

c o p i n g w i t h w a t e r s c a r c i t y



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UN WATER



World Water Day 2007 - Coping With Water Scarcity

Troubled Waters

A schoolgirl in rural Ethiopia. A city-dweller in Bolivia. A farmer in Sri Lanka. A factory worker in Romania. Different lifestyles, different cultures, one challenge: making sure they have adequate supplies of clean, safe freshwater to improve their lives. Whether they are struggling to grow food in a drought-stricken area or living downstream from a melting glacier, their communities are dealing with tough questions about how to maintain a precious and finite natural resource. Global water use is increasing at more than twice the rate of population growth and more people than ever are learning first-hand about **coping with water scarcity**.

Water Scarcity

Coping with Water Scarcity is the theme for the United Nation's World Water Day 2007, which is observed on 22 March. The term water scarcity may conjure up images of drought. But that is only one form of a

condition that affects people on every continent. This brochure is designed to explain some of the many conditions which lead to water scarcity and why some people have called it the challenge of the century.

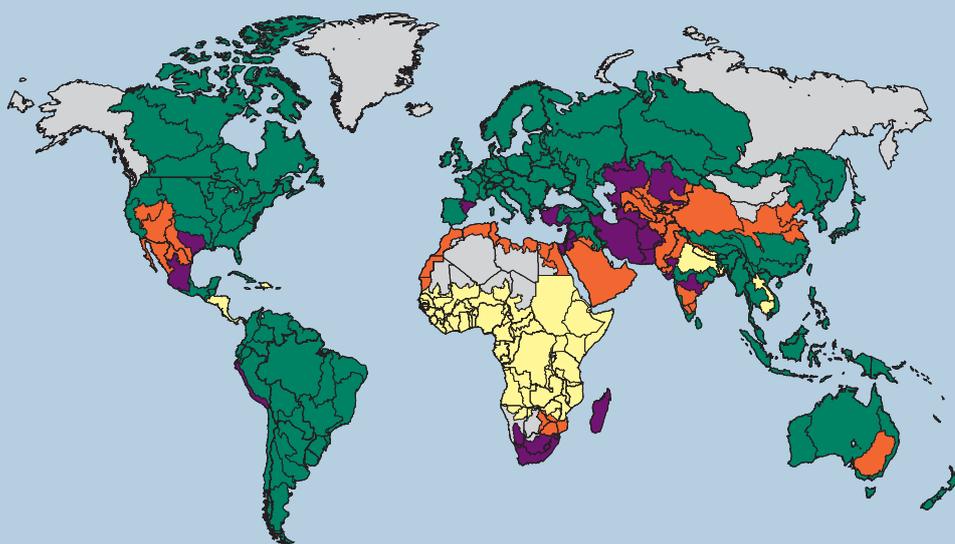
Running Dry

An increasing number of regions suffer from chronic water shortages. The problem is most acute in the driest areas of the world. Drylands are home to more than 2 billion people and to half of all poor people. Most countries in the Near East and North Africa suffer from acute water scarcity, as do countries like Mexico, Pakistan, South Africa, and large parts of China and India. Most freshwater used in these areas goes towards irrigated agriculture.

Water Life, Water Cycle

Three quarters of the Earth is covered by water, but only a small fraction of it is available as freshwater. Of that amount, nearly 70 percent of the water withdrawn is

Areas of Physical and Economic Water Scarcity



- **Little or no water scarcity.** Abundant water resources relative to use, with less than 25% of water from rivers withdrawn for human purposes.
- **Physical water scarcity** (water resources development is approaching or has exceeded sustainable limits). More than 75% of the river flows are withdrawn for agriculture, industry, and domestic purposes (accounting for recycling of return flows). This definition—relating water availability to water demand—implies that dry areas are not necessarily water scarce.
- **Approaching physical water scarcity.** More than 60% of river flows are withdrawn. These basins will experience physical water scarcity in the near future.
- **Economic water scarcity** (human, institutional, and financial capital limit access to water even though water in nature is available locally to meet human demands). Water resources are abundant relative to water use, with less than 25% of water from rivers withdrawn for human purposes, but malnutrition exists.

