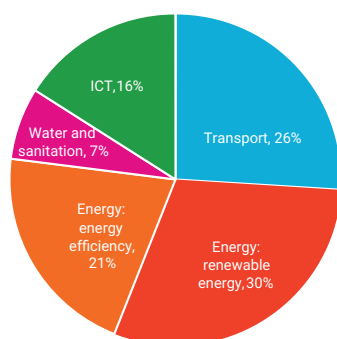
Terrestrial ecosystems and, in particular, forest ecosystems have a critical role to play in preserving the Earth's climate equilibrium, especially in the Asia-Pacific region where forest coverage is significant. Globally, the share of GHG emissions from deforestation and forest degradation from land conversion to farming and grazing is estimated at 17 per cent. On the other hand, forests also help to combat climate change by absorbing large amounts of carbon dioxide, making their net contribution to the emissions balance positive. To incentivize developing countries to reduce carbon emissions from deforestation and forest degradation, to conserve or enhance forest carbon stocks and to manage their forests sustainably, they can receive results-based payments for verified emissions reductions through such programmes as the United Nations-sponsored REDD+ (Reducing emissions from deforestation and forest degradation). Although this chapter does not contain a costing of this particular aspect, a shadow carbon price for verified emissions reductions from forestry can be used as a good proxy.

The chapter is focused on the energy transition and climate resilience in infrastructure. *First*, investment costs to achieve climate mitigation by transforming the energy sector are calculated. The study uses the World Energy Model and estimates the additional costs (capital costs only) to shift investment from fossil fuel to renewable energy as well

as enhance energy efficiency in the end-user side (transport, building and industry sectors). *Second*, for building climate resilience into the infrastructure sector, including transport, ICT, and water and sanitation, this section applies a markup on the total capital and maintenance costs for new and existing infrastructure to reflect climate-resilient investment needs, with a focus on small island development States in the Pacific (box 3.6). It does this by building on the previous section on enabling infrastructure.

**Figure 3.13**  
**Climate mitigation and adaptation investments, by sector**

(Percentage of total)



Source: IEA and ESCAP calculations.

Taken together, additional investment needs for climate action amount to \$373 billion per year for Asia and the Pacific, roughly half of which is for mitigation through the energy transition and the other half for adaptation through climate-resilient infrastructure (figure 3.13). Specifically, the region needs \$191 billion to invest in renewable energy and improving energy efficiency,<sup>46</sup> and the remaining \$182 billion to build climate-resilience in transport, ICT,

and water and sanitation infrastructure. Countries with special needs are projected to face the largest financing needs in the region.

### Box 3.6

#### What a disaster: Let's build it right

For infrastructure investment, risks from natural disasters should be considered as the impacts of these events are quite uneven within the subregions of Asia and the Pacific. In developing countries in the Pacific subregion in particular, the average annual loss associated with the occurrence of such hazards is about 18 per cent of their total investment, which is nine times higher than the average for the Asia-Pacific region as a whole (see table below). When disasters happen, infrastructure loss is a major source of the total loss. For example, in 2012 a cyclone in Samoa caused infrastructure loss valued at \$75 million, accounting for a third of the total loss (Samoa, 2013).

#### Ratio of average annual loss to capital investment in Asia and the Pacific

	Average annual loss/total investment (percentage)
Asia-Pacific region	1.9
East and North-East Asia	1.8
North and Central Asia	1.3
South-East Asia	2.8
South and South-West Asia	2.5
Pacific	1.5
Developing countries in the Pacific	18.0

Source: ESCAP calculations based on United Nations (2015).

Given the Pacific subregion's high exposure to climate and seismic risks, higher investment is needed to build disaster resilience and adaptation to climate risk. The infrastructure must be risk-sensitive while building climate resilience into new infrastructure. In the present chapter, a 1:5 ratio has been adopted for climate resilience investment, i.e. for every \$5 of capital investment in infrastructure, an additional \$1 needs to be invested in building climate resilience. The actual investment requirements in small island developing States in the Pacific could be much higher if protection strategies are to be made robust in the face of the many different and possible future scenarios associated with uncertain climate change effects. In addition, various engineering solutions, such as sea-wall building and beach nourishment, could be needed if sea level rise, coastal erosion and sea and river flooding occur. However, such solutions are beyond the scope of this study and are not incorporated into the estimation.

<sup>46</sup> Investment in renewable energy and energy efficiency to mitigate climate risks is also part of Goal 7 costing. It is the additional investment in renewable energy and energy efficiency to achieve two-degree Celsius target (under the sustainable development scenario) compared with a baseline scenario (current policy scenario), derived from the IEA World Energy Model.

### **Policy and financing options**

While the suitability of policy measures would depend on national and local circumstances, countries could take a comprehensive approach to achieving Goals 7 and 13. Governments must develop a clear policy framework of “low-carbon, climate-resilient” (LCCR) growth, including emissions reduction or energy intensity targets, and ensure that these are fully mainstreamed into national planning and budgeting processes. This would entail setting criteria for prioritizing LCCR investments and adopting methodologies to assess co-benefits of these investments. In the region, the share of climate investment in national budgets ranged from 0 to 15 per cent, or 7.5 per cent of total national capital formation, with the bulk of these investments directed towards adaptation projects, suggesting that there is plenty of room for scaling up (ESCAP, 2016b). Subsidies on fossil fuel distort incentives in favour of fossil fuel at the expense of cleaner sources of energy. In ESCAP (2016b), it was estimated that the fiscal gain from removing energy subsidies amounts to about 10 per cent of the region’s GDP and more than 30 per cent of government revenue, which could be used to boost investment across the Goals.

Another key instrument is carbon pricing, including carbon taxes and emission trading schemes. Credible and long-term carbon prices have the potential to induce fundamental and long-term shifts in infrastructure, technology and behaviour, which form the basis of a low-carbon economy (ESCAP, 2016b). However, carbon pricing alone, in the absence of sufficient transfers to compensate their unintended distributional cross-sector, cross-country effects, cannot reach the levels needed to trigger system transitions. Consistent policy packages could help mobilize incremental resources and provide flexible mechanisms that would help reduce the social and economic costs of the triggering phase of the transition (IPCC, 2018).

The private sector has a crucial role to play in this regard. It accounted for 92 per cent of global investment in renewable energy projects in 2016. Governments could create an enabling environment; for instance, public finance can be applied in the form of instruments that reduce, transfer or compensate for risks to generate investor demand (ESCAP, 2018i; UNHLPF, 2018a). Financial system reforms are necessary to support investments in low-carbon energy and technologies. For example, Bangladesh issued *Environmental Risks Management Guidelines for Banks and Financial Institutions*; Indonesia introduced its *Sustainable Finance Roadmap*; and Turkey adopted *Sustainable Guidelines for the Banking Sector* (ESCAP, 2017h). In 2017, green bond issuance reached a value of \$43 billion, accounting for more than a third of the global volume (up from less than 10 per cent in 2015). In 2018, Australia; China; Hong Kong, China; Japan; India; Indonesia; Malaysia; the Republic of Korea; Singapore; and the Philippines issued green bonds (Drew, 2018).

International cooperation could be further enhanced to support climate finance. Developed countries should continue to seek to scale up their level of support for developing countries, with a concrete road map to achieve the collective mobilization goal of jointly providing \$100 billion annually by 2020 and beyond for climate mitigation and adaptation (UNHLPF, 2018b). In addition, in view of developing countries’ increasing experience and knowledge on climate action, South-South cooperation is critical. In 2014, China announced a \$3.1 billion South-South Climate Change Fund. In 2017, India contributed \$100 million to South-South cooperation trust funds and an additional \$50 million to member States of the Commonwealth (United Nations General Assembly, 2018).

### **2.5. Living in harmony – sustainable consumption and biodiversity**

#### **Fundamental changes in production and consumption are needed to protect oceans, biodiversity and climate**

The 2030 Agenda calls for fundamental changes in the way mankind produces and consumes, so that social and economic goals can occur within global environmental targets for oceans, biodiversity and climate. The efficient management of humanity’s shared natural resources, and the ways in which toxic waste and pollutants are disposed of, are important for reducing the “ecological footprint”. Such changes are especially important for Asia and the Pacific which has the largest share of global population and extensive development needs. If the changes were to be delivered using current systems of production and consumption along with the commensurate need for

materials - and the concomitant levels of waste and emissions - the capacity of the Earth system, which is already crossing a number of planetary boundaries, would be overwhelmed (Steffen and others, 2015).

**Investing in resource efficiency would deliver substantial benefits, but early action is needed to avoid being locked into inefficient technologies and infrastructure**

This section contains estimates of the investment needs required to achieve Goals 8, 12, 14 and 15. It reveals that the “cost of action” is relatively small compared with the benefits that these investments would deliver and the “cost of inaction” which they address. Such opportunities are high for the Asia-Pacific region, but early action is needed to avoid being further locked into inefficient technologies and infrastructure.

**Goals 8 and 12 – Promote sustained, inclusive and sustainable economic growth .... and Ensure sustainable consumption and production**



Resource efficiency refers to the amount of economic output that can be achieved per unit of input of natural resources. It is essential to addressing the historic trade-

off between economic growth and environmental degradation. In accordance with the *10-Year Framework of Programmes on Sustainable Consumption and Production*, this feature cuts across almost all sectors and aspects of life, including public procurement, consumer information, tourism, lifestyles and education, buildings and construction, and food systems.

In UNEP (2011), it was estimated that the annual financing demand to green the global economy was in the range of \$1-2.6 trillion. Dobbs and others (2011) pointed out that \$2 trillion of cost savings could be achieved over the period 2010-2030 by deploying efficient technologies, many of which would offer a return greater than 10 per cent. Compared with these case study-based analyses, macro-level studies using integrated modelling have also demonstrated overall positive economic outcomes that go hand in hand with environmental improvements (UNEP, 2017; OECD, 2018).<sup>47</sup>

### Costing methodology and results

Providing estimates for investments to improve resource efficiency is a difficult task because of the many interlinkages between investment and material use that occur within a national economy and the absence of readily available data in the context of the system of national accounts and environmental accounts. It would require in-depth case studies for specific provisions in the housing, mobility, food and energy domain as well as for heavy industry and the manufacturing of consumer goods.

