

SDG 6 Country Acceleration Case Study Cambodia

2024

SDG 6 Country Acceleration Case Studies

UN-Water coordinates the work of the United Nations (UN) on water and sanitation.

At the end of 2023, UN-Water was comprised of 35 UN entities (Members) and 48 other international organizations (Partners) working on water and sanitation issues. UN-Water's role is to ensure that Members and Partners 'deliver as one' in response to global water-related challenges.

The latest progress report shows that we are not on track to achieve Sustainable Development Goal (SDG) 6.

At the current rate of progress, the world will not reach the SDG 6 targets by 2030. In 2021, UN-Water reported that the world – on average – must quadruple current rates of progress to have a chance of achieving SDG 6 by 2030.¹

It is not enough to look at what is not working. There is so much we can learn from the many countries that have made significant progress. Since 2022, UN-Water has therefore commissioned case studies to understand how some countries are advancing towards SDG 6. The case studies highlight achievements and describe processes, enabling conditions and key lessons learned in countries selected for their progress on SDG 6. As such, each case study is a recognition of the progress made at the country level on one or several SDG 6 targets.

The case studies are meant to enable the replication of what has worked and encourage continued action to achieve SDG 6 in the selected countries. The 2030 Agenda for Sustainable Development forms an overarching lens for the case study to capture interlinkages and opportunities that are relevant across sectors and SDGs.

Starting in 2022, UN-Water has published case studies on three countries each year.

The selection of the case studies is made by the UN-Water Expert Group on the 2030 Agenda for Sustainable Development, based on country progress reporting on the SDG 6 global indicators, compiled by the UN custodian agencies. In 2024, the Expert Group selected Cambodia, Czechia and Jordan for the case studies.

The contents of the case studies are prepared by UN-Water, based on material shared by UN-Water Members and Partners and representatives from relevant ministries and institutions in the selected countries, including the country monitoring focal points for the SDG 6 global indicators. This case study also includes inputs from background interviews with a variety of stakeholders, conducted online and in-person. The case studies are reviewed and validated by UN-Water Members and Partners before publication.

To enable cross-country comparison and learning, the case studies examine key underlying factors and enabling conditions that brought about the changes. Often, these are political, institutional or behavioral, and they span over the five global accelerators identified in the SDG 6 Global Acceleration Framework: financing, data and information, capacity development, innovation, and governance.

So far, the following countries have been selected for country acceleration case studies:

2022: Costa Rica, Pakistan, Senegal

2023: Brazil, Ghana, Singapore

2024: Cambodia, Czechia, Jordan

More information: www.unwater.org/publications/country-acceleration-case-studies

1. As evidenced by UN-Water (2021).

Table of contents

Executive summary	5
1. Country context	6
2. What was achieved.....	9
3. Understanding the achievement	12
Data: access to information about water quality and water operators	12
Governance: ambitious goals and enabling private sector investment.....	13
Finance: mobilizing private investment and donor support	14
Capacity development: efforts at all levels.....	15
Innovation: scaling up successful pilots.....	15
4. Recommendations for accelerated action	16
5. Replicability in other countries	17
Opportunities for experience sharing	17
References	18
Acknowledgments	20



View of the floating village
of Kampong Khleang, Cambodia.
Photo: Kelly Lacy

Executive summary

Thirty years ago, Cambodia had very limited access to safe drinking water and open defecation was prevalent. Today, the situation has improved dramatically and the country is progressing on six indicators of SDG 6. In recent years, Cambodia managed to turn an ailing state-owned water utility into a well-managed one, double access to sanitation in rural areas, pull in private investment to the water sector and make piped water and sanitation attractive to the population, including in smaller cities and rural areas. It managed to rid cities of open defecation and is now making significant progress in rural areas. At the same time, Cambodia still faces many challenges, principally the need to expand wastewater treatment and to make the shift from ‘improved’ to ‘safely managed’ water and sanitation. The key factors and drivers identified include:

- **Ambitious goals have been set and are pursued with determination.** In 2010, the government set the goal to achieve 100 per cent coverage of improved water and sanitation in rural areas and achieve open defecation free status by 2025.
- **Water contamination data is accessible to all.** A database of wells is published online and easily accessible for the public. A simple colour-code is used. It is also applied to the wells on the ground.
- **The government leads communications campaigns.** Piped systems are presented as easier and cheaper, and toilets have become something of a status symbol. Households investment in sanitation and hygiene is increasing.

- **The licensing system has been carefully designed.** A 3-year license system was transformed into 20-year licenses, to ensure the cost recovery of the investment.
- **Private investment is leveraged.** The state-owned water utility of the capital city is highly profitable and raises financing from the stock exchange.
- **The main utility has adopted a ‘Robin Hood’ approach.** By investing first in central and wealthier parts of the capital city, Phnom Penh Water Supply Authority (PPWSA) has managed to create the conditions to cross-subsidize poorer areas.
- **Private water operators are in a federation.** The Cambodian Water Supply Association (CWA) supports their development and experience sharing.
- **Technical solutions are adapted to local contexts.** Affordable, locally sourced and flood-resilient latrines play an important role in improving access to sanitation.
- **‘Community-led total sanitation’ and marketing approaches have been implemented.** These initiatives have raised awareness of the importance of sanitation and hygiene and created public demand for change.

The experience of Cambodia is highly relevant for others: water utilities in developing countries should look at the success of the Phnom Penh Water Supply Authority (PPWSA) as a source of hope for many operators that are struggling; countries that want to improve access in rural areas could look to how Cambodia managed to mobilize the private sector, particularly in small cities; finally, countries that want to increase private sector investment should look at how Cambodia made the water sector attractive for investment.

