A FRAMEWORK FOR ENVIRONMENTAL POLICY

Final Part *Continued from May*

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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) economic use of such resources should be controlled and protected to avoid over-exploitation and to avoid damage to ecosystem conditions.

In case of cultivated ecosystems (paddy lands, forest plantations, pastures, etc), land use should be compatible with soil characteristics, morphology and other physical conditions and where necessary such conditions should be adapted to sustain cultivation. In case of urban systems, we only can maintain stability if we provide the necessary infrastructural and other technical means to take over or compensate for natural ecosystem regulation. Therefore, quality control requires tuning of management objectives and means to specific ecosystems, i.e. an area approach.

Variations in ecosystem conditions and the purposes for which they are being used also have to be reflected in source control strategies. To protect a natural reserve we will have to prohibit the establishment of polluting industries in their vicinity or to impose very stringent pollution control measures. To avoid over-exploitation of a natural resource we have to establish procedures to distribute user rights among the local people and possibly to ban certain techniques and so on. Therefore, source control strategies should follow a target group approach reflecting the particular socio-economic conditions of local communities (for instance in relation to the management of nature reserves and natural resources) or the socio-economic conditions of particular subsections of the economy, such as industrial sectors, agricultural sectors, etc.

It may be evident that a target group approach implies an active participation of local communities and interest groups in the formulation and implementation of specific quality and control strategies.

The main elements of such specific control strategies are being presented in figure 5.

IV. IMPLEMENTATION OF SOURCE CONTROL STRATEGIES

As in other countries, it is likely that also in Sri Lanka implementation of adequate source control strategies will prove to be the most problematic part of environmental management. Therefore, it may be useful to discuss in somewhat more detail the most crucial elements of source control. Thereby we will focus on problems related to economic ecosystem management.

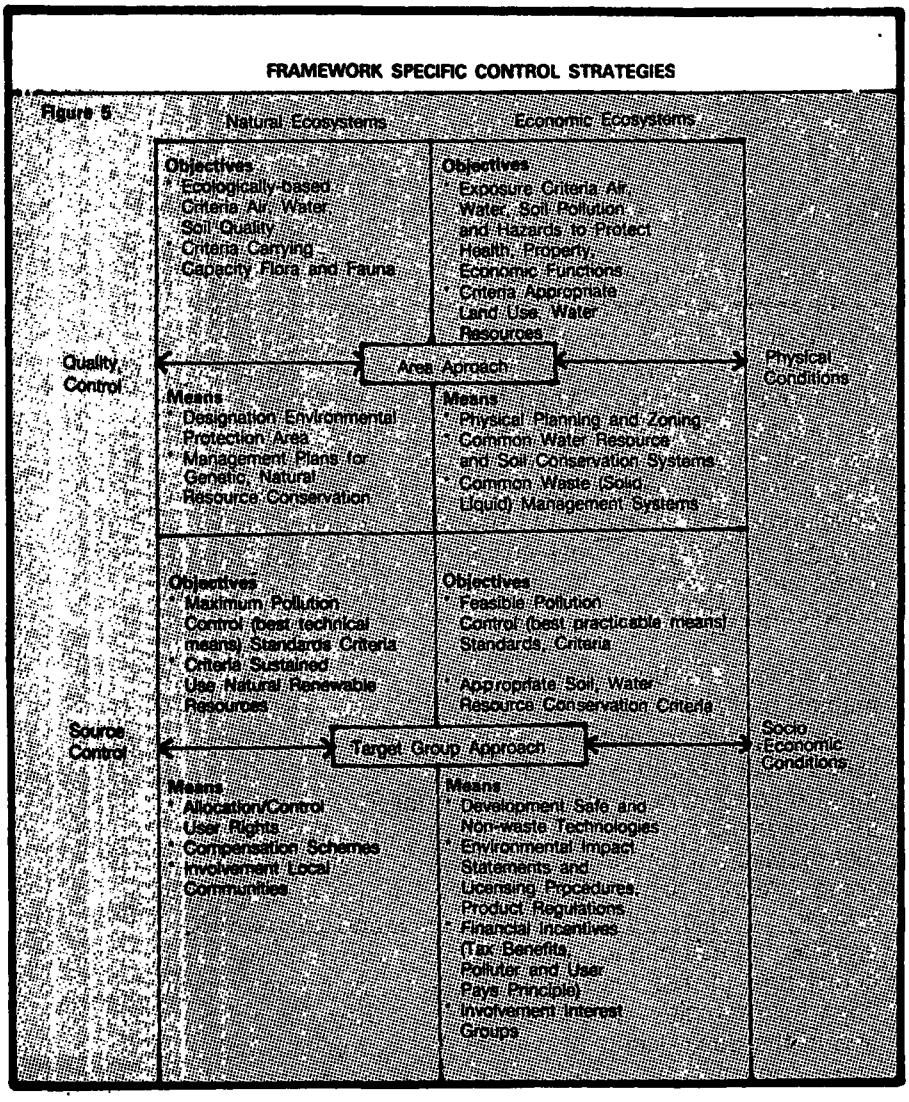
(1) Internalization of Environmental Costs