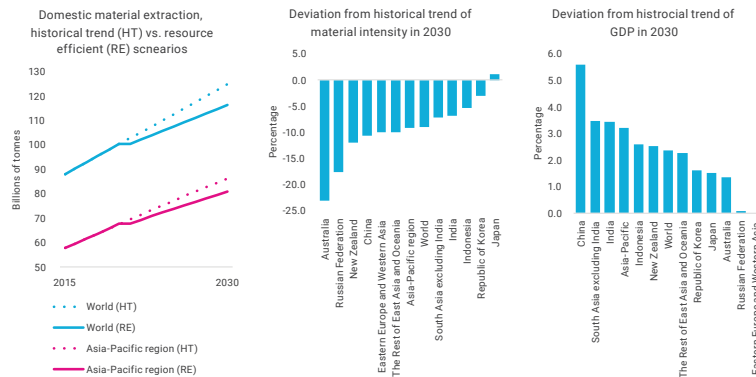
This chapter uses integrated modelling wherein, compared with a historical trend scenario, resource efficient policies would deliver reductions of 6 per cent in domestic material extraction and 10 per cent in material intensity and contribute an additional \$1.7 trillion to the Asia-Pacific economy by 2030, with large gains in China and South Asia in particular (figure 3.14).<sup>48</sup> While this may not look significant, it reflects the inertia built into current systems of technology and infrastructure. Projections through 2060 suggest that the benefits accrued will increase significantly over a longer time horizon.

<sup>47</sup> Most studies rely on a combination of ecological budget and tax reform implemented in a revenue-neutral way to avoid economic distortions and assumptions about achievable technological change in priority sectors, such as buildings, mobility, food and energy (Ekins and others, 2012).

<sup>48</sup> The chapter relies on modelling capability established for the International Resource Panel (Hatfield-Dodds and others, 2017; Schandl and others, 2016), including the CSIRO Global Trade and Environment Model (GTEM), which is a general equilibrium economic model with detailed technology bundles for energy and transport (Cai and others, 2015; Cai and Arora, 2015; Arora and others, 2016; Hatfield-Dodds and others, 2015) and the IIASA Global Biosphere Management Model (GLOBIOM) (Ermolieva and others, 2015). GTEM/GLOBIOM allows reporting for eight countries and three regional clusters that together form the Asia-Pacific region.



**Figure 3.14**  
**Resource use scenarios and their environmental and economic implications**



Source: ESCAP.

The policies modelled represent three strands of activities: *first*, investments in public research programmes, incentives for public and private R&D, support for demonstration projects, business incubators and other measures to aid faster transition to more resource-efficient systems of production and consumption, with wide-ranging implications for urban redesign, public and shared modes of transport, electric cars, plant-based diets and renewable energy; *second*, to fund such investments, taxing resources at extraction, specifically introduction in developing countries of a 10 per cent tax in 2020, to increase progressively by 1.5 percentage points annually which would reach 25 per cent by 2030 (and 70 per cent by 2060 after which it would flatten out),<sup>49</sup> and *third*, complementary changes in regulation and standards and preferences to facilitate a demand shift away from material-intensive consumption.

In this framework, the “investment need” would be the revenues collected and reinvested from the resources tax,<sup>50</sup> which would rise from \$48 billion in 2019 to \$3 trillion in 2030 and \$8.7 trillion in 2050. However, this would be gradually offset by the positive returns to investment as captured by the GDP impact, which would rise from \$1 billion in 2019 to \$1.7 trillion in 2030 and \$10.6 trillion in 2050. Thus, the net macroeconomic cost of resource efficiency would peak at \$1.26 trillion in 2028 and become negative in 2042, i.e. the resource efficiency package would begin to deliver net benefits (figure 3.2). In practice, the economic attractiveness of such a resource efficiency

package may be much higher when the cost of inaction for climate change and resource depletion would be included, which is currently not addressed by the model. The resource efficiency policy package shows co-benefits for GHG abatement, with a reduction of about 9 per cent in 2030 and 17 per cent in 2050 compared with the business-as-usual approach.

### Policy and financing options

The potential for resource efficiency in Asia and the Pacific is high because of the large amount of infrastructure that will be built and new technologies that will be adopted over the coming decades. Many of the resource efficiency innovations are also economically attractive as they reduce costs, especially over the medium to long run. There are several positive examples in the region. In 2009, the Government of India distributed 1.41 million energy-efficient compact fluorescent bulbs to replace incandescent lamps, resulting in a reduction of 90,000 tons of carbon emissions per annum, as well as a reduction in costs given the much longer lifespan of the compact fluorescent bulbs (OECD, 2014). Between 2007 and 2011, Viet Nam adopted a sustainable form of rice production, which increased rice yields by 9–15 per cent and income by \$95–260 per hectare, while reducing the use of nitrogen fertilizer by 20–25 per cent and water usage by a third (Castillo and others, 2012). Aside from such specific interventions, countries could foster a “circular economy”, which encourages reuse and recycling and is restorative and regenerative by design, in contrast to a linear economy, which is a “take, make, dispose” model of production.

<sup>49</sup> To reflect the shared but differentiated obligations outlined in target 8.4, developed countries would have to implement a higher tax rate of 12.5 per cent in 2020, which would increase progressively by 1.875 percentage points annually until it reaches 31.25 per cent in 2030 (and 87.5 per cent in 2060, after which it would flatten out).

<sup>50</sup> Part of the tax revenue collected would be used to compensate low-income households that would otherwise be disadvantaged by higher prices for primary resources that would be handed out to manufacturing industries.

## Goals 14 and 15 – Biodiversity and ecosystems



The Asia-Pacific region is biologically diverse and hosts a great number of unique ecosystems, with 17 of the 36 global biodiversity hotspots and 7 of the world's 17 megadiverse countries found in the region. It is home to the highest marine biodiversity in the world, with the longest and most diverse coral reef systems, more than half of the world's remaining mangrove areas and the greatest seagrass diversity. However, the region's rapid economic growth, increasing population and associated increases in consumption and pollution, high rates of urbanization, agricultural expansion and introduction of invasive alien species are resulting in extensive biodiversity loss and ecosystem degradation (IPBES, 2018; ESCAP, 2018). The ocean health index in more than a third of countries in the region worsened between 2013 and 2017, while 135,333 square km of natural forest area (three times the size of Denmark) was lost in the region between 2000 and 2015.

Investing in conservation and restoration of ecosystems and biodiversity is an impactful strategy to protect both people and the planet. On forests, it was estimated in UNFCCC (2007) that globally \$43.3 billion per year would be needed to achieve three targets by 2030: \$12.2 billion to reduce deforestation/forest degradation to zero; \$8.2 billion for sustainable forest management; and \$23 billion to expand agroforestry.<sup>51</sup> On oceans, it was estimated in UNDP and GEF (2012) that globally an initial public investment of \$5 billion over the next 10-20 years to address hypoxia, ocean acidification, overfishing and marine invasive species could catalyse about \$35 billion per year, mostly from

private sources. Most of these and other interventions are comprehensively addressed under the *Strategic Plan for Biodiversity 2011-2020* and associated Aichi targets.<sup>52</sup> A high-level panel study estimated that meeting the 20 Aichi targets would require incremental investment needs globally ranging from \$153 billion to \$436 billion per year (CBD, 2012).

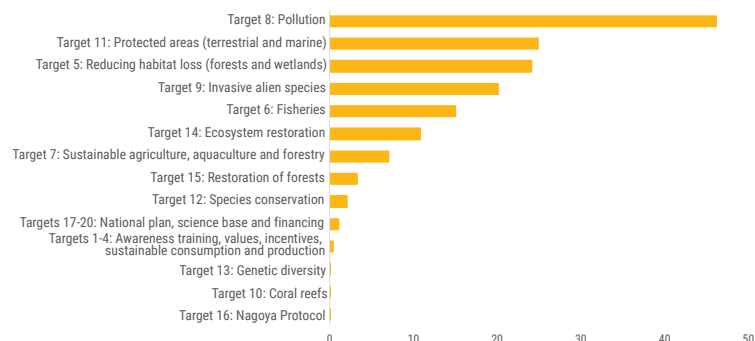
### Costing methodology and results

Goals 14 and 15 are largely based on the Aichi commitments, the target year of which is currently set at 2020, without scenarios or investment needs assessments through 2030. Thus, this chapter adopts the CBD (2012) analysis done globally for the period 2013-2020. Figure 3.15 shows the average of lower and upper bound estimates, rebased to 2016 prices. Given the lack of geographical disaggregation, it is assumed in the chapter that the Asia-Pacific region accounts for half of the global estimate, which would be \$156 billion per year.

**Figure 3.15**

#### Investment gap for meeting global biodiversity goals, by Aichi targets

(Annual average investment gap, 2013-2020, expressed in billions of United States dollars in 2016 prices)



Source: ESCAP calculations based on CBD (2012).

There are clear differences in the relative scale of resources required to deliver various targets, with the most significant investment required to address the drivers of biodiversity loss, such as reducing pollution (\$46 billion), which was partly addressed previously in the chapter. Targets associated with conservation work, such as establishing and maintaining protected areas, are lower, at \$25 billion. For these needs assessments, there is an underlying assumption of the business-as-usual approach in other segments of society. If progress is made on other Goals in tandem with the biodiversity targets, the financial needs can be reduced substantially. In particular, if climate action

<sup>51</sup> Under the reference scenario, it is assumed that GHG emissions from the forestry sector in 2030 will be the same as in 2004. The needs are based on estimated opportunity costs and forest management costs.

<sup>52</sup> Adopted in 2010 in Nagoya, Aichi Prefecture, Japan, the *Strategic Plan for Biodiversity 2011-2020*, including Aichi Biodiversity Targets, provides an overarching framework on biodiversity, not only for the biodiversity-related conventions but for the entire United Nations system and all other partners engaged in biodiversity management and policy development ([www.cbd.int/sp/](http://www.cbd.int/sp/)).

makes significant progress, the cost of achieving the biodiversity and ecosystem-related Goals would be lower. However, aside from accounting for obvious overlaps, it is difficult to precisely quantify such potential synergies.

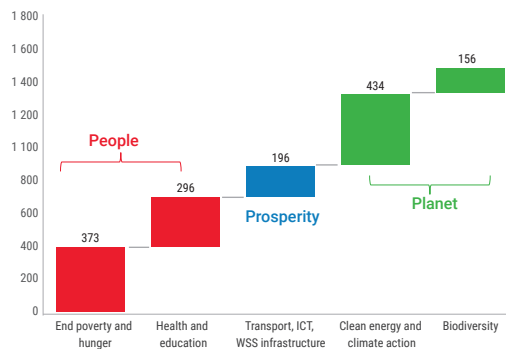
### Policy and financing options

In most cases, the rationale for investing in biodiversity and ecosystems has been derived from the enormous benefits which they deliver rather than on financing gap considerations. Thus, there are many more valuation exercises and studies on natural wealth accounting. For 47 countries in the Asia-Pacific region, Kubiszewski and others (2016) estimated the benefits provided by terrestrial ecosystem services to be worth approximately \$14 trillion per year, and that a scenario wherein the Goals are met would lead to an increase in the value of ecosystem services worth \$3.3 trillion by 2050, compared with a loss in value of \$4.7 trillion if historical trends continue.