1. Country context

Cambodia is a medium-small country located in Southeast Asia. About six in ten people live in urban areas, while the remaining population lives in rural areas (Table 1). Cambodia is considered a lower-middle income country, with a per capita yearly Gross Domestic Product of 1,759 United States dollars (USD). Its economy has been growing rapidly in recent decades. Cambodia is a constitutional monarchy, with the King acting as head of state and the prime minister serving as head of government. With the 1991 Comprehensive Cambodian Peace Agreements, the country emerged from a long period of war as well as political, social and economic struggle. A peacekeeping operation, known as the UN Transitional Authority in Cambodia (UNTAC), administered the country in 1992 and 1993. For the last four decades, the country’s politics has been dominated by one party. The country is divided into 24 provinces plus the special administrative unit of the capital.

Table 1: Overview of water-related key data

Population	17,091,464 (61% rural) <small>Source: National Institute of Statistics (2023)</small>
Gross domestic product	1,759 USD per capita/year (lower-middle income) <small>Source: World Bank (2022, current USD)</small>
Renewable freshwater resources	29,036 m³/habitant/year (75% external) <small>Source: Food and Agriculture Organization (FAO) Aquastat (2020)</small>
Surface water	Mekong, Tonlé Sap, Tonlé San, Bassac, coastal rivers
Renewable groundwater	17.60 billion m³/year <small>Source: FAO Aquastat (2020)</small>
Water-related ecosystems	1.9% of land area <small>Source: Calculated from the Freshwater Ecosystem Explorer (2022) data</small>
Forest area	44.8% of land area <small>Source: UNCCD (2023)</small>
Water withdrawal	94.0% agriculture, 4.5% domestic, 1.5% industry <small>Source: FAO Aquastat (2020)</small>
Irrigated land	5.9% of agricultural land <small>Source: FAO Aquastat (2021)</small>
Hydropower	52.4% of electricity generation <small>Source: International Energy Agency (IEA) (2021)</small>
Drought risk	Medium to high <small>Source: World Resources Institute (WRI) Aqueduct 4.0</small>
Flood risk	High to extremely high <small>Source: WRI Aqueduct 4.0</small>

Water governance is centralized. The sector is overseen by the Ministry of Water Resources and Meteorology (MoWRaM). In the past, MoWRaM’s action focused on irrigation. A more integrated approach to water management has been adopted more recently. The Ministry of Industry, Science, Technology and Innovation (MISTI) focuses on piped water supply and the Ministry of Public Works and Transportation (MPWT) is responsible for sanitation and drainage in the capital and other cities and towns. The Ministry of Rural Development (MRD)

has a leading role in water supply and sanitation in rural areas. The Ministry of Environment and the Ministry of Agriculture, Forestry and Fisheries (MAFF) also play key roles in water management. At the subnational level, PPWSA is the public utility of the capital city, the Cambodia National Mekong Committee is responsible for the Cambodian part of the Mekong Basin and the Tonlé Sap Authority manages the lake and river basin with the same name. Local authorities are also involved in water governance.

Floating villages

The Tonlé Sap hosts a wide variety of settlements. Entire villages live on floating structures that move as the lake expands and shrinks. The livelihoods of these villages rely on fisheries and boats for transportation. In these areas, the safe management of drinking water and sanitation remains a challenge. Inhabitants tend to rely on surface water. Open defecation is frequent.



Cambodian girl steering her boat in a water village on Tonlé Sap Lake. Photo: CPhoto/Uwe Aranas

There is plenty of water in Cambodia. According to FAO, the yearly renewable internal freshwater resources exceed 29,000 m³ per capita. Because of population growth, this figure has been dropping over the last four decades, but it remains high. Sometimes, there can be too much water, with most part of the country being exposed to high or extremely high risk of flooding. This occurs frequently and can damage water infrastructure.

Most of Cambodia’s renewable freshwater resources flow from neighboring countries, especially the Mekong River, which flows into the country from Lao People’s Democratic Republic and out of the country to Vietnam, where the Mekong flows to the sea. The Mekong River Commission was established by riparian countries with the support of development partners and plays a key role in managing transboundary waters.

At the same time, drought is increasingly common. There is huge seasonal variability. Much of the country is at high risk of drought. This is related to withdrawals upstream and climate change, but also to forest loss and land degradation. Droughts are also made worse

by increasingly hot dry seasons, which depletes reservoirs. This is having serious implications for water sources. Despite the conservation efforts of the national government and international partners, the loss of highly valuable mangroves, flooded forests and wetlands is a major issue. These water-related ecosystems play a crucial role in the regulation of the water cycle by ensuring water retention and by improving water quality.

Most of the water is used for agriculture. According to FAO, agriculture represents more than 90 per cent of water withdrawals. This occurs even though less than 6 per cent of agricultural land is irrigated. Less than 5 per cent of water is withdrawn for domestic use. While industrial withdrawals are very limited, hydropower generation provides more than half of the electricity in the country. Dams and reservoirs alter the natural flow of water, while at the same time representing a useful tool to mitigate the risk of flooding.

