Asian Water Development Outlook 2013

Measuring Water Security in Asia and the Pacific

ADB

Asia-Pacific Water Forum
Prosperity in jeopardy?

More than 90% of the people in Asia and the Pacific are without water security

The Asian Water Development Outlook 2013, published by the Asian Development Bank (ADB) and the Asia-Pacific Water Forum (APWF), provides leaders in the region with the first quantitative and comprehensive analysis of water security on a country by country basis. AWDO 2013 examines all dimensions of water security from the household level to water-related disasters, and uses indicators and a scaling system to rank the progress of each of the 49 countries assessed.

The study found that more than 75% of the countries in Asia and the Pacific are experiencing a serious lack of water security, with many of them facing an imminent water crisis unless immediate steps are taken to improve management of water resources.

AWDO 2013 reveals that 37 developing countries in the region are either suffering from low levels of water security or have barely begun to engage in the tasks essential for improving water security. Of these, 8 countries have water security levels that are rated as hazardous. The other 12 countries assessed are establishing the infrastructure and management systems necessary for water security. Of these, only two countries are rated at the effective stage. None of the countries in the region were found to have reached a “model” stage of water security.

“While the Asia-Pacific region has become an economic powerhouse,” observed Bindu Lohani, ADB’s Vice-President for Knowledge Management and Sustainable Development, “it is alarming that no developing country in the region can be considered ‘water-secure.’ Countries must urgently improve water governance through inspired leadership and creative policymaking.”

In 2007, the first edition of Asian Water Development Outlook stated that if some developing countries in Asia and the Pacific face a water crisis in the future, it will not only be because of physical scarcity of water, but because of inadequate or inappropriate water governance. The 2013 edition highlights two stark realities resulting from insufficient improvements in water governance since 2007—a sharply rising inequality in access to safe drinking water supply and sanitation, and the increasingly precarious state of rivers.

South Asia and parts of Central and West Asia are found to be faring the worst, with rivers under immense strain and a growing inequity in water and sanitation services. Many communities in the Pacific Islands continue to lack access to safe piped water and decent sanitation and are highly vulnerable to increasingly severe natural disasters. By contrast, East Asia, although exposed to frequent water-related hazards, is relatively more secure as a result of higher investment in disaster defences, but urban water security remains poor in many cities and towns across the region.
National Water Security

Household Water Security
Key Dimension 1
- Access to piped water supply
- Access to improved sanitation
  - Hygiene

Economic Water Security
Key Dimension 2
- Agricultural water security
- Industrial water security
- Energy water security

Urban Water Security
Key Dimension 3
- Water supply
- Wastewater treatment
- Drainage

Resilience to Water-related Disasters
Key Dimension 5
- Exposure
- Vulnerability
- Hard coping capacities
- Soft coping capacities

Environmental Water Security
Key Dimension 4
- Watershed disturbance
- Pollution
- Water resource development
- Biotic factors
Assessing Water Security

The Key Dimensions
Assessment in 5 dimensions reveals the interaction between uses and the need for integrated solutions.

Household Water Security
To satisfy household water supply and sanitation needs in all communities.

Economic Water Security
To support productive economies in agriculture, industry, and energy.

Urban Water Security
To develop vibrant, livable cities and towns.

Environmental Water Security
To restore healthy rivers and ecosystems.

Resilience to Water-related Disasters
To build resilient communities that can adapt to change.

80% of Asia's rivers are in poor health, jeopardizing economies and the quality of life. $1.75 trillion in ecosystem services per year are threatened.

In Asia and the Pacific, agriculture accounts for 79% of annual average water withdrawals.

In South Asia, as little as 22% of wastewater discharges are treated, making it a hot spot for the growth of livable cities.

90% of people affected by water-related disasters live in Asia.

In Asia and the Pacific, more than 60% of households live without safe, piped water supply and improved sanitation.

Around the Region
With the world's lowest per capita availability of freshwater, Asia and the Pacific need to resolve critical water security issues.

Subregional Status
Leadership in governance and investments can reduce hotspots of water insecurity.
Assessing Water Security

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National Water Security Index

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Reversing the inequity calamity

More than 60% of households still live without safe, piped water supply and improved sanitation. South Asia and Pacific Islands are regional hot spots with the lowest coverage. South Asia has the highest inequity of coverage between rich and poor and urban and rural households. Many countries should double the current rates of investment in sanitation. Investment of $25 per person will finance basic access to safe drinking water and improved sanitation. Research shows a dollar invested in water and sanitation is likely to return $5 to $46 in reduced health care costs and increased economic productivity.