We have stated that the major objective of economic ecosystem analysis is to sustain the productivity of renewable resources and the stability of vital ecosystem functions.

This being the case, it is obvious that the sound management of such ecosystems should be the prime responsibility of all who are in-charge of such ecosystems and make use of it. Under ideal circumstances there would be no need for government interference, because a rational use of economic ecosystems would be in the interest of all users. Also each and everyone should be willing – in his own interest – to make the costs necessary to sustain the productivity of such resources, that is by taking appropriate environmental protection measures. In short, there would be no discrepancy between economically and environmentally sound management of economic ecosystems and all costs associated with the maintaining of ecosystems stability would be **'internalized'** in the production costs of the various economic activities.

However, the actual situation is quite different and does require government intervention due to the following circumstances:

(a) Though everyone in the end will benefit from healthy (sustainable) air, water and soil conditions some will benefit more than others. For example: Though a textile com-



pany (its employees) will benefit from higher yields of paddy fields through lower food prices, this benefit does not necessarily compensate the costs to be made by this company for pollution abatement to protect same paddy fields. So there is an uneven distribution of costs and benefits of environmental management. In economic terms this means that in the absence of abatement measures, the price of textile products does not reflect the real social costs of production.

(b) Even if individual users recognize the importance of ecosystems stability as a **common resource** for all users, they will try to minimize their share in the costs of maintaining this common resource. For example every farmer knows that an adequate and regular supply of irrigation water is dependent on the adequate forest coverage of hill sides. Nevertheless it is not likely that he will volunteer to pay 'his share' in the costs of re(af)forestation of eroded hills unless this applies to everyone. Thus individual users of common natural resources prefer to have a 'free ride' rather than to pay for its use.

(c) Our economic behaviour is being determined by balancing costs and benefits of different available opportunities. We generally choose that opportunity that will render us maximum returns over costs. Also we place higher value on returns to be earned in the short run than on profits to be gained in a more remote future. Consequently, we put a higher price on costs to be made now compared to future costs. The combination of these factors results in a behaviour that favours options rendering short-term profits of economic resource use even if this means a loss of sustained productivity in the longer run.

In an open market economy, which is being managed on the basis that prices should reflect real scarcities, effectuation of the principle of Environmental Justification means that the aim should be to 'internalize' the costs of environmental control. This principle of 'internalization of environmental costs' means that any use of a common resource, direct or indirect, made by an individual economic household should be paid for by that household in proportion to its use. **(Direct Individualization of Internalization)** Where it is impossible or impracticable to have the user paying directly, costs may be redistributed by means of some kind of levy, again as much as possible in proportion of the individual use made by households. **(Indirect Individualization or Internalization)** In cases where we are dealing with typical, common or collective resources (goods) for which it is impossible to assess individual user benefits the costs of maintenance should be borne by society at large. This is for instance the case with 'natural reserves'. **(Collective Internalization)** (The term collective internalization is being used to underline that society as a whole is bearing the cost and that those cost are being internalized via general taxes.)

It must be noted that various combinations of the three means of cost-internalization are possible. For example, a farmer can be obliged to invest in soil conservation measures on his own land (direct-internalization), in combination with a land-tax (or alternatively a surcharge on the use of irrigation water) to let him pay for collective conservation measures in the catchment area concerned (indirect-internalization), while by

means of general taxes he will contribute to the funding of the protection of vulnerable steep slopes. A gem miner may be obliged to re-fill the mine after exhaustion (direct-internalization), to deposit a sum for the restoration of the surface (indirect-internalization), to deposit a sum for the restoration of the surface (indirect-internalization), while general taxes may be used to promote R & D of more environmentally sound mining practices, although in this case such R & D also could be financed by a surcharge on the sale of gems. A distillery may be obliged to have its own waste water treatment facility (direct-internalization) but because it residue may need further treatment in a collective treatment facility it will also have to pay for the costs of sewerage and collective treatment for instance by a levy on the waste water volume (indirect-internalization) and finally the distiller will have to pay taxes to finance i.a. the costs associated with the establishment and funding of environmental control agencies (collective internalization).

