

IMPROVING WATER MANAGEMENT: RECENT OECD EXPERIENCE

EXECUTIVE SUMMARY

Poor water management poses a serious challenge to sustainable development worldwide...

There is widespread concern that poor water management will be one of the major factors limiting sustainable development during the next few decades. Water shortages are common in many regions, and are exacerbated by the pollution or degradation of many water bodies. There are conflicting demands for available water resources, both between human, economic, and ecosystem needs and between regions sharing a single water basin, in some cases leading to geopolitical security threats. World population roughly doubled over the last 50 years, while water consumption worldwide quadrupled. With urban populations growing faster than rural populations, the financial pressures on urban water utilities is intensifying.

... with significant scarcity in some areas restricting human use of water resources...

Securing safe, reliable, reasonably priced water and sanitation services for all is one of the leading challenges facing sustainable development. At the beginning of the 21st century, 1.1 billion people still do not have access to safe water and 2.4 billion lack access to basic sanitation. There are internationally agreed targets to halve these numbers by 2015, set as part of the Millennium Development Goals and the Plan of Implementation of the World Summit on Sustainable Development, respectively.

... and degrading ecosystems.

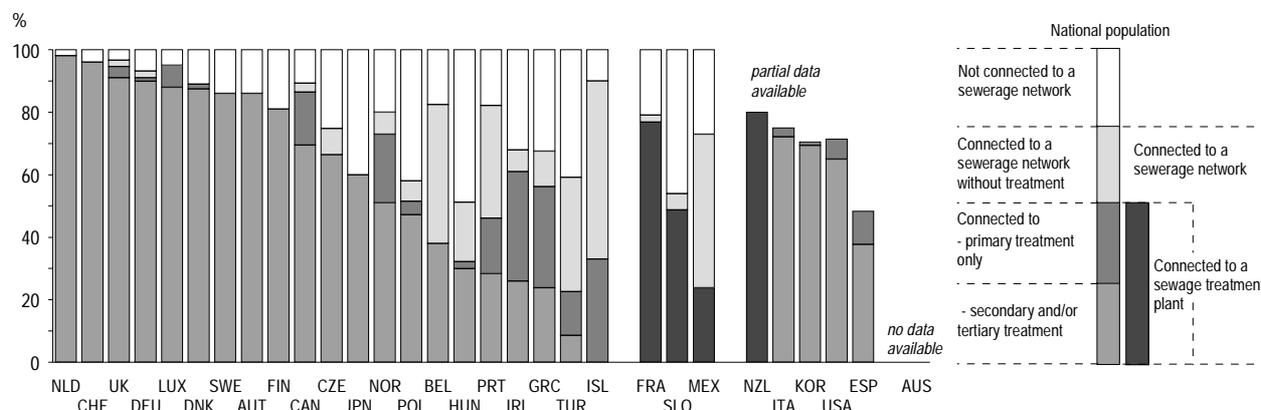
Meeting these basic human needs is only part of the challenge; increasingly, attention is also focusing on the importance of assuring sufficient water flows in the environment to support essential ecosystem services. In the developing world, 90% of all wastewater still goes untreated into local rivers/streams. An estimated 47 countries (with roughly one-third of the world's population) are classified as suffering medium-high or high water stress. Of these, 17 already extract more water annually than is recharged through their natural water cycles. The increasing pollution of some water bodies further restricts available supplies, and degrades water-dependent ecosystems and the services they provide.

In OECD countries, many surface freshwater bodies still do not meet baseline quality standards, while degradation of groundwater resources appears to be worsening. Pollution of water bodies by farm nutrients and chemicals is an increasing problem, as is contamination by heavy metals and persistent organic pollutants. Subsidies for water use continue to exacerbate problems of overabstraction and pollution. The lack of adequate financing hampers the maintenance, upgrading, and expansion of water supply and sanitation systems. While access to water services has increased significantly, many OECD countries now face concerns about their affordability.

But some progress is being made.

Despite these negative trends, some progress is being made. For example, OECD countries have significantly reduced industrial and urban discharges to waterways, with the total share of the population connected to public wastewater treatment plants in OECD countries reaching an average of 65% (see figure), and many of the rest using private sewage treatment. OECD countries have also cleaned up a number of the worst polluted freshwater bodies. They have increased their water use efficiency, with several realising overall reductions in water use over the last two decades. Many have started to apply more integrated approaches to water management, following a "whole-basin" or "ecosystem" approach.

Sewerage and sewage treatment connection rates
(latest year available)



Source: OECD.

Important lessons can be drawn from experience...

Some of the main lessons for improved water management that OECD countries have learned through their experiences include: making wider use of markets; improving the coherence of decision making; harnessing science and technology; and working in partnership with developing countries to address internationally shared objectives (see box).

Key Elements of Effective Water Management

Making Markets Work

- Ensure that financial resources are adequate.
- Levy charges that reflect the real marginal costs of water service provision, and thus provide incentives for efficient water use.
- Address any negative social impacts of water pricing policies.

Improving the Coherence of Decision Making

- Apply integrated "whole-basin" and ecosystem approaches.
- Work with the private sector.

