

# ENVIRONMENT-DEVELOPMENT CONFLICTS -- A WAY OUT

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## INTRODUCTION

Whether it is a large hydroelectric dam (for example, Sardar Sarovar), an Enron/Cogentrix-type thermal power plant, a Kaiga-type nuclear reactor, or a mass-transit project (for example, the Bangalore Elevated Light Rail Transport System), the environment-development conflict follows a standard pattern. First, the government in its role of "developer" comes up with, or approves, a mega project to supply infrastructural inputs -- electricity, water, transport, etc. In the process, they forget, or ignore, or suppress, crucial side-effects and environmental impacts. Socially conscious citizens, independent experts and civic groups then highlight the negative consequences of the project. Soon, a major battle develops. On one side, there are environmental agitations, public-interest litigations and political forces and movements opposing the project. And on the other side, are the interested politicians, the concerned government agencies, and the industrial/commercial/contractor lobbies pushing for the project.

What differs from one project to the other is only the intensity and outcome of this conflict. In some cases, the project is stalled, and initial investments become infructuous. In other cases, the opposition is overcome and the project is steam-rolled through.

Is there a more constructive approach that would minimize, if not avoid, these enormous "transaction costs"? Yes, according to this essay which analyses the origins of the conflicts and outlines a constructive agenda for resolving environment-development conflicts.

## THE GENESIS OF ENVIRONMENT-DEVELOPMENT CONFLICTS

### *The Prevailing "Development" Paradigm*

The approach to infrastructural inputs (electricity, oil, water, transport, etc.) is based on a prevailing paradigm that dominates the views of government, the approach of the official planners, and the thinking of most people on the subject. This conventional paradigm (Figure 1) starts by equating development with economic growth measured by the magnitude of the Gross Domestic Product (GDP). Then, the paradigm argues that the only way of increasing growth is by providing more infrastructural inputs to the economy -- this is the GDP-input relation, for example, the GDP-electricity relation. Hence, the consumption of these inputs is considered a necessary condition for economic growth. Electricity, oil, water, transport, etc., become ends in themselves. Once this happens, the main task is to make a demand projection: how much of this input will be required in the future, say in the year 2010? After the demand projection, the attention shifts to thinking about how the supply can be increased or expanded to meet the requirements of consumption.

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With this emphasis on supply, the shibboleth of economies of scale is invoked -- the larger the scale of the supply project, the more economic will it be. This argument for maximisation of scale is one of the forces leading to mega-projects. Of course, there is another driving force operating in situations where there are illegal commissions that are percentages of the total expenditures -- the larger the project, the greater the opportunity for commissions.

On the right hand side of Figure 1 are all the things that have been forgotten in this consumption-directed supply-biased process of planning. Forgotten are the possibilities of saving inputs (electricity, etc.) and of using them more efficiently. Also forgotten are the environmental impacts and whether the inputs are being used sustainably or unsustainably, renewably or non-renewably. Are they being depleted? Are they being "stolen" from future generations?

Nowadays, the lay public has become quite aware of these issues. No planner can get away with completely ignoring conservation and environmental impacts. So, what is done by most planners is to do the left hand side (Figure 1) of the exercise first, i.e., a demand projection followed by a scheme for supply increases. Then, after the whole exercise is over and all the budgets are drawn up, a chapter is written on conservation stating powerfully how important it is to use infrastructural inputs (such as energy) efficiently and another chapter on environmental impacts saying eloquently that care must be taken about the only planet that humankind has, etc. But, conservation and environmental protection do not come into the budget in any substantial way. They are afterthoughts and retrofits.

This is the conventional paradigm on infrastructural inputs -- it may be called the GRowth-Oriented Supply-Sided CONsumption-directed paradigm for which the acronym is GROSSCON -- according to the Oxford dictionary, "gross" means *flagrant* and "con" means *confidence trick*.

### ***The Emerging Sustainability Paradigm***

The conventional GROSSCON paradigm is weakening against an alternative paradigm. This alternative is based on economically efficient, basic-needs-oriented, self-reliant, environmentally sound development the benefits of which start from the site of the project and radiate outwards, e.g., sustainable development or *sudevelopment*. The proponents of this alternative paradigm watch with alarm the growing negative consequences of the conventional paradigm. They enter the fray.