These examples illustrate that there are many ways to internalize the costs of environmental control. Also it may be clear that there are different views possible as how far 'internalization' should go. Some will argue that only those costs for which a 'direct casual link' between 'user' and 'environmental control costs' can be established, individualization of such costs is allowable. Others will argue that the 'need for environmental control' is primarily caused by the economic households using the environment as a 'resource' or 'dump' and therefore, those costs should be borne by them, at least in first instance. What should be done in practice is thus again a 'political decision'. However, it is evident that any major departure – for a longer period of time – from the 'principle of internalization' will result in less efficient solutions, if not obstruction of environmentally sound management of natural resources. It is on these grounds that the implementation of environmental management systems should follow the User Pays and Polluter Pays Principles.

(2) New and Existing Sources

We have introduced the Principle of Environmental Justification as the general Code of Conduct regarding the approval of new development activities. When this is combined with the Principle of Internalization of Environmental Costs, we may expect that new developments will more or less succeed in balancing real social costs and benefits (as far as our knowledge reaches).

However, the bulk of environmental problems we are facing today are due to already established activities. In view of the rapid deterioration of ecosystems that takes place due to existing mal-practices we have to develop some kind of 'rehabilitation strategy'. Also, it must be emphasized that due to our limited knowledge of the functioning of (the whole complex of) ecosystems and of the dose-effects of numerous (chemical) substances released into the environment every day, it is impossible to establish once and for all environmentally sound control systems regarding new development activities. It is most likely as has been demonstrated again and again that we systematically under-estimate the environmental hazards involved in all kinds of activities. Because of this 'trial and error approach' we will have to adjust from time to time the practices of already established production and consumption activities. Nevertheless, the distinction between new and existing sources of (potential) environmental degradation is an important one from a socio-economic and therefore, policy point of view and should have its implications for the implementation of environmental management measures.

(a) Present income and employment is generated by existing enterprise. Any environmental control resulting in higher unit costs of operation may adversely affect the market position of existing manufacturing firms, the income position of farmers and so on. This problem will be more serious if we have to deal with low competitive units of enterprise operating at the margin of the market or even operating below the bottom line.

(b) The introduction of new resource conservation and pollution control technologies – needed to comply with environmental management objectives – will generally be more easy for new than for existing enterprise both for technical and economic reasons.

(c) Even in case where it can be demonstrated that the social cost-benefit ratio of environmental control measures (short and long term) outweigh the loss of capital and employment vested in existing enterprise there is the socio-political problem that the gains and losses do not accrue to the same categories of people.

It is obvious that – unless such factors are taken into account and actions are taken to overcome obstacles that may arise due to these factors – we cannot expect to make any significant progress in environmental management. In veiw of these circumstances we can derive the following general guidelines for implementation:

(i) Standards of environmental control for new enterprise should generally be more stringent than for existing enterprise. This principle holds both for pollution control measures and performance standards related to resource conservation. In many countries this distinction is described as;

- best available technology for new sources, and

- best practicable means for existing sources.

Although, this distinction leaves ample room for differences in actual interpretation and further elaboration it may be very useful as a general guidance for implementation.

(ii) In cases where an existing source is required to apply control methods that are more stringent than best practicable means there is a case for financial compensation of the extra costs involved. Such cases may occur where the protection of 'natural ecosystems' do require more severe control measures. (Environmentally Justified Compensation).

(iii) In case where application of the principle of best practicable means is beyond the financial capabilities of an existing firm compensation should be allowed only if otherwise the economic viability of such enterprise would be undermined. (Economically Justified Compensation).

(iv) Financial compensation of environmental control measures in enterprises of which the economic vitality is doubtful, should take place only in the context of a comprehensive set of measures to restore sound economic performance.

It is bad – although rather common – policy to exempt marginal or unprofitable enterprise from normal (best practicable) environmental standards on just these grounds. The problems with such enterprises are 'economic' in nature (bad management, old equipment, over-sized capacity or under-sized units of operation, under-investment, low-skilled or low-motivated labour and so on). Only if such economic problems are properly addressed, there is a scope of improvement in both economic and environmental performance. If not, all but a few will loose.