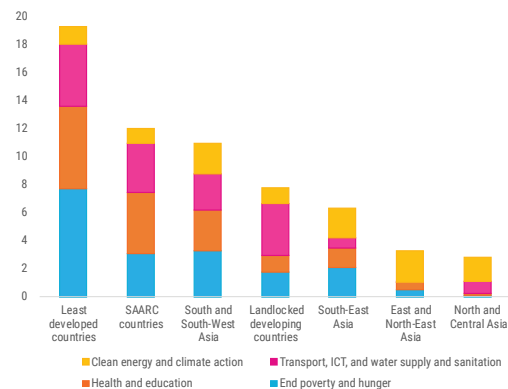
However, ecosystems and biodiversity values are not internalized by markets, nor are the costs of biodiversity and ecosystem loss reflected in prices. Similarly, public budgets often overlook the economic potential and negative risks associated with underfunding biodiversity and conservation. Average biodiversity expenditures as a share of total government expenditures range from as low as 0.16 per cent to 1.8 per cent (UNDP, 2018).<sup>53</sup> In going forward, while scaling up public finance for biodiversity, including through such worldwide initiatives as the Global Environment Facility, another priority will be to engage the private sector. Based on a survey of private investors, “conservation investment” – intentional investments in companies, funds and organizations with the goal of generating both a financial return and a measurable environmental result – is growing rapidly (Hamrick, 2016).

**Figure 3.16**  
**Total investment gap for achieving the Goals**

**A. Annual average investment gap, 2016-2030**  
(Billions of United States dollars in 2016 prices)



**B. Annual average investment gap, 2016-2030**  
(Percentage of GDP in 2018)



Source: ESCAP.

Note: A: Climate-resilience investments in transport, ICT, and water and sanitation infrastructure are discussed under both the infrastructure section and the climate action section of this chapter. To avoid confusion, the figure shows those investments under infrastructure. Including those investments, the gap for clean energy and climate action would increase to \$636 billion per year. B: Pacific islands and small island developing States are not shown here, as costing could be done only partially. Biodiversity investments also are not shown here, as geographically disaggregated results are not available.

<sup>53</sup> For more details, see the UNDP Biodiversity Finance Initiative (<http://biodiversityfinance.net/>) website on financing solutions for sustainable development ([www.sdfinance.undp.org/content/sdfinance/en/home/sdg/goal-15-life-on-land.html](http://www.sdfinance.undp.org/content/sdfinance/en/home/sdg/goal-15-life-on-land.html)).

## 2.6. Total investment gap

In aggregating across the five investment areas and accounting for overlaps, the chapter finds that developing countries in the Asia-Pacific region need to invest an additional \$1.5 trillion per year on average during the period 2016-2030 in order to achieve the Sustainable Development Goals by 2030. This is equivalent to approximately 5 per cent of the region's GDP in 2018, or about 4 per cent in terms of the annual average GDP for the period 2016-2030.

People- and planet-related interventions account for the bulk of the investment gap (figure 3.16). For *people*, ending poverty and hunger and meeting the health and education Goals would require \$669 billion per year. For the *planet*, securing humanity's future through clean energy and climate action and living in harmony with nature would require \$590 billion per year. For *prosperity*, infrastructure investments for better transport, ICT, and water and sanitation services would require \$196 billion per year.

Across the region, the investment gap varies significantly, rising to 16 per cent of GDP in least developed countries and 10 per cent in South and South-West Asia (figure 3.16). The composition of the additional investment need is also different, with investments in people accounting for more than two thirds of the total gap in least developed countries and South and South-West Asia, but about half or less in other subregions. In landlocked developing countries, infrastructure investments in transport, ICT, and water and sanitation account for the largest share, whereas clean energy and climate action account for the bulk of the additional investment need in East and North-East Asia and, to a lesser degree, in the South-East Asian countries.

## 3. Bridging the investment gap

The question then is how to bridge this investment gap. The answer lies in good planning as well as financing. Those steps require an understanding of how the Goals are interconnected with each other and therefore could be best achieved through an integrated approach. They also necessitate an understanding of the priorities, based on an assessment of where each country stands in terms of making progress in achieving Goals and targets, whether the country is on track, lagging or regressing, and how much in the way of additional investments would be required in those respective areas.

Once such assessments are made at the planning phase, countries would be in a better position to develop an appropriate financing strategy. The latter step entails finding the right mix and match between public and private sources of financing and the sectoral investment needs. It also requires an understanding of how much fiscal space countries have to meet the investment gap, and the potential contributions that could be made by the private sector. The chapter concludes with an emphasis on strong development partnership and regional cooperation in the light of the resource gaps that least developed countries face, and the cross-border spillovers of marine pollution and climate change.

### ***Bridging the investment gap requires good planning as well as financing in order to harness synergies and set priorities***

### 3.1. Harnessing synergies

How the various investments translate into desired outcomes in a coherent manner will depend on countries' ability to harness synergies and address trade-offs. This could also potentially reduce the overall investment gap for achieving the Goals. However, identifying and measuring these interactions are not straightforward tasks. Several approaches have been undertaken to articulate the interactions between the Goals. The network diagrams developed by Le Blanc (2015) show how targets are linked to more than one Goal, demonstrating integration and helping to identify effective intervention points. The diagrams, however, are conceptual and are not intended to project the impacts of interventions.<sup>54</sup>

<sup>54</sup> Similarly, focusing on nine Asia-Pacific countries, Zhou, Moinuddin, and Xu (2017) mapped linkages using an interactive tool developed by the Institute for Global Environmental Studies.

Among conceptual approaches with quantitative elements, a team of scientists evaluated target-level interactions for Goals 2, 3, 7 and 14, and attributed a score to these interactions based on their expert judgment, using a 7-point scale: +3 ("indivisible"); +2 ("reinforcing"); +1 ("enabling"); 0 ("neutral"); -1 ("constraining"); -2 ("counteracting"); and -3 ("cancelling"). Of the 316 target-level interactions assessed, three- fourths were positive, while a fifth were negative (Science Council, 2017).

For instance, pressure on freshwater resources is increasing throughout the world, with food production being responsible for the largest share of freshwater withdrawals. At the same time, safe and affordable drinking water is essential to address undernutrition. This is an example of the bidirectional, possible positive and negative interactions between *Goal 2 (end hunger and promote sustainable agriculture)* and *Goal 6 (water)*, as shown in table 3.4. However, the actual outcome would depend on such factors as geography, governance and technology. For instance, the use of advanced irrigation technologies to reduce water use in agriculture and improved coordination across government departments to design coherent water resource policies could turn trade-offs into synergies.

**Table 3.4**  
**Measuring synergies across Goals: a scoring approach**

TARGETS	KEY INTERACTIONS	SCORE	POLICY OPTIONS
2.4 → 6.3	Sustainable agriculture enables the improvement of water quality by reducing pollution	+1	Promote sustainable agricultural technologies that support land and soil quality improvement and the protection/restoration of water related ecosystems. For instance: more diverse rotations and associations in agriculture (including industrial agriculture) are often less energy-consuming and use fewer pesticides and fertilisers, lowering freshwater toxicity
2.4 → 6.6	Sustainable agriculture, improving land and soil quality reinforces the protection/restoration of water-related ecosystems	+2	
2.2, 2.1 ← 6.1, 6.2	Safe and affordable drinking water and adequate and equitable sanitation are essential to address undernutrition	+2	Promote sustainable agricultural technologies and research/technology activities, such as breeding of drought tolerant crops, or use of advanced irrigation technologies to reduce water use in agriculture; develop guidelines for sustainable agricultural water use to engage all sectors on the important topic of water savings
2.3 → 6.1, 6.2, 6.4	Competition over water can result in trade-offs. Intensive conventional agriculture can constrain and in some cases counteract access to safe drinking water, proper sanitation, and the fight against water scarcity	-1/ -2	
2.3 → 6.3, 6.6	Pollution due to unsustainable agriculture can constrain or even counteract the reduction of water pollution and the protection / restoration of water and related ecosystems	-1/ -2	Enhance institutional capacity, and improve communication and coordination between public departments to design coherent water resource policies and regulatory practices to address water scarcity and pollution

Source: Science Council (2017).

Among more data-driven approaches, ESCAP (2016c) applied complexity science to conceptualize the Goals as a network consisting of official indicators - for which 174 countries had adequate data available - and the linkages among and between the countries and indicators. The results suggested that Bangladesh would benefit from prioritizing education, infrastructure and reducing inequalities, while Fiji should focus on infrastructure, especially telecommunications.

A simpler and yet intuitive approach is based on covariances and correlations. Pradhan and others (2017) used official indicator data for 227 countries and applied a non-parametric correlation analysis to categorize as "synergy" if the correlation coefficient ( $\rho$ ) is greater than 0.6 and as "trade-offs" if it is less than -0.6. At the global level, they found that *Goal 1 (end poverty)* has a synergetic relationship with most of the other Goals, whereas *Goal 12 (responsible consumption and production)* is most commonly associated with trade-offs.

### **Goal 1 (end poverty) has the most comprehensive synergy with other Sustainable Development Goals**

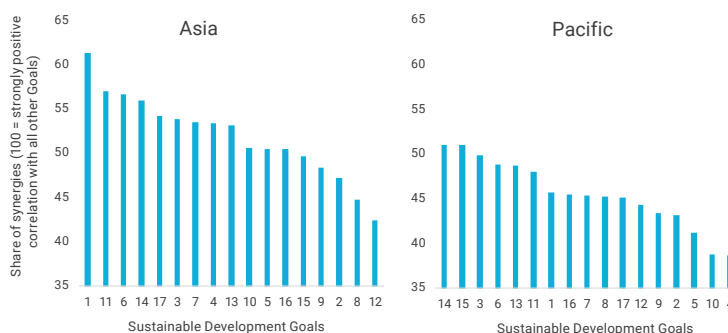
Based on updated data, the chapter finds that a similar pattern emerges for Asia, but not for the Pacific (figure 3.17). In Asia, the interaction between *Goal 1 (end poverty)* and all other Goals is predominantly positive, with synergies accounting for more than 60 per cent of all interactions (with the remainder accounted for by neutral relationships or trade-offs). To a lesser degree, other social Goals, such as health, education and gender equality (Goals 3, 4 and 5), and physical/infrastructure Goals, such as water and sanitation, energy, and



cities (Goals 6, 7 and 11), have a highly synergetic relationship with other Goals. Thus, investing in one of them would also deliver co-benefits to others. At the same time, although correlations are a rough measure of synergies and should be interpreted with caution, the fact that *Goal 8 (economic growth and decent jobs)* and *Goal 12 (responsible consumption and production)* are at the bottom of the synergies ranking seems to confirm the need to improve the quality of growth and shift to more resource-efficient systems of consumption and production in order to accelerate progress across all Goals. In the Pacific, Goals 14 and 15 on biodiversity and ecosystems have high positive correlations with all other Goals. This is not surprising given the cross-cutting importance of nature in the Pacific, especially life under water and marine ecosystems for people's livelihood.

