
Case study: Analysing water contaminated with pathogens

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Short summary

The analysis of waters contaminated with pathogens, should be approached from a multidisciplinary perspective. Management, economists, technicians, and scientists should be involved with the training and analysis. In addition, there should be opportunities for continued professional development.

Key words:

Reducing pollution; Eliminating dumping of hazardous waste ; Minimising release of hazardous chemicals and materials - achieve sound management of chemicals through their life cycle ; Reducing untreated wastewater ; Increasing recycling and safe reuse ; Protect, restore and sustainable use of inland freshwater related ecosystems ; Prevent the introduction and significantly reduce the impact of alien species

Issues addressed:

Water quality (pollution, dumping of toxic materials, wastewater management, recycling, reuse, restore ecosystems and aquifers)

Testing for water quality. Multidisciplinary training and continuing education.

Tools for implementation:

Capacity development: The analysis of water for pathogens cannot be addressed in isolation and the training programme should include basic modules on water and water resource management. The programme should be a mix of theoretical modules and hands-on learning-by-doing training. The curriculum should also create and awareness of, and

interest in, water-related education and training as a variety of factors, including lack of infrastructure, limited career options and technological and academic isolation may hamper sustainable development.

Lessons Learned:

Triggers: The training of analysts to test for pathogens in water sources should be addressed using a multidisciplinary holistic approach. It should not only address the technology to be applied and technical skills required but should include the interpretation and implications of test results, economic aspects and resource management. The programme should be a mix of theoretical modules and hands-on learning-by-doing training.

Drivers: Scientists, Engineers, Economists, Educational institutions.

Barriers: The training of scientists/analysts from the African region will, however, present challenges as many trainees will come from resource-poor settings and equipping them with skills for pathogen testing in their countries of origin will create expectations which may or may not be economically feasible. In addition, the scientific, educational backgrounds and communication skills of the potential trainees may vary from region to region, a factor which will need to be taken into account in curriculum development. Another obstacle to be addressed is the financial commitment for such training programme(s). Agreements between Research Councils, e.g. South African National Research Foundation/Kenya Research Cooperation programme, from partnering countries contribute to such training programmes, but these are available for only a small number of African countries. To implement a sustainable training programme for the African region a more dedicated and sustainable funding model needs to be developed.

What has worked well? This will equip trainees with the necessary skills to build national and institutional capacity to ensure a sustainable programme. There should also be opportunities for continuing professional development – either in the country of origin or in regional centres of excellence.

What can be improved?

The way forward: To develop and foster collaborative programmes between countries and within countries, e.g. collaborative partnerships between the water utilities/industry and tertiary institutions, to provide skilled graduates through intensive educational and capacity building programmes.

Links: