

Part II

Continued from April

A Framework for Environmental Policy

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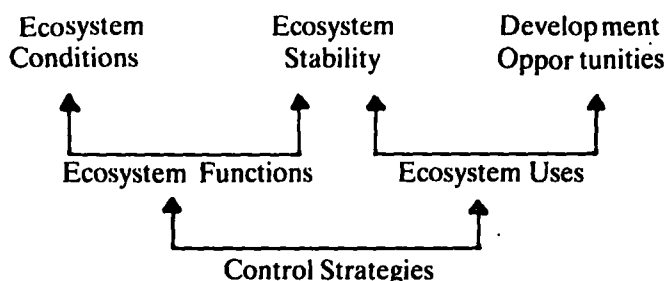
Policy Advisor to the Central Environmental Authority for two years from 1988. Earlier he was Director, Environmental Policy Development and Management in the Ministry of Environment in the Netherlands.

Also he had been the Chairman of the Group of Economic Experts of the OECD Environmental Committee from 1981 to 1983 and since then a member of this Committee.

III ENVIRONMENTAL STRATEGIES

The core-business of environmental management is to match

that we can make definite statements about what exactly is needed to ensure ecosystem stability. Therefore, in many cases, we have to follow a 'trial and



development opportunities with prevailing ecosystem conditions to ensure ecosystem stability. In more operational terms this means that particular ecosystem functions are not threatened by development activities and vice versa that an ecosystem is not being used for purposes it is not suited for.

Although there is a fast growing body of knowledge on the functioning of ecosystems and the environmental impacts of development activities we are still far away from a position

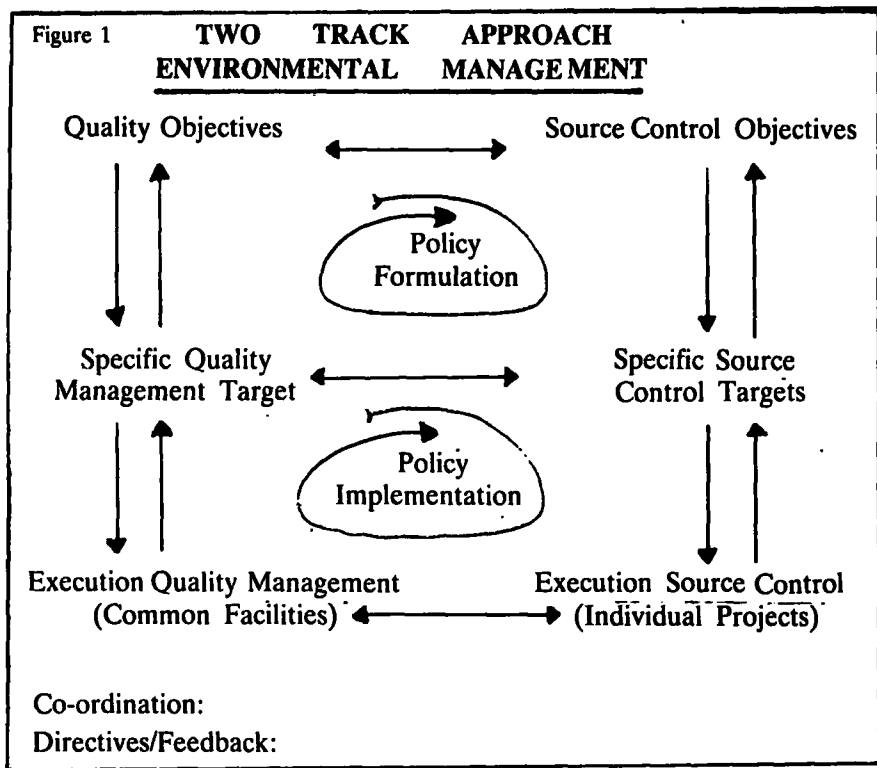
'error' approach rather than a 'command and control' strategy.

The best way to implement such a strategy is to integrate environmental considerations into the planning, implementation and monitoring of development activities. No policy plan, programme or development project that may have any significant impact on the environment should be allowed without a proper assessment of its impacts on ecosystem conditions and functions and without the incor-

poration of adequate remedial measures to prevent or mitigate adverse environmental impacts. This Principle of Environmental Justification should be the code of conduct for all public and private developers and decision makers. The main instruments by which this principle will be effectuated are the Environmental Impact Statement and the Environmental Licence (especially for stationary pollution sources). The Central Environmental Authority is presently in the process of preparing regulations to implement those instruments.

This implies that environmental policy should follow a two track approach. One track is to develop and implement strategies to maintain and enhance the quality of various ecosystems and their functions. This we call the 'quality oriented approach'. The second track is to prevent and mitigate adverse environmental impacts of various sources. This we call the 'source oriented approach'. See Figure 1.