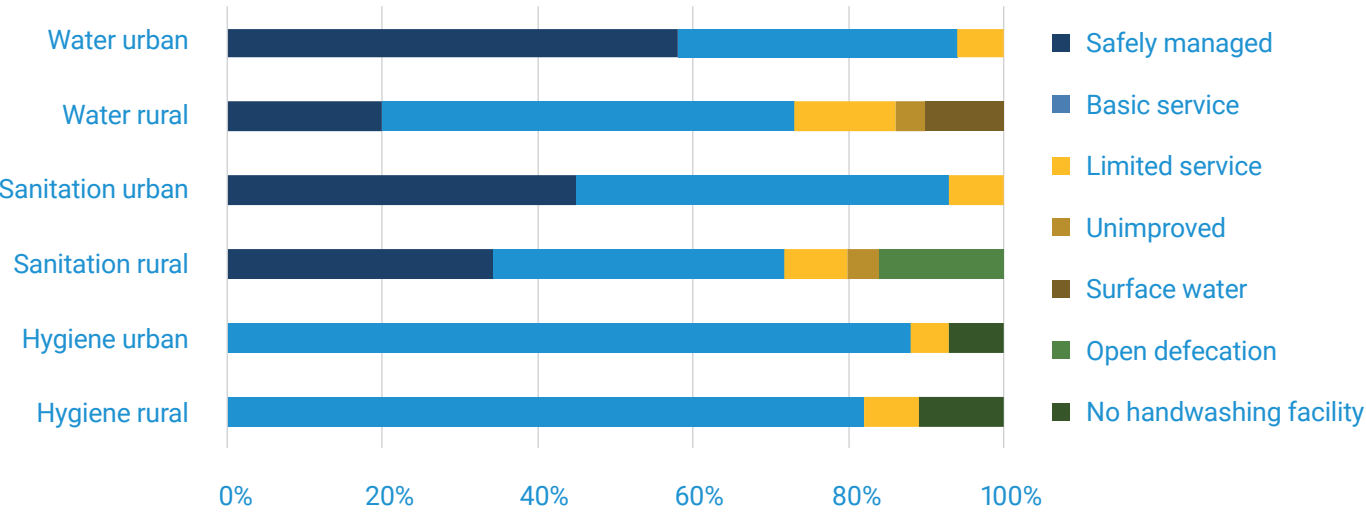
In 2000, less than 20 per cent of the population was using safely managed drinking water services. Now, the situation has improved (Figure 1). In urban areas, piped

supply has taken over from non-piped options, such as wells, while in rural areas both piped and non-piped supply have expanded. The increased access to bottled water also contributes to the observed improvement in the data. Regarding sanitation, more than one in three Cambodians have access to a safely managed service. Urban areas are now largely open defecation free, while in rural areas around 16 per cent of the population practice open defecation. This is down from 99 per cent in 2000, thanks to huge efforts from the government and development partners. In the same period, the use of pour-flush pit

latrines went from 0 per cent to more than 70 per cent in rural areas.

The diffusion of wastewater treatment is limited. This is related to the limited development of the sewage system and sludge collection. As a result, the risk of contamination is high for both people and the environment. In Phnom Penh, significant investments are underway to expand sewerage and wastewater treatment, with the support of development partners. However, wastewater administration is complicated and reforms are ongoing.

Figure 1: Household WASH coverage (2022)



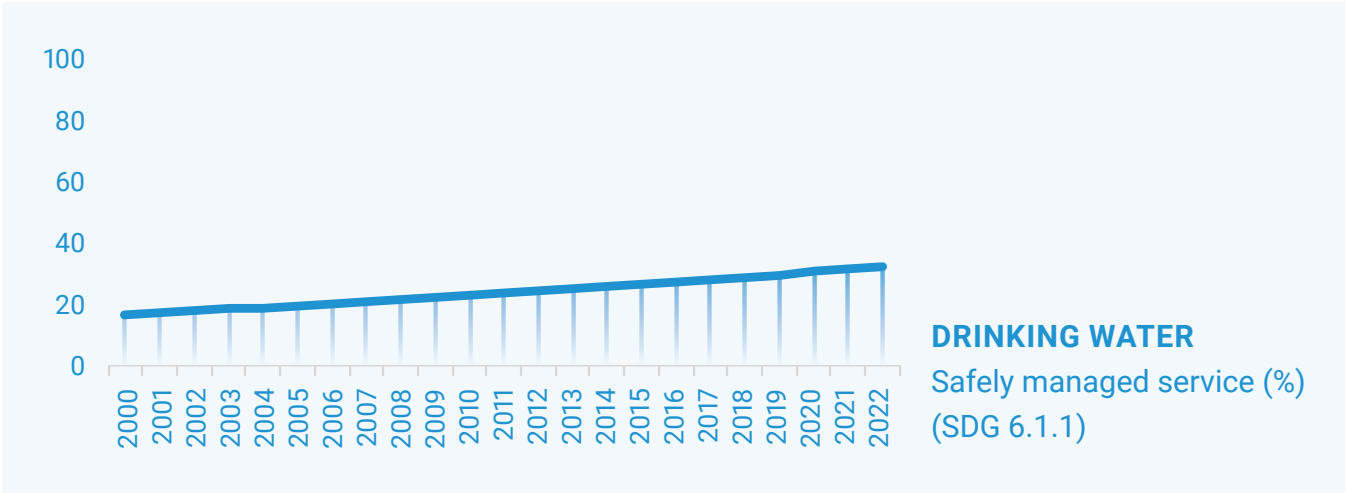
Source: [UN-Water SDG 6 Data Portal](#)

2. What was achieved

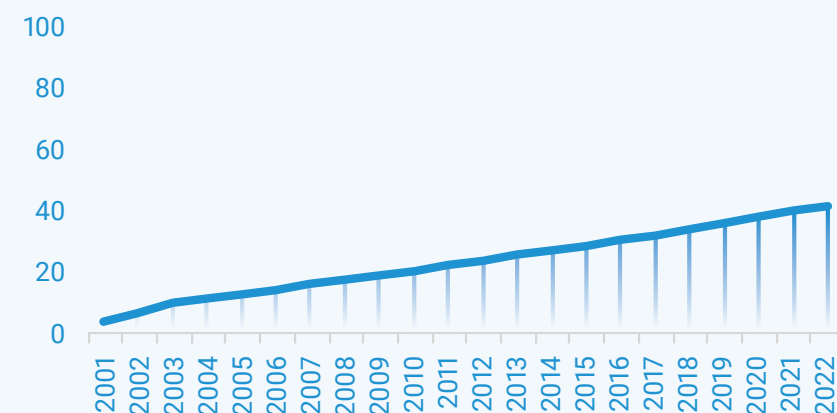
Cambodia has been making progress on six SDG 6 indicators and is regressing in none. In 2022, 29 per cent of the population had access to safely managed drinking water, up 13 percentage points since 2000 (Figure 2). This means that the country still needs to make a lot of progress on safely managed drinking water, primarily due to E. coli contamination. However, Cambodia has made great progress on the provision of basic services, which means that most of the population now has access to improved water and aims to achieve universal coverage by 2025. Cambodia has also made significant progress on access to safely managed sanitation (SDG 6.2.1a), which went from 5 per cent in 2000 to 36 per cent in 2022. Huge progress has been made in access to basic sanitation in rural areas, doubling from 40 per cent to around 80 per cent in a few years. Hygiene has also made progress, gaining 20 percentage points in less than 15 years and surpassing 80 per cent in 2021.