Harnessing Science and Technology

- Improve technologies for protecting drinking water quality.
- Improve the efficiency of water use.

Working in Partnership with Developing Countries

- Support international water goals.

Making better use of water pricing mechanisms, ...

Water pricing structures and price levels vary greatly among OECD countries due to differences in availability of water resources, in demand, and in institutional and cultural frameworks. In general, OECD countries are moving towards water pricing schedules that reflect the full marginal costs of providing water services, and systems that better target available support to low-income users. These developments help provide incentives for

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efficient water use and generate funds for necessary infrastructure development and expansion, while assuring affordable water services for all.

... including reform of water subsidy programmes (e.g. in agriculture), ...

While pricing structures for municipal and industrial water services increasingly reflect the full costs of providing the services, agricultural water use – primarily for irrigation – remains heavily subsidised, which encourages inefficient use of often scarce resources.

...while addressing any social impacts of water pricing policies.

Concern about the affordability of household water services for vulnerable groups (e.g. low-income households and retired people) has led to the development of policy measures aimed at resolving affordability problems while still meeting economic and environmental goals. In general, policies that target specific vulnerable groups – such as through income-related support – have been found to be more efficient at achieving all three objectives than across-the-board subsidies.

Experiences in non-OECD countries illustrate difficulties in funding the maintenance and expansion of water infrastructure.

Recent OECD work has examined water pricing policies in the countries of Eastern Europe, the Caucasus, and Central Asia (EECCA), and in China. Unlike most OECD countries, many of these countries face serious financial deficits in the water sector. This results in underfunding of necessary maintenance and expansion of water and wastewater treatment infrastructure. In the EECCA countries the extensive water infrastructure left from the communist period is deteriorating significantly, resulting in reduced service quality and increased health and environmental risks. These countries face significant problems maintaining the existing infrastructure, let alone expanding it. OECD work with EECCA countries and China is currently focusing on developing realistic plans to finance infrastructure maintenance and expansion through application of water charges, in combination with other available financing.

Coherent decision making requires more integrated water management...

Many OECD countries have significantly changed the institutional and management structures through which their water services are provided. These changes have included a move towards more integrated approaches to water management, including managing resources across the full river basin (i.e. using a “whole-basin” or “ecosystem” approach). For most of these countries, comprehensive frameworks of water management laws, policies, programmes, and institutions have been established, and enforcement of water regulations has been strengthened.

...and increased local autonomy and private sector participation.

Today, the average range, level, and quality of water services provided in most OECD countries is quite impressive. While most water and wastewater systems remain publicly owned, there is a growing industry of private service providers that compete for the right to finance, build, manage, and operate facilities. Another increasing trend is towards management autonomy by water utilities, reflecting a shift in the role of governments away from being the “provider” of water services and towards being the “regulator”. While this trend has generally been accompanied by an increased role for the private sector, ownership responsibility most often remains in public hands. The most widely used system has been the “concession” model, under which private companies with access to finances and technical know-how operate and manage publicly owned water utilities.

Harnessing science and technology is also important...

Many new scientific and technological developments have been helping to increase the efficiency of use of available water resources, to reduce emissions of pollutants to water bodies, and to improve purification of drinking water. The OECD has worked extensively on the development of technological advances in this last area. Inadequate drinking water supply and poor water quality and sanitation are among the main causes of preventable

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...particularly for improved drinking water quality.

OECD countries also contribute to resolving water problems that are more global in nature.

The OECD continues to work towards better water management and the achievement of internationally agreed water goals.

morbidity and mortality in the world. Some 5 million deaths a year are due to polluted drinking water, with infants and children particularly at risk. While the majority of these deaths occur in developing countries, OECD countries are not immune to outbreaks of water-borne disease. Major outbreaks of gastrointestinal illness have occurred in the last decade in OECD countries. The development and use of reliable drinking water management systems and technologies are essential in assuring the microbiological safety of drinking water supplies.

Meeting the huge financing needs for the maintenance and expansion of basic water services is a key priority recognised in the Millennium Development Goals and at the World Summit on Sustainable Development. An estimated USD 75 billion per year is needed to expand water service infrastructure, beyond the costs of maintaining existing systems. Total development assistance allocations to the water sector have been averaging about USD 3 billion a year, with an additional USD 1-1.5 billion in the form of non-concessional lending. Clearly there is a large financing gap.

The OECD is undertaking a number of activities to enhance water management policies in OECD and non-OECD countries alike, basing this work on recent experiences. Much of this activity supports internationally agreed water goals, including those on access to drinking water and sanitation. Current projects involve:

- Comparing performances of OECD country water management systems, using the results of OECD Environmental Performance Reviews, as well as peer reviews of country regulatory reforms and economic development.
- Addressing social issues related to water pricing policies, including the need to alleviate negative distributive effects.
- Assessing the utility of transferable permits in managing water use and pollution.
- Strengthening management and technical systems to assure microbiological drinking water quality.
- Measuring and managing water use and water pollution in agriculture.
- Supporting the development of stable financing plans for water and wastewater infrastructure expansion and maintenance in non-OECD countries.
- Assessing levels and effectiveness of aid for the water sector in non-OECD countries.

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