

## Evaluating River Valley Projects

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The role of the Planning Commission and the Ministry of Environment and Forests (ME&F) in ensuring that river-valley projects are not environmentally unviable, needs to be viewed in the following context :

### 1. Planning for River Waters

It is high time that the country had a master plan for the utilisation of its river water resources. Such a plan has been recommended repeatedly by various bodies<sup>1</sup> and, reportedly, state-wise plans have been under preparation for many years<sup>2</sup>.

The Ministry of Environment and Forests is specifically concerned with the environmental components of such a plan. River waters, apart from being used for agriculture, industry and domestic requirements, and for recreation and cultural pursuits, also have significant environmental functions. They provide habitat and nutrients to a host of fauna and flora, maintain river ecosystem, prevent salt water ingress at river mouths, maintain ground water levels, provide drainage, act as sources of drinking water for wild animals, and as diluters and absorbers of industrial, agricultural and domestic pollution.

It is, therefore, essential that plans for utilisation of river waters must take into consideration environmental aspects of the rivers, and that the Planning Commission and the Ministry of Environment and Forests should insist on a basin/state/region-wide river water utilisation plan before river valley projects (RVPs) are considered. As RVP's also submerge land and forests, they must also conform to land use and forest plans. The Planning Commission and the Ministry of Environment and Forests should, accordingly, announce a deadline after which they would not consider River Valley Projects unless they are shown to be a part of well worked out and approved land, forest and river waters management plans.

The Planning Commission and the ME&F should also make a policy, for future projects, that they would not be even considered for clearance if construction work is started before environmental clearance has been received.

## 2. Planning for the Project

Most environmental "costs" cannot be reduced to rupees and paise. This is because of an inherent weakness in economics.

".....economics seems to be able to deal with only those 'goods and services' which are, in one way or another, inputs to, or products of, 'economic activities'. Therefore, the cost of soil-erosion can only be measured in terms of the resultant 'loss of agricultural produce', or the cost of clay in terms of how many clay pots could be produced from it. But when 'goods' are essential for 'natural processes', then it becomes difficult to compute economic costs.

What is the cost of a tree which cleans air, regulates water flows, fixes nitrogen, absorbs pollutants, produces biomass and provides habitat to other flora and fauna? At best economics can compute 'replacement costs' of those of these functions which are replaceable. Replacement cost of firewood can be computed in terms of coal equivalent energy produced through 'economic activities' like generation of electricity, or mining of fossil fuels. But what happens to the 'irreplaceable'. They become priceless and, therefore, go out of economic calculations. Unfortunately, much of nature is irreplaceable, and therefore priceless." 3

It is, therefore, impossible to make a decision on whether a project is environmentally viable, purely on an economic analysis.

Currently, there appears to be no objective set of criteria to evaluate a project. However, if the acceptance and rejection of projects has to be done on a 'scientific' basis, such a set has to be developed.

### 2.1 Establishing a Need for the Project

Many a project is planned without being clear whether there is a need for the project, that is, whether what the project is expected to deliver can be got in some other way. This involves examining alternatives to the project and establishing its optimality, as compared to all the alternatives.

The judgment about the viability of the project, even

from the environmental view point, cannot be made without assessing the above.

## 2.2 Justifying the Design of the Project

It has been noticed, for many River Valley Projects, that a small modification in the height of the dam, or in the design of the project, could save a lot of environmental costs. Though this would also affect the benefits of the project, the viability of the project could significantly go up. It is, therefore, essential that comparative analysis be done, on the basis of relative costs and impacts for different designs of the project, and optimality be decided accordingly.

## 3. Cost Benefit Analysis

As already mentioned, environmental costs are usually not quantifiable. It, therefore, becomes imperative that the final judgment on the viability of a project be done keeping in mind both the quantifiable and non quantifiable costs and benefits.

It is sometimes argued that examining the cost benefit analysis of a project should not be a concern of those involved in its environmental assessment. However, this is not correct, as it becomes impossible to evaluate whether ~~the non-quantifiable~~ environmental costs of a project are justified, unless one knows what are the quantifiable residual benefits of the project.

## 4. Environmental Costs

It is important to categorise the quantum and type of environmental costs from the non-permissible to the minimal. Non-permissible costs would include, for example, the destruction of unique or fragile eco-systems, critical habitats of endangered species, or the destruction of huge areas of natural forests and/or other natural eco-systems, or the displacement of a large number of tribals and other socially fragile communities who are emotionally, culturally and economically dependent on their traditional

homelands.

