Water for Shared Prosperity

Executive Summary

Fan Zhang and Christian Borja-Vega

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GLOBAL WATER SECURITY & SANITATION PARTNERSHIP

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EXECUTIVE SUMMARY

In 1997, thousands of people gathered in Marrakesh, Morocco, for the first World Water Forum to address an urgent problem: the global water crisis. The meeting resulted in the Marrakech Declaration, a pledge that called on the World Water Council to develop a "World Water Vision" for the 21st century. In 2024, thousands are convening in Bali, Indonesia, for the 10th World Water Forum. They will be addressing the same crisis. But if the water crisis was already acute nearly three decades ago, its urgency has become even greater today. Population and economic growth, coupled with environmental degradation and climate change, have greatly intensified the global water crisis, as the Republic of Indonesia's President Ir. Joko Widodo has remarked (World Water Forum 2024).

Indonesia and Morocco are worlds apart in many ways. As the world's largest archipelago, Indonesia is surrounded by water. On the other hand, Morocco is partly occupied by the Sahara, the world's largest hot desert. However, one reality these (and many other) countries share is water stress. The 10th World Water Forum is an invitation to consider the collective water issues in countries as different as Indonesia and Morocco and to draw parallels among them. But it is also about finding solutions. These solutions must work for rural farmers and urban dwellers across the world. They must stimulate economic growth, but they cannot end there. They must also improve the lives of the poor and marginalized, consider inclusive infrastructure, and tackle climate change. These tasks require inclusive actions, and hence the idea of water for shared prosperity, the theme of the 10th World Water Forum.

In that vein, "Water for Shared Prosperity," the global flagship report of the 10th World Water Forum co-published by the World Bank and the Government of Indonesia, aims to identify the water challenges and risks faced by the poorest and most marginalized populations and to inform policies that enhance water accessibility and climate resilience while alleviating poverty and boosting shared prosperity. Although various reports have covered water and development, this one fills a knowledge gap by exploring the connection between water and inclusive growth.

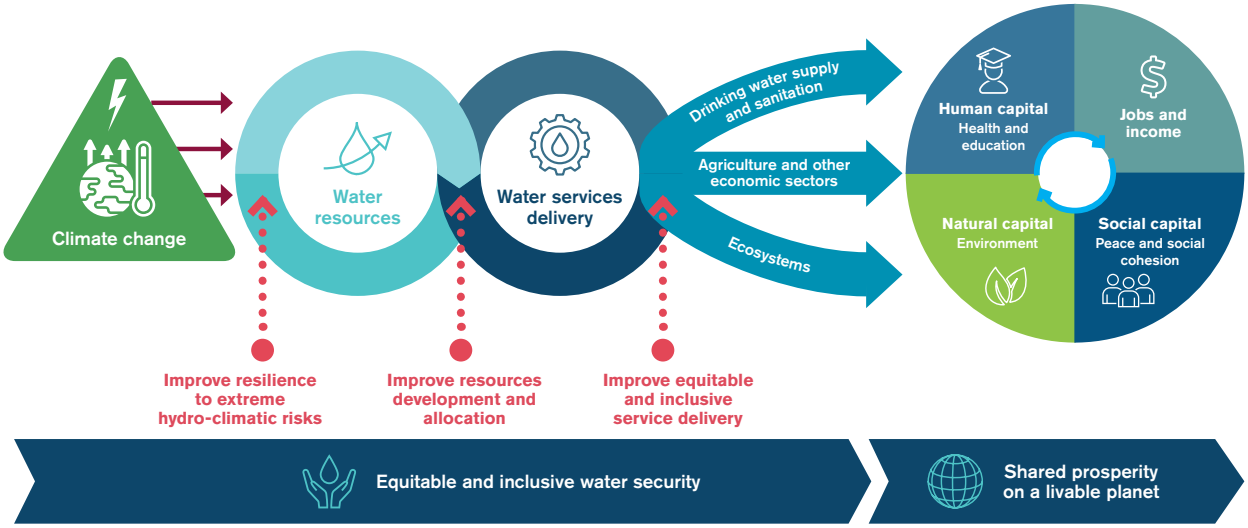
This report makes three major contributions. It (1) provides a conceptual framework to illustrate the relationship between water and shared prosperity; (2) presents new empirical evidence on the drivers, extent and costs of inequalities in water access, as well as disparities in the impacts of climate-related water shocks; and (3) identifies policy responses to improve water access, strengthen climate resilience, and promote shared prosperity on a livable planet.