The implication of the two track approach is that on one side we try to classify the characteristics and suitability of particular ecosystems and from thereon develop standards, criteria or targets to protect or to enhance the quality of such ecosystems as well as develop and implement appropriate means to sustain their functions. Such means may be reservation of space, water resource conservation, re(af)forestation, river flow (flood) control and so on. The disposal of solid waste and common sewerage and waste water treatment also may be viewed as examples of environmental quality management though closely related to source



control. On the other side, we have to improve our knowledge about feasible source control and management techniques and to translate them where possible in to source performance standards, criteria and targets. The development of source control objectives and targets has to be backed up by the development of environmentally safe and non-waste technologies. But source control also implies that sources are being located in places where they are less likely to impose threats to ecosystem conditions and to the functioning of other economic activities and human settlements.

Implementation of environmental quality control objectives implies a differentiation of objectives and management techniques in accordance with the variations in the natural or economic significance of ecosystems and their functions. Implementation of source control objectives does require a

recognition of the particular technical-economic conditions prevailing in different (sub) sectors of the economy. Therefore, we may conclude that the implementation of environmental management should differentiate or target the control strategies on different ecosystems (ecosystem approach) as well as on different target groups (target group approach).

However, such differentiation should take place within the context of an overall policy that does recognize the interaction between ecosystems as well as between different groups. Such interactions impose certain constraints on the differentiation of control strategies. With regard to ecosystems we have to be aware for instance that, polluting substances flow through all environmental media (air, water, soil) or that the productivity of coastal marine waters may be affected by the water quality of coastal lagoons and so on. This implies that we have

to develop and impose some minimum environmental quality objectives and standards applying to all ecosystems.

With regard to source categories or target groups we must be aware of the fact that the markets on which they operate are inter-linked and that any bias in source control requirements not warranted by differences in environmental impacts may disrupt competitive balances. Moreover, there is the general objective of equity to be observed implying; that what is sauce for the goose is sauce for the gander. Therefore, we also have to ensure that certain minimum control standards and measures are being observed by all sources causing more or less similar environmental impacts.

There are no rules of thumb how to balance such requirements of policy integration and differentiation. However, this does not make them less important, neither is this an excuse to disregard such aspects. The implication is that policies (not only environmental policies for that matter) should be based upon a proper assessment of the underlying problems and causes (what they are, how they are inter-related and where and in what respect are they different) and an assessment of the efficiency and feasibility of control strategies (what types of instruments and procedures should be applied, what impacts we may expect on target-groups or society at large, what can be done to mitigate negative side-effects, what mechanisms do we need to co-ordinate and monitor implementation, what funds and staffing are needed, etc).

In short, we may say that any policy should be designed and implemented on the basis of a proper assessment of the system it is going to interfere with. Such an analysis should include not only the scope, structure and mechanisms of the environmental system but also external factors that influence the system and how such factors will react to changes in the functioning of the system. Because at the outset there will be lack of data and a lot of uncertainties about how the system actually functions policy formulation and implementation will have to be a revolving process, involving a gradual extension, elaboration and specification of objectives, instruments, organization and execution of the policy based upon more detailed analysis and on feedback information. This process will have to be guided by a proper system of policy planning and co-ordination of policy formulation and implementation. This process of policy making can be illustrated as follows:

Let us see what this general concept implies for the development of environmental policies. It may be obvious that we cannot do this in any detail and therefore, have to use simplifying concepts.

Policy System Analysis

We have identified ecosystems as the objects of environmental management. For practical purposes we have related the great variety of ecosystems to their relative significance as a natural or economic ecosystem. We have observed that at any moment the state of the environment is being determined by a combination of physical and socio-economic condi-

tions. Vice versa any change in ecosystem conditions will have its impact also on these external factors. We have argued that environmental policy should be organized along a two track approach, namely quality control and source control. Both quality control and source control can be achieved by a combination of physical control (spatial distribution and land-utilization) and technical control, (Pollution abatement techniques, infrastructural devices for soil, water conservation, etc). The need for technical control will increase with the intensity of source impacts, therefore the development and application of environmentally sound technologies is particularly relevant in relation to source control. On the other hand, the appropriate location, zoning of activities and the allocation of space is particularly relevant to sustain ecosystem Functions. Therefore, we may consider the

instrument of spatial planning as the first line of defence to protect and maintain environmental quality and the instrument of technology as the second line of defence.

Basic Policy Framework

The primary objective of 'natural' ecosystems we have defined as the non-deterioration of natural values by (maximum) protection of the genetic resource base. For economic ecosystems this is sustained productivity of renewable resources by protection of the economic resource base. In both cases this should be achieved by the protection and management of ecosystem functions. This results in the following basic policy framework for the development of environmental policies.

