



EVALUATION HIGHLIGHTS

Cambodia's cities faced with the challenge of drinking water supply

Scope Cross-evaluation of 3 drinking water supply projects in Cambodia (Phnom Penh and Siem Reap)

Total amount € 70.7 M

Period 2013-2020

Evaluation conducted by SCE Aménagement & Environnement (lead partner)*

Since the early 2000s, Cambodia has undergone sustained urban development, leading to a steady increase in water demand. To meet this challenge, AFD has provided support to Cambodia since 2002 in the piped water supply sector. Following a cross-evaluation of three projects, AFD can now draw lessons for improving its interventions.

Background

The water supply sector represents a significant share of AFD Group's activity in Cambodia (37% of its commitments since 1993). The three projects were considered vital both for urban development and for improving the living conditions of local residents. Their cross-evaluation had the dual objective of informing AFD's dialogue with its Cambodian partners and identifying ways of improving future projects.

Two of the projects evaluated concerned the capital, Phnom Penh, where the population grew from 1.5 to 2.3 million between 2005 and 2020:

- The Greater Phnom Penh Water Supply Project (2013–2018), known as "Niroth 2", sought to expand the production capacity of the Niroth 1 water treatment plant.
- The project to extend Chamcar Morn's water production facilities and distribution network (2016–2019) was launched following the saturation of the Niroth station.

Both projects were led by the Phnom Penh Water Supply Authority (PPWSA), a long-standing AFD partner.

The third project involved the supply of drinking water to Siem Reap (2015–2020). Led by the Siem Reap Water Supply Authority (SRWSA), its purpose was to provide an urgent response to the growing local demand for water, pending completion of a plant financed by the Japanese International Cooperation Agency (JICA).



Training is an essential component of the projects. Here, a laboratory technician checks water quality at the renovated Chamcar Morn plant.

The key results of the 3 projects

→ **Functional infrastructure has been set up and is producing quality water**

+182
million liters of water per day in Phnom Penh, thanks to the expansion of the Niroth (130 million l/d) and Chamcar Morn (52 million l/d) plants

+15
million liters of water per day in Siem Reap produced by the urgently built plant, bringing total production to 30 million l/d

→ **Users have increased in number and are generally satisfied with the service**

+130,000
connections
in Phnom Penh

+5,120
connections
in Siem Reap

- In Phnom Penh, nearly 85% of users are satisfied, as reflected in the increase in consumption, with users using practically only the PPWSA network for household purposes (cooking, bathing, etc.). This has enabled savings in time and energy as well as improved hygiene.
- In Siem Reap, connection to the piped water supply has transformed daily habits, although private boreholes are still sometimes used concomitantly. Among the population not connected to the network, only 11% refuse to be connected (half of them for cost reasons).

FOCUS

ACCESS TO DRINKING WATER IN URBAN AREAS: TARGET OF 100% BY 2025

In Cambodia, access to safely managed drinking water services remains low (57% in urban areas, 17% in rural areas in 2020). Furthermore, although 75% of Cambodia's population remains rural, urbanization is growing rapidly – and with it the need for urban water supply.

In response, the Cambodian government has referred to the Sustainable Development Goals (SDGs) and set the target of achieving 100% access to safely managed water services for urban populations by 2025. All three projects evaluated work toward achieving this objective.

Evaluation conclusions



Socio-economic impacts

- **The projects were relevant and necessary** in order to extend piped water supply services, supply drinking water, and thereby improve the quality of life for the people of both cities.
- **Users can benefit from different water tariffs** depending on their consumption and social category. They consider the tariffs **affordable** overall. Social policies (including a subsidy for connection) and communication campaigns on the importance of running water have had a positive influence.

Sustainability of the intervention

- **Ex-ante feasibility studies assessed the projects' environmental impact**, identifying possible negative effects and proposing adaptation measures.
- **The projects enhanced the skills of water supply authority staff** at various levels (technical operations, management, finance, etc.), which is considered by other authorities as a model to follow. For all three projects, training was conducted by the consulting firm involved (Safege, now SuezConsulting) and the construction company (Vinci).

AFD's added value

- AFD is able to **mobilize funds in a short space of time for large-scale projects**. For example, it accelerated its procurement procedures in response to the urgent situation identified in Siem Reap.
- AFD has established **lasting and trusted partnerships with water authorities**. It is viewed as a flexible partner that understands the issues and challenges facing the sector.
- **Its commitment to capacity building in Cambodia is appreciated** and has been crucial to achieving the project objectives.



- **Some users do not want to be connected** to the network. Others are connected, but sometimes must continue to rely on private boreholes. This is the case for tourism businesses with higher consumption (e.g., hotels), for example.
- **Communication campaigns did not reach all residents**, and the messages could have been adapted to the user category, e.g., large companies are more sensitive to environmental arguments, while private users are more attentive to price.
- **Raw water quality could become a source of concern**. In Phnom Penh, the sludge discharge point is close to the raw water intake point, which could lead to raw water pollution. In Siem Reap, raw water quality has deteriorated, negatively affecting the treatment process.
- The Covid-19 pandemic led to the cancellation of several training sessions. Furthermore, the **training methods were not always adapted** to the PPWSA personnel profiles, and SRWSA's training needs remain significant.
- In Siem Reap, an effort was made to ensure coherence and complementarity with parallel projects led by JICA and the Asian Development Bank (ADB). However, the evaluation reveals **conflicting technical approaches and a lack of coordination**.

FOCUS

IN SIEM REAP, A DUAL CHALLENGE OF ACCESSING WATER AND PRESERVING CULTURAL HERITAGE

In 2014, less than 20% of Siem Reap's population was connected to the piped water network. Faced with the growth in population and tourism there, it became urgent to replace unregulated private boreholes with a supply controlled by the public authorities. A second challenge was that of preserving cultural heritage, as groundwater extraction could ultimately compromise the stability of the Angkor temples.

By 2020, the percentage of the population connected to the network reached 37%. However, 43% of users continue to use a private well concomitantly. The possible impact on the temples could not be measured due to lack of data.



"Being connected to the network water is much easier because no effort is needed to pump water from the well. In the last 2 years, the network water has improved its quality compared to when I first connected."

(household user connected to the network since 2008)

"In normal times, we use water from the network but it is sometimes not enough so we still rely on water from a private well (...) We only use it when the network can't provide us with enough water and we almost haven't used it since the beginning of the pandemic."

(person responsible for a hotel in the city centre)

RECOMMENDATIONS

- **Possess a comprehensive view of water resources**, their condition, and their use.
- **Co-finance projects with other donors** rather than work on parallel projects.
- **Develop alternative financing methods and simplified national procedures** to respond more flexibly to urgent or rapidly changing needs.
- **Ensure that affordable tariffs do not undermine the long-term financial capacity** of the water supply authorities.
- **Improve capacity building impact** by developing a training plan.
- **Rethink communication campaigns** to encourage lasting changes in user behavior.
- **Share best practices** in urban development.

CONTACT

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