

# 6

## CLEAN WATER AND SANITATION



Ensure availability and sustainable management of water and sanitation for all

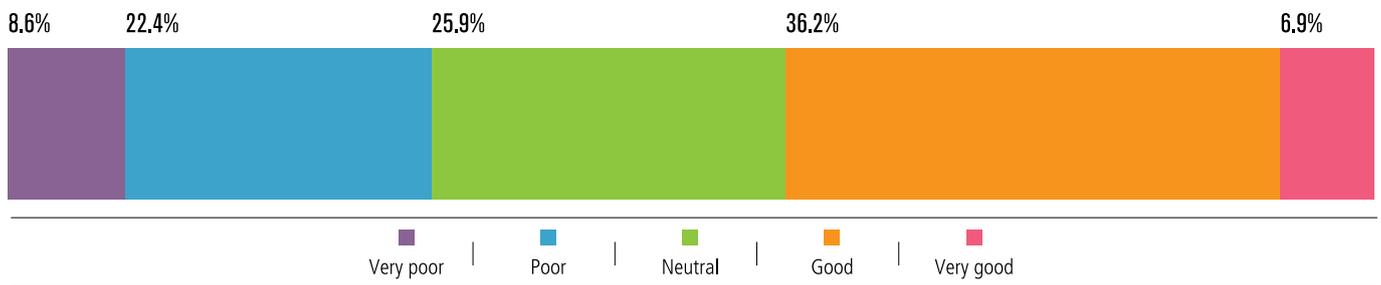
### I. SUMMARY

Asia and the Pacific has only 36 percent of the world's water resources, its per capita water availability is the lowest in the world. More than 80 per cent of the wastewater generated in the region's developing countries is not treated<sup>1</sup>, and wastewater remains an under tapped resource. Around half of the rural population in Asia and the Pacific has no access to improved sanitation, while the region's urban population has more than doubled between 1950 and 2000, creating a huge demand for water and wastewater treatment systems. Persistent organic pollutants and other hazardous chemicals are making their way into water sources, polluting ground and surface water resources and water-related ecosystems. The region is one of the most disaster-prone in the world, and its major economic sectors, such as agriculture and energy, are largely dependent upon a reliable supply of freshwater. Due to the population growth, urbanization, and increased industrialization, water competition among sectors has become more severe in the region, which has been threatening agricultural production, food security and which affects water quality. These conditions, compounded by the impacts of climate change, will hamper the achievement of Sustainable Development Goal (SDG) 6 if left unaddressed. Water scarcity, poor water quality and inadequate sanitation affect the health of ecosystems, societies and economies and will negatively impact the achievement of the other SDGs as well.



