

Late lessons from early warnings: science, precaution, innovation



Contents

Acknowledgements	5
Preface	6
1 Introduction	9
Part A Lessons from health hazards	13
2 The precautionary principle and false alarms – lessons learned	17
Steffen Foss Hansen and Joel A. Tickner	
3 Lead in petrol 'makes the mind give way'	46
Herbert Needleman and David Gee	
4 Too much to swallow: PCE contamination of mains water	76
David Ozonoff	
5 Minamata disease: a challenge for democracy and justice	92
Takashi Yorifuji, Toshihide Tsuda and Masazumi Harada	
6 Beryllium's 'public relations problem'	131
David Michaels and Celeste Monforton	
7 Tobacco industry manipulation of research	151
Lisa A. Bero	
8 Vinyl chloride: a saga of secrecy	179
Morando Soffritti, Jennifer Beth Sass, Barry Castleman and David Gee	
9 The pesticide DBCP and male infertility	203
Eula Bingham and Celeste Monforton	
10 Bisphenol A: contested science, divergent safety evaluations	215
Andreas Gies and Ana M. Soto	
11 DDT: fifty years since <i>Silent Spring</i>	240
Henk Bouwman, Riana Bornman, Henk van den Berg and Henrik Kylin	
Part B Emerging lessons from ecosystems	261
12 Booster biocide antifoulants: is history repeating itself?	265
Andrew R. G. Price and James W. Readman	
13 Ethinyl oestradiol in the aquatic environment	279
Susan Jobling and Richard Owen	
14 Climate change: science and the precautionary principle	308
Hartmut Grassl and Bert Metz	
15 Floods: lessons about early warning systems	347
Zbigniew W. Kundzewicz	

16 Seed-dressing systemic insecticides and honeybees	369
Laura Maxim and Jeroen van der Sluijs	
17 Ecosystems and managing the dynamics of change.....	407
Jacqueline McGlade and Sybille van den Hove	
Part C Emerging issues.....	429
18 Late lessons from Chernobyl, early warnings from Fukushima	432
Paul Dorfman, Aleksandra Fucic and Stephen Thomas	
19 Hungry for innovation: from GM crops to agroecology.....	458
David Quist, Jack A. Heinemann, Anne.I. Myhr, Iulie Aslaksen and Silvio Funtowicz	
20 Invasive alien species: a growing but neglected threat?	486
Sarah Brunel, Eladio Fernández-Galiano, Piero Genovesi, Vernon H. Heywood, Christoph Kueffer and David M. Richardson	
21 Mobile phones and brain tumour risk: early warnings, early actions?.....	509
Lennart Hardell, Michael Carlberg and David Gee	
22 Nanotechnology – early lessons from early warnings	530
Steffen Foss Hansen, Andrew Maynard, Anders Baun, Joel A. Tickner and Diana M. Bowman	
Part D Costs, justice and innovation.....	561
23 Understanding and accounting for the costs of inaction	564
Mikael Skou Andersen and David Owain Clubb	
24 Protecting early warners and late victims.....	581
Carl Cranor	
25 Why did business not react with precaution to early warnings?	607
Marc Le Menestrel and Julian Rode	
Part E Implications for science and governance	621
26 Science for precautionary decision-making	623
Philippe Grandjean	
27 More or less precaution?.....	643
David Gee	
28 In conclusion	670
In memory of	683
Annex 1 Author biographies	715
Annex 2 An overview of <i>Late lessons from early warnings: the precautionary principle 1896–2000 vol. 1</i>	731
Annex 3 An update of some case studies from <i>Late lessons from early warnings: the precautionary principle 1896–2000 vol. 1</i>.....	747
Index <i>Late lessons from early warnings: science, precaution, innovation</i>.....	768