Synergies have also been addressed through more sophisticated integrated assessment models, but usually focusing on specific interactions or channels. In assessing the health co-benefits of climate action, Markandya and others (2018) used the Global Change Assessment Model and an air quality model first to investigate the emission pathways and abatement costs of a set of scenarios, and then to estimate the concentration of particulate matter and ozone in the atmosphere and the premature deaths and morbidity associated with those pollutants. Applying a monetary value to these health impacts, they found that the health co-benefits substantially outweighed the mitigation costs, especially in China and India. However, given that such models are not easily accessible to most policymakers, simpler simulation tools could be useful for national or subnational-level assessments for integrated planning (box 3.7).

**Figure 3.17**  
**Measuring synergies across Goals: a correlation approach**



Source: ESCAP, based on 2018 update by Pradhan and others (2017).

### Governance and geographical aspects

Governance approaches and institutional contexts to achieve the Goals can influence the character of the interactions (Nilsson and others, 2018). This was illustrated previously in the context of sustainable agriculture in table 3.4. Another example is from energy (Goal 7). If the costs for new energy policies to support renewables and energy efficiency fall disproportionately on the poor, then this could impair progress towards universal access and, by extension, counteract the efforts to eliminate poverty (Sovacool and others, 2016). Another example is from oceans (Goal 14). While protected marine areas are generally seen as an effective instrument to conserve and restore coastal and marine ecosystems and life under water, it is also possible that such areas may limit access to, and create competition for, resources and thus impede the Goals addressing hunger and poverty, especially in the short term (Mascia, Claus and Naidoo, 2010). Such examples highlight the importance of integrated planning and coordination across government departments.

There are also important geographical spillovers, especially when it comes to the environment. Many coastal areas and small island developing States have a problem with pollution, for example with plastics, in their coastal zones (Schmidt, Krauth and Wagner, 2017). However, the actual source of this pollution is often located far away and comes from different countries or even regions of the world, owing to the effect of ocean currents. Another example is climate change and its disproportionate impacts. Climate change and related effects, such as ocean acidification, is a global phenomenon, but the actual impacts, such as coral bleaching, occur locally or regionally and may cause development problems for coastal communities (Cinner and others, 2012). On the other hand, minimizing ocean acidification will likely have beneficial effects on fish stocks and improve livelihoods and nutrition, especially in developing coastal States. Moreover, for many small island developing States, marine

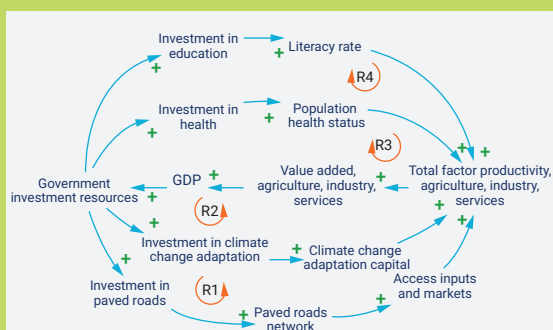
**Box 3.7****Capturing the complex feedback loops**

The 2030 Agenda calls for integrated approaches to harness synergies. However, given the complex interlinkages across the Goals, new modelling tools are needed to identify and quantify the synergies that potentially arise when multiple actions are taken to achieve the Goals. Using the Threshold21/iSDG model, which is based on the system dynamics method, the chapter identifies “high leverage” investments and evaluates the implications of the national budget composition for the overall attainment of the Goals.<sup>55</sup> The results shown below are for the Philippines.

*First*, single policy simulations suggest that investments in road infrastructure and climate change adaptation are high leverage points for the Philippines, in line with the country’s national development plan.<sup>56</sup> Paved roads improve access to inputs and markets and thereby contribute to productivity growth in the agricultural, industrial and services sectors, which in turn increases the available financial resources for the Government. The figure below illustrates this with causal linkages and feedback loops. Similarly, climate adaptation investments, such as disaster preparedness, help nullify the impacts of climate change on factor productivity, agricultural yields and life expectancy.

*Second*, multiple policy simulations suggest that a certain mix of investments may be more cost-effective than others in the overall attainment of the Goals

due to synergies and in some cases, diminishing returns to investment. The table shows overall attainment of the Goals and the associated “unit costs” under different composition of additional public investments. Under the first scenario, an additional 10 per cent of GDP is invested evenly for roads and climate change adaptation, whereas in the second and third scenarios the amount also covers the agricultural, health and education sectors. Accounting for feedback loops and economy-wide impacts, the results suggest that the latter is a more cost-effective path, as shown by higher attainment of the Goals and lower unit costs. In the fourth scenario, an additional investment of 20 per cent of GDP delivers the highest attainment of the Goals, but at a higher unit cost. While these simulations are illustrative, they could help policymakers track the impact of single or multiple policies or investments across the Goals.



Source: ESCAP.

#### Allocation of additional public investment under each scenario, percentage of GDP

Scenario	Total	Agriculture	Health	Education	Roads	Adaptation
1	10.0				5.0	5.0
2	10.0	1.5	2.0	1.5	2.5	2.5
3	10.0	1.0	1.0	3.0	2.5	2.5
4	20.0	2.0	2.0	6.0	5.0	5.0

Source: ESCAP.

<sup>55</sup> More information on the model is available at [www.millennium-institute.org/isdg](http://www.millennium-institute.org/isdg).

<sup>56</sup> The Philippine Development Plan 2017-2022 is available from [www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022\\_Final.pdf](http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022_Final.pdf).

tourism is a major economic factor (United Nations, 2015). Such cross-border impacts are highly relevant for the Asia-Pacific region and highlight the importance of strong regional and global cooperation.

### Application to investment needs

While it is clear that total investment needs may be considerably lower once synergies and co-benefits are accounted for, there is no existing methodology on how to link, in a consistent manner, the investment needs drawn from various sectoral analyses with estimates of synergies drawn from different models. Moreover, while investments in health and education, for instance, would contribute to poverty reduction (ESCAP, 2018l), that does not necessarily mean that countries would no longer need to invest in social protection floors; what would happen is that the need for certain means-tested transfers would be reduced and more importantly, people would not only rise above the poverty line but also become much more productive in all dimensions. Therefore, aside from accounting for clear overlaps, the chapter has not adjusted the investment gap by applying a certain synergy coefficient.

















Nevertheless, the implications are clear in terms of bridging the investment gap. Good governance and partnerships, as highlighted in Goals 16 and 17, are key to turning the potential for synergies into reality and to implementing the 2030 Agenda in a coherent manner. At the same time, building partnerships between actors fundamentally depends on understanding what the interactions look like between the policy issues or sectors they represent (Nilsson and others, 2018).

## 3.2. Understanding the priorities

### Considering investment needs and progress towards sustainable development simultaneously would better inform policy prioritization

Estimation of the investment gaps provides useful insights on specific interventions required to achieve the Goals and on the scale of financial requirements to fund these ambitions. However, costing figures alone do not provide a full picture on how to plan and prioritize policies to achieve the Goals. To gain a better understanding of priorities, it would be necessary to zoom out and consider the investment gaps together with the progress indicators on the Goals. Based on the 2017 and forthcoming editions of the ESCAP progress report on the Goals, this section categorizes the Goals into five broad categories (table 3.5).

**Table 3.5**  
Mind the gap between progress and investment

Category	Goal progress	Financial requirement	Goals
(1) Goals which are achievable but require sustained effort and targeted investment in certain aspects	Progress made but not enough <sup>57</sup>	Substantial but within reach	   
(2) Goals where large and continuing investments would be needed	Clearly off-track	Significant scaling up needed	   
(3) Goals where additional substantial spending would be required	Mixed but likely to miss the targets	Unclear but potentially significant	 
(4) Goals requiring cross-cutting interventions but cannot be allocated a specific price tag	Mixed	Unclear; hard to isolate specific interventions for investment	 
(5) Goals depending more on vision and policy than on money spent	Likely to miss the targets	Insignificant or less applicable	   

Source: ESCAP.

<sup>57</sup> For Goal 2 (zero hunger), if indicators on Target 2.4 (sustainable agriculture) and Target 2.5 (generic diversity of seeds and species) are also taken into account, the overall progress of Asia and the Pacific towards the Goal would be clearly off track.

**Category (1): Largely on track (substantial additional investment required but within reach)**

Goals 1 to 4 form the first category where progress on major indicators has been largely on track, with few notable exceptions at the target level. On *Goal 1 (end poverty)*, the cost to lift the poor above the poverty line through cash transfers would not be high. However, the real challenge would be to truly enable the poor to participate in economic activities so that poverty reduction could be sustained even after cash transfers cease. Although difficult to cost, this would require well-conceived and targeted interventions to expand employment opportunities for the poor and support for the development of local businesses and small and medium-sized enterprises. It would also require improved public social spending and social protection. As this cost estimation reveals, providing universal social security benefits accounts for some 90 per cent of the investment gap for ending poverty.

On *Goal 2 (end hunger)*, the policy thrusts implied by the cost estimation are consistent with those suggested by the progress indicators on the Goal. Increasing agricultural productivity and eliminating stunting, in particular, are two targets where Asia and the Pacific is off-track by a wide margin. Interventions on these targets account for three quarters of the additional investment needed to achieve Goal 2.

On *Goal 3 (good health and well-being)*, increasing the number of health workers is a priority. The region is projected to miss this target by a wide margin, despite progress made on other targets of the Goal. This is also where the largest investment is required.

On *Goal 4 (quality education)*, the region has progressed relatively well on increasing the primary and secondary enrolment rates and on reducing the adult illiteracy rate. In contrast, the region lags far behind on equal and affordable access to tertiary education. However, to achieve this target, Asia-Pacific developing countries would need to invest a significant amount, exceeding the total budget for universal pre-primary to upper-secondary education. This could be too much of a burden on the limited public coffers of many developing countries. Ideally, tertiary education should generate enough return in future individual income to incentivize private spending, especially in the context of fast-growing household income and vibrant economy. The most immediate priorities should still be basic education from the pre-primary to secondary levels.

