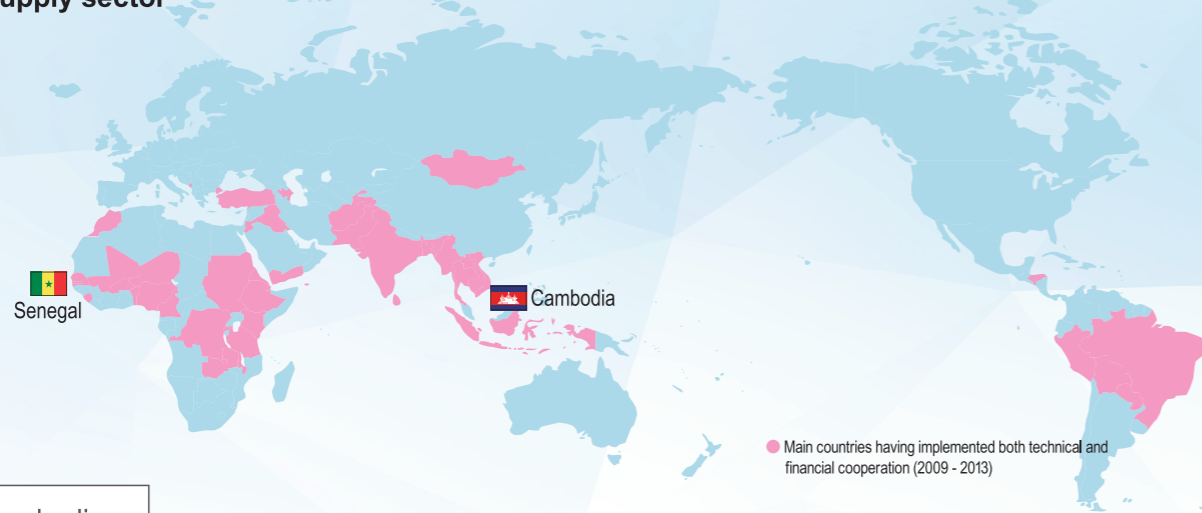


**Safe water to the world
Our broad support
in the water supply sector**

JICA is supporting the water supply sector in developing countries, comprehensively employing a variety of modalities, from the construction of facilities to improvement of management capacity, by capitalizing on the strength of Japan's technology.



 **Cambodia**

“The Miracle of Phnom Penh,” brought into reality by Japan’s support

In the Cambodian capital of Phnom Penh, Japan took the lead in supporting the reconstruction and expansion of the water supply facilities of the Phnom Penh Water Supply Authority (PPWSA), and in rebuilding its technical and management capacity after the end of civil war in 1991. JICA supported the formulation of the Phnom Penh water supply master plan in 1993. While coordinating with other development partners, JICA has been assisting the PPWSA by combining three types of aid modalities in accordance with progressive development stages. The three types are grant aid for urgent restoration and expansion of the facilities, technical cooperation in partnership with Japan's water supply utilities, and ODA loan for further facility expansion. As a result, the water supply coverage expanded from 20% (1993) to 90% (2012) providing drinkable water from the tap, while the non-revenue water ratio reduced from 72% (1993) to 6.6% (2012). The success story of the PPWSA has been highly acclaimed worldwide and is called "the Miracle of Phnom Penh." Taking one bold step further, JICA has been expanding its support to the provinces in order to spread the success of Phnom Penh to those provincial capitals through the combination of technical and financial cooperation.

1993	The Master Plan Study on Phnom Penh Water Supply System (fundamental roadmap for development)
1994-1996	The Project for Improvement of Water Supply Facilities in Phnom Penh (urgent rehabilitation of Phum Prek Water Treatment Plant by grant aid)
1997-1999	The Project for Improvement of Water Supply Facilities in Phnom Penh (Phase 2) (urgent replacement of old pipe network by grant aid)
2001-2003	The Project for Expansion of Phum Prek Water Treatment Plant (urgent expansion by grant aid)
2003-2006	The Project on Capacity Building for Water Supply System (Phase 1) (human resources development by technical cooperation)
2004-2006	The Master Plan Study for Greater Phnom Penh Water Supply (update of the master plan)
2004	"Safe water declaration" (achieve water quality drinkable from the tap)
2006	General Director of the PPWSA awarded "Magsaysay Award"
2009-2014	Niroth Water Supply Project (facility expansion by ODA loan)



 **Senegal**

Towards a self-sustainable water supply system led by community users associations

For more than 30 years Japan has extended grant aid for constructing water supply facilities in over 120 locations in Senegal. This corresponds to over 10% of the same type of facilities throughout Senegal, enabling 350,000 people in rural areas to access potable water. In addition, a series of technical cooperation projects supported the establishment of an operation and maintenance system of the facilities managed by the local people themselves, organizing water users associations to collect and save water fees, and repair the facilities when they breakdown. The associations, inclusive of women and ethnic minorities, also contribute to their community development such as income generation activities. The approach to organize the water users associations was legislated in Senegal, and now it is prevalent across the country.



