



Winter 1985

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Recommended Citation

Lakshman Guruswamy, *Environmental Management in a North Sea Coastal Zone: Law, Institutions and Policy*, 25 Nat. Resources J. 233 (1985).

Available at: <https://digitalrepository.unm.edu/nrj/vol25/iss1/11>

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Environmental Management in a North Sea Coastal Zone: Law, Institutions and Policy[†]

INTRODUCTION

The case for an integrated environmental and resource strategy has been cogently argued in the World Conservation Strategy.¹ The urgency of adopting a strategy aimed at conserving natural and living resources and ecological systems, as well as controlling pollution, has been acknowledged by the House of Lords Select Committee on the European Communities,² the Commission of the European Communities,³ the European Parliament,⁴ and the British government.⁵

The Commission of the European Communities is concerned about the condition of the North Sea, particularly its coastal zones and estuaries. The Commission considers the formulation of a coordinated administrative and legal policy for the North Sea a matter of the highest priority.⁶ The Federal Republic of Germany shares this concern and with the support of other North Sea states, including the United Kingdom,⁷ has convened an international conference on the Protection of the North Sea which was held in the Federal Republic of Germany in the latter part of 1984.⁸

The European Parliament, which doubts the efficacy of existing laws, has called upon the Commission of the European Communities to examine

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[†]I am very grateful to the British Academy and the Nuffield Foundation for the financial assistance given by them to Part I of this research project.

1. WORLD CONSERVATION STRATEGY (1980), *reprinted in* 23 INTERNATIONAL PROTECTION OF THE ENVIRONMENT: TREATIES AND RELATED DOCUMENTS (B. Rüster, B. Simma & M. Bock eds. 1981). *See also*, THE CONSERVATION AND DEVELOPMENT PROGRAMME FOR THE UNITED KINGDOM: A RESPONSE TO THE WORLD CONSERVATION STRATEGY (1983) [hereinafter cited as CONSERVATION AND DEVELOPMENT PROGRAMME]. It should be noted that this report does not discuss the official response of the United Kingdom government. This report was drawn up by a number of non-governmental and quasi-governmental bodies, and it has not been endorsed by the United Kingdom government.

2. HOUSE OF LORDS, EEC ENVIRONMENT POLICY, 5th REPORT 40 (1980).

3. Action Programme of the European Communities on the Environment (1982 to 1986), 26 O. J. EUR. COMM. (No. C 46) 1 (1983) (approved by the Council on 7 February 1983) [hereinafter cited as Action Programme].

4. 25 O. J. EUR. COMM. (No. C 182) 102 (1982).

5. 417 PARL. DEB., H.L. (5th ser.) 1301 (1981) (statement of Lord Avon).

6. Action Programme, *supra* note 3, at 5.

7. 417 PARL. DEB., *supra* note 5, at 1307.

8. Memorandum by the Government of the Federal Republic of Germany for the preparation of an International Conference on the Protection of the North Sea and Oil Pollution of the North Sea, *reprinted in* 1982-83 EUR. PARL. DOC. Annex 4 (No. 1173) (1983). *See also* Timetable of the Conference, as of Apr. 15, 1984 (made available to the author) (unpublished).

the feasibility of sponsoring a comprehensive new North Sea environmental convention or treaty which will coordinate and integrate environmental protection and the conservation of natural resources. The Parliament has requested the Commission to discuss a possible new environmental charter at the North Sea conference.⁹ The Tenth Report of the Royal Commission on the Environment recommended that the British government should respond positively to the Federal German Government and the European Economic Community (EEC) concerning the North Sea.¹⁰

Whatever the strength of an integrated environmental and resource strategy as a concept or ecological construct, its functional or operational meaning and form remain blurred and ill-defined. Furthermore, the strategy will remain an ecological construct of little utility, unless it can be applied within a framework of law and administration. In this context, three important questions arise for consideration:

1. What meaning and shape will the environmental resource strategy take?
2. Can existing laws and practices be adapted and developed to produce a basis for the application of an environmental resource strategy?
3. If not, what fresh patterns of law and administration are required?

