

Public Participation and Sustainable Development

Comparing European Experiences,
PESTO PAPERS 1

ISBN 87-7307-929-4

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Published by Aalborg Universitetsforlag

Printed Thy Bogtryk og Offset

Distribution Aalborg Universitetsforlag
 Badehusvej 16
 9000 Aalborg
 Phone 9813 0915
 Fax no 9813 4915

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Foreword

These papers have been written within the research project, Public Participation and Environmental Science and Technology Policy Options (PESTO), which is supported by the Nordic Environmental Research Program (1996-97) and the European Commission's research program on Targeted Socio-Economic Research (TSER) from 1996 to 1998. We are pleased that two of the "partners" in the European project, Lancaster University in the United Kingdom and the University of Twente in the Netherlands, have contributed to this report, even though this review of national experiences is formally not included in the European version of the project.

Our objective in the project is to examine both the new social networks that are being constructed in environmental science and technology in different European countries, and to see how the broader public interest is being taken into account. The specific objectives of the project are:

- 1) to contrast and compare national experiences in network-building and policy doctrine reform in terms of specific contextual factors, notably institutional traditions, policy styles, and emerging environmental awareness; 2) to analyze and evaluate the effectiveness of the different ways of organizing networks between universities, research institutes and business and government; and 3) to analyze the various ways of involving the public into environmental science and to assess to what extent public participation influences flexibility, competence building and accountability.

These papers represent the results of the first phase of our research. The project itself will continue until the end of 1998. As project coordinator, I would like to express my appreciation to the authors of the papers, as well as to all of those who have commented and offered advice. I also thank Dorthe Andersen at Aalborg University for her assistance.

Aalborg, Denmark in early May 1997

Andrew Jamison

Contents

Foreword	i
Introduction	9
References	14
Sweden: The Dilemmas of Polarization	
by Andrew Jamison.....	15
1. Introduction.....	15
2. The Swedish National Policy Style	19
3. Phase One: Constitution, 1960s-early 1970s	24
4. Phase Two: Institution-building, 1970s-mid 1980s	28
5. Phase Three - Reconstitution, mid 1980s-1990s.....	34
6. Conclusions.....	40
References	42
Environmental Technology Policy in a Consensus Mode:	
The Case of Denmark by Erik Baark	45
1. Introduction.....	45
2. The Danish Style of Policy Making.....	46
3. From Conservation to Environmentalism.....	51
4. Institutionalization and Sectorization	54
5. Commercialization and the Making of a Technology Policy for the environment	57
6. Conclusions: Toward Integration and Internationalization	64
References	69
Environmental Science and Technology Policy In Norway	
by Per Østerby	71
1. Introduction.....	71
2. The Constitution of a New Problem-Field.....	72
3. Institution-Building, 1970-1980	77
4. The First Wave of Environmentalism.....	79
5. Reconstitution, 1982-1996.....	88
6. Concluding Remarks.....	96
References	99

Lithuania: Environmental Awareness and National Independence	
by Leonardas Rinkevicius.....	101
1. Introduction.....	101
2. Environmentalism in Lithuania: Historical Background	102
3. Public Participation in the Period of Upsurge of Perestroika	112
4. The Case of Ignalina Nuclear Plant	114
5. Public Participation After the Restoration of Lithuania's Independence.....	117
6. The Oil Terminal on the Baltic Sea	121
7. Conclusions.....	128
References	130
 The Uncompromising Ally: Environmental Policy in Iceland	
by Órn D. Jónsson	133
1. Introduction.....	133
2. Development in Iceland - from a populist to an open market economy	136
3. The Building of a National Environmental Science Policy.....	138
4. Emerging Policy and Conflicts of Interests	142
5. The Environmental Institutions.....	145
6. Construction through Conflict	147
7. Concluding Remarks.....	154
References	156
 Public Participation in Environmental Science and Technology:	
The Dutch National Experience, 1960s-1990s	
by J.M. Andringa and J.W. Schot.....	159
1. Introduction.....	159
2. Discussions on 'quality of life', 1965-74.....	160
3. Economic stagnation and institutionalisation of technology policy, 1975-85.....	166
4. Technology policy	168
5. Developing modes of technology assessment, 1986-96	173
6. New directions in technology policy	176
7. Conclusions: an emerging environmental technology policy	180
References	184

The British National Experience	
by Patrick van Zwanenberg	187
1. Introduction	187
2. Environmental Science and Technology Policy-Making Styles.....	190
3. Phases in the Development of UK Environmental Science and Technology Policy	195
References.....	218
 Contributors.....	 223

Introduction

Since the mid-1980s science and technology policy within the environmental field has changed character. On the one hand, environmental s&t policy has been affected by the general changes that have taken place throughout European science and technology policy: the shift towards increased international cooperation and decreased direct state control and the emergence of a new "mode" of knowledge production transcending traditional disciplinary and institutional boundaries (Gibbons et al 1994). On the other hand, environmental s&t policy has come to be directed to the new global problems of climate change and biodiversity and the new "transnational" constellations of actors - both corporate, intergovernmental and non-governmental - which are seeking to ameliorate them (cf. Jamison 1996). Emphasis during the 1990s has been given to the doctrine of sustainability, to preventive measures and so-called cleaner technologies in environmental research and development, both nationally and internationally (cf. Schot 1992; Wynne 1992). In this as in other areas of science and technology policy, however, each European country has assimilated the new doctrines into its own national "system of innovation."