■ Physical water scarcity
 ■ Approaching physical water scarcity
 ■ Economic water scarcity
 ■ Little or no water scarcity
 ■ Not estimated



used to produce food, up to 95 percent in some developing countries. And the demand for water is growing. Global population is expected to reach 8.1 billion by 2030 and the need for food worldwide is expected to increase by 55 percent over 1998 figures. At the same time, we will need more water to provide basic sanitation, produce energy, operate industries and support growing cities.

Water for Food

The ability to produce food is essential to reducing poverty and encouraging social and economic development. But increased agricultural production has come at a steep price.

Amount of water (litres) required to produce:

1 kilo of grain-fed beef

15 000

1 kilo of wheat

1 500

Daily drinking requirements

2 - 5

While rainfed agriculture accounts for 80% of the total cropland and irrigated agriculture accounts for 20%, it is this latter that contributes to 40% of the total food production. Still, irrigation has strained groundwater and surface water supplies, weakened the quality and resistance of the soil with salt deposits and water logging, and reduced naturally-occurring plant and animal species. The agriculture sector must take the lead in meeting a challenge that no one can afford to ignore - finding ways to do more with less water and reducing potential damage to the environment.

Quantity and Quality

Even urban areas and countries with plenty of freshwater face the threat of water scarcity. Scarcity is a relative concept, which can mean either an absolute

shortage of water or a lack of access to safe water supplies.

On every continent, water supplies are being stressed by increases in irrigation for agriculture, urbanization and industrialization. Economic development and urban growth often damage freshwater bodies with increased pollution and sewage runoff can damage freshwater bodies.

Bolivia is flanked by the largest lake in South America, Titicaca, and dotted with tropical glaciers, yet the lack of access to clean water is a key factor in the country's high rate of child illness and death. High water tariffs, industrial pollution of drinking wells, global warming and rapidly melting glaciers are among the challenges affecting Bolivians, whether they live in cities or work on rural farms.



No Access

In an industrialized city with plenty of water, flushing the toilet in an average household can send up to 50 litres of water down the drain every day. Yet more than one in six people worldwide – 1.1 billion – don't have access to 20-50 litres of safe freshwater daily, the minimum range suggested by the UN to ensure each person's basic needs for drinking, cooking and cleaning. Two people in five lack proper sanitation facilities, and every day, 3 800 children die from diseases associated with a lack of safe drinking water and proper sanitation.

Access to clean water and adequate sanitation are part of the gulf that separates people who live healthy, productive lives from those who are unable to grow enough food to eat, earn enough income, resist life-threatening diseases and send their children to school. But the haves and the have-nots are all part of the same global fabric. The consequences of large-scale



international problems like war and the spread of HIV/AIDS can be worsened by poor access to water and sanitation.

Water and Wealth

Poor households in developing countries spend higher portions of their income on water than families in industrialized nations.

Proportion of monthly income spent on water



Developing Countries



Industrialized Countries

More than 16 million people in four countries depend on the water in the Kagera River Basin for farming, herding and fishing. But the basin, which includes Burundi, Rwanda, the United Republic of Tanzania and Uganda, is being stressed by a variety of factors - rapid population growth, conflicts over territory, and heavily concentrated land use. A UN-sponsored programme is encouraging those countries to coordinate efforts across their borders to protect their shared land and water resources.



A Shared Responsibility

In recent years, there has been a growing consensus that international, national and local policies must be coordinated to guide more effectively the use of water resources for agriculture and fisheries, urbanization and energy production. This approach is based on the philosophy that water is a shared responsibility.

Nature's Wrath, Nature's Bounty

The importance of the natural environment must be considered in any move to protect our water resources, but also to protect the future of our planet. Human activity has been linked to climate change and to the intensity of some hurricanes, flooding and other natural disasters that have destroyed crops, contaminated fresh and salt water bodies and damaged water facilities. Such events are all the more devastating when ecosystems which act as natural buffers, such as vital waterways and stable hillsides, have been affected by industry, pollution and deforestation. Natural ecosystems are rich in animal and plant life and they, too, need clean, plentiful water to stay healthy. A healthy and unpolluted natural environment is essential to human development.



The United Nations has developed UN-Water to help Member States achieve water and sanitation goals and targets. Since water touches on so many aspects of our lives, this challenge requires the participation of 24 UN agencies, each of which brings a different set of skills to the table. UN-Water takes the integrated water resources management (IWRM) approach, which is based on the premise that everyone involved, from individuals to governments and international organizations, must share information and decision making to yield the best results.