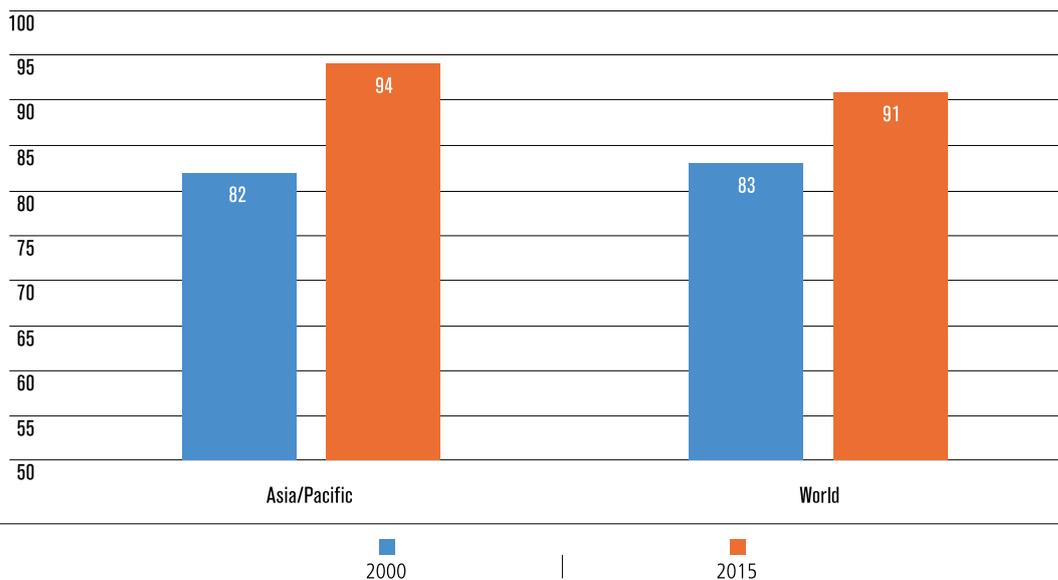
## II. CURRENT STATUS

Perception on progress made on **SDG6**, based on a multi-stakeholder ESCAP survey



- Many cities in the region, both large and medium-sized, face the risk of water shortages, due to outdated water supply systems and inadequate infrastructure to harvest and store rainwater in. This is further compounded by rapid urbanization, and municipalities are challenged to keep up with the rapidly growing demands on their freshwater supply and infrastructure and to provide adequate wastewater collection and treatment.
- There is unequal access to improved sanitation between urban and rural areas, with a gap that was approximately 30 per cent in 2015; since 2000, the proportion of people in rural areas with access to sanitation has increased by 0.8 per cent per annum, compared with 0.5 per cent per annum in urban areas<sup>2</sup>.
- Whilst Asia and the Pacific is on par with the rest of the world in terms of access to improved water sources, Least Developed Countries are lagging behind other countries in the region in areas related to attaining SDG 6 and relying on external financial support from donors<sup>3</sup>.

**Figure 1:** Asia-Pacific population with access to improved water sources (percentage)



Source: ESCAP, 2016



## A. AREAS WHERE GOOD PROGRESS IS MADE

### Sanitation and drinking water (targets 6.1. and 6.2)

An estimated 900 million people have gained access to improved sanitation since 2000<sup>4</sup> while in 2015 almost 94 per cent of the region had access to improved drinking water supply<sup>5</sup>. The number of people using improved drinking water supply increased by 20 per cent in South and South-West Asia and by 19 per cent in South-East Asia between 1990 and 2015<sup>6</sup>.

### Waste water (target 6.3)

Localized solutions towards wastewater treatment, such as decentralized wastewater treatment systems, are emerging at the technical and policy levels in South and South-East Asia. This is a positive improvement as the lack of wastewater management is major problem in the region, with 70-80 percent of urban waste waters being discharged without any treatment into fresh water reservoirs and the oceans, and issues of persistent organic pollutants and hazardous chemicals in water streams. At the same time, wastewater is a critical component of integrated water resources management, and is an affordable and sustainable source of water, energy, nutrients (e.g., phosphorous) and other recoverable by-products.

### Water resource management (target 6.5)

Improvements towards water resource management have been seen across Asia-Pacific. Integrated approaches such as Integrated Water Resources Management (IWRM) and eco-hydrology are increasingly being trialed and implemented at the local level. The Davao River Basin in the Philippines provides an example of an inclusive, multi-stakeholder approach to IWRM and water governance at the basin scale. Additionally, basin management systems are in place, such as in the Mekong River Basin and the Aral Sea Basin, although they need to be further scaled up to ensure effective water resource management and to maximize water productivity. The most significant contribution to the sound and sustainable management of freshwater resources and ecosystems are advancements in innovative, integrated, inter- and trans-disciplinary science. The establishment of international centres for research and capacity- building such as the UNESCO-affiliated Asia-Pacific Centre for Ecohydrology hosted by the Indonesian Institute of Sciences demonstrate a growing commitment to adopt and implement such practices.

## B. AREAS REQUIRING SPECIFIC ATTENTION AND ASSOCIATED KEY CHALLENGES

### Safe drinking water in rural Asia-Pacific (target 6.1)

Water pollution has worsened since the 1990s in most rivers in the region, and one in ten rural residents is still without access to safe drinking water. Around 30 per cent of the population living in landlocked developing countries in 2015 did not have access to safe drinking water<sup>7</sup>. In 2012, 1.52 billion people in the region did not have access to improved sanitation<sup>8</sup>, and the urban-rural difference was widening in some developing countries. Severe pathogens and other hazardous chemicals already affect around one-third of all river stretches in Latin America, Africa and Asia, and the number of rural people at risk to health by encountering polluted surface waters may range into the hundreds of millions on these continents. Among the most vulnerable groups are women and children.