This article reports a proposed project which examines these questions for a small specific area of the North Sea. The coastal zone of County Cleveland in the United Kingdom has been selected, and its sea boundaries have been redefined for the purposes of this project.¹¹

The "soft" coastline of Teeside (as the industrialized area around the estuary of the River Tees in Cleveland is called) once formed part of nature's marine frontier. In 1852, there were 24,000 hectares of intertidal flat and wetlands which were the feeding and breeding ground for fish, birds, seals and marine invertebrates, many of which spent a critical part of their lives in this estuarine habitat. By 1975, only 175 acres remained and this, too, was designated for port development.¹² Along with so many valuable coastal zones the world over, these had been irretrievably "reclaimed" for industrial development, agriculture, and other utilities such as seaports, airports, and power stations. The River Tees was once a

9. Resolution of the European Parliament of Jan. 20, 1984, para. 1 of the Preamble, paras. 1 & 5 of the text, 27 O. J. EUR. COMM. (No. C 46) 135 (1984) [hereinafter cited as Resolution].

10. ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION: TENTH REPORT, CMD., No. 9149, at 109 (1984).

11. The landward boundaries of Cleveland have been taken to be that of the County Council of Cleveland, but the seaward boundaries have been extended to the sea adjoining the coast of the County Council up to a distance of six nautical miles. This corresponds with the fisheries jurisdiction of the Water Authorities as set out in the Water Act, 1973, ch. 37, § 4, sched. 2 and the Fishery Limits Act, 1976, ch. 86, § 19, sched. 2.

12. See CONSERVATION AND DEVELOPMENT PROGRAMME, *supra* note 1.

thriving fishery in which salmon, sea trout, flounder, and eel, which depended on the clean water of the estuary flourished. They had disappeared by 1940, and the waters of the estuary are now lethal to fish.¹³ The Tees estuary was a victim of law and policy which permitted, without any control, the discharge of sewage and industrial effluent into estuaries and coastal waters.¹⁴

Today, the Tees remains one of the most polluted estuaries in the United Kingdom,¹⁵ characterized as a highly industrialized area with a diverse mix of activities which make increasing use of and demands upon natural resources. These activities, while not embracing all the problems of the North Sea, reflect and encompass within a small area many of the problems encountered in larger industrialized zones of the North Sea. Almost all of the laws and institutions relevant to Cleveland apply nationally. Many of the policies are either centrally approved or formulated. This study, therefore, should provide an understanding of the relationship between law, institutions, and policy applicable within the whole of the United Kingdom. This project may be coordinated with a similar one in the Netherlands based within the Delft Hydraulics Laboratory.¹⁶

AN ENVIRONMENTAL RESOURCE STRATEGY IN TWO STAGES

The proposed environmental resource study will be undertaken in two stages. First, the applicable law will be researched, whether it be United Kingdom, European or international law. The degree to which the laws are fragmented or integrated will be determined. The law, together with the institutions and policies relevant to pollution control and resource conservation, will then be analyzed, clarified and restated. An accurate policy-oriented restatement of the complicated weave of law, institutions, and policies is necessary to determine the tapestry of what the law is or should be. While this exercise could not, of itself, be expected to yield

13. Porter, *Pollution in Four Industrialised Estuaries*, in *FOUR CASE STUDIES UNDERTAKEN FOR THE ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION* (1973).

14. Pollution upstream has been controlled in the United Kingdom by a number of Acts, the most important of which, for our purposes, being the Rivers (Prevention of Pollution) Act, 1951, 14 & 15 Geo. 6, ch. 64. This Act was extended by the Clean Rivers (Estuaries and Tidal Waters) Act, 1960, 8 & 9 Eliz. 2, ch. 54, to estuaries and tidal waters. However, the 1960 Act applied only to new discharges and did not cover pre-1960 discharges or continuations of these discharges. The Control of Pollution Act, 1974, ch. 40, Part II enables all discharges into estuaries and tidal waters to be controlled, though the relevant parts of the Act have not as yet been brought into operation. The government of the United Kingdom has announced its intention to bring the relevant parts into force on the basis of a four year program of implementation commencing from July 1982. See 18 *PARL. DEB.*, H.C. (6th ser.) 36-37 (1982) (written answers per Mr. Giles Shaw). This program has not been executed as planned and there have been further delays. See House of Commons Official Reports, Mar. 13, 1984, col. 93 (statement of Mr. W. Waldegrave) (unbound).

