

## ENVIRONMENTAL DIMENSIONS OF REGIONAL DEVELOPMENT : A THEORETICAL APPROACH

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**ABSTRACT :** Regional development has its impact on the quality of environment which is likely to be impaired. A most likely situation is the exploitation and impairment of the environment of a developing or underdeveloped society by technologically advanced societies. The paper emphasizes the need for preserving the quality of environment and causing minimal damage to it. Since there appears an apparent conflict between greater production and higher consumption on the one hand, and the preservation of environment on the other, a policy aimed at proper decision making, judicious use of resources and above all an awareness of the problems of environmental pollution has to be followed.

### **Introduction :**

Regional Development has three main dimensions which are intimately related to one another and form one system. They are economic, social and environmental. Experience over years has shown that none of these dimensions could be neglected if an overall development of a region has to be achieved. These dimensions have their base in the resources of the region. Among these, environmental dimension is all pervasive one, but so far least notice has been taken of it.

Awareness of environmental dimension in regional development is positively related to economic development. It could be noted that more the regional economic development, the greater is the environmental waste management efforts, since all economic production and consumption eventually result in residuals and waste. By the same token, regional economic development is closely linked with the environmental damages. The potential environmental damage and the magnitude of the waste management problems are directly related

to the growth of economic activities which demands some regions to reduce the rate of economic growth resulting in regional imbalances. On the other hand, a reduction of economic growth rate would lead to unemployment, poverty and several other sociological problems. Therefore, some alternatives should be found out to reduce the environmental damage without reducing the regional economic growth rate.

Benefit-cost studies offer techniques for comparing alternative development programmes designed to maximize the benefits at minimum cost. The present study offers the possibility of assessing the trade-offs between regional development and management of residuals. The benefit-cost analysis must be viewed as an aid to decision making by appropriate government authorities and not a substitute for it.

### **Review of Literature :**

Though a large body of literature is found concerning regional development, not much work has been done where regional development is linked with environmental

planning. Most of the existing works attempt to analyse the economic development and its impact on environmental quality, often stressing the negative aspect. The studies of Cumberland (1972a, b, and 1977) focus on the relationship between economic development and environmental quality and to some extent on the social perspectives of environmental planning. Lakhmi's (1972) study deals with both the static and dynamic aspect of such relationship. Vester's study deals with the systems approach to urban environmental crisis but they are to some extent valid for the regional development also. The classic studies of Galbraith (1959) and Medows (1972) serve as thought-provoking pieces for such studies.

#### **Theoretical Analysis :**

Economic activity always generates residuals and releases them into the common property resources of air, water and land to create external diseconomies for the society which must bear the pollution costs. However, there are strong moral and ethical justifications for not imposing such costs and injuries upon other regions and the society. But, the internalization of externalities is virtually impossible in the case of large-scale production by the use of technology without proper policy to manage the environment. Though the principle of permitting optimal levels of emissions and environmental damages in every region for every economic activity sounds as a better rule to be followed in the regional development programme, it has to pay for the environmental damage in the long-run. Hence the scale of regional development should be comprehensive enough to manage the environmental damages and also have co-ordination with the transportation network, water management and urban development of the particular region.

Other sets of social and political problems need to be examined. That what is regarded as an enormous ecological problem by one social group, may be regarded by another,

as an economic opportunity with negligible external costs. A sparsely populated region having large assimilative capacities in its air and water resources may appear to other region or nation as an ideal dumping ground of residuals which may be highly objectionable and unfair for the receiving region. (It is also to be noted that the residents of well developed region except the residents of under developed region to forego the benefit of regional economic development so that the residents of well developed region may have the external economies of non-polluted vacation areas and second homes in the country side ).

Industrialised regions and nations have already started protecting their environment at the cost of other region's and nation's environment by making heavy demands upon the existing limited stocks of non-renewable minerals, metals, fuels and other natural resources. Some countries make the capital and consumer goods less lasting and therefore the amount of residuals discharged in the environment over a period of time is increased. This double bias results not only in excessive strains on the capacity of nature to decompose residuals and therefore in cumulative environmental damages, but also in a higher demand for natural resources than would otherwise be the case. This is one of the basic reasons why many resources are being over exploited. These above said facts are demanding the consideration for the inter-regional and intergroup welfares.