### Unsustainable water withdrawals (target 6.4)

Some countries in the region withdraw unsustainable proportions of their freshwater supply, exceeding half of the total water availability. Seven of the world's 15 biggest abstractors of groundwater are in Asia and the Pacific, and research suggests that groundwater use will increase by 30 per cent by 2050<sup>9</sup>. The increase in demand for irrigation has led to severe groundwater stress in some areas<sup>10</sup>, especially in two of Asia's major food baskets – the North China Plain and North-West India.



## Data management

For countries to effectively monitor progress of SDG 6, data needs to be collected on multiple levels and from multiple sources using both country-derived data and geospatial data produce the most comprehensive results on local water. For monitoring indicator 6.6, data at both the ecosystem level (i.e. lake, wetland) and basin level (e.g. upland areas, watersheds, forest areas, combined river, lakes wetlands within a basin), is required. There is a serious need to strengthen the regional capacity for data collection for SDG 6 (although there is a good availability of annual data on indicators on the proportion of the population using an improved drinking water source and with access to basic sanitation as they were already part of the Millennium Development Goals indicators). A further challenge is that many countries in Asia and the Pacific have not established unified water quality standards. In some countries different institutions are responsible for monitoring surface water quality and groundwater quality, which complicates data sharing between the institutions and reporting for the SDG 6 indicators. It is important to have reliable focal points and to improve collaboration on data sharing between institutions at the national level.

## Financial constraints

Effort required to achieve SDG 6 may place a higher financial burden on low-income countries, putting them at an economic disadvantage compared to high-income countries. The current mechanisms for financing water and sanitation will not enable us to reach the SDG target 6.1 on universal access by 2030. Asia and the Pacific will need \$800 billion in investment over the period 2016–2030 in water and sanitation infrastructure, or \$53 billion annually, including climate-adjusted investment needs<sup>11</sup>.

## Water and climate change

Water is the primary medium through which we will feel the effects of climate change. Water availability is becoming less predictable in many places, and increased incidences of flooding threaten to destroy water points and sanitation facilities and contaminate water sources. In some regions, droughts are exacerbating water scarcity and thereby negatively impacting people's health and productivity. Therefore, climate change will pose a challenge to ensure that everyone has access to sustainable water and sanitation services. This area requires new research and action, in particular in support of Least Developing Countries.

# III. PROMISING INNOVATIONS AND BEST PRACTICES

## Mainstreaming of SDG 6

Active integration of SDG 6 into governmental frameworks and planning - enabling the development of technological and social innovations - is being pursued, supporting the progress towards achieving SDG 6. For example, Bhutan adapted a policy screening mechanism, under which all proposed plans must go through Gross National Happiness, ensuring that there are formulated to enable the achievement of the SDGs.