Photos: JICA

— Japan Brand ODA —

Water supply:
the foundation for precious lives and livelihoods

Safe Water for All



Water is essential for human life and health. Water is also fundamental to all human activities including agriculture, industry and our living environment. However, many people in the world are still struggling to obtain water for their lives and livelihoods. JICA attaches great importance to water issues, as it is crucial in realizing human security. By scrutinizing and understanding the local needs and problems with people in developing countries, JICA advances comprehensive cooperation integrating both infrastructures and capacity development, taking advantage of Japanese experiences in the public and private sectors.



Unique know-how, experience and technologies originating in Japan and cultivated at international cooperation sites around the world are proving useful in the field in many developing countries. JICA is disseminating these methods and program models that are effective for solving problems to the rest of the world as the Japan Brand of international cooperation and promoting its use.



Of the 17 Sustainable Development Goals (SDGs), strongly associated goals are shown in color.

The fact is about 663 million people in the world lack access to improved sources of drinking water

According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), the proportion of people without access to improved drinking water sources, is said to have decreased from 24% in 1990 to 9% in 2015 (*1). However, there still remains people using unimproved sources of drinking water as many as about 663 million in 2015 (*1). Even in today's world, there are still people who have to use turbid and unhygienic water, women and children who are forced to fetch heavy water spending several hours every day, and people who are suffering from intermittent water supply service of only a few hours per day or per week.

Water-related problems also affect a number of development issues such as sanitation, health, education, poverty, and gender. An increase in water demand due to population growth, urbanization and expansion of irrigated farmland for food production, leads to a wider supply-demand gap. In recent years, the serious impact of climate change on water resources has become a threat. It is said that by 2025, half of the world's population will be living in water-stressed areas (*2).

(*1) Source: WHO / UNICEF 25 Years Progress on Sanitation and Drinking Water - 2015 Update and MDG Assessment
 (*2) Source: WHO Fact sheet N° 391 June 2015
 (*3) Source: United Nations The Millennium Development Goals Report 2015
 (*4) Source: WHO

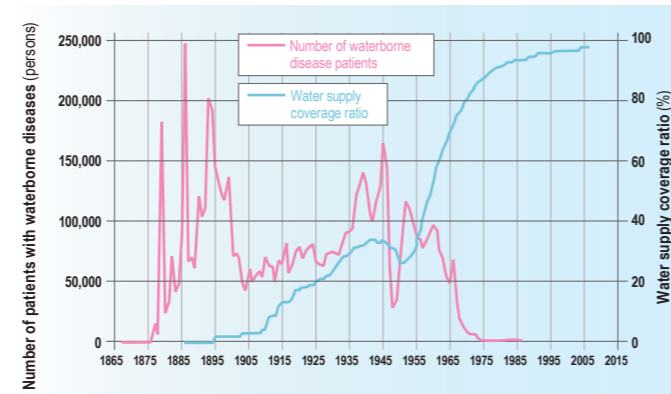


Japan's water supply service at the highest level in the world

Modern water supply in Japan started at Yokohama in 1887, followed by Hakodate, Nagasaki and other harbor cities, and then expanded to other major cities. Although its development stagnated during World War II and its aftermath, the service coverage showed remarkable expansion from the 1950s to the 1970s. Today, universal access to tap water has been nearly achieved, reaching a coverage of 97.5% as of 2013.

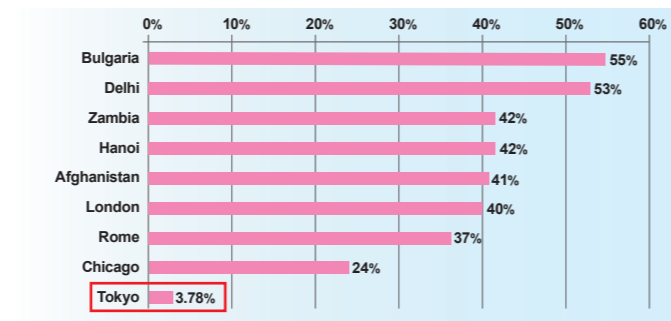
The water supply system in Japan is a world-class advanced system in terms of not only its high coverage but also good water quality and the remarkable low water leakage. Almost all the Japanese people can enjoy a continuous and stable water supply twenty-four hours a day, seven days a week, which is drinkable directly from the tap. A well-managed water supply service has significantly contributed to the improvement of health and hygiene conditions in Japan. The number of patients with waterborne diseases, such as cholera and dysentery, has drastically dropped with each passing year. Currently, Japan benefits from a hygienic living environment in which few people get infected with waterborne diseases within the country. While even some cities in developed countries are plagued by a more than 30% water leakage ratio, Tokyo has made a great effort to significantly reduce the leakage ratio from about 80% in the devastation after World War II to an astonishingly low level of 3% today, which is recognized as one of the world's most advanced urban water supply models. These high level water supply services are realized by thorough Japanese-style quality management, consistently covering from the water source to the tap.

