

**Scientific and Technological Community Delegation:  
Summary of Intervention: CSD-13 Preparatory Meeting  
Wednesday, 02 March 20005  
Intergovernmental Preparatory Meeting: Sanitation  
PM 10:00 – PM 1:00 / Conference Room 3**

**Main Finding:** We do not have a sufficient knowledge base nor the practitioner talent pool necessary to optimally design and carry out sanitation projects without compromising Integrated Water Management Principles (IWRM) principles while simultaneously pursuing the MDG sanitation goals.

**Recommended Action:** Governments and other stakeholders in science and technology should immediately launch a large-scale and comprehensive training initiative that would fill this gap. The Scientific and Technological Community (STC) recognizes that providing even the most basic of needs for sanitation continues to be a critical international development priority. While it is easy dwell on the fact that 2.6 billion people today lack sanitation services, it is also recognized that investments in science and technology have provided these services to more than 3 billion and undoubtedly will continue be crucial in bringing sanitation to the unserved.

**Supporting Points:**

The STC sees enormous benefit in investments that promote and help adopt cost-effective, environmentally sound, low technology, and locally-operated sanitation systems. At the same time, these investments will provide little enduring impact if they are not accompanied by investments in capable practitioners. The decided lack of trained professionals in precisely those regions that require systematic upgrading of sanitation services will interfere with attainment of the 2015 MDG target for sanitation as well as the longer-term aim to provide universal sanitation.

The STC stands ready to provide the necessary training for the next generation of such experts. Investments in technical training, short courses, and advanced study institutes will be critical in this context.

Safe disposal of human waste has for many been a major development achievement with material improvements on the health and well-being of those served directly, as drinking water is separated from waste streams. In developing countries, 90-95% of all sewage and 70% of industrial wastes that are discharged into surface receiving waters are discharged untreated. Therefore, while the provision of sanitation is of clear benefit to human well-being among those served, special attention must be paid to understanding the implications of sanitation services on downstream users as well as downstream ecosystems, their biodiversity, and the livelihoods that healthy aquatic ecosystems convey to humans.

Thus, at the same time that we need and expanded program of training of sanitation engineers and operators, we also need to disseminate knowledge associated with a more holistic view of the role that sanitation plays within a drainage basin and regional water system context. We note a severe lack of training in multi-stakeholder interactions in the context of the water sciences.

Further, water quality monitoring is in a poor state across much of the world, with highly fragmentary coverage, in particular, for developing regions. We propose strengthening the surveillance of inland

water bodies to first provide a contemporary picture of water quality and to then monitor its trajectories in light of major improvements in the delivery of sanitation services. Monitoring upstream-downstream interactions, including analysis of the impacts of consumptive use (like agriculture), sewage and other pollutant sources, and the waste assimilation capacity of receiving bodies, is critical for understanding a potential major transformation of river systems globally.

Establishing and sustaining systematic observations through the Integrated Global Observing System Water Theme (IGWCO) and the Global Environmental Observation System of Systems (GEOSS) can serve as the vehicle for such surveillance in otherwise poorly monitored parts of the world. Long-term commitments are essential as trend detection requires systematic, unbroken time series of information.

To help address these weaknesses in our knowledge base, the STC makes a specific proposal: To collectively increase, substantially over current levels, investments in advanced training institutes and collegiate-level fellowship programs for environmental engineering, aquatic ecosystem studies, and monitoring technology and applications. ICSU's newly consolidated Global Water System project can assist in multi-stakeholder, interdisciplinary training and analysis. A long-term commitment to investments in monitoring, through GEOSS and IGWCO, is clearly advised.