

Water — The Common Asset of All People

How We Tackle Water-related Problems Will Influence the Future of Human Society

— Heading Towards 3rd World Water Forum —

On our watery planet, water cycle and quality are undergoing dramatic changes. With an explosive increase in the world's population, the balance between people and water maintained for so long is on the edge of collapse. The water environments surrounding our life are rapidly deteriorating. In 2003, Kyoto, Shiga and Osaka, Japan will host the 3rd World Water Forum. The World Water Forum provides an opportunity to consider a variety of water-related problems that extend across national borders from water shortages and floods to water pollution and water right conflicts. The objective of the World Water Forum is to find solutions for these issues. As such, an Innovation staff member presents a candid discussion with Mr. Hideaki Oda, the Secretary General of the 3rd World Water Forum Secretariat, which handles the arrangements for the forum.

Inadequate Debate on Water Problems at Rio de Janeiro

United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil in 1992 was a major landmark in the history of the world's commitment to finding solutions to environmental problems. The conference intensely discussed how to achieve sustainable development while protecting the Earth's environment in terms of global warming and maintenance of biodiversity. However, "issues relating to water were not paid sufficient attention," says Mr. Oda. "Water, air, and land are the essentials for human life. Of these, water and air are the assets of all humankind that circulate the planet. While the conference in Rio de Janeiro comprehensively discussed global warming — a problem related to the atmosphere, it did not give the same



Mr. Hideaki Oda

Secretary General, Secretariat of 3rd World Water Forum

emphasis to water issues."

Though, in 1992, UNCED assigned higher priority to global warming and the protection of tropical forests, issues that required urgent solutions at the time, droughts and floods that hit many places around the world later in the 1990s renewed awareness of water issues. Recognizing that international cooperation is imperative to resolving water problems, the World Water Council (WWC), a global network of water specialists, academic institutes, and international organizations, was established. Under the proposal of WWC, the World Water Forum was started.

Colossi of Memnon, Egypt
(Submitted by Secretariat of 3rd World Water Forum.)



Flood Damage Increased 6-fold in 20 Years

Let us consider current water problems. Many people are aware of the problem of desertification, such as the expansion of the Sahara Desert. However, few are also aware of the fact that flood damage is also on the rise. Graph 1 shows the trends in the number of victims of various natural disasters. While the number of victims of earthquakes and volcanic eruptions fluctuate moderately, the number of flood victims has skyrocketed. The average number of flood victims in a year, which was 20 million in the period between 1973 to 1977, jumped to 130 million in the period between 1993 and 1997 – an increase of over 6 times in 20 years.

“This does not mean that rainfall around the world has increased 6-fold. The world's population has grown and much of the increased

population is forced to live in river flood plains previously considered unsuitable for habitation,” says Mr. Oda.

For example, the ancient Egyptians exploited the fertile mud carried by the Nile for agriculture but the people did not actually live on the flood plains. They formed their settlements in elevated areas. The photograph shows the giant statues called the Colossi of Memnon on the right bank of the Nile in the suburbs of the city of Luxor. No houses exist in the expansive surrounding areas with human settlements visible only at the foot of distant mountains. The horizontal lines visible on the statue stylobates are relics of Nile floods that occurred annually before the Aswan High Dam was constructed on the river.

However, the burgeoning populations of the developing nations in Africa and Asia do not permit people the luxury of selecting where to live. The major Chang Jiang floods in China in 1998 affected 230 million people and claimed more than 3,000 lives. Heavy monsoon rains in 2000 caused floods in India and Bangladesh that affected several million victims. Due to spreading urbanization, even people in developed countries sometimes become the victims of floods.

The current world population of 6 billion is expected to grow to 8 billion by 2025 (see Graph 2). This will surely increase the number of flood victims.

