Water security for growth

In a world of climate uncertainty, investment in water infrastructure is central to growth and prosperity

By Benedito Braga, president, World Water Council

Throughout history, managing water resources has been the common thread connecting social stability, human wealth, prosperity, economic growth and sustainable ecosystems. Water has been central to achieving good public health, food security and sustainable energy. Water infrastructure and its good management have been humanity's major adaptive measures to increase options for decision-makers in times of drought and floods, to help make cities more resilient and to guarantee the quality of the environment.

Hydropower reservoirs and their multipurpose operations are increasingly important elements in the strategy for coping with climate variability

Today the world faces a major ethical public policy dilemma. Water and security debates are raising public anxiety about how changes in climate patterns will affect water availability and water-related extreme events. At the same time, little is being invested in what are known to be effective adaptive means to cope with such projected events.

Humanity faces inherent uncertainty in dealing with climate change phenomena, to which the hydrologic cycle is inextricably linked. Water resources are the most vulnerable to the impacts of climate change and variability. Public concern about climate is not about climate per se, but about the consequences of water-related impacts such as floods, droughts or increased variability in rainfall. By and large, felt impacts of climate variability are manifested through water.

The impacts of Hurricane Katrina in the United States in 2005 and the droughts and consequent poor harvests in Russia in 2010, which affected international food prices, demonstrate that everyone, in both rich and poor parts of the planet, can be affected by extreme water-related disasters, and must be prepared for them. The operation of large flood-risk reduction infrastructures on the Mississippi and the Yangtze in the 2011 floods of record, as well as the Delta Works in the North Sea and other such initiatives, continue to prevent enormous damage to life and property: some estimate the returns on these investments to be reaching benefit-to-cost ratios of almost seven to one.

With floods demolishing homes, with projections of upwards of 60 per cent of the Earth's population to be living in vulnerable coastal megacities in 40 years' time, with droughts destroying crops while demand for food increases, with widespread depletion in the quality of water, with changing climate risks and uncertainty, the imperatives of water infrastructure to achieving sustainable economic growth and building resilient societies are stark.

Increasing resilience

The question that all must ask is what the water sector can do to increase resilience and to reduce the vulnerability of social systems. How can we adapt to the wide-ranging impacts of changing patterns of climate variability across sectors and across continents?

Adapting to climate variability means understanding the role that water plays in the global economy, in socioeconomic development and in the well-being of people. Adapting means ensuring that measures are taken to make all sectors of society more resilient and robust.

The capacity to manage uncertainties of too much or too little water is central to the ability to grow and prosper. This requires specific infrastructure. Lack of infrastructure is much greater in developing countries. In the developed world, where water infrastructure has been implemented, damage due to floods and droughts as a percentage of gross domestic product has been pushed down to around five per cent or lower; for developing countries it is routinely higher than 20 per cent.

In the US, the cumulative benefit of avoided losses from floods is as much as $700 billion. If water is stored and managed well, economic growth is possible; decision-makers have greater options for dealing with stress on natural systems and thus preserving social stability. Based on hundreds of years of experience and on today's uncertain climate variability, water professionals are becoming convinced that hydropower reservoirs and their multipurpose operations are increasingly important elements in the strategy for coping with climate variability and change.

A pact for water security

Water security consists, primarily, of attaining basic human requirements for everyday life, ensuring safe drinking water, hygiene and health while maintaining the good functioning of ecosystems. Water security also means guaranteeing economic and social security, using water to produce food,

In developed countries, where water infrastructure has been built, damage due to floods and droughts is down to five per cent of gross domestic product

DANITA DELIMONT/GETTYIMAGES

energy, and the goods and services needed for development and rising living standards.

Changing climate patterns are affecting water security. Due to uncertainties in precipitation patterns and consequent stream flows in rivers and creeks, adaptive water management is needed, including management tools on both the supply and demand sides. On the demand side, conservation measures must be implemented. On the supply side, the role of engineered storage systems must be expanded to meet multiple uses of water, such as water supply, irrigation, inland navigation and hydropower.

These issues were highlighted during recent World Water Council dialogues on water, climate change and adaptation, which revealed very different viewpoints among countries. Developed countries are more likely to think of the environment and security in terms of global environmental changes, whereas developing countries are more concerned with the human security issues raised.

The World Water Council advocates global recognition of water as a milestone in the forthcoming Sustainable Development Goals and calls for the inclusion of a stand-alone goal on water security in the post-2015 development agenda.

Water as a human right

Since 2010, the world has witnessed major events acknowledging the importance of water. For example, in 2010 the United Nations General Assembly officially recognised access to water and sanitation as a basic right, and in 2012 the Rio+20 declaration included a dedicated chapter on water and sanitation. These events testify to a growing awareness of the importance of water at the highest possible political level, an objective towards which the World Water Council has strived since its creation in 1996.

The technical solutions already exist. However, economic incentives and innovative means for financing multipurpose water infrastructure along with effective cross-sectoral partnerships based on win-win outcomes are needed to achieve integrated, sustainable and resilient practices. These needs go beyond external aid. They call for financing mechanisms that simultaneously build local capital markets, manage risks to capital investments and create revenue streams, while also delivering widely distributed public benefits.

G7 leaders will certainly consider the importance of investing in water infrastructure as a response to climate variability and change. By recognising interdependencies and common goals in water security, they can create the conditions for the long-term well-being of cities, economies, societies, humanity and, indeed, the planet.

An enormous challenge lies ahead in inventing new financing mechanisms for investing in water infrastructure. Placing water investments into mainstream economic policies and endorsing a water security pact will help assure water availability, manage its distribution, and thus guarantee security throughout the world in many other domains. ■