**Category (2): Clearly off-track (significant scaling up in investment needed; requires external support)**

Goals 7, 13, 14 and 15 belong in the second category, where the current trajectory is not promising, and significant investments are required to bring the region on track. On *Goal 7 (access to affordable and*

*clean energy)*, despite significant efforts, progress on the targets has been uneven. Renewable energy's share in the overall energy mix at the median has remained largely unchanged between 2000 and 2018, despite several successful examples in the region. It is worth noting that the \$450 billion required annually for renewable energy and energy efficiency improvements to achieve Goal 7 is the largest amount required for achieving any single Goal.

*Goal 13 (climate action)* is among the Goals where Asia and the Pacific has achieved little progress between 2000 and 2018.<sup>58</sup> On greenhouse gas emissions and exposure to natural disasters, the region is expected to miss all targets. The challenge is compounded by the fact that many developing countries in the region still need to industrialize. Converting to a greener path for development and structural transformation and achieving Goal 13 targets would require investments much greater than the current levels, along with ambitious policy interventions that may be economically costly in the short run despite generating lasting benefits in the long run, as illustrated by the model simulation on a resource efficiency package. Importantly, the interventions require not only cutting across public-private boundaries but also national and regional borders. Efforts made by the Asia-Pacific region would have to be complemented by efforts made by other developing and developed regions, and vice versa. Innovative mechanisms would be required to address this gigantic global coordination challenge.

*Goals 14 and 15 (preserving life/ ecosystems below water and on land, respectively)* share similar challenges as Goal 13. Based on current trajectory, Asia and the Pacific will miss most of the targets and may even regress on

<sup>58</sup> The other Goals with little progress include: Goal 6 (clean water and sanitation), Goal 8 (decent work and economic growth) and Goal 12 (responsible consumption and production).

some. Many cross-cutting interventions are needed to deliver on these Goals, and significant scaling up of investment is required over the current levels. As with Goal 13, coordinated actions beyond national and regional borders would be necessary, and Asia-Pacific countries should be prepared to take up their fair share of responsibility in such a collective agenda.

However, few developing countries in the region, except for the most economically advanced ones, would be able to shoulder all the financing requirements for achieving these four Goals. Especially for least developed countries and small island developing States, the investment needed would be far beyond their financial capacity. Therefore, strengthened external support will be indispensable.

**Category (3): Mixed progress but likely to miss the targets (potentially significant additional financial requirement)**

Goals 6 and 11 belong in the third category where, despite progress achieved in certain aspects, the region is still confronted with serious challenges which may require huge additional investments not yet accounted for. *Goal 6 (water and sanitation)* seems to be a low-hanging fruit at first glance, based on the investment gap estimation of \$10 billion per year to set up water and sanitation infrastructure in rural and urban areas. Yet, the real challenge is with water stress and changes in water-related ecosystems. In both of these aspects, Asia and the Pacific is expected to completely miss the targets and would be in a worse situation by 2030 than in 2000. Although there is no reliable way to cost interventions to address water stress and restore water-related ecosystems, China's \$62 billion South–North Water Transfer Project<sup>59</sup> to address water shortage in its northern provinces could shed some

light on the scale of additional investment needed.

For *Goal 11 (sustainable cities and communities)*, while the costs for essential urban infrastructure and services have mostly been captured by cost estimations of other Goals, one multifaceted item is still remaining: ensuring adequate, safe and affordable housing for all and upgrading slums. Asia and the Pacific is home to the world's largest urban slum populations (ESCAP and UN-HABITAT, 2015); 35 per cent of urban residents in South Asia were estimated to have been living in slums in 2012 (United Nations, 2014). Historical experience suggests that, without comprehensive public interventions, private housing expenditure alone would not solve the slum problem in developing countries. A reliable costing estimation for slum upgrading and providing affordable housing for all is difficult to develop due to lack of accurate data on slum populations and the unclear division of labour between the public and private sectors. However, the required additional investment on affordable housing alone could easily be in trillions of dollars over the years.<sup>60</sup>

**Category (4): Mixed progress (unclear; hard to isolate specific interventions for investment)**

A fourth category comprises *Goal 8 (decent work and economic growth)* and *Goal 9 (industry, innovation and infrastructure)*. For these two Goals concerning macroeconomic performance, it is without doubt that substantial public interventions and investments would be required. However, due to their cross-cutting nature, it is hardly feasible to isolate the specific interventions<sup>61</sup> required which have not already been captured by costing estimations for other Goals. Success in achieving these two Goals would rely on the joint force of a host of financial and non-financial interventions to improve the overall efficiency and quality of economic performance, rather than on a handful of individual interventions.

**Category (5): Likely to miss the targets (financial requirement insignificant or less applicable)**

*Goal 5 (gender equality)*, *Goal 10 (reduced inequalities)*, *Goal 12 (responsible consumption and production)* and *Goal 16 (peace, justice and strong institutions)* fall into the last category, where successfully achieving the targets hinges much more upon changes in vision, culture and non-financial interventions than upon monetary inputs.

On gender equality, for instance, targeted investments to provide gender-sensitive public infrastructure and services would be necessary. Yet, the major policy thrusts should be directed towards eliminating all kinds of discrimination against women, promoting

59 For more details, including a map of the area concerned, see [www.water-technology.net/projects/south\\_north/](http://www.water-technology.net/projects/south_north/).

60 As an example, China spent the equivalent of \$278.2 billion on shantytown redevelopment in 2017 alone. For details, see [www.reuters.com/article/us-china-economy-property/china-ploughs-144-billion-into-shantytown-redevelopment-so-far-in-2018-idUSKBN1L10WC](http://www.reuters.com/article/us-china-economy-property/china-ploughs-144-billion-into-shantytown-redevelopment-so-far-in-2018-idUSKBN1L10WC).

61 Infrastructure investment in transport and ICT are the two exceptions which have been costed for this Goal.



public awareness and support for gender parity, and creating a fair, safe and friendly environment for women to realize their potential in all professions and positions.

Responsible consumption and production is another area where urgent action would be required. So far, the Asia-Pacific region has the worst-performing record for its efforts to achieve this Goal, with all the indicators monitored having either deteriorated between 2000 and 2018 or registered zero progress. To reduce wasteful consumption and production and change consumption behaviour towards one that is more responsible, non-monetary factors, such as advocacy, education and policy changes to internalize the social-environmental costs of irresponsible consumption or production into market price signals would play a foremost role.<sup>62</sup>

These Goals are perfect examples demonstrating that financial interventions are important in the pursuit of the Goals, but not necessarily the most important in all cases. For countries with narrow fiscal space or with many urgent development priorities competing for the limited public financing that is available, directing part of their policy focus to these four Goals, which could be achieved with minimal financial burden, would be an advisable strategy.

### 3.3. Financing the investment gap

#### **Investments to achieve the Goals are generally affordable, although financing gaps are wide for least developed countries**

It is clear that significant levels of additional financing will be required to meet the levels of investment required to achieve the Goals, and that this financing will need to come from a variety of both public and private flows and instruments. There are some Goals which are *by their nature reliant on public funding*, while others offer greater potential for private funding. The ones requiring public funding are education and health, climate change adaptation and ecosystems/biodiversity. These are sectors where investments offer high social returns but where it is difficult to design risk-return profiles attractive to private investors, such as in climate change adaptation, or because they are in sectors regarded as public responsibilities, such as health and education, and which are thus highly sensitive for private sector involvement. On the other hand, the areas which have seen *greatest private sector involvement* are in infrastructure sectors, such as ICT, power and renewable energy (within climate change mitigation), and to a lesser degree in transport, and water and sanitation. These infrastructure sectors are natural candidates for private sector involvement under the right enabling conditions and with the appropriate safeguards.

<sup>62</sup> Investment to enhance resource and material efficiency would also play an important role, and the financing need would be substantial. However, quantifying the financing need and attribute it to a specific Goal is difficult, when it is cross-cutting and serves multiple Goals and objectives.

#### **Public finance**

Public investment in the Goals can be supported by increased tax collection or prudent sovereign borrowing. The Asia-Pacific region has one of the world's lowest tax-to-GDP levels. ESCAP (2014) found that actual tax collections were below potential for 17 economies for which data were available, with gaps of up to 6 per cent of GDP for such countries as Afghanistan, Bangladesh, Bhutan and Maldives<sup>63</sup>. Figure 3.18 compares estimates of the country-level investment gap for achieving the Goals, with current levels of tax revenues. The five countries below the 45-degree line in panel A – which are South Asian and/or countries with special needs – have investment gaps which exceed their tax revenues. For these countries, a priority would be to mobilize tax revenues through tax administration reforms and expanding the tax base. Based on ESCAP (2018b), panel B shows that better tax administration could increase tax-to-GDP levels by 5 to 8 per cent in Cambodia, Myanmar and Tajikistan. Many countries also have room to expand their tax base by introducing progressive, wealth-based taxes and/or environmental taxes, which would contribute directly to the achievement of the Goals, as well as indirectly by making resources available for public investments (Subhanij, Banerjee and Jian, 2018)<sup>64</sup>. Along with tax revenues, public debt is a popular indicator of fiscal space. As discussed in chapter 2, public debt-to-GDP levels are relatively low in the Asia-Pacific region and are projected to remain

<sup>63</sup> Tax potential was predicted by a cross-country regression using income, economic structure and other variables.

<sup>64</sup> An example of a socially oriented tax is wealth-based tax, which would help to reduce wealth inequality in economies. This would include taxes on financial transactions, inheritances and gifts. Examples of environment-oriented taxes are taxes on carbon emissions, natural resource use, airline travel and vehicle use in urban areas.

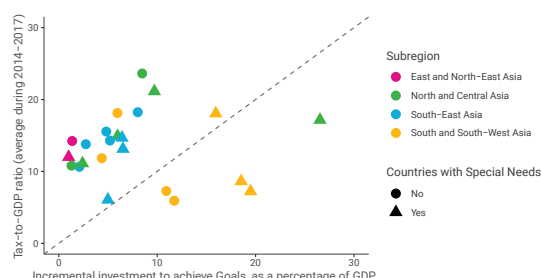
stable or decline over the next five years in many countries. Nevertheless, panel C reveals that only a few countries have relatively high public debt and investment gaps above the regional weighted-average of 5 per cent of GDP. Moreover, panel D shows that countries with above-average investment gaps also have limited access to international capital markets, having

either issued domestic bonds only or never issued domestic or foreign bonds. For these economies, a priority would be to develop domestic capital markets by having in place: (a) an effective legal framework for the issuance process, such as frameworks for different types of issuers and investor protection; (b) a sizeable investor base; (c) a diverse set of products; (d) knowledgeable financial intermediaries, such as the business analysis capacity of investment banks and securities firms; and (e) an enabling market infrastructure, such as credit rating agencies and bond pricing agencies (ESCAP, 2018b).