Cambodia has shown progress in multiple dimensions. The degree of implementation of integrated water resources management (IWRM) went from 46 per cent in 2017 to 62 per cent in 2023 (SDG 6.5.1). In addition to the progress on drinking water and sanitation, water use efficiency also improved, with the industrial sector making the most progress, followed by the services sector. Agriculture improved, from 0.23 USD/m³ of water used in 2000 to 0.35 in 2019, according to the latest data available from FAO (SDG 6.4.1). Moreover, according to data from the UN Environment Programme (UNEP), the spatial extent of water-related ecosystems from Earth observation is stable between 2015 and 2022 (SDG 6.6.1). Lastly, in the period from 2014 to 2021, official development assistance (ODA) provided by donor countries to Cambodia increased four times, from around 75 to more than 300 million USD (SDG 6.A.1). Still, this figure remains limited, as it represents on average only around 17 USD per capita per year.

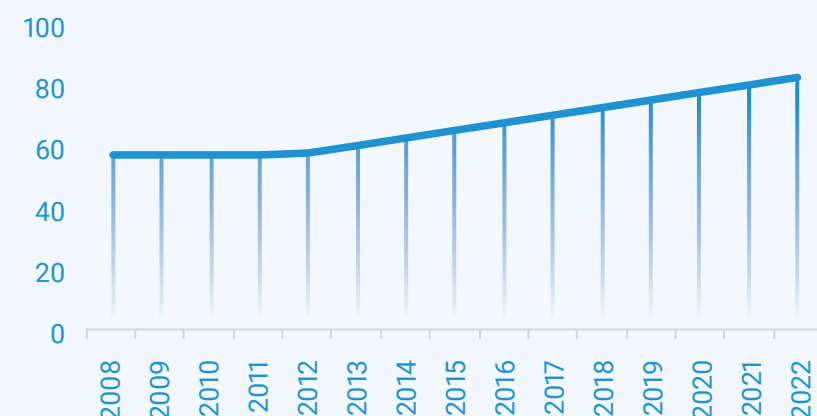
Figure 2: Progress on SDG 6 indicators in Cambodia



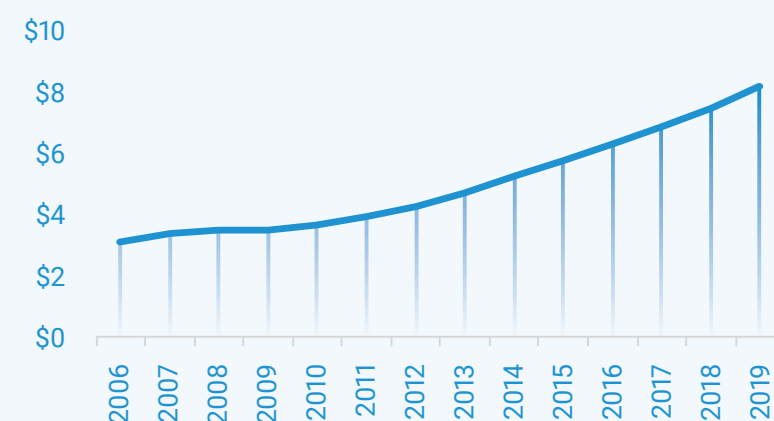
DRINKING WATER
Safely managed service (%)
(SDG 6.1.1)



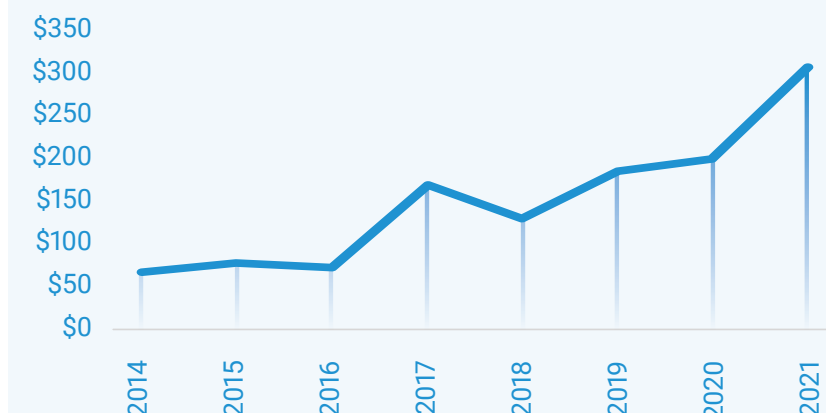
SANITATION
Safely managed service (%)
(SDG 6.1.1A)



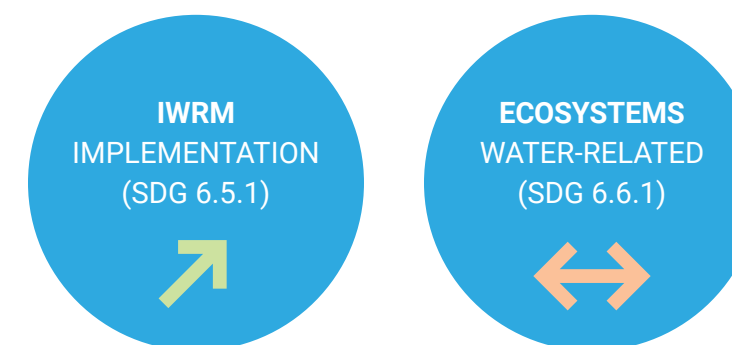
HYGIENE
Basic service (%)
(SDG 6.1.1B)



