

# Improving the evidence for development of UK Government policy on endocrine disrupting chemicals



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## Introduction

"Policy" is:

- what the Government chooses to do, or not do, about an issue or a group of issues.
- or :
- the process by which Governments translate their political vision into programmes and actions to deliver 'outcomes' – desired changes in the real world<sup>4</sup>.

## Background to the endocrine disruption issue

For some years now there have been concerns regarding the possible effects of hormone-disrupting chemicals in the environment. Endocrine disruption is of particular policy concern because of its potential to impact on fundamental biological systems in all multi-cellular animals, at very low concentrations. An especial difficulty for policy development is that 'endocrine disruption' is a collective noun, describing a plurality of effects on hormone systems.

Endocrine disruption by chemicals is not a new phenomenon (Figure 1). But it was not until the mid 1990s that it started to be recognised that specific features of endocrine active chemicals might require risk assessment and regulatory controls additional to those already applied to chemicals with less specific modes of action.

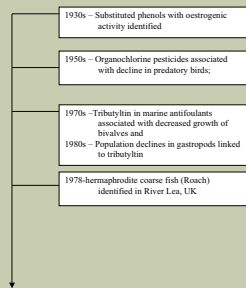


Figure 1 The emergence of endocrine disruption as an issue of wide environmental concern

## Development of endocrine disruption science

As part of its response to concerns with endocrine disrupting chemicals, the UK Government has funded a number of major programmes of research (Figure 2): including studies of Endocrine Disruption in the Marine Environment (EDMAR) and river catchment studies that seek to consider population level effects of endocrine disrupting chemicals as well as the benefits of higher level sewage treatment for reduction or removal of these effects. An important part of the process for initiating scientific studies in support of policy has been the use of Defra sponsored workshops that draw together expert views to identify any outstanding gaps in research coverage of endocrine disruption science with subsequent work programmes planned accordingly.

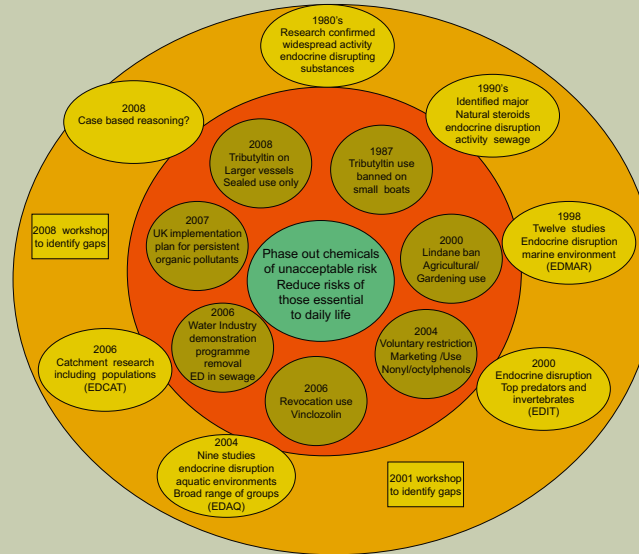


Figure 2. Science providing the evidence for policy

## Tackling major issues

To support good decision making the evidence base must be both broad enough to develop a wide range of policy options, and detailed enough for those options to stand up to intense scrutiny. In development of the Defra UK Endocrine Disruptor Research Programme, studies have been commissioned to provide both breadth and depth of information. In this process it is important to recognise the different viewpoints of science and policy to ensure that the best evidence is developed and communicated (Figure 3).

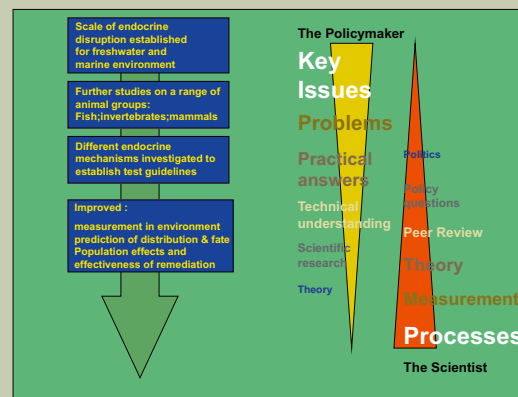


Figure 3 The development of endocrine disruption science in support of policy and the importance of recognising differing perspectives to ensure good communication to stakeholders

## The way forward

The evidence of the harmful environmental effects of some chemicals has emerged through observations of actual impacts. For particular areas where the evidence for effects is soundly based and generally accepted – e.g. Tributyltin on marine molluscs, natural and synthetic oestrogens on certain species of freshwater fish - specific regulatory approaches can be adopted.

To ensure good environmental stewardship in situations where the evidence is more equivocal, there is little option other than to attempt to fill in the gaps in knowledge whilst assessing chemicals of concern in an international setting – e.g. REACH. Environmental monitoring is also an important part of the process of good chemical management and this can be achieved through monitoring at point of chemical production or use, to allow regulation of inputs, and through wider area monitoring to identify trends toward environmental deterioration for which the underlying cause must be investigated.

## International collaboration

Funding for research is finite so it is important that Governments collaborate in sourcing the best science to ensure that the most comprehensive evidence is made available to strengthen our understanding of whether we may need a new or revised policy for chemical management (UK and Japan collaboration over a number of years has yielded excellent science in support of policy, (<http://www.uk-j.org/text/uk-j.html>))

## Concluding Points

Development of tests for screening new chemicals for endocrine disrupting properties will enable appropriate checks to be placed on the management of those chemicals in production, use and disposal. Further research on chemical mixture toxicity and low dose effects specifically in the context of endocrine disruption is still needed as our incomplete understanding in these areas means that a precautionary approach to chemical management is still the main option.

In addressing these and other issues, Science needs to consider the uncertainties and evaluate confidence in information provided to help qualify risk to policymakers and above all help ensure that the message is communicated clearly to the widest audience.

## Acknowledgements

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<http://www.defra.gov.uk/environment/chemicals/hormone/index.htm>

## References

<sup>4</sup> Modernising Government White Paper, 1999. <http://www.defra.gov.uk/science/how/guidance.htm>

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