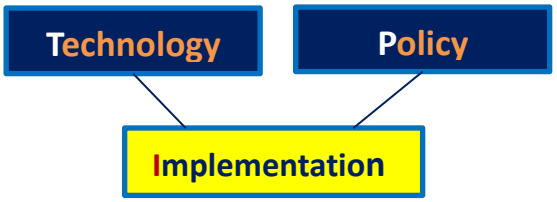
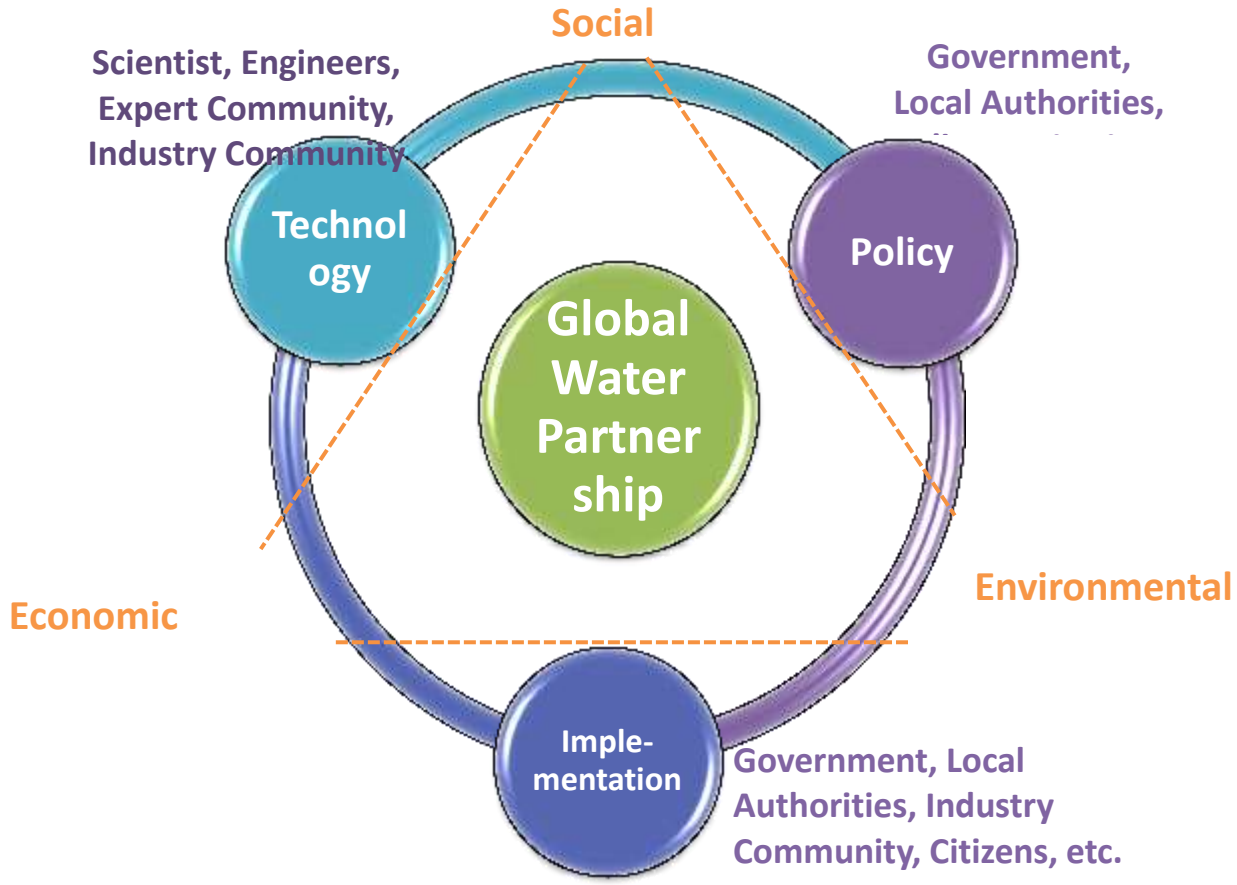
TIP PLATFORM
TECHNOLOGY, IMPLEMENTATION, POLICY PLATFORM



In order to lead implementation based on developed policies and technologies, TIP Platform (Total 15 sessions) will serve as an arena/ means/ media to

- Share appropriate and innovative technologies and policies to implement solutions to challenges
- Share best practices and cases for further application of solutions
- Bridge developed and developing countries by exchanging their technologies and policies



TIP Platform focuses on a number of areas where science and technology provides a major opportunity to innovate water resources management and environmental security, simultaneously, where the development of relevant policy offers socio-economic opportunities and supports the process of technological application and its development. A number of areas have been carefully selected and are described below.