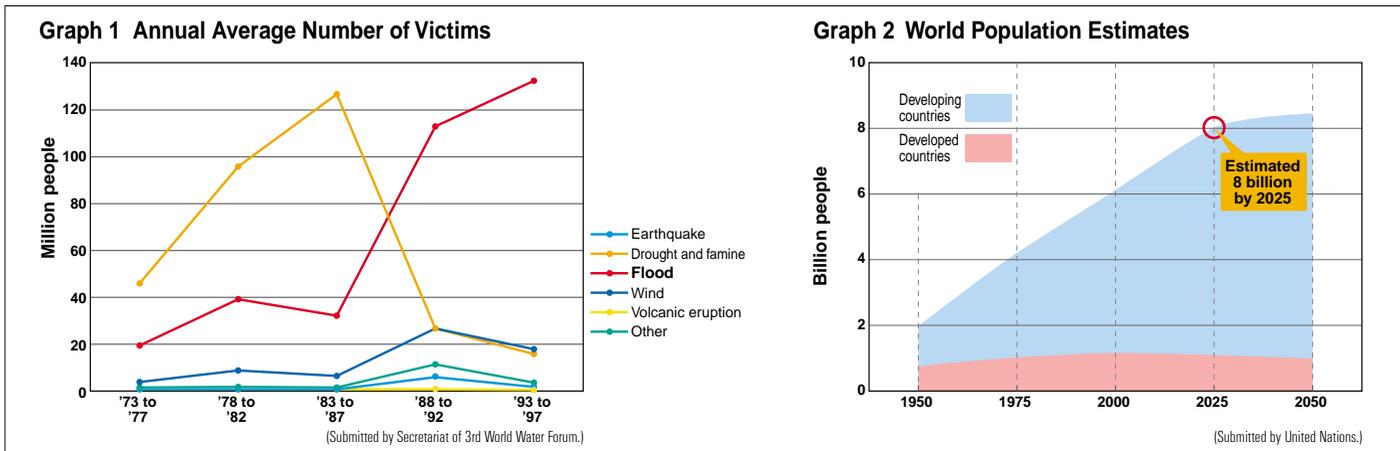
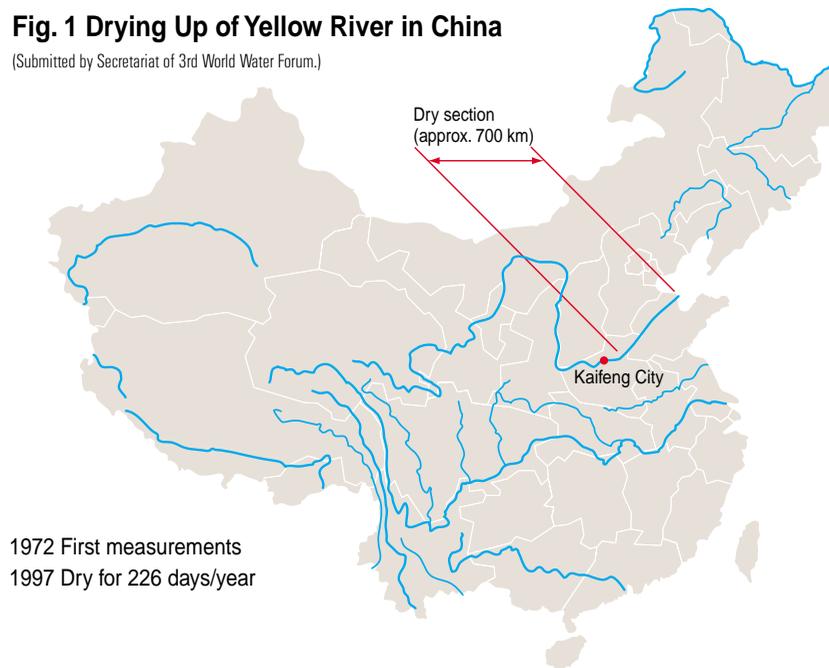


Fig. 1 Drying Up of Yellow River in China

(Submitted by Secretariat of 3rd World Water Forum.)



Water Problems Cast a Shadow over Reconstruction of Afghanistan

“One effect of global warming on water is the rise in sea levels and another is the polarization of the climate, that is, the increased flipping between flood and drought. Global warming has distorted the water cycle, which will further increase the number and severity of floods and droughts,” says Mr. Oda.

In fact, water shortages have been a serious problem around the world in recent years. For example, since 1972 the Yellow River in China has, at times, partially dried (see Fig. 1). During some periods water flow stopped over a length of 700 km from the river mouth. In 1997 parts of the Yellow River dried up for 226 days. The water level in Lake Chad in

Africa fluctuates over the year due to the wet and dry seasons. However, since the 1960s, the variation in water level has been widening with the average water level continuously lower. This means the lake is gradually shrinking. Lake Chad, located on the south edge of the ever expanding Sahara Desert, may one day disappear.