Science and technology policy in the environmental field can be seen to have gone through five main phases since the 1960s (figure one).

Figure One:

Phases of postwar environmentalism s&t policy

Period	Emphasis
1) pre-68: awakening	public education and debate
2) 69-74: sectorization	institution building/environment as R&D sector
3) 75-80: public mobilization	energy policy
4) 81-86: professionalization	environmental assessment
5) 87-: internationalization	integration/sustainable development

In the 1960s, a new range of environmental problems were identified - industrial pollution, atomic radiation, urban sprawl - that tended to supplant traditional conservation issues from most national political agendas. These problems gave rise to a widespread public debate throughout the industrialized countries and, eventually, to a number of policy responses.

The second phase was inspired by the general questioning of industrial society that came in the wake of the student revolts. It was also a period of active institution building. It was then that most industrialized countries established sectorial agencies to deal with environmental protection, and environmental research, education, and even technological development were organized in new institutional forms. Many countries passed stronger environmental legislation, and set up new kinds of courts to decide over cases of environmental pollution. In this phase, the concepts of ecology were transformed into political programs, and at the UN Conference on the Human Environment in Stockholm in 1972, the environment was recognized as a new international policy concern.

We can refer to a third phase of environmental s&t policy from the first oil crisis until about 1980. This was a time when environmentalism had a major impact on national political agendas, especially in relation to energy policy, and when several of the larger national environmental organizations turned into mini-bureaucracies. An important result of the energy debates of the 1970s was a professionalization of environmental concern and an incorporation by the established political structures of what had originally been a somewhat delimited, even marginal political issue. As a result, there was a specialization of knowledge production.

The effect was that, when nuclear energy was removed from many national political agendas in the early 1980s, there was a range of expertise that had previously not existed. In many European countries, there were university departments and research institutes, as well as substantial state bureaucracies that had an institutional interest in environmental problems. From the mid-1980s, as the network-building activities of the new environmental professionals began to be felt, we can legitimately speak of a fifth, or international, phase of environmental science and technology policy, in which global problems have taken over

from local problems as the main areas of concern; and the solution to these problems has been characterized, since the report of the World Commission on Environment and Development in 1987, as "sustainable development."

At the same time, many business firms have begun to adopt new methods of clean, or cleaner production, including environmental auditing, recycling of waste products, and more efficient uses of resources and energy in production processes. For some, the shift is seen as a change in production paradigm; increasingly, environmental concern is being integrated into corporate planning and innovation strategies, while management schools are beginning to provide training in environmental economics as well as in the new methods of production.

In many respects, this shift in agenda can be seen as a convergence of interests between environmental organizations, governmental agencies and transnational firms. The promulgation of national and international programs to encourage "cleaner production" in industrial firms has led to the creation of new institutions at universities and engineering schools, and, in many European countries, new departments of environmental management, economics and engineering are being established to provide the professional experts who are to direct the greening of industry (cf. Fischer and Schot, eds 1993).

These shifts have manifested themselves both on a discursive level, where new principles of environmental science and technology are being formulated, as well as on a practical level, where informal networks are serving to link universities, business and government agencies in new configurations. In between, at an intermediary institutional level, policy-makers face fundamental problems in designing appropriate programs and policy measures to move environmental science and technology in more sustainable directions. What is often lacking is sufficient understanding of the relevant factors that shape and/or constrain effective policy response. By comparing national experiences in a systematic way, as well as investigating the social and organizational dynamics of the ongoing transformation processes, our project aims to fill some of those gaps in understanding.

Our research strategy is to move from the general doctrinal level to a more detailed investigation of the emerging networks of innovation in the environmental field. The general structural model of a national policy system, or realm, is drawn from the literature on science and technology policy (cf. Nelson 1993); but while most analysts have focused on the economic aspects of R&D policy, our interest is directed to what might be termed the cultural dimensions of s&t policy. In the model that has been developed, science and technology policy is conceptualized as an arena of interaction between four policy domains, or constituencies - economic, bureaucratic, academic, and civic. These domains are characterized by different ideals of science and technology policy, that is, by different attitudes to the general social functions of science and technology. Each domain also tends to favor particular kinds of policy measures, as well as different types of programs and projects (cf. Elzinga and Jamison 1995). the general perspective can be depicted as in figure two:

Figure Two:
Cultural Tensions in Science and Technology Policy

	Policy domain			
	Bureaucratic	Economic	Academic	Civic
Dimension				
Principle	order	growth	enlightenment	democracy
Steering mechanism	planning	commercial	peer review	public assessment
Ethos	formalistic	entrepreneurial	scientific	participatory

In the PESTO project, this model is applied to science and technology policy in the environmental field. We examine the interactions among the different constituencies in particular national settings. Our range of countries includes Britain, where the academic domain has traditionally been dominant in science policy and technology policy has largely been left to the private sector, or economic domain; Sweden and Norway, where the bureaucratic and economic interests are historically strong;

Denmark and the Netherlands, with strong civic traditions, but with different combinations of bureaucratic, economic and academic influences; Italy, with a greater balance among the four policy domains; and Lithuania, struggling to emerge from the bureaucratic order and reinvent academic, economic and civic traditions. By comparing experiences in such a wide range of countries, we hope that it will be possible to distinguish those factors that are nationally, or culturally specific from general historically convergent factors that are at work throughout Europe.

In any case, this first report is an attempt to describe some of the most important features of the national experiences of seven of our eight PESTO countries.

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