WATER USE EFFICIENCY
No breakdown (USD/m³)
(SDG 6.4.1)



OFFICIAL DEVELOPMENT ASSISTANCE
For water and sanitation
(millions USD)
(SDG 6.A.1)



Source: [UN-Water SDG 6 Data Portal](#)

SDG indicator 6.1.1 “Proportion of population using safely managed drinking water services” monitors the proportion of population using safely managed drinking water services. A safely managed service is defined as an improved drinking water source that is accessible on the premises, available when needed, and free of fecal and priority chemical contamination. Improved water sources include piped water, boreholes or tubewells, protected dug wells, protected springs and packaged or delivered water.

SDG indicator 6.2.1a “Proportion of population using safely managed sanitation services” tracks the proportion of population that is using an improved sanitation facility, which is not shared with other households, and where the excreta produced is either treated and disposed in situ, stored temporarily and then emptied and transported to treatment off-site or transported through a sewer with wastewater and then treated off-site. Improved sanitation facilities include flush/pour flush to piped sewer system, septic tanks or pit latrines, ventilated improved pit latrines, composting toilets or pit latrines with slabs.

The description of other SDG 6 indicators is available at www.unwater.org/our-work/integrated-monitoring-initiative-sdg-6.

3. Understanding the achievement

This section describes how and why progress took place. It examines the direct and indirect factors that enabled the achievement, paying attention to which factors could be replicated in other countries. Five drivers have been identified in the case of Cambodia: data and information, governance, financing, capacity development, and innovation. They correspond to the five global accelerators of the SDG 6 Global Acceleration Framework. They are presented in order of relevance.

Data: access to information about water quality and water operators

There is widespread awareness of groundwater contamination. Since the 2000s, the population is aware that the water in many wells is not drinkable. This represents a significant incentive for alternative piped and non-piped solutions. A database of wells is published online and easily accessible for the public, with a simple colour-code. After testing, the wells were also painted (green = suitable for use, red = not suitable for use). It is

The SDG 6 Global Acceleration Framework is a unifying initiative that aims to deliver fast results, at an increased scale, towards the goal of ensuring the availability and sustainable management of water and sanitation for all by 2030. The Framework contributes to the new Water Action Agenda, an outcome of the UN 2023 Water Conference, held in March 2023.

More information: www.unwater.org/our-work/sdg-6-global-acceleration-framework

also an important tool for management, as specifics such as well depth, casing materials and drilling techniques are accessible to engineers and policymakers, together with parameters like pH, turbidity, and contaminants which are tracked for water quality monitoring to ensure safe drinking water. This tool allows authorities to plan for maintenance and sustainable water supply.

The licenses of water operators can be verified. Managed by MISTI, the Water Supplier Monitoring System publishes water supplier license and quality data, by spatially linking data with commune locations. This gives decision-makers and citizens access to information, allowing them to monitor the performance of water operators. To address issues of underreporting from operators, MISTI is planning to conduct an assessment of all the active water operators to improve performance monitoring.

Global objectives were localized. The SDG framework was transformed into the Cambodia Sustainable Development Goals (CSDGs). These are locally owned objectives, which are regularly monitored. The monitoring framework is well developed and identifies responsible organizations for each indicator. As definitions and methodologies vary, national and international indicators are often not comparable.

Governance: ambitious goals and enabling private sector investment

The government set ambitious goals and pursued them with determination. In 2010, MRD set the goal to achieve 100 per cent coverage of improved water and sanitation in rural areas and achieve open defecation free status by 2025. These ambitious goals are pursued with determination, in cooperation with development partners. The high level of ambition has helped catalyze support from donors.

Enabling conditions have been created for private sector investment. In 2015, MISTI reformed a 3-year license system for water supply into 20-year licenses, as the cost recovery of investment is typically between 10 and 20 years. A feasibility study is also required for operators to obtain a license. This reform accelerated the creation of private water operators (PWOs) in smaller cities across the country, thus mobilizing private sector investment. These are areas where the public sector was unable to provide sufficient support. However, no license system is currently in place for water extraction, resulting in unregulated withdrawals. The issue is addressed by the 2023 Law on Clean Water Resources Management, from 2023. A specific piece of secondary legislation is expected to be produced on water extraction licensing since some licenses are being misused by private water operators with no or low levels of delivery.

Water management is being decentralized. In rural areas, local authorities and non-governmental organizations (NGOs) are providing water to communities with funding from donors. Many community-led systems are temporary and may not be sustainable without donor support. Farmer Water User Communities (FWUCs) were created in every irrigation scheme, but most are not yet fully functional.

Transboundary cooperation is in place, but is incomplete. Cambodia is part of the Mekong River Commission. Cooperation with neighboring countries is essential for sustainable water management. However, not all transboundary rivers and aquifers are fully covered and not all riparian countries fully participate in the Mekong River Commission.

Cambodia WellMap

Cambodia WellMap is a comprehensive database that includes details on the location, construction, and water quality of rural wells across the country. It enables public access to key information such as arsenic contamination and iron concentration, as well as indication of wells with undrinkable water. The platform went live in 2010. The initiative was launched by the Ministry of Rural Development with financial support from the World Bank and contributions from the Asian Development Bank (ADB), UN Children’s Fund (UNICEF), Resource Development International and World Vision International.