After what have been said before the figure does not need much explanation. The major implication of the framework as

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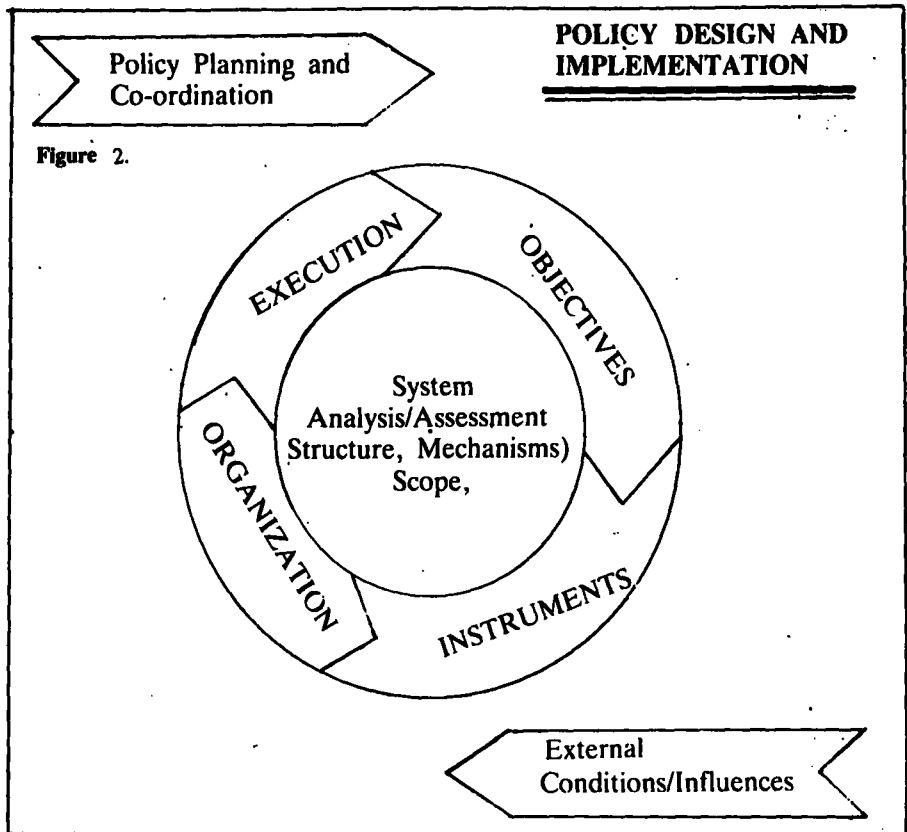


Figure 2.

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A frame work for Environ.....

being presented is that spatial (land use) planning and technology development are the major vehicles by which environmental strategies have to be executed (of course by means of regulations to establish appropriate procedures and instruments to this effect).

lishment of appropriate systems of spatial planning at the national, regional and local level should be one of the first priorities of environmental management. It is evident that the establishment of such a system will require concerted efforts on the part of all ministries and

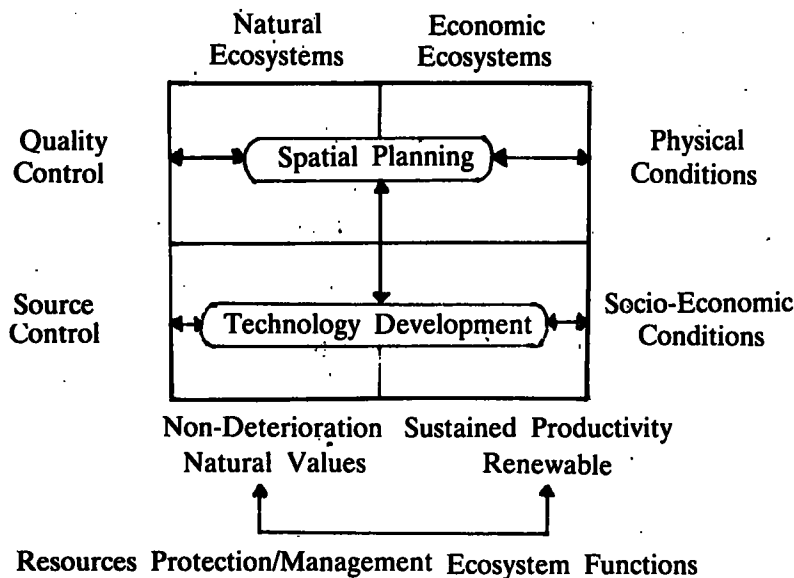
system of spatial planning. May be that the growing awareness of the significance of a rational and environmentally sound use of land, water and other natural resources may give a new impetus to earlier efforts to develop such a system.

