



Water quality and Health challenges

A1: Supply of drinkable water

A2: Water related diseases

A3: Water quality and health challenges

Indian rapporteur: Pushpito Ghosh

European rapporteur: José Menaia

India challenges

- In India the supply of safe water remains a major hurdle and a national economic burden
- Waterborne diseases are serious public health problems (~73 million losses of working days/year) - **diarrheal** diseases are by far a top priority
- Surface and ground water sources contamination is a serious problem
- Fecal contamination originated from waste and wastewater occurs extensively
- Excessive extraction of ground water leads to arsenic, fluoride, iron and other metals contamination, increased hardness and salinity of source water
- Agricultural contamination with pesticides and nitrate is also occurs
- Algal blooms lead to cyanotoxin contamination of surface waters
- Degradation of water quality during transmission/distribution due to recontamination and deficient design/operation /maintenance is a problem
- Water losses during transmission/distribution are extensive
- Regional imbalances/natural calamities cause water shortage in many regions



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Common challenges

- Chemical water contamination (e.g., arsenic, heavy metals, nitrate and pesticide contamination, marine intrusion) is also an European problem
- The same applies to algal blooms/cyanotoxin contamination of surface waters
- Improved design/operation /maintenance of transmission/distribution systems to preserve water quality/safety is a common necessity;
- Affordable real time monitoring tools / rapid tests are needed;
- Development of decision support tools (hydraulic / quality simulators)
- Regional imbalances in water availability/quality also exist in Europe

India National Water Policy (2002) highlights:

- Top priority to drinking water allocation in the planning and operation of the system.
- Need for periodical reassessment of groundwater potential on a scientific basis
- To prevent over exploitation of ground water, especially near the coastal areas to prevent sea water ingress
- To develop ground water recharge projects to improve ground water quantity and quality
- Need for rational development of surface and ground resources and their conjunctive use

→ also suitable for EU problems

ST&I needs

Problem tackling is site/regional specific (urban, rural, coastal, water-scarce) and requires a joint multidisciplinary/interdisciplinary approach:

- Integrated waste, wastewater and drinking water management
- Strategic planning (drinking water systems design, operation, maintenance best-practices, asset-management)
- Technology selection / adaptation / development
- Centralized vs. point-of-entry- point-of-use treatment
- Education and training
- Source water protection and quality monitoring
- Monitoring tools and protocols
- Systems design, management and operation decision support-tools (e.g., simulators)
- Institutional and public awareness (stakeholder)
- Accountability for the supply of safe water
- Knowledge & experience sharing / transfer , etc. etc,

→ Institutional level governance, policies, regulations, inspection.....



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Current cooperation existing competence

Several EU countries (e.g., Netherlands, German, France, Finland) are already developing cooperating programs

As shown in the Bangalore and in this Conference there are many S&T competencies and experiences to share for drinking water systems innovation, towards water quality and safety



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Need to keep the momentum

- Bangalore/Delhi-meetings follow-up workshops
- Collaborative EU/India think-thank committee/cabinet to provide/disseminate information and promote follow-up actions
- Cooperative links between the ongoing India/EU initiatives



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