## ***The Environment-Development Conflict***

The conventional paradigm for energy is also responsible for the well-known environmental-development trap. Groups of people who may be called *developers* propose their version of "development" (see the top left-hand corner of Figure 2). To achieve this, economic growth is a necessity. In turn -- according to the conventional paradigm -- there must be increases of consumption of inputs. When, however, these inputs are produced, there are a number of side effects. But, like many doctors who prescribe "miracle drugs" without telling patients about the side effects of these drugs, the developers do not tell the people about the side effects of their projects.

One of the most important of these side effects is environmental degradation. People who see or anticipate the environment degrading realize that it is going to degrade the entire life-support system. According to their perception, the only way they can prevent this environmental degradation is to oppose the development projects. Thus, a conflict grows in intensity -- the developers say that there cannot be development without environmental destruction. They are vehement that the environmentalists are preventing development and progress. The environmentalists allege that the developers and planners are destroying the environment making further development impossible and the development process unsustainable. The two sides are locked in battle. This conflict cannot be resolved within the framework of the conventional paradigm (Figure 2).

There are also other side effects two of which offer hope for an alternative paradigm. First of all, there are the *mounting costs*. It is becoming more and more expensive to generate those inputs. Economists say that the marginal cost of the inputs is increasing which means that it is more expensive to produce the next unit of that input than the previous one. That is because as the easy sources are exhausted, we have to turn to the more difficult ones. We have to go from the easy dams and mines and oil fields to the remote dams in mountainous areas, the deep mines and off-shore sources of oil.

Then comes the *people dimension* of the problem. The people who are located at the site of these development projects become the victims of development. They do not at all see the process as development. They see it as a process whereby a group of people -- the contractors and their allies -- benefit from these projects whereas they become the displaced victims. This conflict is taking place in a large number of projects including the Narmada projects. These victims then begin to oppose large development projects.

The conventional paradigm leads therefore to environmental degradation, mounting costs and conflicts with the people located at the site of the project. Each side doubts the bonafides of the other.

### ***How the Conventional Paradigm is implemented***

Several major features of the project formulation process must also be highlighted.

(1) The process of arriving at the project design is *opaque*; it is not made public so that it can be scrutinized and verified.

(2) *No alternative options* for satisfying the same objectives are considered. And often, the project is (deliberately?) compared with a worse alternative -- in the case of the electrical part of SSP, it was compared with a far more expensive coal-based thermal power plant but not with cheaper alternatives, and the Bangalore Elevated Light Rail System was compared with a subway, but not with a bus system.

(3) *Externalities are rarely considered* in the process of arriving at the project, in particular environmental and equity/distributive justice impacts. As a result, such projects usually end up with enormous environmental degradation and harm to the project-affected persons (who become the victims of development).

(4) Since there is no attempt to consider a large number of alternatives and choose the cheapest alternative, there are also *negative economic (and financial) implications*.

## **AN AGENDA FOR RESOLVING THE CONFLICTS**

The above description of the process of project formulation and selection suggests a new agenda for resolving environment-development conflicts.

***Statement of Project Objective:*** The whole process must begin with a clear statement by the "developers" (government or private sector) of the extra infrastructural inputs that they propose to provide through the project. The statement must be quantitative, for example, million units of electricity, cubic metres of water, passenger kms of transport, etc. This statement is essential for alternative approaches to establish whether they can provide equivalent services.

***Comprehensive Listing of all the Options:*** It must be made obligatory for the "developers"-- not the environmentalists -- to provide a comprehensive listing of all the options for achieving the objective. These options must not be restricted only to supply-side expansion options. Decentralized (for example, small hydel projects) as well as centralized options (for example, large hydroelectric dams) must be considered. Demand-side management and saving options (for example, compact fluorescent lamps) must be included because inputs saved are equivalent to inputs generated.

***Comparative costing of options:*** Since a comparison is being made of different options for providing the same benefit, for example, a kWh of electricity or a cubic meter of water, what is required is a computation of the costs of the option. But this computation must not be restricted to the initial costs thereby ignoring the annual costs throughout the life of the option. It must reckon with the life-cycle costs of the option throughout its entire life. Further, a rupee spent  $n$  years later in its life is worth less than a rupee spent today; hence, all the costs must be discounted to the present and aggregated to give the present value of the life-cycle costs.