15. See *Tackling Pollution—Experience and Prospects* in *ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION, TENTH REPORT, CMND.*, No. 9149, at 70-72 (1984).

16. Letter from Delft Hydraulics Laboratory to author.

satisfactory conclusions as to what practical manifestations an integrated strategy can take, it does constitute a first step in that direction.¹⁷

The second stage will build upon the first part and will be operational and distinctly interdisciplinary. In the second stage, application of the strategy in a practical way in order to achieve given objectives will be attempted. An economist, engineer, natural scientist, and systems analyst will be among those who might be involved in the second stage.

The first stage has assumed greater importance in light of the European Parliament's view that national, European and international laws applicable to the North Sea and its coastal zones are characterized by loopholes and lack of enforcement. Consequently, effective environmental protection is not guaranteed. The European Parliament has, therefore, called upon the Commission of the European Communities to study the shortcomings of international conventions applicable to the North Sea and to make suggestions as to how those shortcomings might be remedied.¹⁸ Because a development of this nature had been anticipated, the project is well placed to contribute toward an assessment of international and other laws applicable in the area. In addition, the first stage of the project will:

1. Determine whether the European Parliament's conclusions as to the inadequacy of the present legal regime are accurate;
2. Inform discussions and decisions about the proposal of the European Parliament that the European Commission should sponsor a new convention;
3. Ascertain the extent to which environmental and resource policies, not necessarily integrated policies of the kind under discussion, are actually applied;
4. Discover what types of environmental policies or strategies, apart from those presently being applied, might be implemented on the basis of existing law and institutions.

LAW, INSTITUTIONS AND POLICY: THE FIRST STAGE

Uses of Natural Resources

During an early part of the project, the uses of Cleveland's land, foreshore, sea, and atmosphere will be ascertained. Typical uses of coastal zone natural resources include: housing, transport, agriculture, manufacturing industry, waste disposal on land, land drainage, defense require-

17. Practical responses even eluded a group of eminent experts who, for over a year, examined the implications of the strategy for, among other subjects, the marine and coastal areas of the United Kingdom. See CONSERVATION AND DEVELOPMENT PROGRAMME, *supra* note 1. After identifying three areas of concern, namely, the reclamation of wetlands and the problems of waste and over-fishing, they assigned these subjects to three groups of experts for further study. These groups, insisted the original experts, must be possessed of a "commitment to introduce effective solutions."

18. See Resolution, *supra* note 9.

ments, nuclear plants, nature and habitat conservation, harbor development, land reclamation, sand and gravel mining, bird sanctuaries, recreation, transport by ships and pipelines, oil and gas exploration, development and production, commercial fishing, dumping of wastes at sea, air transport and the discharge of wastes into the atmosphere. Many of these activities take place in Cleveland.

The extent of the uses' effect on natural resources will be determined. The study will be confined to the pollutant's recognized general effects and will not address the particular effects of that pollutant on Cleveland. For example, if a chloralkali works is discharging mercury into the Tees estuary, this stage of the project will be concerned only with the possible effects of mercury on the aquatic environment. Mercury which is toxic, bioaccumulable, and persistent can affect sediment, fauna, flora, and fish.¹⁹ This information will be incorporated factually. The actual damage, if any, caused to Cleveland's natural and living resources will be investigated only in the second or operational stage of the project. The law, institutions, and policy regulating pollution caused by these activities and the use, management, and conservation of natural resources affected by these activities will then be analyzed, clarified, and restated.

Fragmentation or Integration

Pollution control, town and country planning, and the conservation of species and habitat have received attention as separate subjects.²⁰ They have been treated discretely. Little attention has been focused on examining the interrelationships between conservation, planning, and pollution control. Additionally, the law has not been interpreted to lend itself to an integrated regulatory strategy. This project will attempt this challenging task. The legal analysis will encompass the law applicable to developers, polluters, institutions, the public, and individual persons affected by an activity.