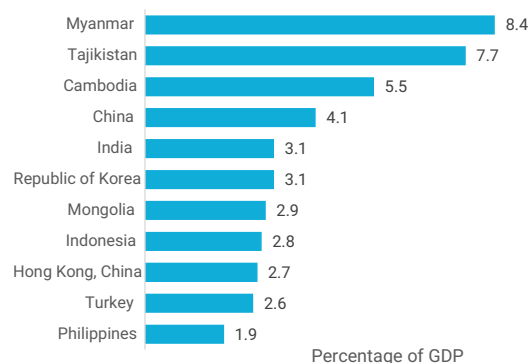
**Figure 3.18**

**Is there fiscal space to meet the investment needs?**

**A. Tax revenues vs. investment gap**



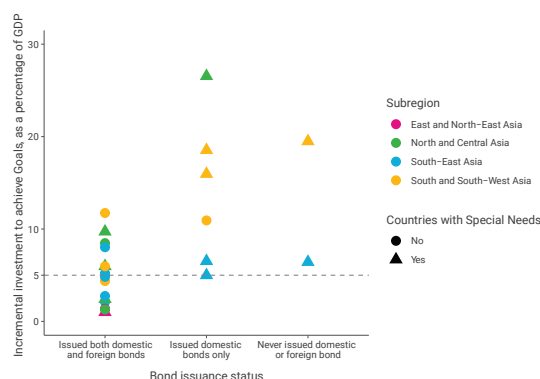
**B. Potential for higher tax revenues**



**C. Public debt vs. investment gap**



**D. Options for bond issuance**



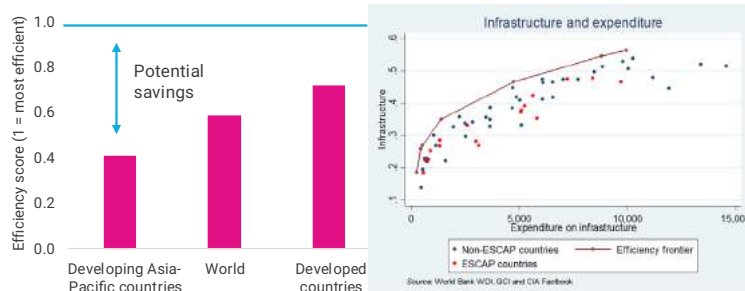
Source: Survey 2019 calculations, ESCAP (2018b) and World Bank, IMF and CEIC data.

Note: Panel A: Countries below the 45-degree line have wider investment gap than their current tax revenues. Panel B: Based on regression analysis using ESCAP Tax Administration Index; for more details, see ESCAP brief at [www.unescap.org/resources/mpfd-policy-brief-no-68-improving-tax-administration](http://www.unescap.org/resources/mpfd-policy-brief-no-68-improving-tax-administration). Panel C: While there is no universal threshold for prudent debt levels, countries in the shaded area with relatively high public debt levels and investment gaps above the regional average are likely to face greater financing challenges. Public debt is measured by general government gross debt. Panel D: It shows that countries with above-average investment gaps have limited access to international capital markets; for more details, see ESCAP brief at [www.unescap.org/resources/mpfd-policy-brief-no-70-prudent-sovereign-borrowing-financial-markets](http://www.unescap.org/resources/mpfd-policy-brief-no-70-prudent-sovereign-borrowing-financial-markets).

Aside from raising more fiscal resources, funds for the Goals can be increased by improving the efficiency of government spending. As highlighted in boxes 3.2 and 3.3, the chapter estimates that Asia-Pacific developing countries can achieve similar levels of output and outcome in health and education sectors using 30 per cent less resources than they currently do. It estimates that the potential savings through efficiency gains are even higher in the infrastructure sectors, at more than 50 per cent (figure 3.19).<sup>65</sup> While these estimates are illustrative and should be interpreted with caution, it goes without saying that countries could improve efficiency in investment and service delivery.<sup>66</sup>

In public investment, public financial management institutions – notably project appraisal, selection and management – would need to be strengthened. Effective coordination among different government branches for construction permits, environmental clearance and land acquisition is particularly important, as these processes often lead to project delays. Ensuring a steady flow of resources for operations and maintenance is a necessary condition for success. Good maintenance generates substantial savings, reducing the total life cycle cost of transport and water and sanitation infrastructure by more than 50 per cent (Rozenberg and Fay, 2019). Finally, infrastructure efficiency would depend on the actual services they deliver to the targeted beneficiaries.

**Figure 3.19**  
**Poorly invested: room to save billions of dollars**



Source: ESCAP.

*Note:* The public investment efficiency indicator estimates the relationship between the public capital stock and indicators of access to and the quality of infrastructure assets. Countries are given a score between 0 to 1 based on their vertical distance to the frontier relative to peer best performers. The less efficient the country is, the greater is the distance from the frontier.

Another way to increase fiscal spending on critical or lagging Goals is to reprioritize spending within existing government budgets. Governments can redirect resources from programmes and projects which are high cost but have low impact in terms of the Goals. Examples include energy subsidies and military spending. Governments could find it easier to undertake such measures by appealing to the public for support through greater dialogue. In this way, they can overcome the power of special interest groups and lobbies.

Beyond such political economy challenges, reprioritizing spending will require an understanding of how the national budget is supporting national development priorities and the achievement of the Goals. While existing tools, such as public expenditure reviews, can help in this regard, there is a need for better classification and monitoring of public spending on the Goals. Among different approaches to mainstreaming the Goals into the national budget, several Governments have introduced gender-responsive budgeting and child-focused budgeting frameworks.<sup>67</sup> Climate budget tagging systems have also been introduced to monitor and track climate-related expenditures. While the proportion of budgets classified as “aligned with climate objectives” varies, it averages in the range of 5 to 10 per cent of a country’s budget.<sup>68</sup> Box 3.8 highlights some of new initiatives.

<sup>65</sup> This estimation is based on efficiency frontier analysis covering 14 infrastructure quantity and quality indicators on energy, ICT, transport, and water and sanitation. Studies using different methods report similar estimations. For example, McKinsey (2013) estimated a 40 per cent potential efficiency improvement globally.

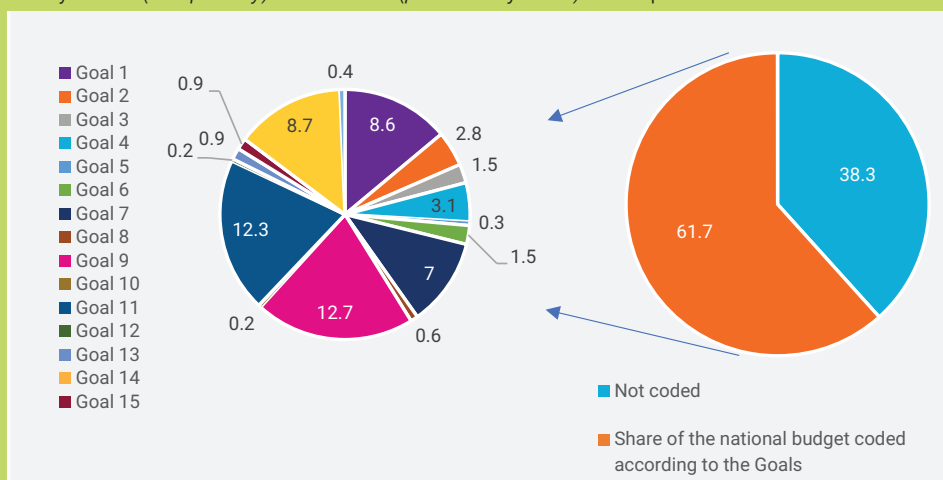
<sup>66</sup> For instance, there are exogenous factors, such as the influence of geographic challenges on unit costs, and possible biases in perception of infrastructure quality.

<sup>67</sup> For instance, in the Philippines and Thailand, UNICEF assessed the equity implications of existing public financial management systems from a child’s lens.

<sup>68</sup> For further information, see [undp.org/content/undp/en/home/blog/2018/Financing\\_the\\_response\\_to\\_climate\\_change\\_we\\_all\\_need\\_to\\_play\\_our\\_part.html](https://undp.org/content/undp/en/home/blog/2018/Financing_the_response_to_climate_change_we_all_need_to_play_our_part.html).

**Box 3.8****Tracking public spending on the Goals**

The Sustainable Development Goals are ideally suited for informing budget decision-makers, members of parliaments, media, civil society organizations and the general public on national policies, priorities and targets. Instead of inventing and applying a new full-fledged budget classification, a simpler *coding or tagging system* can be a good starting point for countries which lack the technical capacities to integrate the Goals-relevant codes into their financial management information systems. A challenge to consider while introducing such budget coding is the “overcrowding” of the budget system with various classifications. To address this matter, an alternative is “*mapping*” of Goals with the functional classification of the national budget, as is done in Nepal. The figure below shows that more than 60 per cent of the country’s national budget was linked to the 17 Goals. *Goal 9 (industry, infrastructure and innovation)* and *Goal 11 (cities)* each accounted for 12-13 per cent of the budget, followed by *Goal 1 (end poverty)* and *Goal 16 (peace and justice)* at 8-9 per cent.



Source: ESCAP, based on National Planning Commission, Government of Nepal.

Note: Projection is for the fiscal year 2019/20 (www.unescap.org/sites/default/files/Nepal\_15.pdf).

Another example from the region is Japan's *SDG Action Plan 2019*, which frames the national budget into priority areas which are linked to the Goals. Two of those areas concern energy, sustainable consumption, climate change and biodiversity Goals, as shown in the table below.

