

Wastewater

...threatening our quality of life and the ecosystems services we depend upon.

Background

Up to 90 per cent of wastewater in developing countries flows untreated into rivers, lakes and highly productive coastal zones, threatening health, food security and access to safe drinking and bathing water. It also contributes to the rapid growth of de-oxygenated dead zones in the world's seas and oceans: UNEP's recent Sick Water report noted that an estimated 245 000 km² of marine ecosystems are affected by hypoxia, with impacts on fisheries, livelihoods and the food chain. Over half of the world's hospital beds are filled with people suffering from water related diseases while some 2.2 million people die each year from diarrhoeal conditions: 1.8 million of them are children under 5 years old. The climate is also affected: wastewater-related emissions of methane and nitrous oxide, both powerful global warming gases, could rise by 50 per cent and 25 per cent respectively between 1990 and 2020.

The cumulative impacts of excessive, illegal or unregulated wastewater discharges particularly affect coastal areas, since these contain some of the world's most productive yet fragile ecosystems. Blue carbon sinks in these areas (e.g. mangroves, seagrass beds and salt marshes) provide food, energy sources, shoreline protection, recreation, waste assimilation and carbon sequestration. The economic development of Small Island Developing States (SIDS) in particular often depends on these areas and is vulnerable to any degradation of the coastal environment.

The situation is likely to get worse unless there is urgent action to manage wastewater better. By 2015, the world's coastal population is expected to reach approximately 1.6 billion, over one fifth of the global total; by 2030 close to five billion people will live in towns and cities, many within 60 kilometers of the coast; and by 2050 the global population will exceed nine billion. Some of these trends are inevitable, but the world can still choose the quantity and quality of discharges to rivers and seas if a sustainable link is made from cities, rural areas and farms, to the ecosystem services surrounding them. Investment in improved sanitation and water treatment technologies will pay multiple dividends. Similarly, investment in rehabilitating and restoring nature's own water purification systems—such as wetlands and mangroves— will be cost effective.

What do we mean by wastewater?

Wastewater is "a combination of one or more of: domestic effluent consisting of black water (excreta, urine and faecal sludge) and grey water (kitchen and bathing wastewater); water from commercial establishments and institutions, including hospitals; industrial effluent, storm water and other urban run-off; and agricultural, horticultural and aquaculture effluent, either dissolved or as suspended matter"

UNEP and Wastewater

UNEP has long focused on protecting coastal and marine waters from excessive, unregulated or illegal discharges of untreated wastewater. In 2001, it joined the World Health Organization (WHO), the UN Human Settlement Programme (UN-Habitat) and the Water Supply and Sanitation Collaborative Council (WSSCC) to develop a Strategic Action Plan on Wastewater. It also hosts the coordination office of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), a global mechanism that explicitly addresses the linkages between freshwater, coastal and marine environments.

Since 2003, UNEP-GPA has been training municipal wastewater managers on “Improving Municipal Wastewater Management for Coastal Cities” together with the UNESCO-IHE Institute for Water Education and other partners around the world. Over 1,350 experts from 67 countries have so far benefited from the training: the results include wastewater and research projects and country-driven follow-up training courses, and changes in policy guidelines and regulations. UNEP and its partners are encouraging community-based solutions to marine and freshwater pollution problems through improving sanitation and wastewater management practices. They aim to achieve these through additional vocational and academic training which will impart skills in building and maintaining water supply and sanitation infrastructure, and improve expertise in monitoring and quality assurance of the projects. Further regional courses are planned.

In 2010, UNEP, UN-Habitat, and the UN Secretary General’s Advisory Board on Water and Sanitation (UNSGAB) – in partnership with the members of UN Water – combined their collective experience and expertise to address the challenges posed by excessive, illegal and unregulated discharge of wastewater. The report, “Sick water? The central role of wastewater management in sustainable development”, identifies threats to human and ecological health and the consequences of inaction, while also presenting opportunities, where appropriate policy and management responses over the short and longer term can trigger employment, support livelihoods, boost the health of people and ecosystems and contribute to more intelligent water management. A UN-Water Task Force on Wastewater is now establishing a Multi-Stakeholder Collaborative Agenda on Wastewater that responds, amongst other things, to the challenges posed in the “Sick Water?” report (www.unep.org/pdf/SickWater_screen.pdf).



Sick Water Recommendations

The report’s policy recommendations propose tackling immediate consequences, whilst thinking forward to the long term:

■ Tackle immediate consequences

- 1) Countries must adopt a multi-sectoral approach to wastewater management as a matter of urgency, incorporating principles of ecosystem-based management from the watersheds into the sea, connecting sectors that will reap immediate benefits from better wastewater management.
- 2) Successful and sustainable management of wastewater requires a cocktail of innovative approaches that engage the public and private sector at local, national and transboundary scales. Planning processes should provide an enabling environment for innovation, including at the community level.
- 3) Innovative financing of appropriate wastewater infrastructure should incorporate design, construction, operation, maintenance, upgrading and/or decommissioning. Financing should take account of the fact that there are important livelihood opportunities in improving wastewater treatment processes.

■ Thinking to the long-term

- 4) In light of rapid global change, communities should plan wastewater management against future scenarios, not current situations.
- 5) Solutions for smart wastewater management must be socially and culturally appropriate, as well as economically and environmentally viable into the future.
- 6) Education must play a central role in wastewater management and in reducing overall volumes and harmful content of wastewater produced, so that solutions are sustainable.

Additional reading

Training manuals in various languages www.gpa.unep.org

For more information on wastewater activities and partnership opportunities, please contact:

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