19. The effects of mercury in the environment are well-established in the literature. *See, e.g.*, J. K. Piotrowski & M. S. Inskip, *Health Effects of Methyl Mercury* (1981) (Report No. 24, Monitoring and Assessment Research Centre, Chelsea College, London); J. K. Piotrowski & D. O. Coleman, *Environmental Hazards of Heavy Metals: Summary Evaluation of Lead, Cadmium and Mercury* (1980) (Monitoring and Assessment Research Centre, Chelsea College, London); R.H.W. Schubert, *Appraisal of the Ecological Consequences (eco toxicity) of Mercury Discharges for the Aquatic Environment* (undated) (Report prepared for the Commission of the European Community, Environment and Consumer Protection Service, Brussels); U.K. DEP'T OF ENV'T, *POLLUTION PAPER NO. 10, ENVIRONMENTAL MERCURY AND MAN* (1976). *See also* REPORT OF THE STUDY OF CRITICAL ENVIRONMENTAL PROBLEMS, *MAN'S IMPACT ON THE GLOBAL ENVIRONMENT* (1970).

20. *See, e.g.*, *THE CONTROL OF POLLUTION ENCYCLOPEDIA* (J. F. Garner ed. 1976); *ENCYCLOPEDIA OF PLANNING LAW AND PRACTICE* (D. Heap ed. 1978); J. MCLOUGHLIN & M. J. FORSTER, *THE LAW AND PRACTICE RELATING TO POLLUTION CONTROL IN THE UNITED KINGDOM* (2d ed. 1982); U.K. DEP'T ENV'T, *POLLUTION PAPER NO. 9, CONTROL OF POLLUTION IN THE UNITED KINGDOM: HOW IT WORKS* (1978); A. WALKER, *LAW OF INDUSTRIAL POLLUTION CONTROL* (1980); A. S. WISDOM, *THE LAW OF RIVERS AND WATERCOURSES* (4th ed. 1979).

The administration of pollution and conservation laws is remarkably fragmented and has spawned a plethora of authorities and institutions.²¹ This study will determine the extent to which these authorities and institutions coordinate or integrate their activities.

The impact of law cannot be measured without reference to its application. Any institutional implementation of law involves the interpretation, administration, and application of complex legislation. The integration and reconciliation of apparently contradictory goals, and of rights, duties and powers legally vested in those institutions is often required. Authorities and institutions discharging these functions often act according to policy or policies which are perceived or formulated within the parameters of discretionary powers. This study will review social and economic policies to determine how such policies have shaped or influenced the implementation and impact of the law. For this purpose, policy will be understood as the principles which govern action directed at implementation or enforcement of the law.

Finally, the extent to which institutions have implemented the law will be determined. At this stage, the inquiry will be confined to institutional implementation and not to its actual operation. In other words, only the fact of compliance or enforcement and not its manner or extent will be analyzed. For example, the Directives of the European Communities and the Programmes of the Paris Commission have instituted a licensing system for the discharge of dangerous or "black-listed" substances.²² The question asked at the first stage of the study will be whether water authorities in the United Kingdom require a license before these substances are discharged into tidal waters, estuaries, and the sea. If a discharge license is required, important questions arise as to the effectiveness, efficiency, and policing of the licensing system. These latter questions will be examined only in the second or operational stage of the project.

Some Examples

The nature of the problems which arise when attempting to orchestrate conservation, pollution, and planning laws, and the exploration in the

21. In Cleveland, they include Water Authorities, Planning Authorities, Waste Disposal Authorities, the Health and Safety Executive, Sea Fisheries Committees, Crown Estate Commissioners, the National Radiological Protection Board, the Tees and Hartlepool Port Authority, the Nature Conservancy Council, the European Commission, the Paris and Oslo Commissions, the Secretary of State for the Environment, the Minister of Agriculture, Fisheries and Food, the Department of Trade, and the Department of Energy. Many of these, like Water and Local Authorities, and the Health and Safety Executive, exercise multiple functions.