Source: [Ministry of Rural Development of Cambodia](http://www.unwater.org/our-work/sdg-6-global-acceleration-framework)

Phnom Penh Water Supply Authority (PPWSA)

PPWSA is among the few large water utilities in developing countries that managed to transform itself from a failing bureaucracy into a well-managed and highly successful publicly-owned water utility, with long-term support from Japan International Cooperation Agency (JICA), French Development Agency (AFD) and other partners. According to Biswas et al. (2021), lessons learnt include the importance of leadership and of the stability of chief executive tenure, the importance of organizational culture, its autonomy, the reduction of non-revenue water, the availability of data and quality of reporting, the standardization of treatment plant size and connections to poor communities. The step-by-step approach followed by PPWSA starts with effective leaks repair and updating the customer database all the way to internal service contracts, as described in Biswas et al. (2021).

Ek Sonn Chan

Ek Sonn Chan acted as General Director of PPWSA from 1993 to 2012. He led the transformation of PPWSA into a well-managed water utility, capable of raising capital on the stock market. In 2010, PPWSA was awarded the prestigious Stockholm Water Industry Award, which highlighted his leading role. Afterwards, Ek Sonn Chan was appointed first Under-Secretary of State at the Ministry of Industry, Mines and Energy (now MISTI) and Minister attached to the Prime Minister. It is under his mandate that MISTI reformed the licensing system, thus creating the conditions for accelerated investment into private water operators.



Ek Sonn Chan (left), General Director of PPWSA, receives the 2010 Stockholm Water Industry Award from Peter Forssman, Chairman of Stockholm Water Foundation. Photo: Exray Photo/SIWI

In fact, there is recent evidence that subsidies can increase access in rural areas (Michaels, 2022; Kozole, 2023).

Capacity development: efforts at all levels

The government leads communication campaigns.

Since the 2010s, the Ministry of Health and the Ministry of Environment carried out large and successful communications campaigns, which have raised awareness among the general population. The focus was sanitation, hygiene and water quality, including the danger of utilizing contaminated wells, and the opportunity to use piped systems instead, which are presented as easier and cheaper to use. As a result, toilets have become something of a status symbol. As the economy grows and revenues increase, households are investing in sanitation and hygiene.

Implementation of the community-led total sanitation and marketing approaches.

Community-led total sanitation was adapted to the national context and adopted by the Ministry of Rural Development around 2010. This approach promotes positive sanitation and hygiene behaviour change, using an element of peer pressure, to increase demand for better sanitation. Sanitation marketing programmes by international NGOs have been inducing behavioral change, helping shift away from open defecation and encouraging sanitation uptake by working mainly with private operators.

PPWSA has invested in human resources and is sharing its experiences. The success and international recognition

of PPWSA have made it a model for others to follow. Over the years, PPWSA has invested heavily in the capacity development of its human resources. It is now sharing its experiences with other utilities in the country, and providing services to them.

The CWA federates private water operators. It brings together more than 300 water companies, supporting their further development and experience sharing. CWA is the voice of private water operators vis-à-vis the government and other partners.

Innovation: scaling up successful pilots

20-litre treated water bottles. For several years, a local NGO has been deploying systems to produce and distribute 20-litre treated bottled water systems across the country. This initiative is supported by a MRD and UNICEF. These bottles are now widely used and make a significant contribution to improved access to drinking water.

Filters for rural schools. Small-scale filters for water treatment were deployed in rural areas. This has made a difference in schools, where access to drinking water has improved.

Locally adapted latrines. Affordable, locally sourced and flood-resilient latrines models have also been developed. These solutions are also important to address water quality and public health concerns.

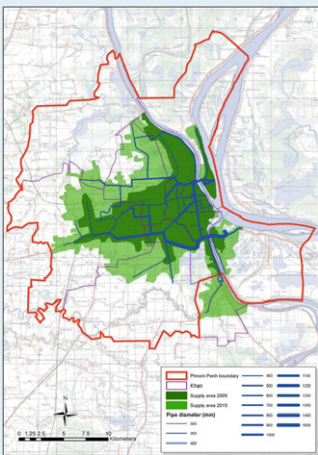
Finance: mobilizing private investment and donor support

Both large and small utilities are leveraging private investment. PPWSA is highly profitable. In 2012, it was successfully listed on the Cambodia Stock Exchange, enabling it to raise private capital to support its development. Progress in smaller cities is led by the expansion of private water operators, which also rely on private investment with no subsidy being provided from the government, except for concessional loans. A Provincial Investment Plan was prepared in 2022 with the support of Australia's Investing in Infrastructure Program to help prioritize public and private investment.

There has been a shift to a non-subsidy approach, while relying on remittances and donor support. In 2014, the Ministry of Rural Development adopted a National Strategic Plan that shifted away from subsidies for water supply and sanitation in rural areas. Reliance on subsidies was seen as slowing down development. The government adopted a 'community-based total sanitation' approach in some areas to raise awareness of the importance of sanitation and hygiene and thereby create public demand for change, with outside assistance as needed. Rural communities receive support from the remittances of Cambodian migrants abroad, as well as donor support. The latter can be considered a form of non-structural subsidy, such as UNICEF covering the 75 USD connection fee of poorer households to have access to the piped network.

Adoption of a 'Robin Hood' approach

By investing first in central and wealthier parts of the capital Phnom Penh, PPWSA managed to create a sound business model. Higher levels of affordability allowed it to increase tariffs enough to generate sufficient margins that could be then invested in service expansion and improvement. In 2008, PPWSA established a Social Fund to enable cross-subsidization from richer to poorer communities. This resulted in the expansion of water supply in poorer areas, providing access to poorer households. However, according to Biswas et al. (2021), excess focus on profitability may undermine cross-subsidization and service expansion into poorer communities for both large and small water utilities.