Priority areas	Goals	Programmes	Budget (Billions of Japanese yen)
Energy conservation, renewable energy, climate change countermeasures, and sound material-cycle society	7, 12, 13	Promoting thorough energy efficiency	437.50
		Fostering introduction of renewable energy	324.50
		International cooperation on energy	107.30
		Measures for addressing climate change	138.00
		Establishing a sound recycling-based society	3.60
		Ensuring sustainable consumption	0.25
		Further reducing food losses and waste and promoting food recycling	1.34
		Environmental preservation in agriculture	88.00
		<b>Subtotal</b>	<b>1 100.49</b>
Conservation of environment, including biodiversity, forests and oceans	2, 3, 14, 15	Biodiversity and forestry resources	1 740.20
		International cooperation on agriculture and forestry	2.90
		Measures for chemicals management	76.00
		Measures against air pollution	8.90
		Measures against marine debris and marine pollution	47.20
		<b>Subtotal</b>	<b>1 875.20</b>

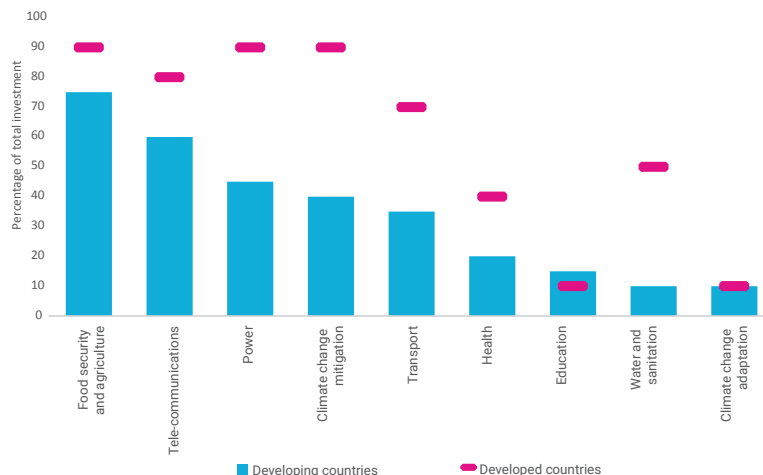
Source: Government of Japan (www.mofa.go.jp/mofaj/gaiko/oda/sdgs/index.html).

**Meeting the required investment is possible through a wider tax base and more efficient public spending, as well as active private sector involvement**

### Private finance

In terms of private financing, there are specific challenges for Governments in promoting such financing in projects to ensure a positive impact on the Goals. UNCTAD (2014) classified these challenges into three categories – mobilizing funds for sustainable development, channelling funds to sustainable development projects and maximizing their impact and mitigating their drawbacks. For developing countries globally, it has been estimated that 75 per cent of current investments in food security and agriculture and 40-60 per cent of current investments in telecommunications, power, and climate change mitigation come from the private sector (figure 3.20). In most sectors, developed countries enjoyed a higher share of private sector contribution, indicating that there may be room for developing countries to converge to those levels over time.

**Figure 3.20**  
How much can the private sector contribute?



Source: UNCTAD (2014).

Note: Figure shows global estimates; regional estimates were not available.

### Mobilizing private finance

In terms of mobilizing funds for sustainable development, there are a number of potential sources in financial markets and through financial intermediaries with huge resources. These include pension

funds, insurance companies and sovereign wealth funds. Private sector financing to date has been dominated by the domestic and foreign *banking sector*, which has proved both insufficient and prone to maturity mismatch in lending. *Capital markets* are currently underutilized in attracting foreign and domestic investors. To attract such investors, countries will need to ensure a favourable investment climate in terms of policies, institutions and political stability. *Institutional investors*, although not private, are also an untapped source with substantial assets to invest. These investors are looking for secured returns over longer-term periods which match infrastructure lifecycles quite well. However, for both institutional and other capital market investors the pool of well-prepared, economically viable projects currently remains small. One solution lies in creating innovative financial instruments investors can own or manage, such as *green bonds*, as well as promoting new investor classes, such as funds investing in *impact investments*. Another is to internalize externalities, for example climate change through *carbon pricing*, to overcome market failures in pricing of investments (Schmidt-Traub and Sachs, 2015).

### Channelling private finance

Apart from increasing the availability of private capital for sustainable development, countries face challenges in ensuring that available capital is channelled to appropriate projects on the ground. One requirement for Governments is to *adequately safeguard public interests* while ensuring a welcoming investment climate. The enabling policy framework should specify which Goal sectors are open to private investment and under what conditions. Some concerns include preventing private monopolies and the degree of foreign ownership in sensitive sectors.



An important avenue for risk-sharing with the public sector is through blended financing of the private and public sectors through *public-private partnerships* (PPPs). In a similar vein to the public sector, multilateral development banks and ODA can also blend their financing with the private sector. PPPs can be designed to share risks and costs as well as overcome high start-up costs. To encourage their use, general improvements in the investment climate are required. In ESCAP (2018b), an index comparing countries' enabling environment was constructed from such factors as macroeconomic stability, financial market development and existence of a legal and regulatory framework, and the result was compared with the amount of PPP investment undertaken. It was found that a 1 unit increase in the index resulted in a 5 per cent increase in the amount of PPP infrastructure investment.

At the same time, PPP-related reforms are important to propagate the use of PPPs, such as enacting PPP laws, streamlining PPP procurement and bidding processes, introducing dispute-resolution mechanisms, and establishing independent PPP government units. Nevertheless, when considering PPPs, Governments should also be cognizant of their risk. PPPs should be entered into with caution to prevent the possibility of undue burdens on the public sector. Governments should carefully design contractual arrangements, ensure fair risk sharing between the public and the private sectors, develop the capacities to monitor and evaluate partnerships, and promote good governance in PPP projects. The capacity to do all this is especially a challenge for least developed countries, so the support of the international community would be necessary.

### **Maximizing impact and mitigating drawbacks**

Some of the key challenges in ensuring the maximum absorption of the benefits of projects are the *lack of absorptive capacity, social and environmental risks, stakeholder engagement and monitoring of impacts*. While absorptive capacity differs across sectors, some general areas in which Governments can enact supportive policies are entrepreneurship, technology, skills and linkages. Encouraging some of these areas will have benefits for businesses across the board, but some measures can particularly encourage the achievement of the Goals. One of these is *financial inclusion policies to support entrepreneurship in small and medium-sized enterprises (SMEs) and women-owned businesses*. In the area of linkages, pro-poor linkages with poor consumers and SMEs can be encouraged for projects by such policies as disseminating information about the needs of the poorest customer segment, creating shared supplier databases, leveraging local logistics networks and promoting microfranchising schemes.

Ensuring benefits of private projects through reducing social and environmental risks requires a *strong regulatory framework and standards*. This means ensuring the quality and inclusiveness of services through appropriate domestic regulations and standards and through the setting of such conditions in the *contractual arrangements* with the private sector party. Furthermore, standard setting requires coordination across ministries to meet other non-investment-related objectives, as well as internationally to ensure harmonization with global norms.

Promoting stakeholder engagement is a critical policy measure in mitigating the possible drawbacks of private projects. *Affected populations need to be given a voice through effective consultative processes*. Governments also have to take strong measures to mitigate negative impacts on local communities. Stakeholders should be engaged at the national, district and local levels, especially given that projects are also managed at different geographical levels of Government.

### **On the ground**

Mobilizing these diverse types of public and private finance will require an array of interventions and initiatives. From the perspective of Governments, these cut across the way that public resources are mobilized and invested as well as the way that policies, collaboration and partnerships are used to influence the way that other actors invest their resources. Governments can take a more holistic, *integrated approach to financing* in order to mobilize investments that will be

needed to achieve the Goals.<sup>69</sup> Policies in each area of financing – whether related to the budget, stimulating domestic commercial investment, engaging the diaspora or other financing issues – can be most effective if they are not developed and implemented in isolation, but are part of a larger, strategic approach to financing. Aligning policies in each area of financing to the Goals, or to a national sustainable development plan, helps build coherency, address trade-offs and leverage synergies between different areas of financing.

A growing number of countries are developing more holistic financing strategies to support national plans and implementation of the 2030 Agenda. While many countries have historically relied on public finance, sometimes with the addition of ODA and PPPs, to finance national plans, there is growing recognition of the benefits of taking a broader, public and private approach. **Solomon Islands**, for example, has developed the *Solomon Islands Integrated Financing Framework* to support the implementation of its National Development Strategy 2016-2035 (UNDP, 2018). The Framework acts as a bridge between the Strategy and policies across more than 10 areas of public and private finance. It articulates a vision of what the financing landscape should look like in 2035 in order to achieve the goals of the Strategy and provides strategic guidance and tangible steps to be taken to get there over the medium and short term, respectively. The Framework is being actively used by the country's Strategy implementation oversight committee to help coordinate and drive forward implementation of the Strategy.

In **Bangladesh**, the Planning Commission published its financing strategy in 2017 assessing financing needs for all 17 Goals and identifying five potential financing sources. The total additional cost for the period 2017-2030 would be the equivalent of about \$928 billion. The largest source of financing (42 per cent) is expected to be the private sector, followed by the public sector (34 per cent) with PPPs and NGOs contributing 6 and 4 per cent, respectively. Public sector finances would go mainly to Goals 1, 2, 3, 4, 14, 16 and 17 while private contributions would be key for Goals 7, 8, 9, 11 and 12. External financing would be important for Goals 13 and 17.

In 2018, **Myanmar** adopted the *Myanmar Sustainable Development Plan*. Myanmar's financing landscape is evolving as the country undergoes a triple transition – from conflict to peace, from military rule to democracy and from being a closed to an open economy. The Plan will be funded with resources mobilized from financial markets, foreign and local investment, PPPs and ODA, in addition to increases in domestic tax revenue. The Plan has set up the Project Bank to strengthen and coordinate the development of projects in

support of Goals-related areas, which will be funded either by the budget or with development assistance.

In **Armenia**, the *Armenia Development Strategy 2014-2025* is aimed at increasing public expenditures in social protection, education and science, health care and infrastructure through 2025. Average additional spending would be 4.2-4.5 per cent of GDP annually. Closing the funding gap in Armenia would depend crucially on increasing the efficiency of public spending and redirecting it to areas where it is most needed and will have the most impact. The private sector, ODA, international financing institutions and philanthropists will also play a role in bridging the financing deficit.

### 3.4. Good governance and development partnership

Good governance is known as the “fourth pillar” of sustainable development. While governance aspects were highlighted throughout the chapter, including in the context of synergies, there is one particular aspect of governance which this section addresses, and that is corruption. Goal 16 explicitly urges action against corruption. Corruption exists in developed and developing countries and in public and private spheres.

Corruption robs societies of schools, hospitals and other vital services, drives away foreign investment and strips nations of their natural resources.<sup>70</sup> Bribes worth a total of \$1 trillion are paid annually, while another \$2.6 trillion is stolen - all due to corruption. Moreover, corruption undermines democratic institutions and erodes trust. It disproportionately

69 The Addis Ababa Action Agenda on Financing for Development recognizes the important but diverse contributions that public and private financing can make to achieving the Goals. It calls for integrated approaches to financing that can support cohesive, nationally owned sustainable development strategies.