22. European Economic Community Council Directive of May 4, 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment [hereinafter cited as E.E.C. Directive]. See also Paris Commission: Third Annual Report, June 1980 to June 1981 (1984); Report on Mercury in the Paris Convention Area (1984); Paris Commission: Fifth Annual Report, June 1981 to June 1983 (1984).

first stage of the interaction of law, institutions, and policies may be illustrated by a few examples. The first concerns the definition of pollution. In the United Kingdom, pollution has been perceived in an anthropocentric or homocentric manner and interpreted in the light of whether an activity has caused damage to another person's health or property. Recent international conventions, EEC laws, and, perhaps, customary international law, have redefined pollution to include not only activities which cause harm to man, but also harm to living resources and ecosystems.²³ When read in conjunction with other statutory provisions relating to the "wholesomeness" and "purity" of rivers,²⁴ living resources and ecosystems could be given a protection and legal status which has not yet been appreciated. The full implications of this development merit careful analysis.

The next examples relate to the scope of land use planning and waste disposal plans. Land use planning is governed by the Town and Country Planning Acts which provide for the making of structural or strategic plans.²⁵ An integrated environmental resource strategy could be written into a structural plan. This course of action, however, could be resisted because it amounts to "social engineering" which is not covered by land use planning. Another difficult question of law and policy is the extent

23. See, e.g., Convention for the Prevention of Marine Pollution from Land-Based Sources, Paris 1974, reprinted in 13 I.L.M. 352 (1974); E.E.C. Directive, *supra* note 22; and United Nations Convention on the Law of the Sea, UN Doc. A/CONF.62/122 (Oct. 7, 1982), reprinted in 21 I.L.M. 1261 (1982).

24. Under the Water Act, 1973, ch. 37, § 1(2)(c), it is the duty of the secretary of state to secure the "restoration and maintenance of the wholesomeness of rivers and other inland waters," while under the Public Health Act, 1936, 26 Geo. 5 & 1 Edw. 8, ch. 49, § 30, discharges of sewage by Water Authorities should not affect the "purity and quality of the water in the stream." Apart from this, the Water Act, 1973, ch. 37, § 22, as amended by the Wildlife and Countryside Act, 1981, ch. 69, § 48, provides that:

In formulating or considering any proposals relating to the discharge of any of the functions of water authorities, those authorities and the appropriate Minister or Ministers—

- (a) shall, so far as may be consistent with the purposes of this Act and of the Land Drainage Act 1976, so exercise their functions with respect to the proposals as to further the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiographical features of special interest;
- (b) shall take into account any effect which the proposals would have on the beauty of, or amenity in, any rural or urban area or on any such flora, fauna, features. . . . (emphasis added).

It may be significant in this context that "pollution" has not been statutorily defined under the Rivers (Prevention of Pollution) Act, 1951, 14 & 15 Geo. 6, ch. 64, § 2(1), or the Control of Pollution Act, 1974, ch. 40, § 31(1)(a). This leaves it open for "pollution" to be interpreted in a manner that protects natural resources.

25. A structure plan sets out "the local planning authority's policy and general proposals in respect of the development and other use of land in that area. . . .", Town and Country Planning Act 1971, ch. 78, § 7(3)(a).

The law places upon planning authorities a duty to "seek the achievement of the general objectives of the structure plan. . . .", Local Government Planning and Land Act, 1980, ch. 65, § 86(3).

to which planning authorities, as distinct from pollution control authorities, can establish discharge standards as conditional to the grant of permission for development.²⁶ Waste disposal plans, which cover a period of 10–15 years, set out the arrangements made by waste disposal authorities for the disposal of household, industrial, and commercial waste.²⁷ The plans resemble structural plans (under the Town and Country Planning Acts) and, though not presently viewed as such, could be used as instruments of an environmental resource strategy. This possibility will be examined.