Until then environmental management has to rely heavily on the development and application of environmental sound technologies. The significance of environmental technology development is that it will allow a greater density of activities within a specific area by mitigating adverse impacts. Also the application of technologies that consume less energy, less raw materials, less chemicals will save financial resources and therefore, enhancing development opportunities. Thus technology development is the process whereby we balance source control objectives and prevailing socio-economic conditions. Fortunately, this is a process that is less dependent on typical local conditions, hence Sri Lanka may benefit to a great extent of technologies that have been developed elsewhere. National efforts should focus on the adaptation of available technologies for production processes which are typical or dominant in Sri Lanka such as for instance, plantation industries, coir industries, gem mining.

The basic policy framework as illustrated in figure 3 can be used for the further elaboration and specification of policy objectives, instruments, organization and implementation of environmental policies. Broadly speaking the further development of environmental policies involves a further elaboration of:

Figure 3

BASIC POLICY FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT



At any level of development space can be used more efficiently and potential adverse source impacts will be less of a problem, if there is a well developed system of spatial planning based upon a proper assessment of the suitability of certain ecosystems (areas, waterbodies, coastal zones, etc) for particular development purposes. Also, a proper zoning of industrial, agricultural activities and human settlements may prevent or mitigate adverse environmental impacts.

This is particularly true for a densely populated country like Sri Lanka, therefore, the estab-

departments engaged in land use and natural resource management. Also, it must be noted that though Sri Lanka can benefit from the experience in other countries, spatial planning is a process by which typically local, physical conditions are balanced with socio-economic conditions and development opportunities. This involves the weighing of conflicting interests (not only economical but also ethnic) and is therefore, essentially a political process (of course, to be backed up by professional expertise). It is evident that Sri Lanka has still a long way to go before there will be a more or less established

- (a) Overall objectives and strategies with regard to environmental quality and source control to provide a comprehensive (integrated) framework for implementation; and
- (b) A differentiation of standards, targets and strategies to accommodate for the diversity in ecosystems and source categories.

Core Environmental Strategy

To start with the first we may recall that implementation of environmental policies should take place within the context of some general objectives, procedures and rules (Codes of Conduct) to ensure a base level of overall environmental quality and to observe minimum requirements of economic and legal security or equity in dealing with industries, farmers and other people. As an overall code of conduct for new developments we have introduced the Principle of Environmental Justification. Application of this principle requires the formulation of quality control and source control objectives and approaches to be followed with due recognition of the variation in natural and economic ecosystems.

For 'natural' ecosystems the leading principle is that we should prevent deterioration of natural values. This requires an environmental quality approach aiming at a spatial separation of sources and ecosystems. To the extent that such ecosystems may be affected by new and existing less socio-economic activities, we should aim for maximum source control by application of best available physical or technical means.

Natural ecosystems are being protected because they represent a value or perform functions for the society at large. Where the benefits of protection accrue to the whole society the costs involved in protection should also be borne by society. Such costs does not only involve the expenditure needed to manage and monitor the ecosystem but may also involve more limited or restricted opportunities for development of people who have been to some extent dependent on the ecosystem. This may even imply re-settlement of people or re-location of certain activities because for instance, adequate protection requires the establishment of a buffering zone. It is not more than reasonable that such costs are being compensated (financially or in kind, e.g., land). Thus, in case of natural ecosystems the costs of source control should be collectively shared.

For 'economic' ecosystems the general policy objective is to ensure sustained productivity of natural economic resources, respectively to sustain the regulation of vital ecosystem functions, eventually by artificial means. This has to be achieved by an adequate spatial planning to ensure that the integration of sources into the ecosystem does not upset the stability of the system nor adversely affects the functioning of other sources. This spatial planning has to be supplemented by source control techniques that are economically viable in order not to endanger the continuity of existing industries, farming activities and so on. Also, the development of new projects should be jeopardized by imposing source control standards for which no feasible technology is available or

beyond the means of developers. On the other hand, it will be existing industries, farmers as well as new developers who particularly benefit from ecosystems or who are directly responsible for environmental degradation due to inappropriate source control. Therefore, the costs of protection and management of 'economic ecosystem' should in principle being borne by the users and polluters of the ecosystem concerned. **User Pays, respectively Polluter Pays Principle.** Such an individualization of environmental costs is also needed to ensure an efficient use of natural resources and to establish market conditions and prices that reflect the real scarcity of natural resources.

Such are the basic elements of a comprehensive environmental policy that should provide guidance to the implementation of more specific control strategies.

Specific Control Strategies

Implementation of environmental strategies requires a tuning of objectives, instruments organization and actual execution to the specific conditions of particular ecosystems and different source categories. With regard to environmental quality control this implies that an area approach should be followed reflecting the characteristics of particular natural and economic ecosystems. Thus, where the main function of a natural ecosystem is to conserve genetic resources (nature reserves) there will be only very limited scope for human activities. Where an ecosystem is being used as a natural resource base (lagoons, coastal seas, rivers) ●

(To be continued in the next issue)