Source: Biswas etl al. (2021)

Easy Latrines

Easy Latrines were designed with support from the United States Agency for International Development (USAID) and the World Bank to fit local needs, including the need to keep their cost below 20 USD, the established affordability threshold in rural areas. Now it is estimated that one-fifth of rural households have bought such latrines, favouring them over traditional ones. Private sector support and sanitation marketing were required to scale up. They are built using local materials.



Workers installing the building blocks of a new latrine for a rural household. Photo: iDE

4. Recommendations for accelerated action in Cambodia

Some recommendations emerged from the analysis of the drivers of progress towards SDG 6, particularly from interviews and published material. Moreover, the SDG 6 Global Accelerator Framework also provides some indications of where action may be required to make further accelerated progress.

Cambodia invested in all five global accelerators. For the country, it would have not been possible to achieve progress on SDG 6, including spectacular progress on improved drinking water supply and sanitation, if it had not employed all five accelerators identified in the SDG 6 Global Accelerator Framework, namely data and information, governance, financing, capacity development, and innovation. The available evidence shows that progress across six SDG 6 indicators in Cambodia is the result of many actions, ranging from mapping unsuitable wells to extending licenses to enable private investment, from a well-managed publicly owned utility cross-subsidizing poorer areas and households, to government-led communication campaigns and innovative bottled water, toilet design and sanitation marketing. More than in many countries, support from development partners seems to have contributed to much of the observed progress.

To achieve SDG 6, Cambodia must shift from ‘improved’ to ‘safely managed’ water and sanitation. Wastewater management must be improved. Pit latrines fill up quickly. Sludge needs to be managed safely for public

health and environmental protection. Sewerage needs to expand in cities. Pit latrines must be regularly emptied also in rural areas. The legal and institutional framework for wastewater management needs to be improved. Development partners must provide more support for building wastewater treatment plants. Sewage systems must also be deployed.

Other recommendations that emerged from the case study include the need to focus on remote areas and adapt water supply and sanitation to flooded areas and floating villages. Water extraction licenses should also be established as a tool to better monitor water quantity and quality, especially in a context of increasingly frequent drought. The oversight of private water operators must also be strengthened. Licenses should be revoked and reassigned if they are not used. Actions should be taken to increase the trust of the population in the quality of piped water, as many are not using it for drinking and cooking purposes. Switching to bulk supply from private operators, which then focus on distribution, may contribute to increasing the quality of water supply and efficiency of the sector. Monitoring indicators should be further harmonized, including with international standards for greater comparability and easier benchmarking with other countries. Moreover, the irrigation master plan requires updating. In general, interministerial communication and coordination could improve. Continuing to address corruption is essential to increase trust, attract further investment and continue progress.

5. Replicability in other countries

The experience of Cambodia is highly relevant for others: water utilities in developing countries should look at the success of PPWSA as a source of hope for many operators that are struggling; countries that want to improve access in rural areas will be inspired by how Cambodia managed to mobilize the private sector, particularly in small cities; finally, countries that want to increase private sector investment should look at how Cambodia made the water sector attractive for private investment. Key factors and drivers that may be replicated in other countries include:

- **Ambitious goals have been set and are pursued with determination.** In 2010, the government set the goal to achieve 100 per cent coverage of improved water and sanitation in rural areas and achieve open defecation free status by 2025.
- **Water contamination data is accessible to all.** A database of wells is published online and easily accessible for the public. A simple colour-code is used. It is also applied to the wells on the ground.
- **The government leads communications campaigns.** Piped systems are presented as easier and cheaper, and toilets have become something of a status symbol. Household investment in sanitation and hygiene is increasing.

- **The licensing system has been carefully designed.** A 3-year license system was transformed into 20-year licenses, to ensure the cost recovery of the investment.
- **Private investment is leveraged.** The state-owned water utility of the capital city is highly profitable and raises financing from the stock exchange.
- **The main utility has adopted a ‘Robin Hood’ approach.** By investing first in central and wealthier parts of the capital city, PPWSA has managed to create the conditions to cross-subsidize poorer areas.
- **Private water operators are in a federation.** The CWA supports their development and experience sharing.
- **Technical solutions are adapted to local contexts.** Affordable, locally sourced and flood-resilient latrines play an important role in improving access to sanitation.
- **Community-led total sanitation and marketing approaches have been implemented.** These initiatives have raised awareness of the importance of sanitation and hygiene and created public demand for change.

Opportunities for experience sharing

Cambodia is engaged at the basin and regional levels. The Mekong River Commission and other regional processes provide a powerful platform to share the experience of Cambodia not only about transboundary cooperation but also about its progress towards SDG 6.

Cambodia actively participates in global water and environment conventions and processes, such as the Dushanbe Water Process and the Ramsar Convention on Wetlands. These are also useful opportunities for experience sharing.

References

Government documents

- Cambodia Forest Cover 2016
- Cambodian Sustainable Development Goals 2016-2030: Revised List of Targets and Indicators by Goals, 2022
- Review of the 2014-2025 National Strategic Plan (NSP) and 2019-2023 National Action Plan (NAP II) of the Ministry of Rural Development, 2022
- Cambodia's Voluntary National Review, 2023
- Annual Report of MoWRaM for 2023
- Annual Report of Tonlé Sap Authority for 2023
- Annual Report of Cambodia National Mekong Committee for 2023

United Nations documents

- United Nations Development Programme (UNDP) (2020), *Development of Groundwater Management Strategy in Cambodia: Institutional Assessment, Capacity Building Plan and Proposed Key Components of Ground Water Management in Cambodia*, Phnom Penh.
- UNEP (2017, 2020, 2023), *Country Survey Instrument for SDG Indicator 6.5.1*, Nairobi.
- UN Economic Commission for Europe (UNECE) and UN Educational, Scientific and Cultural Organization (UNESCO) (2017, 2020, 2023), *Reporting on Global SDG Indicator 6.5.2*, Geneva-Paris.
- UNICEF (2019), *Water, Sanitation and Hygiene: Country Programme 2019-2023*, Phnom Penh.
- UNICEF (2023), *Climate Rationale for Water, Sanitation and Hygiene Services in Cambodia*, New York.
- UNICEF and WHO (2021), *Assessing the Affordability of Water, Sanitation and Hygiene: Cambodia Country Case Study*, Phnom Penh.

