



## **GEOSS Water Cycle Integrator**

Toshio Koike (1), Richard Lawford (2), and Douglas Cripe (3)

(1) Dept Civil Engineering, The University of Tokyo, Tokyo, Japan (tkoike@hydra.t.u-tokyo.ac.jp), (2) Morgan State University, Manitoba, MB, Canada (Richard.lawford@morgan.edu), (3) Group on Earth Observations (GEO) Secretariat, Geneva 2, Switzerland (dcripe@geosec.org)

It is critically important to recognize and co-manage the fundamental linkages across the water-dependent domains; land use, including deforestation; ecosystem services; and food-, energy- and health-securities. Sharing coordinated, comprehensive and sustained observations and information for sound decision-making is a first step; however, to take full advantage of these opportunities, we need to develop an effective collaboration mechanism for working together across different disciplines, sectors and agencies, and thereby gain a holistic view of the continuity between environmentally sustainable development, climate change adaptation and enhanced resilience.

To promote effective multi-sectoral, interdisciplinary collaboration based on coordinated and integrated efforts, the intergovernmental Group on Earth Observations (GEO) is implementing the Global Earth Observation System of Systems (GEOSS). A component of GEOSS now under development is the "GEOSS Water Cycle Integrator (WCI)", which integrates Earth observations, modeling, data and information, management systems and education systems. GEOSS/WCI sets up "work benches" by which partners can share data, information and applications in an interoperable way, exchange knowledge and experiences, deepen mutual understanding and work together effectively to ultimately respond to issues of both mitigation and adaptation. (A work bench is a virtual geographical or phenomenological space where experts and managers collaborate to use information to address a problem within that space). GEOSS/WCI enhances the coordination of efforts to strengthen individual, institutional and infrastructure capacities, especially for effective interdisciplinary coordination and integration.

GEO has established the GEOSS Asian Water Cycle Initiative (AWCI) and GEOSS African Water Cycle Coordination Initiative (AfWCCI). Through regional, inter-disciplinary, multi-sectoral integration and inter-agency coordination in Asia and Africa, GEOSS/WCI is now leading to effective actions and public awareness in support of water security and sustainable development.