Statistics compiled by the United Nations indicate that one out of every five people has no safe drinking-water supply and food shortages due to lack of water are becoming increasingly serious. Between five and ten million people die every year from water-related causes. Without effective measures implemented, this situation will be even more aggravated due to the increasing population.

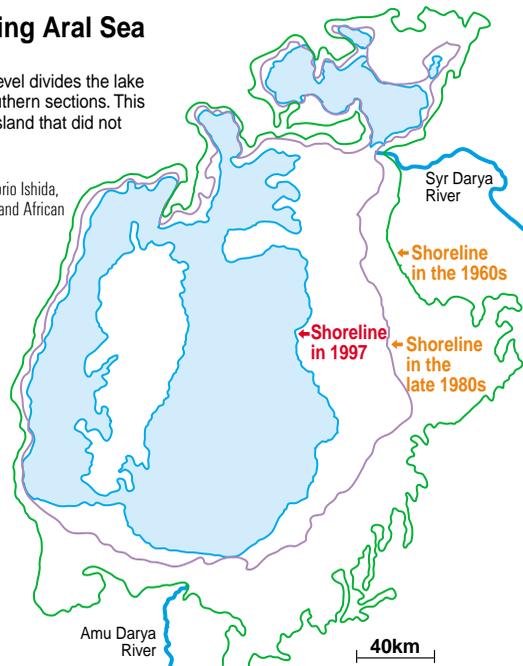
“Water is also an important problem in the reconstruction of

Afghanistan. Since the 1960s, the Aral Sea in the north of Uzbekistan, Afghanistan's northern neighbor, has suffered a dramatic drop in water level and reduction of water surface area. Two major rivers flow into the Aral Sea and 20% of their total catchment area lies in Afghanistan. Thirty-five percent of the land of Afghanistan is catchment areas for the Aral Sea,” explains Mr. Oda. “Using this previously unexploited water for agriculture as part of Afghanistan's economic reconstruction will cause water shortages downstream in Uzbekistan, causing a further reduction in the size of the Aral Sea. It is important to consider the use of water resources over a greater perspective.” (see Fig. 2). Water problems can affect the very existence of countries making a fresh start.

Fig. 2 Shrinking Aral Sea

The dropping water level divides the lake into northern and southern sections. This has created a large island that did not exist before.

(Submitted by Professor Norio Ishida, Graduate School of Asian and African Studies, Kyoto University.)



Contaminated Water Causes 80% of Disease in Developing Countries

The problems relate not only to water volume. When rain falls to earth, it eventually forms rivers and ground water that flow into lakes and the ocean. There it is warmed by the sun and evaporates back into the atmosphere. While circulating during this cycle, the water also helps the circulation of solar energy and various substances in the soil and atmosphere (including harmful micro-organisms). Humans partially interfere with this water cycle by taking water for living, agriculture, and industry. Wastewater is returned to the natural water cycle but never completely reverts to its original quality; thus, causing water pollution.

In past ages, when the scale of human economic activity was still very small, micro-organisms in the natural water cycle were able to clean up human water contamination. However, with the huge scale of modern economic activity and the creation of substances that do not exist in the natural world, it is imperative for us to purify our own wastewater. If we do not do so, water contamination will degrade the environment to our detriment. Reports from the World Health Organization reveal that contaminated water causes 80% of disease in developing countries and that one child dies every 8 seconds of a disease caused by water.

“The Netherlands, which hosted the 2nd World Water Forum, is a country with an extremely high level of awareness about water. One reason may be that much of

the country's landmass is reclaimed by drainage making flood control extremely important. Another reason is that the country lies on the lowest reaches of the River Rhine. The Dutch are nervous about the effects of economic activity in Germany and other upstream countries on the water quality in the river,” says Mr. Oda.

The Japanese also have a long history of living with water. Mr. Oda hopes the Japanese still maintain their folk wisdom and understanding of the importance of using water carefully. The 3rd World Water Forum provides an important opportunity for the people of the world to think about water problems on both global and local scales.