BACKGROUND

Current and future water solutions are highly dependent on the use of scientific research, new technologies and innovation processes. The challenges for water resources management are complex, which include rapid urbanization, population growth, climate change, industrialization, a surge of energy demand, disaster impacts, water-energy-food nexus, and massive pollution of water, soil and air. Many of them form the basis for the discussions of global community around the Sustainable Development Goals (SDGs). In the whole process, policy making process and development considering science and technologies became more important and the linkage between two pillars, technology and policy, will be the key to making implementation possible for all actors. Science and technology and its ties with policy making do not appear to tackle all the mounting challenges in the water sector. These circumstances signify the urgency for ground-breaking and brand-new commitment from the perspectives of technology and policy simultaneously so as to make good practices.

To properly address above challenges, we need to focus on and invest in the processes of innovation in the water (and related) sectors as follows: Firstly, it is to create a better understanding on how innovation and application of technologies in the water sectors works and how it can contribute to profound changes at scale. Secondly, it requires renewing political will from key decision makers in both the public and private sectors to invest in water innovations, from fundamental research, to piloting new technologies, to wide scale applications. Finally, it also requires the mobilization of an entrepreneurial spirit which not only provides practical solutions for problem owners but also helps making technologies useful for industries.

OBJECTIVE

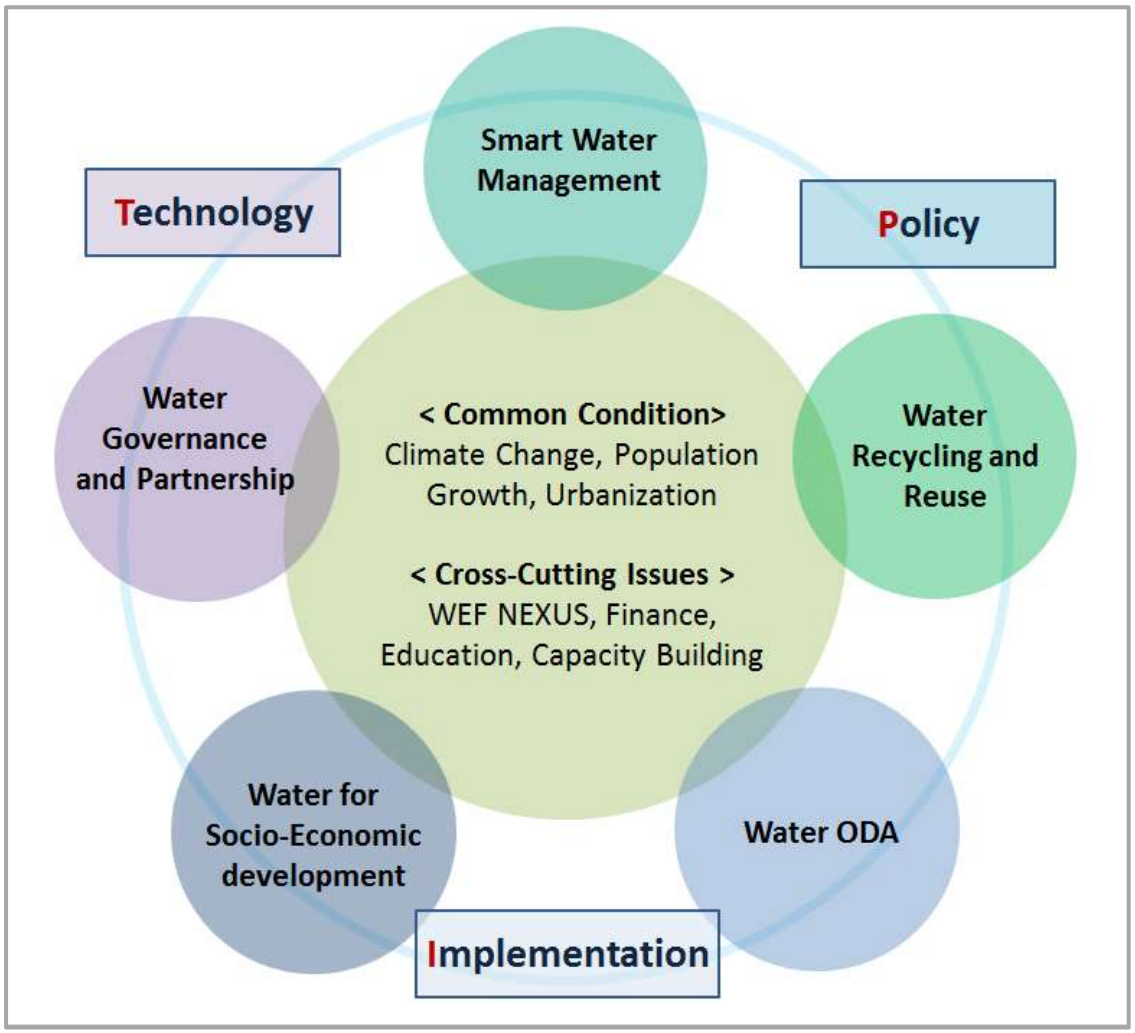
The objective of TIP platform is to promote global discussion on practical solutions for water challenges at various scales. The platform will be designed to provide practical and innovative guidelines to those who seek for practical know-hows and lessons learned from successful implementation of water policies. It also aims to provide market places with the emerging science and technologies and engineering services for active engagement in global water issues. The activities of TIP platform in KIWW will develop the robust network for international cooperation in water sectors and provide practical advice for further projects and future collaborative works.