Water authorities are integrated management agencies responsible for water supply, sewage, water conservation, land drainage, control of pollution, fisheries, navigation, and water recreation. Once flourishing fisheries have been destroyed either by sewer discharges or by industrial discharges permitted in Teeside.²⁸ What is the policy of the water authorities toward their duty to improve and develop fisheries?²⁹ Are the enormous expenses³⁰ required to bring back fish justified during a recession? Is it fair to ask non-polluters to pay the price of this restorative measure? Finally, is the statutory "duty" of the Tees and Hartlepool Port Authority to reclaim land³¹ consistent with the unambiguous conservation functions of the water authorities and the Nature Conservancy Council?³² Fulfillment of this statutory duty has resulted in extensive reclamation of mudflats in Teeside and the loss and destruction of a valuable and irreplaceable habitat.³³ A further question for pursuit in this context is the extent to which the Port Authority has paid heed to the case for conservation when reclaiming mud flats and wetlands.

OPERATIONS: THE SECOND STAGE OF THE PROJECT

The suggested goals of the United Kingdom's response to the World Conservation Strategy in applying the strategy to its coastal zones include:

1. Protecting estuaries and coastal wetlands which are being exten-

26. In granting planning permission the planning authority "shall have regard" apart from material provisions of the development plan, to "any other material considerations," Town and Country Planning Act, 1971, ch. 78, §29(1), and may impose such conditions on the grant of permission "as they think fit," *id.* §29(1)(a).

27. Control of Pollution Act, 1974, ch. 40, §§ 1–3.

28. See Porter, *supra* note 13.

29. Salmon and Freshwater Fisheries Act, 1975, ch. 51, §28(1).

30. Estimated at £150 million according to 1980 prices. See Press Release of Northumbrian Water Authority (Jan. 16, 1981) (unpublished).

31. Tees and Hartlepool Port Authority (a Local & Personal Act), 1969, ch. 4, § 12(1).

32. Especially, Water Act, 1973, ch. 37, § 22. The amendment to section 22 of the Water Act, 1973, was made by the Wildlife and Countryside Act, 1981, ch. 69, § 48.

33. Of the 24,000 hectares of tidal flat in the Tees estuary in 1852, only 175 remained by 1975, and even this was designated for port development. See CONSERVATION AND DEVELOPMENT PROGRAMME, *supra* note 1.

sively reclaimed even though they are important for fish, wildlife, and ecosystems;

2. Reducing pollution from toxic chemicals; and
3. Avoiding over fishing.

The first part of the project will aid in delineating legal and institutional limitations and the possibilities of achieving these and other objectives. The second or operational part will face the issues and problems which might arise when trying to give practical effect to an integrated environmental and resource strategy. The operational phase, therefore, will build upon the first part.

This operational and interdisciplinary stage will be functional and problem-oriented. The tasks envisioned must evolve within the framework of an interdisciplinary structure. What is now offered is just an impression of what the second stage might embrace. Depending upon the nature of the exercise, the following tasks, among others, could be included:

1. An assessment of policy criteria and priorities in selecting use objectives for natural resources;
2. An investigation, relevant to the selected objectives, of the actual extent and impact of the pollutants and wastes;
3. A determination of the sources of relevant pollutants and wastes;
4. An evaluation of the demand for end products of polluting or waste creating processes and an analysis of whether non-polluting processes could be substituted;
5. A consideration of alternative production processes;
6. An investigation of the feasibility of recycling some pollutants; and
7. An assessment of the methods of attaining objectives, asking whether such methods should be based upon incentives, regulations, or a mixture of both.

SUMMARY

A satisfactory understanding of the laws governing coastal zone natural resources and pollution and the manner in which resource management institutions and policies work is necessary before government and administration can be reshaped to accommodate a World Conservation Strategy or new conceptual framework. This article reports a plan to evaluate the laws, institutions, and policies applicable to the management of diverse natural resources and pollution within a United Kingdom coastal zone off the North Sea. The World Conservation Strategy requires that the established matrix of thinking and administration be unravelled and re-woven into a new pattern. Many existing institutional and administrative arrangements must be dismantled and restructured, and new or subsidiary legislation, setting out the objectives of an integrated strategy, must be

enacted. This need not entail the establishment of new institutions or administrative agencies. Indeed, it may be more efficient for existing institutions to cooperate in moving toward achieving the goals of such a strategy. While the focus of the project should be relevant to the task of determining the manner and form in which the World Conservation Strategy should be applied, the project will also provide the legal and policy baselines from which other suitable conservation and pollution strategies may be formulated.