Boosting water productivity

Water demand from industry and cities is the fastest growing demand in the region; however agriculture dominates abstractions from surface and groundwater systems, accounting for 79% of annual average water withdrawals. Corporatizing water utilities to improve their efficiency and expand sanitation coverage is a viable means to accelerate and increase investment. Service-oriented agricultural water management will also improve the sustainability of water resources. Countries must require service providers to make urgent investments to reduce water losses due to leakages and non-revenue water. The region needs to invest $59 billion for water supply, $71 billion for improved sanitation, and more for water resources management to bring water security to acceptable levels.

Cleaning up Asia’s freshwater resources

Asia has the lowest per capita availability of freshwater and yet around 80% of Asia’s rivers are in poor health, jeopardizing economies and the quality of life. Deteriorating health of rivers means that about $1.75 trillion in ecosystem services per year are threatened. Across the region, most wastewater is discharged directly into rivers, lakes and groundwater untreated or, at best, only partially treated. As little as 22% of wastewater discharges are treated in South Asia, making the region a hot spot where—without urgent action—the growth of livable cities will be delayed. Public investment, market-based approaches, and support from the private sector are needed to reduce pollution and finance the restoration of healthy rivers. Every $1 invested in a river restoration program can return more than $4 in benefits.
Building resilience to disasters

Around 90% of people affected by water-related disasters live in Asia. South Asia and the Pacific face the highest risk and are the least resilient. The cost of flood disasters in the region has increased over time, with estimated damages exceeding $61 billion in 2011. Countries can save lives and reduce economic losses from water-related disasters by investing in upgraded infrastructure and modern flood forecasting and early warning systems that reach local communities to “the last mile”; and in many rivers by sharing information across national boundaries.

Transform governance—or regress

It is clear that the current levels of investment, coupled with outdated policies and institutions, are failing to deliver improved water security for hundreds of millions of people. The figure below illustrates the general trend between governance and national water security, with a few notable exceptions for Pacific island countries with low water-related disaster resilience. The study highlights the urgency to find ways to increase the productivity of water by recycling “used water,” making people more water-wise, upgrading irrigation systems and services, strengthening the management of river basins and regulating groundwater use, engaging with the private sector to invest in river clean-up, and improving disaster risk management. AWDO 2013 presents a number of policy measures that would improve water security and mitigate the growing pressure from booming populations, urbanization, pollution, over-extraction of groundwater, climate change, and other factors.

More than 90% of the region’s population are without water security. By deciding and supporting the urgent actions required to increase water security for all, the region’s leaders can ensure that the social and economic gains of the recent decades are not jeopardized.

“Water supports health and livelihoods, grows our food, powers our industry, and cools our generating plants, and these different uses can no longer be seen in isolation from each other,” said Ravi Narayanan, Vice-Chair of the APWF Governing Council. “Unless these competing needs are balanced, water security will remain elusive, undermining development gains and the quality of life for billions of people in the region, especially the poor.”

Asian Water Development Outlook 2013: Measuring Water Security in Asia and the Pacific

This 2nd edition of the Asian Water Development Outlook (AWDO) provides the first quantitative and comprehensive view of water security in the countries of Asia and the Pacific. Prepared for leaders and policy makers of finance and planning departments, AWDO 2013 introduces a comprehensive framework to measure water security as a foundation for creating a water-secure future for the people of Asia and the Pacific.

AWDO 2013 was prepared by a team of ten leading water knowledge organizations in Asia and the Pacific, guided by specialists drawn from all five subregions. Part I introduces the five key dimensions of water security and presents indicators for assessment of national water security. Part II demonstrates how countries measure up against the AWDO vision of water security, discusses what is at stake, and introduces policy levers to increase security. Part III presents key messages for political, water sector, and civil society leaders to guide actions on water security nationally, in river basins, and in communities.

About the Asian Development Bank

ADB’s vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region’s many successes, it remains home to two-thirds of the world’s poor: 1.7 billion people who live on less than $2 a day, with 828 million struggling on less than $1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

About the Asia-Pacific Water Forum

Created in 2006, the Asia-Pacific Water Forum (APWF) is an independent, not-for-profit, nonpartisan, and nonpolitical network dedicated to improving sustainable water management by championing best practices, boosting investments, building capacity, and enhancing cooperation throughout the Asia-Pacific region. Developing knowledge and lessons is central to the APWF approach.

Through a commitment to cooperation and solidarity, APWF aims to capitalize on the diversity of Asian and Pacific experiences with water issues to accelerate the integration of water resource management into the socioeconomic development of the region. At the first Asia-Pacific Water Summit held in Beppu, Japan on 3–4 December 2007, leaders pledged to improve governance, efficiency, transparency, and equity in all aspects of water management, particularly as it impacts poor communities.