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Contact: Nancy Ross, Pacific Institute, 510-251-1600 x106, nross@pacinst.org

AWARENESS AND WILL TO CHANGE ARE KEY TO WORLD'S WATER QUALITY ISSUES

New UNEP World Water Day Report Details Water Quality Challenges and Solutions

Nairobi, Kenya – March 22, 2010: Every day, 2 million tons of sewage and industrial and agricultural waste are poured into the world's waters. The result is that more people die from unsafe water annually than from all forms of violence, including war. A new report released by the United Nations Environment Programme (UNEP) for this year's World Water Day lays out steps and solutions to address our urgent water-quality challenges—and they start with awareness and will to action.

"A wide range of human activities affect water quality. The health of our ecosystems—and our communities—depends on how we act now," said Achim Steiner, executive director of UNEP. "Improving and protecting water quality means healthier ecosystems, improved human well-being, and more secure livelihoods, both for ourselves and for future generations."

The new report released on March 22, *Clearing the Waters: A Focus on Water Quality Solutions*, details how water quality is as important as water quantity for satisfying human and environmental needs, yet has received far less investment, scientific support, and public attention. Prepared by the Pacific Institute, one of the world's leading nonprofit research organizations on freshwater issues, the UNEP report is part of the World Water Day 2010 effort to bring global attention to the need for clean, safe water—and action and policy to address water pollution.

"Improving water quality, whether by preventing pollution, treating wastewater before disposal, or restoring the quality of waterways, requires increased awareness and political will," said Peter Gleick, president of the Pacific Institute. "The consequences of inaction are stark: water-quality problems affect our health, reduce agricultural productivity, impose additional costs on industrial production, and degrade ecosystem services––with costs to local populations and governments."

The UNEP report calls for worldwide action to:
-increase awareness to change individual behavior around what we put into our water;
-promote policies that improve water quality with education and advocacy;
-increase enforcement of the regulations put in place to protect water quality;
-put investor and consumer pressure on corporations and that pollute waterways.

Solutions to the world's water quality challenges start with education and public pressure to build community knowledge and support for the importance of protecting and improving water quality. Regulatory and legal tools, as well as appropriate financial and economic policies and incentives, are necessary to promote, maintain, and enforce water quality. These actions all lead to support for implementing the behavior, technology, and infrastructure that can help achieve water-quality goals.

Clearing the Waters makes clear that we cannot manage what we do not measure, and the greatest problem with water-quality data is that there is not enough of it. Improved measurement of the physical, chemical,

and biological characteristics of both surface water and groundwater is crucial for identifying, addressing, and tackling water-quality problems.

“The majority of the health threats from poor water quality are from microbial contaminants and subsequent disease in developing countries. But use of chemicals for industrial and agricultural purposes, along with the chemical byproducts of waste management, are severely compromising water quality, leading to other, serious health problems for wildlife and humans around the world,” said Meena Palaniappan, initiative director at the Pacific Institute and coauthor of the water-quality report. “The good news is there are effective, appropriate solutions, and we need to move these forward using policy, financing, and capacity-building strategies.”

One of the most significant sources of water pollution is lack of adequate sanitation. Worldwide, 2.5 billion people—280 million of them children under five—live without improved sanitation, and each year more than 1.5 million children die from diarrhea caused by infectious waterborne diseases. It is a crisis of local challenges with global repercussions.

The UNEP report also cites chemicals from industrial processes, mining, agriculture, and urban runoff as significant and growing sources of water pollution—including mercury, lead, cadmium, pesticides, organic toxins, and radioactive elements. Worldwide, it is estimated that industry is responsible for dumping 300-400 million tons of heavy metals, solvents, toxic sludge, and other waste into waters each year. New contaminants, such as discarded pharmaceuticals, also threaten water quality and human and ecosystem health.

And it is not just humans who are affected. The planet’s most widespread water-quality problem is nutrient enrichment. Largely caused by nitrogen and phosphorus from agricultural runoff and human and industrial waste, nutrient enrichment results in excessive plant (principally algae) growth and decay that robs the water of oxygen necessary for life for many aquatic organisms.
Water quality degradation has measurable deleterious impact: in the last three decades of the 20th century, populations of freshwater species fell 50 percent on average, a rate two-thirds greater than that of terrestrial and marine species. In recent years, the biodiversity of freshwater ecosystems has been degraded more than any other ecosystem, including tropical rainforests. And with impacts from climate change already occurring, most water-quality problems are expected to worsen.

Clean water and healthy freshwater ecosystems provide essential goods and services from food, water, and fiber, to recreation and aesthetic and spiritual benefits, to critical regulating services like wastewater treatment. One influential study estimated the global value of ecosystem services at roughly double the gross national product of the global economy (Costanza et al. 1997). Protecting and restoring natural ecosystems brings broad improvements in water quality and economic well-being. In turn, ecosystem protection and restoration are a basic element of sustainable water-quality efforts.

It is almost always cheaper to prevent pollution than clean it up—and poor water quality has significant economic costs, from ecosystem and human-health costs and impacts on economic activities to increased water treatment costs and reduced property values. For example, economic losses as a result of health impacts from the lack of water and sanitation in Africa are estimated at US$ 28.4 billion or about 5 percent of GDP (UN WWAP 2009). And sanitation and drinking water investments have high rates of return: for every US$ 1 invested, there is a projected $3-$34 economic development return (UN WWAP 2009). The greatest single service freshwater ecosystems provide—marshes in particular—is water purification and the assimilation of wastes, valued at US$ 400 billion (2008$) worldwide (Costanza et al. 1997).

“We have the ability to meet human needs while protecting human and environmental health,” said Steiner. “Acknowledging the importance of preventing pollution before it enters waterways and treating waste before it impacts watersheds can play an essential role in tackling future threats to water quality. The critical decisions made and priorities set in the next decade will determine the path we take in addressing the global water-quality challenge.”

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