Usually, attention is focused only on items that appear in the balance sheets of the "developer". But, there are costs that are borne by society -- so-called externalities, such as environmental degradation, public health bills, etc. These must not be ignored; they must be internalized. Thus, real costs including environmental costs must be considered. For example,

the costs of rehabilitation of project-affected persons and compensatory afforestation must be included in the cost of a hydroelectric dam.

***Mega-project and/or Mix of Options:*** There is no rule that the alternative to a mega-project must be yet another mega-project. A mega-project can be replaced by a mix of mini alternatives, and this mix could include both decentralized options as well demand-side management measures. What matters is whether the mix provides the same services (for example, million units of electricity) as the mega-project. Thus, the range of possibilities must include other mega-projects and various mixes of options.

***Least-Cost Mix of Options:*** The choice between these various possibilities must not be arbitrary. It must be based on a rational procedure such as ***least-cost planning***. This consists of ranking all the options on the basis of real costs. The cheapest option is taken as the first element/component of the mix with a certain potential for contributing to the desired infrastructural output goal. Then, the next more expensive option is taken with a further contribution to the desired output goal. In this way one identifies a least-cost mix that will provide the required output. In the process, only the real costs determine whether an option comes into the mix or not.

Are environmentally sounder strategies possible only after a certain level of per capita GDP is attained? This frequent assertion implies that low levels of infrastructural inputs can only be achieved by environmental harsher mega-projects. It also implies that “softer” alternative options are not feasible. There is no basis at all for this assertion. In any case, if the environmentally sounder options do not form part of the least cost mix, they need not be placed on the agenda.

***Description of Distribution of Benefits:*** One of the major problems with "development" projects is that the distribution of benefits is not clarified prior to the project. In particular, the distribution of benefits between different sections of society and between different regions is not revealed. Above all, the gender distribution of benefits is not made explicit. All these issues of distribution, equity and access must be explicitly treated in public presentations of the project.

***Environmental Impact Assessment:*** It is now becoming mandatory for projects to have environmental impact assessments (EIAs). Quite apart from such EIAs for clearance of the projects, EIAs for the developer's project and all the alternatives must be made part of the project formulation and selection process. Unfortunately, due to the inadequacy of training institutions with expertise in EIAs, there is a tremendous shortage of people trained to carry out EIAs.

***Universally Accessible Information:*** A great deal of information is involved in decision-making regarding projects -- information on the proposed enhanced services, the possible options that can singly or together provide the services, the comparative costing, the identification of the least-cost mix and the assessment of distributional and environmental impacts. All this information must be widely and easily available. The most modern way of making this information universally accessible is to create a website for the process so that the information is available on the internet. An excellent step in this direction is the Central Power

Ministry's website: [www.nic.in./page/dest-india/nrg.htm](http://www.nic.in./page/dest-india/nrg.htm). In addition, the associated material can be made available in hard copy.

**Transparency:** With the proliferation of powerful PCs, what used to be the preserve of a few experts with access to main-frame computers in organizations like the Planning Commission, has now become trivial for large numbers of people in academic and non-governmental organizations. All these people can verify and cross-check the assumptions, estimates and computations of the experts. So, it is vital that all these are made completely transparent.

**Democratic Participation and Decision-making:** The final step in the process is democratic participation and decision-making. Infrastructural projects are too important to be left solely to the government and its experts or even to the private sector. Public interest and involvement is essential.

**Institutional Changes:** Quite clearly, the above agenda involves a major change in the rules of the game. But, these changes in the rules require, as a necessary condition, changes in the old forums, or creation of new forums, for the actors to interact. For instance, **public hearings** are essential where the project developers argue their case for their projects. Also, there must be involvement of all the stake-holders including project-affected and project-excluded persons. That is, institutional changes are necessary.

## CONCLUSION

It appears that environment-development conflicts can be minimized, if not avoided. What is required is the implementation of a new agenda based on a quantitative statement of what the project intends to achieve, a comprehensive listing of all possible options (including mega-projects and/or mixes of smaller options) for achieving the objective, rigorous comparative (real-) costing of options, inclusive of externalities, determination of a least-cost mix of options, clear explicit description of the distribution of benefits according to region, location, income-group and gender, environmental impact assessment, universally accessible information and transparency, democratic participation and decision-making along with the necessary institutional changes. There is a meeting ground for the hitherto opposing camps in the environment-development debate.

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