

# Japan's Portfolio of Water Actions (PWA)

## Contributions of the Government of Japan for the Solution of Global Water Issues

### I. Basic Views and Principles

Water is indispensable to all animals and plants. It is an important source of agricultural production and other various economic and social activities, and essential for ecosystem conservation. Solutions of water issues are urgently needed in order to achieve sustainable development.

It is necessary for all countries and authorities to strengthen good governance and ownership on water to solve water related problems.

At the same time, it is important for the international community to share knowledge, information and experiences, and to foster water partnership to support the ownership.

Japan has been the largest donor in the field of water supply and sanitation. Its annual ODA to developing countries in this field amounts to about 1 billion USD, which constitutes one-third of the world's ODA. Japan regards it is important to continue to actively contribute through its ODA to the water sector.

Based on its knowledge and experiences in overcoming various water issues to achieve development, while expanding international cooperation, to support efforts of various countries facing water issues, Japan is determined to promote the following water actions.

### II. Main Policies and Specific Measures (91 actions)

The following actions will be implemented with a view to solving water issues through "Ownership" and "Partnership" and achieving sustainable development.

#### 1. Water Resources Management and Benefit Sharing (26 actions)

It is feared that the "Water Crisis" comprising such problems as water shortages, water pollution, floods, conflicts over water and other water issues currently faced by the world may worsen with the growing population, increased economic activities, and the global climate change. To overcome the crisis and promote human security, it is necessary to develop legislative frameworks, promote participation of various stakeholders, improve water management capacity, promote science and technology, and implement appropriate measures for water management and benefit sharing.

##### 1) Integrated Water Resources Management (13 actions)

- Planning on Water Resources Development and Management and Capacity Building of Implementing Agencies

- Water Resource Management and Conservation through Afforestation, Anti-desertification, and watershed area management
  - UN Decade of Education for Sustainable Development
  - Surveys Related to the Feasibility of Applying Energy-saving Sludge Reduction Technologies in Southeast Asia
  - Monitoring water quality by advanced ion chromatography
  - Watershed/Urban Regeneration in Accord with Nature
  - Integrated River Basin Management
  - Restoration by Eco-Compatible and Adaptive Management in River Basin
  - Twinning Agreement in Integrated Water Resources Management
  - NETWORK OF ASIAN RIVER BASIN ORGANIZATIONS
  - International Conference on Inland Waterway Transport
  - Research on Development Status and Assistance Strategy in International River Basin (The Mekong River)
  - Socio-Economic research on long-term trends seen in the waterside environments of the world, through studies of their changes in scenery
- 2) Efficient Use of Water (1 action)
- Promotion of Effective Use and Capacity Building of Management for Existing Infrastructure and strengthening of Operation & Maintenance Capacity
- 3) Non-conventional Water Resources Development (6 actions)
- Advanced Prediction System and Counter Measures of Regional- and Meso-scale Water Cycle
  - Research Cooperation Project on Seawater Desalination and Public Water Demand in Oman.
  - Cooperative Research on Hybrid Seawater Desalination for Middle East Countries
  - Cooperative Research on Technology to Increase the Utilization of Recycled Industrial Water for Environmental Applications
  - Development of Energy-Saving Waste Water Treatment Technology
  - Technology development on the Multiple-purpose use system of Deep Ocean Water
- 4) Global Water Cycle Changes and Water Resources Management (6 actions)
- Initiative for Research Activities on Global Water Cycle Changes
  - The sustainable ARGO Project
  - Global Precipitation Measurement (GPM)
  - The Integrated Global Observing Strategy (IGOS) Partnership
  - Monitoring and modeling of balance, circulation, and utilization of groundwater in the Yellow River basin
  - Global Mapping

## 2. Safe Drinking Water and Sanitation (13 actions)

Safe drinking water and sanitation is essential for human health, living, economic and social development, and ecosystem conservation. Therefore, expanding access to safe drinking water and basic sanitation is an urgent agenda of the international community

that requires efforts of all countries.

1) Supply for Safe Drinking Water (10 actions)

- Strengthening Water Supply System and Operation / Maintenance through Groundwater Development in Africa
- Strengthening the Development and Operation / Maintenance on Water Supply System and Sewerage System in Asia
- Stable Water Supply and Water Governance in Middle East
- Water Supply and/or Sewerage Treatment Project in Regional Cities in the Latin American Region
- Water Supply and/or Sewerage Treatment Project in the Pacific Island Region
- Strengthening Control of Water-related Diseases, including Arsenic Poisoning and the Guinea-worm Disease in Asia and Africa
- US-Japan Water Partnership: the "Clean Water for People" initiative
- Partnership With NGOs
- Integrated Study on Restructuring Water-use System for Sound Water Cycle
- Studies for Plan to Maintain the Global Environment Protected the Widely Arsenic-Affected Groundwater

2) Development of low-cost sewerage and sanitation (2 actions)

- Research and Development of environmental sewerage and sanitation technologies suitable for developing countries
- Technology transfer of the on-site treatment system of domestic waste water

3) Appropriate methods for maintenance of water supply and sanitation system ( 1 action)

- To share knowledge, experience and information on operation and maintenance of water supply and sanitation

**3. Water of Food and Rural Development (23 actions)**

The volume of water for food and rural development needed to respond to the growing population and the poverty issues is increasing rapidly. However, as water resources are limited. The issues which should be addressed are: how to use and manage agricultural water, which occupies the largest share in the total water usage, efficiently and effectively, how to meet the challenges of poverty and food security, and how to achieve the balance between the agricultural water use and the increased demand for water in other sectors and the environment.