Turning the Tide - Water Scarcity Around the World: Challenges and Solutions

● KENYA: poor sanitation

The notorious “flying toilets” of the Kibera slums in Nairobi, Kenya are among the more widely reported consequences of lack of proper sanitation due to water scarcity. The image of impoverished urban dwellers who relieve themselves in plastic bags, then fling them onto garbage heaps, is a stark reminder that life in the city doesn’t necessarily lead to greater access to clean water and sanitation. It also serves as an example of how the health and development of an entire community can be undermined when its poorest members remain at a disadvantage.

↳ Government-led recovery

To reduce extreme poverty, the Kenyan Government has developed its Economic Recovery Strategy for Wealth and Employment Creation programme, which recognizes access to water as a pivotal element. The plan aims to reduce the walking distance to water and sanitation services, involve communities and local officials in the management of water and sewerage systems and improve the network of dams.

● SRI LANKA: post-tsunami damage

In Sri Lanka, the deadly 2004 tsunami was a huge setback for a country in which almost half of the population struggles to survive on less than US \$2 a day. In addition to claiming thousands of lives, the force of the waves caused extensive damage to farms, fisheries, irrigation systems and other facilities. Studies showed coral reefs, mangroves and other natural barriers could have reduced the impact of the waves in some areas, but they had been worn down by over-fishing and pollution.

↳ Restoration of natural barriers

After delivering tools, seeds and other immediate assistance to help farmers restore their livelihoods, government and non-governmental organizations are working with local communities on plans to restore and preserve natural barriers.

● ETHIOPIA: human development challenges

In Ethiopia, water-related problems are interfering with basic human development, especially for women and girls. Frequent, severe droughts cause dramatic drops in the livelihoods of rural inhabitants, who are heavily dependent on agriculture. The country’s water resources are stressed by a variety of factors, including cattle grazing, pollution and rapidly-growing urban areas.



According to joint WHO-UNICEF figures, 13 percent of the population in 2004 had access to proper sanitation and 22 percent to safe water. UNESCO figures show only one child out of three goes to school and about 37 percent of those who do are girls. As in many other areas of the world, women and girls are responsible for walking considerable distances to carry water, which leaves them less time, if any, for classroom education or for earning a living. They also are more vulnerable to diarrhea, parasitic infections and other illnesses related to unsafe water and poor sanitation.

↳ Promotion of sustainable development

Various national government initiatives promote sustainable development of water resources and equitable distribution. Training centres are offering technical classes on irrigation, water supply and sanitation services.

nd Responses

● SOUTH AFRICA: stress on resources

In South Africa, a number of factors, ranging from drought and poverty to increased industry, are stressing the water system. This poses a challenge to agriculture, the environment and public health. Twelve percent of the population lack access to piped or well water and 35 percent do not have proper sanitation. Water-related illnesses and poverty are major concerns. South Africa has the greatest energy consumption on the continent, and productive mining and industrial sectors, all of which compete for water with household and agricultural needs.

↳ Provision of affordable water services

While it addresses increasing urbanization, industry and the continued need for irrigation, the government has made progress in addressing the needs of South Africa's poorest citizens. It has instituted stricter regulations for issuing permits to use water, even for those who wish to plant trees. Authorities have begun a programme to provide affordable water services to all citizens. The country is on track to meeting the UN's Millennium Development Goal of halving the proportion of people without access to safe water by 2015, even though millions still remain without adequate sanitation and water.

● EUROPE: river pollution

The Danube River Basin is an example of how several countries must work together to protect their shared resources. Eighteen countries draw water from the Danube River Basin, the second largest basin of its kind in Europe. Population growth, industrialization and agriculture in the last century have stressed the area's large rivers, causing serious pollution and reducing their shared floodplain by 80 percent over the last 150 years. Large constructions like dikes have interfered with nature's ability to recharge the groundwater supplies.



↳ Danube Basin protection plan

The International Commission for the Protection of the Danube River (ICPDR) was established in 1998 to coordinate the development of a basin-wide management plan, in keeping with the European Union's Water Framework Directive (WFD), which requires all member countries to develop such plans by 2009.

For more information on World Water Day 2007, visit the official website: www.worldwaterday07.org

World Water Day 2007 is presented by UN-Water. The official United Nations mechanism for the follow-up of water-related decisions reached at the 2002 World Summit on Sustainable Development and the Millennium Development Goals.

www.unwater.org

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