The awareness of the environmental dimension in regional development usually dawns only after a critical point is reached in economic development. Hence the realization of the environmental dimension differs from one country to another depending on the level of development, policies, priorities and value system. In many regions, there are very strong indications that the current patterns of regional development have already exceeded appropriate limits of

environmental damages imposing a heavy cost for the economic benefits of a region.

### **Stages in Environmental Planning :**

In order to reduce the problems, the environmental dimension should be considered at two stages, namely empirical and planning. At empirical stage a diagnostic survey could be conducted to estimate resources by giving considerations to future demand. The planning stage on the other hand stresses the long term problems, such as, what would be the environmental impact of a proposed plan for regional development, how this impact is to be treated, what would be the cost of the environmental impact, how the above costs will be borne and what would be the economic and social consequences of the development. There should also be ways and means to chalk out the regional benefits and regional costs at all levels of the programme. In this context it would be appropriate to have a public policy for various parts of a region.

The fundamental problem connected with the setting of goals for an environmental policy is the fact that it requires a sacrifice of utilities which are valued by the residents as environmental qualities. Further, an environmental improvement programme would carry a socio-economic cost, such as, investment in various kinds of purification and antipollution equipments involving much capital and labour. The investment problem immediately brings out the question as to who is to decide on the environmental policy goals and how much would it be desirable to forego for the benefits of the environment ?

As environment is a "public good", it would be ideal to have an opinion poll on decision making but it is a difficult task to carry out; furthermore, it would be hard to explain to the common man the cost of an environmental improvement. Hence, the environmental policy should take into account both social and economic benefits and costs and a benefit-cost calculation

made by central decision-making bodies which are politically responsible for the decisions in the same way as for other policy decisions. From time to time the policies could appropriately be altered to solve the environmental problems at different levels.

### **Levels of Planning for Environment :**

While making the environmental policy, various elements of regional development process have to be considered as they are interconnected to form a system. Any change in one of the component parts leads to changes in other parts as well as the system as a whole. When the region is taken as an ecological entity several sub-systems can be distinguished and it should be recognised that the problems faced at local level are different from the problems faced at regional and state levels, yet these problems are interlinked and have impact on different levels. Therefore, the environmental policies should have a check at all levels and apply alternatives to minimize the environmental damages. An economic damage may be reversed but the environmental damage may not be easily reversed and hence regional economic development should be promoted with the policies for environmental managements to prevent the major damages in future. In this connection, the problems of environmental dimension in regional development assumes added significance in developing countries.

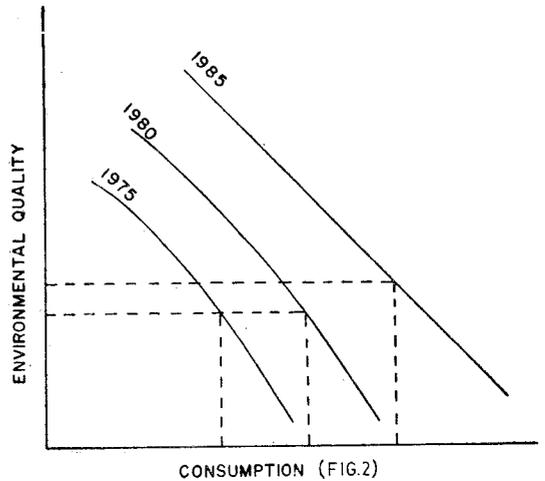
Since regional development has to take place within a given frame work of resources such as climate, economic viability, technology and policies and priorities of the government, it is necessary that one should identify the role of each of these. The economic development has to take into consideration the environmental aspects which will pose the problem of whether one wants affluence or effluence; economy or environment. A choice has to be made between two important components of the

standard of living, namely, consumption and environmental qualities. It should also be noted that it is not always environment versus economy, as if one is good the other is bad, but it is necessary to have economic development and preserve the quality of environment.

Owing to the scarcity of resources some regions are confronted with the basic economic problems of efficiency and optimal resource development. If the resources are plentiful and there is inadequate development, it would have the same problem. This is illustrated by the so called "Substitution" or "Opportunity cost" curve of figure 1. Let us assume the position of a region is at present on the curve, and not inside the area of the curve, so that the consumption and environmental quality are managed efficiently. Being on the curve means that the economy is working at full capacity in such a way that the supply of one of the components of the standard of living cannot possibly be increased without a decrease in the supply of the other component. In other words, to improve the environment. i. e., to move upwards along the vertical axis we have