## Enhancing water efficiency

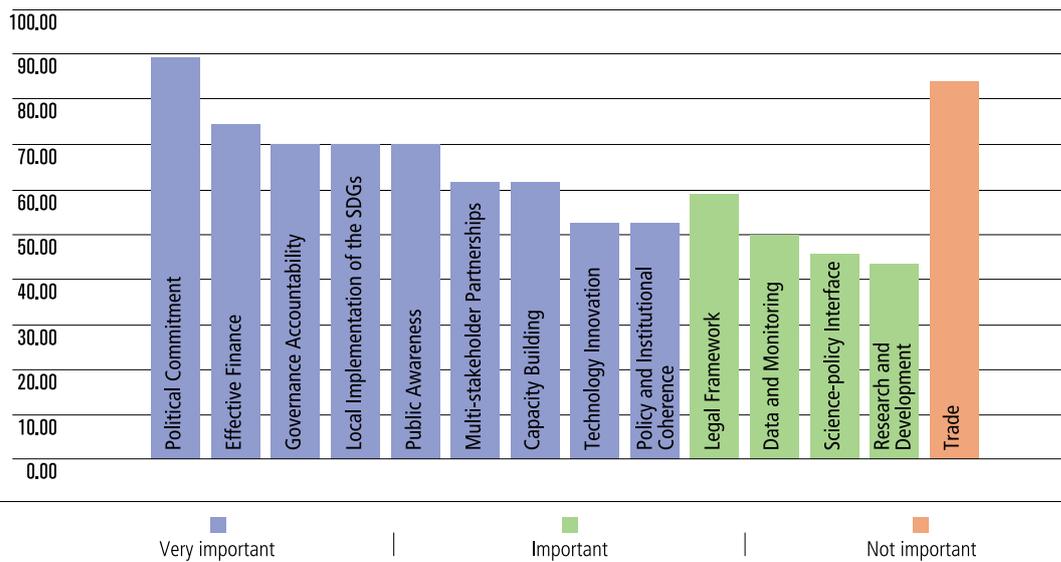
Smart-water technologies are increasingly being used for enhancing efficiency in water management, for example, K-Water's Smart Water Management Initiative, an integrated management model covering the entire water cycle from source to tap. Tools are being developed to facilitate monitoring of water quality. These include monitoring a few parameters through Earth Observations and using affordable in-situ monitoring devices to enable monitoring of rivers, lakes and groundwater by civil society.

## Strengthened monitoring of SDG 6

Global initiatives to strengthen the monitoring of SDG 6, support the evaluation of progress and identify priorities for action. This includes the UN-Water Integrated Monitoring Initiative for SDG 6 and the UN-Water SDG 6 Synthesis Report 2018 on Water and Sanitation. The latter will be launched in June 2018 in time for the High-level Political Forum on Sustainable Development and will outline ways to accelerate progress towards the goal and present the main inter-linkages between SDG 6 and other SDGs.



Figure 2: Rating the importance of components required to achieve SDG 6



Source: Results from an ESCAP multi stakeholder survey, 2017

## IV. PRIORITIES FOR ACTION

- **Political Commitment, Governance and Effective Finance** were identified as the most important issues required for the successful implementation of SDG 6 in Asia and the Pacific according to the ESCAP multi-stakeholder survey conducted in 2017.
- **Governance:** Competition on water-use between sectors (agriculture, industry, energy, human consumption, etc.) as well as between rapidly growing cities and nearby agricultural areas generate conflicts. Difficult decisions and trade-offs between these competing sectors and water users will require holistic and participatory interventions to ensure these are minimized or avoided. Significant opportunities to reduce water shortages can be found in recycling and reusing waste water coming out of cities for food production, through managed aquifer recharge for example and decentralized community water and waste water management. Promoting multi-stakeholder partnerships as a governance model is of critical importance to address such a scarce and vital resource as water and achieve SDG 6. Governments can create and provide platforms for facilitating the involvement of civil society, private sector and the boarder range of stakeholders, including water utilities as employers, workers and their representatives.
- **Innovative and creative financial strategies:** Attaining the ambitious and aspirational targets of SDG 6 requires innovative and creative financing strategies (water bonds for example). The efforts required to achieve SDG 6 will place a higher financial burden on low-income countries. Co-investment among different stakeholders and widening resource mobilization sources and instruments will be critical to deal with various financial challenges. Further, the role and importance of natural ecosystems in managing the hydrological cycle has not been adequately recognized, and international investments in water resource management should better support ecosystems as naturally-functioning and cost-effective alternatives to costly engineering investments.
- **Education and Training:** Education, training and awareness from the community level to policy makers, will play an important role in achieving SDG 6. It is through education and training that a realization of the importance of increasing water efficiency, protecting freshwater ecosystems and ambient water quality will occur.