Other reports

- ADB (2019), *Cambodia: Third Rural Water Supply and Sanitation Sector Project*, Proposed Loans, Grant and Administration of Grant, Manila.
- ADB (2021), *Cambodia: Second Rural Water Supply and Sanitation Sector Project*, Completion Report, Manila.
- ADB (2024), *Cambodia: Urban Water Supply Project*, Completion Report, Manila.
- Investing in Infrastructure Program (2022), *Provincial Investment Plan for Piped Water Supply in Cambodia*, Phnom Penh.
- Mekong River Commission (2021), *Basin Development Strategy 2021-2030 & MRC Strategic Plan 2021-2025*, Vientiane.
- Sanitation and Water for All (2022), *Cambodia: Country Overview*, Manila.

Scholarly publications

- Biswas, Asit, Pawan K. Sachdeva and Cecilia Tortajada (2021), *Phnom Penh Water Story: Remarkable Transformation of an Urban Water Utility*, Springer, Cham. DOI: [10.1007/978-981-33-4065-7](https://doi.org/10.1007/978-981-33-4065-7)
- Kozole, Tyler, Marlaina Ross, Chris Nicoletti, Jennifer Rogla, Nate Ives, Amjad Alif and Ratsamnang Prom (2023), Impact of targeted subsidies on access to resilient sanitation for climate-vulnerable households in rural Cambodia, *Journal of Water, Sanitation and Hygiene for Development*, vol. 13, no. 12, 931-940. DOI: [10.2166/washdev.2023.039](https://doi.org/10.2166/washdev.2023.039)
- Michaels, Terra, Chanmeakara Suong, Chanrith Chi, Lyheang Morm, Phanit Mab and Justine Denis (2022), Increasing access to piped water for poor households: an analysis of water connection subsidy projects implemented by the GRET, *H₂Open Journal*, vol. 5, no. 4, 567-581. DOI: 10.2166/h2oj.2022.024
- Sithirith, Mak, Sok Sao, Sanjiv de Silva, Heng Kong, Chay Kongkroy, Tim Thavrin and Hy Sarun (2024), Water governance in the Cambodian Mekong Delta: the nexus of FWUCS, community fisheries (CFIS), and community fish refuges (CFRS) in the context of climate change, *Water*, vol. 16, no. 242. DOI: [10.3390/w16020242](https://doi.org/10.3390/w16020242)
- Souter, Nicholas J., Kashif Shaad, Ratha Sor and Derek Vollmer (2023), Freshwater health index assessment of the Tonlé Sap basin, *Cambodian Journal of Natural History*, vol. 1, 34-61. URL: <https://rupp.edu.kh/cjnh/journal/CJNH-2023-1/Souter%20et%20al.%202023%20Freshwater%20health.pdf>
- Zuin, Valentina, Vandy MOUNG, Rachel Juay and Jessica Tribbe (2024), Jumping up the sanitation ladder in rural Cambodia: the role of remittances and peer-to-peer pressure in adopting high-quality latrines, *PLOS Water*, col. 3, no. 5, e0000151. [10.1371/journal.pwat.0000151](https://doi.org/10.1371/journal.pwat.0000151)

Referenced data

- FAO Aquastat, last accessed 17 May 2024. URL: www.fao.org/aquastat
- UN-Water SDG 6 Data Portal, last accessed 17 May 2024. URL: www.sdg6data.org
- World Bank Open Data, last accessed 17 May 2024. URL: <https://data.worldbank.org/>
- WRI Aqueduct 4.0, last accessed 17 May 2024. URL: www.wri.org/aqueduct

Acknowledgments

Institutions whose representatives participated in the preparatory webinar and interviews: MoWRaM, MISTI, MRD, Ministry of Planning, Cambodia National Mekong Commission, PPWSA, Tonlé Sap Authority, UN Resident Coordinator's Office, UNICEF, FAO, UN Human Settlements Programme (UN-HABITAT), UNDP, UNESCO, World Bank, ADB, Cambodia Australia Partnership for Resilient Economic Development (CAPRED), AFD, JICA, Global Water Partnership (GWP), GRET, International Development Enterprises (IDE), The Stone Family Foundation, CWA, Institute of Technology of Cambodia (ITC), University of Glasgow

Special thanks to: Chim Kosal, Michele Paba, Asit K. Biswas, Virak Chan, Souraya Chenguelly, Lay Chhan, Kong Chhuon, Marc Goichot, Siti Hasanah, Tony Hel, Ratanak Hoeun, Navy Hort, Phyrum Kov, Tyler Kozole, Minh Lim , Sambo Lun, Solieng Mak, Claire Meyer, Terra Michaels, Léa Musso, Te Navuth, Chantha Oeurng, Chandarany Ouch, Rany Pen, Chreay Pom, Pilar Roig-Rotger, Jo Scheuer, Andrew Shantz, Sokly Siev, Rachel Situmorang, Thavin So, Phanna Sok, Thun Soriya, Nimol Soth, Thach Sovanna, Chhum Sovanny, Chanmeakara Suong, Sokchea Tan, Pheaktra Thlang, Phalla Thuch, Mola Tin, Aya Tokumoto, Cecilia Tortajada, Eam Sam Un, Kol Vathana, Thorchet Veyana, Samol Ya, Roitha Yong

Contributing members of the UN-Water Expert Group on the 2030 Agenda:
Colin Herron (GWP)

Suggested citation: UN-Water (2024), *SDG 6 Country Acceleration Case Study: Cambodia*, Geneva.

Notes



**United
Nations**