(v) Existing firms, farmers, etc., shold be granted a certain period of time to adjust themselves to new environmental requirements. This transition period is needed to enable entrepreneurs;

–to find optimal (cost-effective) methods of environmental control turned to their specific operational conditions,

– to combine where possible the need for environmental control with investments in energy – and raw-material saving technology, and

– to avoid major disruptions in the cash flow that may endanger their 'otherwise sound' liquidity and solvability. Such transition periods may differ from sector to sector, depending upon the magnitude and urgency of their environmental problems and the specific economic circumstances applying to the sector.

(vi) In order to facilitate and possible to speed up the implementation of environmental control throughout industry, agriculture and other sectors of the economy, government may introduce special incentives to comply with environmental objectives. Such incentives may be tax reductions, premiums on resource saving technology, direct investment grants for the installation of pollution abatement control facilities and so on. It must be emphasized that such incentive schemes should be limited to the transition period (for various sectors). Also it is important to note that such incentives schemes will only be effective with regard to basically sound enterprise.

(vii) Apart from typical economic adjustment problems, one of the major obstacles for existing enterprise to comply with environmental objectives is the lack of feasible low-cost non-waste technologies. In order to promote the development and introduction of such technologies government may consider the establishment of a 'Non-Waste Technology Promotion Fund'. Such a fund should grant subsidies both for the development and demonstration (pilot-projects) of such techniques.

To conclude this section, it may be emphasized again that, most of the obstacles hampering the implementation of environmental control measures are due to weak economic performance of (the various sectors of) enterprise and the lack of an effective industrial and agricultural sector policy. For this reason, it is most important that the implementation of environmental control measures takes place in conjunction with an 'economic structure policy' aiming at rationalization, modernization and restructuring of sectors of enterprise by providing proper incentives, technological guidance and human resource development.

3. Target Group Approach

From the two previous sections it may be clear that the environmental management of economic ecosystems cannot be carried out without due regard of the factors determining the economic performance of various sectors of enterprise.

If Government expect entrepreneurs to integrate environmental considerations into their invest-

ment decisions and management practices, entrepreneurs have the right to demand from government an understanding of their economic environment. Such an understanding requires of the Government;

- that environmental management objectives pertaining to their activities will be established by a proper assessment of priorities,
- that implementation schemes will be based on an assessment of the availability of feasible and cost-effective control methods, and
- that implementation will allow entrepreneurs to find most optimal solutions to comply with environmental objectives.

Since the combination of environmental problems and technical-economic conditions prevailing in different (sub) sectors of the economy are quite different there should be a flexible approach reflecting such differences. This certainly does not mean that the general guidelines for implementation as presented in the previous section are not valid for all sector but rather that there is room for further elaboration (refinement) on a sector by sector basis. Such an elaboration is needed to tune the implementation of environmental objectives to specific conditions prevailing in different sectors and branches of the economy. In other words, we should follow a Target Group Approach.

A target-group may be defined as a group of decision-makers representing a set of more or less similar economic activities with common environmental management problems.

The basic philosophy of the target group approach is that by means of careful analysis, consultation, policy planning and implementation it is possible to match ecological constraints and economic opportunities in a way that will be beneficial to overall productivity of the sector concerned.

The main (operational) objectives of a target group approach should be to establish a medium-term (3-5 years) scheme of implementation of environmental control measures consisting of:

(a) general levels of environmental control to be applied throughout the target group taking into account relevant variations in scale and type of economic activities;

(b) a time-schedule for implementation, eventually phased with regard to specific environmental issues and types of activities;

(c) identification, assessment and selection of feasible physical control methods (technology), eventually combined with a technology-development programme to enhance environmental control options in the longer run;

(d) assessment and selection of appropriate financial incentives to overcome existing obstacles for environmental control;

(e) assessment of specific needs for training and extension services to facilitate implementation to be followed by an agreement on mutual responsibilities and cost-sharing, and

(f) assessment of specific needs for monitoring and evaluation of the implementation scheme again followed by an agreement on mutual responsibilities and cost-sharing.

Essential for target group approach is that the sub-sector concerned is being represented by people who have a mandate to negotiate on behalf of the sector. Also essential is that the environmental, technical and economic information on which decisions regarding the various elements have to be made in reliable and reflects major variations in type or scale of activities and environmental problems as there may be.

A major advantage of the target group approach is that the interaction between economic and environmental issues is being analyzed and discussed on a level that is most appropriate from a socio-economic point of view. Socio-economic issues like prevailing market conditions and prospects, production structure, technology development, employment and human resource development play a dominant role at the sectoral or branch level.