WHY WATER MATTERS FOR SHARED PROSPERITY: A CONCEPTUAL FRAMEWORK

Prosperity is multidimensional. This report defines four interconnected building blocks of prosperity: health and education (human capital), jobs and income, peace and social cohesion (social capital), and the environment (natural capital). Water determines prosperity through three primary channels: as safe drinking water, as an essential input for various economic sectors, and as a critical support for ecosystems (Figure ES.1).

Heath and Education. Water is at the core of equality of opportunity for health and education. Numerous studies have established the causal link between safe and reliable water supply and various aspects of

FIGURE ES.1 Equitable and Inclusive Water Security for Shared Prosperity on a Livable Planet



Source: World Bank.
Note: Water security is defined as the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems, and production, coupled with an acceptable level of water-related risks to people, environments, and economies (Grey and Sadoff 2007). Water services include irrigation, water supply, and sanitation.

health (Andres et al. 2018; Maccini and Yang 2009; Shah and Steinberg 2017). Remarkably, through its impact on human capital accumulation, the effects of access to water resources and water services, particularly during the early stages of life, are long-lasting, often spanning multiple generations for vulnerable individuals and communities. For instance, a dry shock in infancy can trap subsequent generations in poverty and malnutrition (Damania et al. 2017). Children who grew up in homes with access to basic services like running water and sanitation are not only more likely to achieve a better education themselves but also tend to have children who attain higher levels of education (Gould, Lavy, and Paserman 2011).

Jobs and Income. Water is also an essential input in production, and its reliable supply has a significant impact on economic growth, jobs creation, and wages (Mueller and Quisumbing 2011; Mahajan 2017; Khan et al. Forthcoming). In developing countries, where farming and fishery are often the main livelihoods, employment disproportionately relies on water-intensive sectors and is sensitive to water availability. Water-intensive sectors are responsible for 56 percent of jobs in low-income countries and only 20 percent in high-income countries. In Sub-Saharan Africa, where water-dependent jobs account for 62 percent of total employment, low rainfall availability often leads to large negative GDP growth (Miguel, Satyanath, and Sergenti 2004; Petherick 2012).

Peace and Social Cohesion. The management and distribution of shared water resources can affect social cohesion and the risk of conflicts at local, national, and transboundary levels. If water resources are managed effectively and equitably, they can foster trust, inclusivity, and cooperation among communities, ultimately promoting peace. However, if mismanaged, water can act as a threat multiplier, exacerbating existing conflicts or leading to new conflicts. Countries with large populations, political exclusion of ethnic groups, and a low level of human development are usually more susceptible to civil unrest that can be triggered by water supply disruptions (Ide et al. 2020).

Environment. Water provides a habitat for aquatic life, fosters biodiversity, and allows nutrient transport within and among ecosystems. Water acts as a coolant to regulate temperature and influences or even defines weather and climate patterns. It creates landscapes through erosion and sedimentation. In short, water sustains life, fosters biodiversity, and makes our uniquely blue planet livable.

INEQUALITIES IN WATER ACCESS THREATEN BROAD-BASED DEVELOPMENT

Water is a crucial source of prosperity, but realizing its benefits requires sustainable management and development of water resources, along with equitable and inclusive delivery of water services. However, disparities in access to water resources and services are widespread. These challenges, further compounded by population growth, rapid urbanization, and climate change, pose a significant threat to shared prosperity.

By 2100, Africa's per capita freshwater resources are projected to be 64 percent lower than today. In contrast, Europe's are projected to be 0.4 percent higher. Low-income countries are also affected by higher seasonal rainfall variability, compounding their challenges in accessing reliable water sources. Globally, in 2022, 2.2 billion people lacked access to safely managed drinking water services; 3.5 billion people lacked access to safely managed sanitation (WHO/UNICEF JMP 2023); 1.7 billion people lacked basic water services at their health care facility (WHO/UNICEF 2022a); and close to 550 million children attended schools without basic water and sanitation services (WHO/UNICEF 2022b).

Although significant disparities in access to safely managed water and sanitation also persist in high-income countries (Mattos et al. 2021), the challenges are more formidable for low-income and least-developed nations. Countries with higher percentages of individuals living in extreme poverty also have higher percentages of people living without access to at least basic water and sanitation services. Despite an increase in global coverage, the access gap between the rich and poor remains large. In low-income countries, access has even regressed: in 2022, an additional 197 million people lacked safe drinking water, and 211 million lacked basic sanitation, compared with the year 2000. Eight out of 10 people who lack access to at least basic drinking water services and 7 out of 10 without access to at least basic sanitation services live in rural areas, and little progress has been made in closing the rural-urban access gap in low-income countries over the past two decades.