1) Food Security and Poverty Alleviation (12 actions)

- Reinforcement of Government Policy and Implementing Capacity to Improve Water Productivity in Developing Countries
- Increase of Agricultural Productivity by Improving Irrigation System and Technique
- Construction of Irrigation Facilities and Enforcement of Local Community Organizations through Participatory Development of Water Resources
- Recycle and Reuse of Water Resources

- Promote the Development and Dissemination of NERICA in Africa (tentative)
  - Sustainable rural modernization based on neighborhood communities
  - International cooperation for improving the efficiency of agricultural water use
  - Food for Work
  - Sustainable Agriculture in the Arid Areas
  - Increasing Economic Options of Rain-fed Agriculture in Indochina through the Efficient Use of Water Resources
  - Combining advanced weather modeling and farmer knowledge to reduce risk in in West African cereal-based cropping systems
  - Water Resource Development Strategy-Building Survey (Asia)
- 2) Sustainable Water Use (7 actions)
- Effect evaluation of global water circulation changes on food production with consideration of potential countermeasures
  - Modeling and economic evaluation of the multi-functionality of paddy fields
  - Development of water use estimation models related to agriculture and irrigation for the Asia Monsoon region
  - Promotion of agricultural water-related projects, taking into account ecosystem conservation and water quality improvement as well as enhancing multi-functionality
  - Promotion of Rural Community Sewerage Improvement Projects
  - Legal Reforms to Achieve Harmony with the Environment on Agricultural Infrastructure and Rural Development Projects
  - Development of Eco-friendly Management Technology of Water and Agro-Forested-Aqua-Ecosystem (AFA-Ecosystem) in Watershed and Estuary (W&E) areas
- 3) Partnership (4 actions)
- Promotion of Participatory Irrigation Management (PIM)
  - Water Use and Management System of the Mekong River
  - Creative actions for Land Improvement Districts (LIDs) (a new action taken by the MIDORI Network initiatives)
  - Irrigation and drainage project to re-allocate agricultural water use to meet urban water demands

#### 4. Water Pollution Prevention and Ecosystem Conservation (16 actions)

In order to conserve sound water environment, it is necessary to take measures in integrated manner for water pollution prevention and ecosystem conservation. For this purpose, development of relevant systems and international partnership and networks are needed.

##### 1) Water Pollution Prevention (6 actions)

- Enhancement of Water Quality Conservation, Industrial Waste Water Control and Domestic Waste Water Management
- Package Cooperation on Institutional Measures and Cleaner Production Technology to Prevent

Industrial Pollution in Vietnam, the Philippines, Indonesia, Thailand, India, Jordan.

- The establishment of the total system regarding to the clarification of wastewater due to food processing
- Research and Development of monitoring methods of toxic substances and pathogenic microorganisms
- Water Environmental Partnership in Asia (WEPA)
- Study on development of assessment methods for water pollution and monitoring methods for toxic cyanobacteria in water resource regions in Asia

## 2) Conservation of Ecosystem linking Forests, wetlands and rivers (10 actions)

- Water Quality Improvement to Conserve the Environment and Aqua-Ecology
- Development and establishment of a network for exchanging information on water and forests
- Appropriate Forest Management According to Forest Planning System
- Sustainable watershed management in developing countries through international cooperation to promote sustainable forest management
- Development and implementation of criteria and indicators for the sustainable forest management (the Montreal Process)
- The research regarding to the phenomenal analysis of the organic, the nutrient salts, and the biocoenosis in lakes and marshes, and the investigation of the achievements by the recovery efforts
- Development and dissemination of the water purification measures utilizing the self-purification function of rivers
- Asia-Pacific Environmental Innovation Strategy Project (APEIS)
- Cooperative program on conservation of waterbirds and their habitats in Asia-Pacific region
- Evaluation of Vulnerability of Natural Ecosystems to Global Warming

## 5. Disaster Mitigation and Risk Management (13 actions)

Floods and droughts usually impose major adverse effects on the poor, and thus the measures to cope with them are important for poverty reduction and sustainable development. Integrated policy and measures for disaster mitigation and risk management including preventive measures in addition to reactive measures, is needed.

### 1) Comprehensive Measures for Disaster Mitigation (10 actions)

- Disaster Preparedness due to the Development and Rehabilitation of the Flood Forecasting and Warning System
- Comprehensive Development Plan for Flood Control
- Flood Control Works Utilizing the Local and Natural Materials
- Flood Control and Sanitation Improvement in Urban Area
- Highly Accurate Rainfall Estimation by Multi-parameter Radar and Information Providing System for Storm and Flood
- Flood mitigation distributing information technology
- Improvement of the system with information technology to monitor the occurrence of

sediment-related disasters and to distribute them

- Comprehensive approach to mitigation and prevention of sediment-related disasters
- National Land with Water Information  
Standardized whole river basin dataset & consolidated applications for Integrated Watershed Management
- Development of IT technologies to mitigate flood damages

2) Sharing Information and Knowledge at International Level (3 actions)

- International Flood Network (IFNet)
- Soda Mattress System as a mean of Riverbank Erosion Protection
- International Sabo Information Network