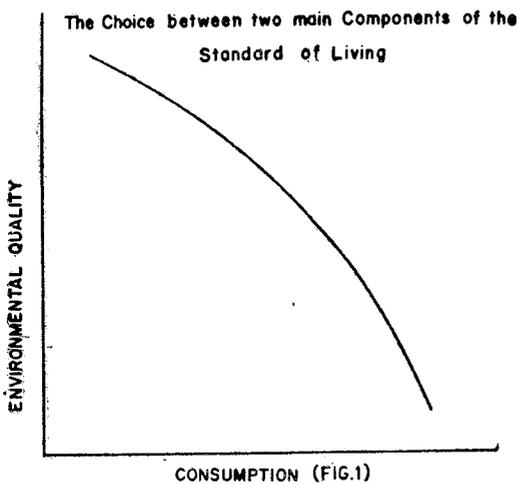
to sacrifice a certain amount of consumption and vice versa. Alternatives could be used through public policies for a better environment with less sacrifice and also increase in consumption.

The use of appropriate environmental policy measures with technological developments may be illustrated schematically

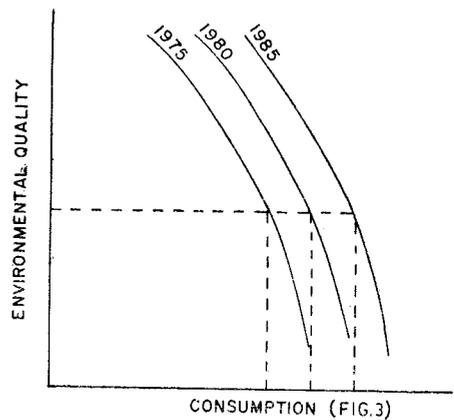


Alternative A

A comparatively rapid technological progress has made it possible to an increase in consumption with a smaller sacrifice of environmental quality which is represented by the third curve.



The consumption and the environmental quality are efficiently managed while the economy works at full capacity which is represented on the curve.



Alternative B

A comparatively slow technological progress illustrates a more gloomy prospect where the future slope indicates no change. That means in future too the sacrifice of environmental quality would be as much as at present.

in the future substitution curves (figure 2), showing that how we could consume more in the next five years period, than at present, without having to accept a worse environment than the present one. At this future point of time, however, any further increase of consumption would require, by and large, the same sacrifice of environmental qualities as today. This is illustrated by the fact that the curve of 1980, though moved to the right, still has the same slope as the curve showing the present situation. The third curve showing the situation, after another five year period, i.e., ten years from now, presupposes that a rapid technological development has made it possible to achieve no less additional consumption than the first five year period and also a certain improvement of the environment, contrary to what was the case in the first period. Furthermore the third curve's new slope illustrates that at this future point of time a further increase of consumption would require a smaller sacrifice of environmental qualities than earlier.

Though this diagramatic exposition certainly does not present a true forecast in quantifying future trends and possibilities, it might help to illustrate a challenge to policy makers, technicians and researchers. This boosts a comparatively rapid technological progress with respect to production methods and products beneficial to the environment. In order to make this hypothesis clear, one would consider figure 3, based on the method of charging a fee for environmental damages in addition to regulating the activities, which illustrates a more static picture due to a comparatively slow technological progress with respect to production methods and products beneficial to the environment. This is more so, in developing countries where the rapid technological development does not take place. Appropriate technology could be selected with reference to the local situations in order to avoid environmental degradations while aiming at regional

developments. Rapid technological methods cannot be used in all sectors of regional development and so also it is not advisable to encourage a number of industries to come up in the same region.

Decentralization and distribution of industries would prevent mass environmental damages and also lead towards a balanced regional development. Awareness of environmental dimensions and management, both local and regional levels, would help in greater economic developments. Hence, consideration of environmental aspects in regional development becomes indispensable for enhancing the quality of human environment and regional development.

#### Conclusions :

1. Most often there is a tendency on the part of the "haves" to exploit the "have nots" and in that process shift the environmental burdens from their region to another region and enjoy the economic benefits that accrue from the degradation of an environment, different from their own.
2. Regional, state and national interests often are not the same with regard to economic development and environmental protection, and hence ecological approach to regional development should be examined.
3. The setting of high standards at local and regional levels in environmental management will have demonstrative effect and this will induce formulating of national strategies for environmental protection.
4. Environmental imperialism is likely to result due to the increasing awareness in states and regions where already higher economic development has taken place and where higher standards of living have been attained.
5. A new strategy of regional development has to be designed in which social, economic and environmental dimensions will have to be integrated.

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