Unsafe water is a leading contributor to child mortality (Kremer et al. 2024). At the global level, during 2019 alone, poor WASH conditions contributed to between 1.4 and 4.2 million deaths and between 74 million and 204 million disability-adjusted life years (DALYs) due to diarrhea, acute respiratory infections, undernutrition, and soil-transmitted helminthiases (WHO 2023). Lack of access to WASH also affects optimal cognitive development, school attainment, labor productivity, and income.

Also evident are disparities in access to irrigation. Although irrigation expansion over the past 75 years has transformed the global agricultural landscape, the benefits of irrigation have yet to be equally shared. Gender, land distribution, class status, and access to capital all play a role in determining the distribution of benefits within irrigation systems. Differential impacts can even be felt between continents—African rice farmers benefit little from irrigation and related seed development, but they must compete with low-cost rice produced from irrigated Asian farms.

CLIMATE CHANGE CAN EXACERBATE POVERTY AND INEQUALITY

Climate change manifests itself mainly through its impact on the water cycle. As global temperatures rise, water supply will become more unpredictable, droughts will increase in frequency and severity, and disease outbreaks after floods will become more likely (IPCC 2023). These water shocks can lead to crop damage, lower food supplies and income, higher food prices, and increased risk of waterborne disease. Water shocks also threaten peace and stability. Rainfall anomalies are shown to be associated with increased incidences of conflict and social unrest, particularly in countries where rainfed agriculture is the dominant source of income (Raleigh, Linke, and Dowd 2012; Hsiang, Burke, and Miguel 2013; Sarsons 2015; Koubi et al. 2021).

Developing countries and poor households are most exposed to climate shocks. During the period between 2000 and 2021, developing countries have been disproportionately affected by droughts, experiencing more widespread and severe episodes compared to developed countries. Developing countries are also more susceptible to flood-related risks and have endured longer-lasting floods during the same period. Within countries, in urban areas, the poor are disproportionately at risk from flooding (Hallegatte 2016). Low-cost housing in flood-risk areas is more affordable for the poor than other options (Zhang 2016). Despite the perceived riskiness of flood-prone areas, socioeconomic factors often force the poor to settle in these areas.

Climate shocks can have significant and long-lasting impacts on vulnerable households. The poor are systematically underinsured. Uninsured or partially insured climate risks can increase risk aversion and can shift income-maximizing investment to risk-reducing investment or discourage it altogether (Amare and Shiferaw 2017; Di Falco and Chavas 2009). For example, farmers are likelier to stop using fertilizer, leading to lower income growth in the long term (Dercon and Christiaensen 2011).

Droughts and floods can also lead to disinvestment in human capital development, with school dropout rates increasing as a coping strategy to deal with financial hardships caused by water shocks. Extreme floods can also affect school attendance by disrupting physical access to school facilities. The current report estimates that extreme-flood-induced school absenteeism during 2000–22 will result in a lifetime earnings loss of $565 billion for affected school children at the global level, with those in low-income countries being particularly affected. The interconnected and cumulative impacts of climate shocks on income and human capital could cause an additional 68 million to 135 million people to fall into poverty by 2030 (Afino et al. 2020).

POLICY RECOMMENDATIONS: THE WAY FORWARD

When water resources, infrastructure, and services are not adequately managed, developed, and delivered, water-related challenges—issues with too much, too little, or too polluted water—can exacerbate inequalities and fragility. Throughout the value chain of water supply, from source to distribution, three types of interventions can significantly improve water security and, concurrently, reduce poverty and increase shared prosperity. These interventions aim to achieve (1) resilience to extreme hydro-climatic risks, (2) water resources development and coordinated allocation to different water uses, and (3) equitable and inclusive delivery of water services.

Achieving these three policy objectives requires a comprehensive set of interventions. This report outlines the following policy recommendations that policymakers can consider to achieve equitable and inclusive water security.

- Enhancing resilience to extreme hydro-climatic risks for the poorest by
  - Setting up robust and inclusive early-warning systems.
  - Developing insurance programs for weather risks and mitigating exposure to hydro-climatic risks through regulations and financial support.
  - Scaling up social protection schemes to assist vulnerable communities impacted by floods, droughts, or both.

- Improving water resources development, management, and allocation by
  - Scaling up nature-based solutions through innovative financing schemes and evidence-based approaches.
  - Enabling coordination of and cooperation for water allocation through information sharing and financial incentives.
  - Adopting water accounting to inform water allocation decisions.

- Improving equitable and inclusive service delivery by
  - Scaling up financing through institutional and tariff reforms.
  - Establishing participatory water governance to ensure transparency and accountability.
  - Creating an enabling regulatory and policy environment to promote innovations.
  - Improving coordination of institutions responsible for water, health, education, and urban planning.

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