Relationship between water supply coverage ratio and the number of waterborne disease patients in Japan



Source: "Outline of Water Supply" Japan Water Works Association (in Japanese)

Non-revenue water (NRW) ratios for cities/countries in the world(*1) (*2)



(*1) Source: NRW (non-revenue water) is the amount of water not subject to billing from the total amount input into the water supply system, including physical loss due to leakage from pipes and service reservoirs as well as unbilled water usage due to illegal connections and a lack or malfunction of water meters.
 (*2) Source: Smart Water Networks Forum (SWAN) "SWAN Research" (Chicago, London and Rome)
 - Japan Water Research Center (Tokyo) - IB-Net (other than the above-mentioned cities)



-JICA's approach- Towards a safe and sustainable water supply

Water issues in developing countries encompass numerous challenges such as safe drinking water, irrigation for food security, flood control, and water pollution. Among them, safe drinking water is attached primary importance for achieving human security; therefore Japan continuously contributes as the largest development partner in the water supply sector.

In order to improve water supply in developing countries, JICA provides comprehensive cooperation integrating both hardware and software. JICA supports not only (1) constructing water-supply facilities,

but also (2) developing capacity of management at water supply utilities in urban areas, (3) strengthening operation and maintenance capacity of water users by establishing water users associations in rural areas, as well as (4) improving the administrative functions to support them. As a result, 46 million people got access to improved water supply facilities in the 10 years from 2004 to 2013, and more than 32,000 water engineers were trained in the 8 years from 2006 to 2013 with JICA's assistance.

[Urban water supply] Sharing the know-how and technology of Japan's water supply system

In developing countries, the concentration of population in cities is increasing, which makes urban water supply a more important issue as it is crucial to provide vital water to those people and stimulate economic activities as well. JICA leverages the operational know-how of Japan's water supply utilities, which boast a high level of services such as a supply of drinkable water 24 hours a day, and an average of less than 10% of non-revenue water ratio (*1), in order to extend total support for urban water supply. It starts from the formulation of a master plan, to the construction of reliable water supply facilities, capacity development at water supply utilities to operate and maintain those facilities, and the improvement of the water service management.

In addition, JICA dispatches experts from Japanese water utilities in local governments and organizes training courses in Japan to address a variety of problems and needs in developing countries.



(*1) Source: Japan Water Research Center "Suido hot news" No. 344 (December 14, 2012, in Japanese)

[Rural water supply] Supporting the establishment of a community-led water supply system

About 79 percent of people without access to improved sources of drinking water (about 520 million people) reside in villages, making rural water supply a major issue in the world. However, even after constructing water supply facilities, their breakdown hinders sustainable use and forces villagers to go back to inconvenient and unhygienic living conditions; consequently a management system that maintains the water supply system needs to be established. JICA supports strengthening a sustainable operation and maintenance system led by the community, ensuring the collection and saving of water fees by users and a response to breakdowns.

Furthermore, resolving the water problem contributes to solving a wide range of issues, such as health, education, poverty, and gender, through hygiene promotion and the reduction of labor to fetch water.



The training at water supply utilities in Japan greatly contributes to the improvement of water supply services

With the cooperation of Japan's leading water supply utilities, JICA implements the training of managers and engineers from water supply utilities of developing countries, in Japan. JICA's training programs offer a variety of opportunities, through lectures and practices, to learn about organizational management, advanced technology, and the customer-oriented professional imperative of Japan's water supply utilities to deliver safe and stable water to the public. Each water supply utility carries out the cooperation taking advantage of its particular regional characteristics. The relationship cultivated through the training program sometimes leads to a new project.

Features of water service training in Japan

- Point 1** Acquisition of the advanced know-how of Japanese water supply utilities
- Point 2** Introduction of Japanese products and technology through plant tours and seminars
- Point 3** Continuous relationship between Japanese water supply utilities and trainees from developing countries