THREE KEY WORDS

TIP Platform seeks to be based upon three core key words, technology, implementation, and policy.

- **Technology** in Feasibility study, Design, Construction, Operation, Maintenance, Monitoring, Treatment, Restoration, ICT including Artificial Intelligence (AI), Big Data, etc.
- **Policy** linked with technologies and implementation promoting efficiency, sustainability, partnership, governance, green economy, culture, and environment
- **Implementation** by sharing best practices, strategies, and the processes based on well-defined policies and both appropriate and developed technologies

FOCUS AREAS



Technology, Policy, Implementation as TIP cross-cutting words

Focus Areas below are aimed to define practical solutions for achieving Sustainable Development Goals on water and consequently provide action tools and tangible strategies.

- **Focus 1: Smart Water Management**

Keywords: Urban Water, Agricultural Water, Industrial Water, Water Disaster, Floods and Droughts, Water related Big Data

Smart water management with the Information and Communication Technology (ICT) is an essence of efficient, safe and sustainable and smart water management and one of the dominated and rapidly changed technologies used in a variety of fields in our current life. The technology has quickly evolved that it might become obsolete without being sufficiently applied to various processes of water management. The scope of ICT application has been limited to the remote data acquisition and sending for monitoring and control of the system, but now many innovative technologies such as mobile technology, internet of things, big data, and augmented reality become available for the application to water management. New applications and best practices of those technologies concerning water resources management are necessary for raising issues.

- **Focus 2: Water Recycling and Reuse**

Keywords: Sustainability, Climate Change, Green Infrastructure, Carbon Emission, Energy Recovery, Resilience, Wastewater Treatment, Water Reuse,

Water recycling can contribute to enhancing the sustainability of the global water and environment, which suffers from climate change, excessive carbon emission and energy consumption, water deficit, and floods. It is a series of processes of reusing treated wastewater for industrial processes, agricultural and landscape irrigation, toilet flushing, and ground water recharge. The challenges associated with the water recycling and reuse can be wastewater technologies, legal and regulatory preparation, and social agreement. Efficient and appropriate technologies are required for diverse purposes of water use. It is also inevitable to set up relevant laws and regulations and forms a social consensus concerning they recycling and reuse process in the implementation.

- **Focus 3: Water for Socio-economic Development**

Keywords: Water Resources Management, Ecosystem, Economic Valuation of Water, Opportunities for Green Job

Socio-economic development is closely related to water resources development and management due to the complicated interactions between water and human activities. Water serves as an indispensable resource and a positive or negative function for socio-economic development such as social and economic resource, a media for energy generation, and natural amenity and flood and disease transmission through water-borne diseases. The pervasive characteristic of those functions attribute to creating such an intricate relationship between water and socio-economic development. The related issues on water for socio-economic development include the assessment of the social, economic and environmental impacts, land use, adoption of an integrated approach, effective communications in the socio-economic process, adaptive decision-making and implementation for socio-economic demands, and incorporation of social issues and values into decision making process.

- **Focus 4: Water Governance and Partnership**

Keywords: Trans-boundary Water Issues, Public Policies, Sound Water Governance, Gap Bridging with Science and Technologies

Water governance is important in developing and managing water resources, and contributes to tangible public policies and implementation through a shared responsibility across all stakeholders, based on effectiveness, efficiency, participation and trust. The stakeholders include policy-makers, government agencies, water industry, civil society and NGOs, who play an important role in enhancing the water resources management towards equity, economic efficiency, and environmental sustainability. The integrated water resources management is one of the conceptual methodologies that reflect the effective governance. Partnership, one of the important factors for good governance, is one of the most effective ways to manage or develop the water resources, which have a characteristic of spatial and temporal availability and movement. Partnership can have various types of the organization scheme such as public-public or public-private

partnerships, etc. depending on the characteristics of project objectives. Since the collaboration of partners also creates a synergy in achieving the goals of water management, the partnership among related stakeholders needs to be issues for efficient water management.

- **Focus 5: Water ODA**

Keywords: Water Aid Projects, Sustainability, Water Development, Appropriate Technologies, Policies, Monitoring System, Financing

Sustainable implementation is the main factor in success of carrying out water-aid programs. According to the report from the International Institute of Environment and Development (IIED), about 300 million dollars wasted for water infrastructure because of unsustainable aid projects. Water Aid indicates two major problems in the current sustainability framework. One is that communities, government agencies, and service providers have a limited capacity of the knowledge to maintain systems. The other is a lack of revenue to cover the full operation and maintenance. The factors affecting the sustainable implementation are user participation, monitoring system, quality of implementation and technology, user's contribution to capital. For example, the sustainable implementation can be achieved by building the capacity of stakeholders for various projects including WASH (Water Sanitation and Hygiene) projects, sharing experiences of raising funds, and setting tariff structures for sustainable water-aid programs.