

New Challenges for Research in Drinking Water

The move towards a new approach to assuring drinking water quality and safety presents a significant and potentially exciting challenge to researchers. WHO's water safety plans and the complementary Bonn principles developed by the water industry and water regulators, mean that there is a greater concentration on prevention as opposed to post-treatment monitoring for both microbial and chemical contaminants. This means that researchers need to develop solutions as well as identifying problems. Because the approach is much more risk based there is also a requirement to characterise the hazards and estimate the risks more accurately so that the balance between costs and benefits can be carefully assessed. The development of high quality science is vital in putting science back at the forefront of decision making, avoiding the danger of science being sidelined because decisions are purely political, as in some interpretations of the precautionary principle, or based only on practicality.

One very good example is that of endocrine disrupting substances in water. These are found primarily in surface waters as a consequence of the discharge of both natural hormones and man-made substances. There are many substances that show potential endocrine disrupting activity in *in vitro* assays, although many are not very active in whole animals. Monitoring treated drinking water does not ensure that drinking water does not contain such substances and does not supply a satisfactory answer to the problem of reassuring the public. Instead, the best approach is to make sure that they are removed by appropriate treatment, either in wastewater treatment or in drinking water treatment and to prove that the treatment systems will do this and continue to do so. There are, therefore a number of issues for researchers.

Which substances are really important and are they true endocrine disrupters in whole animals or humans?

Which of these substances occur in water and drinking water and at what concentrations and frequency? How reliable are the data?

How can they be removed/degraded in wastewater or drinking water treatment and how can we show that drinking water treatment is working reliably without analysing for long lists of chemicals?

Only by multidisciplinary research and by collaborating across Europe can we find the answers to these questions. WeKnow provides an important forum for exchanging information on research and techniques, helping to build good quality data, and for establishing essential cooperative links.