- **Transboundary approach:** There is acknowledgement of the transboundary nature of water issues and the need to address them jointly through the development of regional initiatives and agreements.
- **Innovation:** Innovation contributes to the continuous improvement of water management. Policy and policy incentives need to be in place to foster research and innovation and to ensure the advanced technology to be fully implemented in every place where technical support is needed. While innovative approaches are increasingly being trialed and implemented at the experimental level, there is now a need to stimulate the refining and upscaling of these emerging local approaches.
- **National monitoring systems:** To track progress towards achieving SDG 6, national monitoring systems and capacities should be strengthened. This will also help increase the transparency and accountability of the decision-making process and help build awareness and encourage public, private and civil society engagement.
- **Integrated SDG 6 planning and implementation:** One of the key aspects of the 2030 Agenda for Sustainable Development is recognition of the strong interlinkages and interdependence among the goals. Water is inseparably linked to various sectors of human society, serving as a common basis that runs through almost all SDGs. Water is indeed a vital input to agricultural production, a major source of livelihood in the region (SDG 2) and to energy production (SDG 7). SDG 6 is also strongly linked with SDGs 1- No Poverty, SDG 11- Sustainable Cities and Communities, SDG 12-Responsible Consumption and Production, SDG 13- Climate Action, SDG-14 Life Below Water, SDG-15 Life on Earth, and SDG 8- Decent Work and Economic Growth. Integrated planning will ensure that progress is made on all fronts, taking into account trade-offs and synergies.

## TARGETS

**6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all

**6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

**6.5** By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

**6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

**6.a** By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

**6.b** Support and strengthen the participation of local communities in improving water and sanitation management



## END NOTES

1. E. Corcoran et al (2010), *Sick Water? The Central Role of Wastewater Management in Sustainable Development: A Rapid Response Assessment*, available from [www.unep.org/pdf/SickWater\\_screen.pdf](http://www.unep.org/pdf/SickWater_screen.pdf).
2. UN ESCAP, Asian Development Bank, UN Development Programme (2017) *Asia-Pacific Sustainable Development Goals Outlook*. Bangkok. <http://www.unescap.org/sites/default/files/publications/ap-susdev-outlook-full.pdf>
3. ESCAP (2016), *Asia-Pacific Countries with Special Needs. Development Report 2016 on Adapting the 2030 Agenda for Sustainable Development at National Level*, available from [www.unescap.org/resources/asiapacific-countries-special-needs-development-report-2016-adapting-2030-agenda](http://www.unescap.org/resources/asiapacific-countries-special-needs-development-report-2016-adapting-2030-agenda).
4. United Nations (2016), *United Nations, Millennium Development Goals Indicators*. Available from <http://mdgs.un.org/unsd/mdg/Data.aspx> (accessed 13 December 2016).
5. ESCAP (2016), *Statistical Database*. Available from <http://data.unescap.org> (accessed 15 December 2016).
6. Ibid.
7. Office of Economic Cooperation and Development (OECD), *Data*, available from <https://data.oecd.org/> (accessed 13 December 2016).
8. ESCAP (2016), *Statistical Database*, available from <http://data.unescap.org> (accessed 15 December 2016).
9. Asia Development Bank (2016), *Asia Water Development Outlook 2016*, available from <https://www.adb.org/sites/default/files/publication/189411/awdo-2016.pdf>.
10. T. Shah (2005), Groundwater and human development: Challenges and opportunities in livelihoods and environment, *Water, Science & Technology*, vol. 51, No. 8, pp. 27–37, available from <http://publications.iwmi.org/pdf/H035884.pdf>.
11. Asian Development Bank (2017), *Asia Infrastructure Needs Exceed \$1.7 Trillion Per Year, Double Previous Estimates*, available from <https://www.adb.org/news/asia-infrastructure-needs-exceed-17-trillion-year-double-previous-estimates>
12. For more information please check UN-Water (2018), *SDG Synthesis Report 2018 on Water and Sanitation*, available from [http://www.unwater.org/publication\\_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/](http://www.unwater.org/publication_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/) and UN Educational, Scientific and Cultural Organization World Water Assessment Program (2017), *Synthesis Report on SDG 6*, available from <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/sdg-6-synthesis-report/>