

Data Integration and Information Fusion towards the Integrated Human Security

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To achieve Integrated Human Security, including the security of water, food, energy, health and ecosystem services, nations first need to share comprehensive and accurate data and information, then prepare various measures to prepare for threats and disasters in advance of their occurrence, provide society with timely support and sound decision making, and establish trans-boundary safety networks towards a resilient society. We need data integration infrastructure which enables scientists, practitioners, decision-makers, citizens and other stakeholders to work together toward *end-to-end* cooperation.

To promote effective multi-sectoral, interdisciplinary collaboration based on coordinated and integrated efforts, the Global Earth Observation System of Systems (GEOSS) is now developing a "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. GEOSS/WCI enhances the coordination of efforts to strengthen individual, institutional and infrastructure capacities, especially for effective interdisciplinary coordination and integration.