Projects which do not involve such non-permissible costs, would be categorised, in terms of their impact, from very serious and very extensive to minimal. The economic justifications for projects having very serious and very extensive impacts would have to be much higher than for those having minimal impacts. Such a categorisation would inevitably affect the final choice of projects and their sites. For example, a project with small economic benefits which also has minimal environmental impacts would become more desirable than one with higher economic benefits but much higher environmental impacts.

#### 5. Environmental Planning

If a project meets with all these conditions and is finally sent up for approval, the project documents must include an environmental management plan.

Such a management plan must contain a complete assessment of the impact of the project, and strategies for prevention or minimization of, or compensation for, the impacts. It must also include a carrying capacity study for areas where oustees are to be rehabilitated.

#### 6. Conditional Clearance

If the project meets with all the requirements, conditional clearance should be given. The Ministry of Environment and Forests should have the authority to stop work on any project where the implementation of the Environmental Management Plan is not according to schedule or up to the required standards.

#### 7. Monitoring of the Projects

Once a project is completed, it is important to monitor its performance so that experience can be gained on how far projects succeed in delivering anticipated benefits and limiting anticipated costs. The past experience of projects in India has not been a happy one in this regard<sup>4</sup>.

The Planning Commission and the Ministry of Environment and Forests should get evaluated a sample of past projects, from this perspective, and also do a retrospect analysis of the environmental impact of the project and the efficacy of the Environmental Management Plan.

Details of the steps and stages in the assessment process are annexed.

Proposed Methodology for Environmental Impact Assessment and  
River Valley Projects

The Environmental Impact Assessment of River Valley Projects needs to be done in two different stages:

Stage 1. The submission of a preliminary statement of intent by the Project Authorities/State Governments giving an outline of the proposed project, its location and other details, as per a Proforma. This would enable the Ministry of Environment and Forests to indicate whether a project would be allowed at all in the proposed area. The ME&F would also give the relevant environmental category for the area, so that in case a project is permissible there, the project authorities are informed in advance of the sorts of economic benefits that would be required, and the types of information they would need to collect, in order to be considered for clearance.

In case the proposed project is in an area where projects are permissible and the project authorities feel confident that they could meet the requirements of the Ministry of Environment and Forests, and collect all the information required, then a formal application for clearance should be submitted, along with completed documentation, as per guidelines.

At this stage, the details of proposed rehabilitation, catchment area treatment and compensatory afforestation, must also be submitted. The project design, and the project itself, must also be established to be optimal from among all the alternatives.

Detailed management plans for the environmental aspects must be drawn up and submitted, in accordance with guidelines. These plans must contain detailed objectives, time schedules and strategies of action. At this stage the detailed cost-

benefit analysis must also be submitted, taking into consideration the expected expenditure in implementing the various work plans and the management plan. If these are all found satisfactory, then conditional clearance can be accorded, conditional to satisfactory progress, as spelled out in Stage 2. Also, work on compensatory afforestation and catchment area treatment must be so planned that plantations have become established before impoundment starts. Where necessary, fuel and fodder plantations for support of ousted populations must also be established before people are shifted.

Stage 2. Once conditional clearance to the project has been given at Stage 1, the Ministry of Environment and Forests should monitor the progress of the work and implementation of the management plan as per returns submitted, every six months, by the project authorities. These returns would be in accordance with detailed guidelines and in a proforma, designed for the purpose, for each project.

The Ministry of Environment and Forests would have the authority to stop work on any project which, in its opinion, was not satisfactorily implementing the environmental management plan.

For both these stages, the ME&F would have the right to have independent studies commissioned to verify the project authorities' reports. The ME&F could also identify individuals/institutions which would be asked to do these studies.

The ME&F must give an opportunity to people's organisations to express their views both on the viability of the project and on methods and progress of implementation.

## REFERENCES

1. See Singh, Shekhar, et. al., 'Evaluating Major Irrigation Projects in India', New Delhi, Indian Institute of Public Administration, 1989 (Attached).
2. Ibid
3. Singh, Shekhar, 'The global Environmental Debate', New Delhi, Indian Journal of Public Administration, vol xxxv, No. 3, July-September, 1989.
4. See Singh, Shekhar, et. al. op cit