70 For more information, see UN News article entitled “The costs of corruption: values, economic development under assault, trillions lost, says Guterres”, 9 December 2018. Available at <https://news.un.org/en/story/2018/12/1027971>.

affects disadvantaged groups. Society cannot function equitably and efficiently when public officials – from doctors to police, judges and politicians – enrich themselves rather than perform their duties with integrity.<sup>71</sup> Corruption hinders the achievement of environmental Goals; traffickers often rely on bribery to move illegally harvested wildlife and timber products across international borders. Corruption breeds money-laundering, tax evasion and illicit financial flows, thus depriving countries of the financial resources they need to invest in sustainable development. Thus, strong action is needed against corruption (figure 3.21).

**Figure 3.21**  
**United against corruption, to leave no one behind**



Source: United Nations (www.anticorruptionday.org)./

Corruption can affect the size, composition and the quality of investment for the Goals. Corruption has been found to distort the structure of public spending by reducing the portion of social expenditures on education, health and social protection, compared with the relatively high levels of spending on law and order, fuel and energy subsidies, and defence (Tanzi, 1998; ESCAP, 2017g). Corruption can distort the selection of public investment projects through bribery, rent seeking and cronyism (Tanzi and Davoodi, 2002). It can lead to inflated costs due to inadequate

procurement processes, resulting in poor investment outcomes. Countries with higher levels of corruption tend to have relatively low infrastructure access and quality for a given level of public capital stock (IMF, 2016). Rajkumar and Swaroop (2008) found that public spending has little impact on health or education indicators in countries with poor governance. ESCAP (2017g) confirmed a positive and significant correlation between indicators of good governance and public spending efficiency. Corruption is also negatively correlated with indicators of tax morale, or people's willingness to pay taxes, and constrains a country's ability to mobilize resources for the provision of public goods and services.

### ***Strong development partnership***

While the total estimated cost for implementing the ambitious and transformative 2030 Agenda for Sustainable Development is within reach of Asia and the Pacific, the uneven distribution of investment needs across countries, and the mismatch between these needs and the available financial resources pose serious challenges for the region to achieve key targets by 2030. The more vulnerable countries need to be financially enabled and supported in their pursuit of the Sustainable Development Goals.

Afghanistan and Bangladesh, the two largest least developed countries in the region, would need to invest an additional 19.5 and 18.5 per cent of GDP, respectively, in order to achieve basic social and economic Goals. Such an amount is already well beyond the financial capacity of these countries, but the total cost for achieving the Goals is actually much higher as these figures do not include investments in clean energy, biodiversity and ecosystems, for which the chapter did not estimate country-level costs. To put things into perspective, those lower bound investment gap estimates are two to three times the domestic tax revenues that these countries collected in 2017, at 7.6 and 8.2 per cent of GDP, respectively.<sup>72</sup> As a share of GDP, least developed countries would need to invest three times more than the average for the developing countries of the Asia-Pacific region in order to achieve the Sustainable Development Goals.

Small island developing States and landlocked developing countries would also require external support due to their special circumstances. Total additional investment need for achieving the Goals in Kyrgyzstan, for example, is estimated to exceed 26.5 per cent of the country's GDP. Almost two thirds of this would be devoted to developing transport networks that are resilient to climate change. For small island developing States, the greatest challenge is with climate change and ocean ecosystems. Although these States are not responsible for these environmental challenges, they are most severely affected by the related hazards.

71 On the occasion of a high-level event on 23 May 2018 marking the 15th anniversary of the United Nations Convention against Corruption, UN News released an article entitled "Tackling corruption 'from the top down' essential, declares UN chief, marking key global treaty". Available at <https://news.un.org/en/story/2018/05/1010472>.

72 The figures for 2017 are from the Government Finance Statistics Database (accessed on 7 February 2019).

***Small island developing States are not responsible for climate change and yet they are the most severely affected***

A stronger partnership for sustainable development would be the only way to ensure that countries with special needs are not left behind, until they build up adequate economic and financial capacity to cope with the challenges themselves. For Pacific small island developing States, such assistance would need to carry the bulk of the weight even in the long run.

North-South development partnership through ODA would continue to play an important role. It accounts for 70 per cent of non-public funding in low-income countries globally (UNOHRLLS, 2018), and exceeds 20 per cent of GDP in a number of the region's most vulnerable countries.<sup>73</sup>

There are two important targets in Goal 17 on ODA. *First*, ODA provided by developed countries should equal 0.7 per cent of their gross national income (GNI); and *second*, within this amount, 0.15 to 0.20 per cent of GNI should be allocated to least developed countries. Although total ODA provided to the Asia-Pacific region tripled in nominal dollar terms between 2000 and 2015, and the share allocated to least developed countries has been on the rise, most developed countries have yet to fulfill their commitment to the 0.7 per cent target. Ongoing economic difficulties and focus on domestic issues in developed regions cast some shadows over the prospect for significant increases in ODA flows. While efficiency gains from better allocation, disbursement and expenditure could strengthen the development impact of ODA, such assistance alone would be far from adequate for the task.

On the bright side, South-South and triangular cooperation and multilateral development financing have emerged to assume a greater responsibility in recent years. China, India, Turkey, the Russian Federation and several other developing countries in the region have become important providers of finance for regional infrastructure and economic cooperation initiatives. The traditional South-South cooperation model, with a focus on bilateral relations and geographical proximity, is also expanding into triangular and multilateral arrangements in greater geographic space. Recent examples include the cooperation of Japan with Thailand on disaster prevention and tourism promotion in Myanmar, and the Australia-China-Papua New Guinea trilateral project to eliminate malaria from Papua New Guinea (ESCAP, 2018n).

Multilateral financing mechanisms, such as multilateral development banks, also have been significantly strengthened in recent years. In Asia and the Pacific, the establishment of the New Development Bank and the Asian Infrastructure Investment Bank more than doubled the total capital of multilateral development banks in the region. The Asian Infrastructure Investment Bank offers promise for national and cross-border infrastructure projects (UNCTAD, 2018).

***North-South, South-South and triangular cooperation, as well as multilateral financing mechanisms, need to support each other towards achieving the Goals***

In moving forward, an increasingly diversified mix of partnerships for development financing is not only most likely but also most desirable. North-South, South-South and triangular cooperation, as well as strengthened multilateral financing mechanisms, have the potential to complement and reinforce each other for greater tangible outcomes in sustainable development. Experimentation with new models and modalities could be carried out in a spirit of a benign "race-to-the-top". Meanwhile, a more cooperative approach involving different donor countries and stakeholders should be encouraged.

<sup>73</sup> Including Afghanistan, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru and Tuvalu (ESCAP, ADB and UNDP, 2017).







# Chapter 4

## Towards a better world

### *Getting ready for the journey ...*

The socioeconomic and environmental cost of the preoccupation with economic growth in Asia and the Pacific is becoming increasingly evident. Repairing and reversing the damage will require addressing high levels of inequality in wealth and opportunities, the snail-paced progress on climate change and biodiversity goals, alongside declining life satisfaction and well-being. The forthcoming ESCAP *SDG Progress Report for Asia and the Pacific* will show that progress on the 17 Goals is mixed at best, and a business-as-usual approach will not help the region achieve the goals laid out in the 2030 Agenda for Sustainable Development. In other words, Asia and the Pacific needs a change in mindset and economic philosophy to set the region on track. It is time for policymakers to put “people and the planet first”.

### *The road map is straightforward ...*

Deviating from the familiar path is never easy, but the 2030 Agenda and its 17 Goals provide a clear blueprint for raising ambitions beyond economic growth alone. They provide not only a vision for a better world, but also the tools and innovative approaches to realize that vision. They point to the need for reassessing both the way social and economic progress is measured and the urgency with which the environmental costs are internalized in everyone’s daily activities.

The analysis in the *Survey* shows that the Asia-Pacific economies are growing at a steady rate. While sustaining the positive momentum, there is a greater need for attending to the quality of this growth. This implies that economic policies should be aimed not only at securing macrofinancial stability, but also achieving overall economic resilience



through decent jobs and social protection and tackling broader long-term development priorities. It is time to think *holistically* – *prosperity* cannot be separated from *people* and the *planet*. Realizing a better world also requires both *peace* and *partnership*.

**... and the ticket is affordable,  
if we work together ...**

The analysis in the *Survey* shows that the developing Asia-Pacific region needs an additional investment of about \$1.5 trillion a year, or 5 per cent of its GDP in 2018, to achieve the Sustainable Development Goals by 2030. This is equivalent to just under a dollar per person per day. However, the benefits that this dollar brings are far-reaching and include ensuring basic human rights, building human capacity, providing an enabling infrastructure, securing humanity's shared future through climate action, while living in harmony with nature. This is within the realm of the possible as most countries in the region have the necessary fiscal space.

While the ticket is affordable on average and within reach for many countries, everyone needs to work together to *leave no one behind* in this important journey. The analysis in the *Survey* reveals that the price tag is higher for countries which can least afford it, including least developed countries and small island developing States. It also finds that such countries are the most severely affected by climate change and environmental factors which they did not cause. Strong development partnership will therefore be essential.

**... and have the will  
to take that first step ...**

Resources can be unlimited, if we live a life that is more complete. As Mahatma Gandhi once said: "*Earth provides enough to satisfy every man's need but not for every man's greed*". Thus, everyone needs to start living within planetary boundaries that have been defied by greed to grow and profit forever.

This is the moment to move away from a mindset focused on maximizing profit towards a life defined by purpose. As Confucius once said, "*Wisdom, compassion and courage are the three universally recognized moral qualities of men*". It is time for all to live them in order to make this world a better place.

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The near-term economic outlook for Asia and the Pacific remains broadly stable with relatively robust domestic demand expected to offset the likely negative impacts from international trade tensions and a further tightening of global liquidity.

Yet, the relatively stable economic performance conceals increasing downside risks to regional progress in implementing the 2030 Agenda for Sustainable Development. In an era of uncertainty, bold and wise policies are needed to make growth inclusive and sustainable.

The *Economic and Social Survey for Asia and the Pacific 2019* calls for a holistic policy focus on the three pillars of sustainable development and makes a comprehensive assessment of the investment needed to reach the Sustainable Development Goals in the region by 2030. It estimates that an additional \$1.5 trillion per year would be needed to end poverty and hunger, provide basic health care and quality education for all, invest in an enabling infrastructure, clean energy and climate action, and live in harmony with nature. Realizing these “ambitions beyond growth” is largely affordable for most countries in the region, given the available public and private resources. At the same time, strong development partnerships and regional cooperation are essential to ensure that all countries complete this important journey.

***“We urgently need a shift in mindset and policy direction. This means looking beyond economic growth to pursue, holistically, human well-being and planetary health. Given current economic stability and the fiscal space available to countries in the region, now is the time for a decisive push to accelerate progress towards achieving the Sustainable Development Goals”.***

**António Guterres**  
Secretary-General of the United Nations

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