For example, some individual enterprises may be weak while the economic position of the majority of enterprise in the sector is strong. In this case it would be wrong to grant exemptions or subsidies for environmental control to weak individual firms. Poor economic performance of an economic (sub) sector as a whole may be due to over capacity, out-dated product assortment, old production equipment, etc. In such a case there is a need for modernization and rationalization of overall production capacity within the sector. Such a restructuring process can very well be combined with improvements of environmental control. Another example may be that due to lack of know-how, capital or land-security more profitable types of land-use are not being undertaken (agroforestry, horticulture, animal husbandry). A change from low earnign or subsistence agriculture to more profitable cultivation systems is probably the best way to ensure appropriate soil and water conservation measures.

All these examples illustrate that much can be gained by having a comprehensive analysis and policy planning of environmental and economic problems at the sectoral

level. Another major advantage of a target group approach is that it provides clarity with regard to environmental objectives and ways and means of implementation to all people concerned. If the sectoral environmental objectives and implementation schedule is published and distributed everyone concerned may know what the policy is and what its implications are. This certainly will facilitate the implementation process because entrepreneurs will be able to anticipate and decision-makers will known how to place problems related to individual enterprise in their proper context.

However, there is also the other side of the coin. First, it must be noted that by presenting environmental problems on a sectoral level there may be a strong pressure on behalf of the target group to 'relax' environmental objectives (target levels of control) and to buy time by lengthening the time schedule for implementation. this will be less of a problem if there is a strong political commitment towards the achievement of environmental objectives or in cases where enforcement of environmental control may result in the shut down of marginal enterprise to the benefit of more viable enterprise.

Secondly, a target group approach requires a lot of information gathering, analysis, consultation and planning. This means an investment in time and manpower efforts on behalf of both the environmental and economic management sectors of Government. It also can result in the delay of tackling very urgent environmental problems. Such capacity problems and possible delays in actual implementation have to be balanced against the advantages of a target group approach regarding overall effectiveness and efficiency of implementation and enforcement. It is however obvious that priority should be given to (sub) sectors which cause major environment problems.

Thirdly, and very close connected to the first and second point, it must be emphasized that a target group approach requires the full co-operation of the 'economic management' sectors of Government. Not only should they be convinced of the need for appropriate environmental management systems but also that this is of sufficient priority and 'economic interest' to (re) adjust their own sectoral policies and instruments for this purpose. Environmental policy-makers may experience quite some difficulties in achieving such active support. This points again to a careful selection of target groups more in particular to sectors where we may expect that both 'economic' and 'environmental' benefits of a target group approach will be large.

Conclusion

The efficiency and effectiveness of environmental management will be determined to a great extent by the ways and means source control strategies will be designed and implemented. Such strategies should aim at an integration of environmental objectives and environmental costs with due recognition of the variations in circumstances between and options available for new and existing activities as well as the differences between subsectors in the economy. This can be accomplished by following a target group approach. Such a target group approach should be developed and implemented in close consultation with the interest groups involved. However, it also requires an appropriate, co-ordination between the government sectors involved in environmental, respectively economic management, not in the least because efficient source control is very much dependant on and can be enhanced substantially by improving the economic efficiency of agriculture and industry. When developing such a target group approach priority should be given to those subsectors which are creating serious environmental problems and where there is substantial scope for improving economic efficiency by upgrading production technology, saving of energy and raw materials.

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restoring the status quo ante with regard to the demographic proportions of those areas.

State land available for allocation will be made available to the landless of the area.

Areas from which people have been forced out of lands they have habitually inhabited (including refugees) shall be identified and such inhabitants shall be rehabilitated in those areas completely. All persons shall be free to purchase land, live and carry on their livelihood in any area of this country."

The word 'area' needs to be defined. Does it mean a Pradeshiya Sabha of around 81 sq. miles on an average or a Grama Sevaka Division of about 4sq. miles on an average?

'Demographic complexion' also needs elucidation. If Tamils subject to Thesawalamai in the Jaffna peninsula are given land in the Maduru Oya catchment area along with Batticaloa Tamils subject to Mukkuwa law and Tamil-speaking Muslims subject to Muslim law and Indian Tamils subject to the common law, would that be considered as changing the demographic complexion in the Maduru Oya catchement area?

Column 170 of Hansard of 19th February 1987 sets out the proposed allocation in Scheme B in Batticaloa District as follows:–

Allotments	18,690 (approx)
Sri Lankan Tamils	10,449 + 30
Muslims	4,830 + 15
Indian Tamils	270 + 3
	15,558

This proposal has been incorporated in the Peace Accord of 29th July 1987 and should be adhered to.