



## Environmental Challenges and Developmental Requirements in Mountains During 21<sup>st</sup> Century

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### Guest Article

Received: 21.02.2021; Accepted: 01.03.2021

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#### About the Author

Prof. Aditya Narayan Purohit is a well-known Indian Scientist and Professor who has mainly worked on eco-physiology of tree species and high altitude medicinal plants. He established a prestigious High Altitude Plant Physiology Research Centre at H N B Garhwal University Srinagar Garhwal and acted as its founder Director from 1985-1990 and again from 1995- 2002. He was also appointed Director of GB Pant Institute of Himalayan Environment and Development, Kosi Katarmal, Almora during 1990-95. He is honoured with a galaxy of National and International awards including the prestigious Fellowships of Indian National Science Academy, National Academy of Sciences, National Academy of Agricultural Sciences and Prestigious civilian award of Govt. of India “PADM SHRI”.



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**Abstract:** Mountains are unique resource-rich ecosystems characterized by diverse environments owing to their topography, climatic variability and harboring a rich biodiversity. However, the global pace of development has not left these regions untouched posing serious environmental challenges endangering their resourcefulness. In spite of the 'environment friendly' or 'environmentally sound' concept of development, generally the development is perceived as antagonistic to the health of the environment that of course can be visualized in many cases. Lack of location specific appropriate technology as tool for development in tune with the environmental concerns compounds the problem. There are differences in the perceptions and reality with respect to mountains. The mountain people consider disparity in the pace of development between hills and plains, urban and rural areas within the mountains and more developed and less developed hill villages leading to feel of alienation. A holistic approach of environmentally sound development is difficult to achieve due to differences in the perceptions of different stakeholders with respect to their motives at individual and society level. True change is possible only when it begins in persons who advocate the change. Thus a complete shift in the behaviour, attitude, perception and practices with the element of philosophy is needed to set tone for the environment-development synergy.

**Keywords:** Mountains • Environment • Development

#### Introduction

Last year, one of my close friends sent me Deepavali greetings mentioning, the “Reflections of Silence” The message, in addition to many

other values of silence, says that speech has limitations and silence is boundless. Silence leads to a stillness of mind, then to introspection, then to self-cleansing and finally to liberation. Today,



whatever is being done world over in the name of development needs by self-cleansing, retrospection and stillness of mind. During my stay at Kosi-Katarmal from 1990 to 1995, most of the time, I followed the principles of silence and compiled a booklet “The Murmuring Man”. This address is basically an abridged form of that compilation and is purely a philosophical one based on personal perceptions during my stay in mountains. I purposefully chose this approach because you have many learned geographers, geologist, environmentalists and biologists to put before you the facts and figures on mountain environment and development.

Tensions have arisen in mankind’s relationship with nature during evolution. We, especially in mountains, are acquainted with crises caused by nature’s forces or due to disturbances in them, like, earthquakes, floods, drought, famine, epidemics, etc. All these have the local character and are limited in time. They are generated by outside causes, not the forces of nature and man is only their victim and not the cause. The outburst of the present crises, that is the environmental crises, is more about the result of our own doing, which are manifested differently under different social systems. We all know about the population crisis, energy crisis, food crisis, raw material crisis, and so on. These are the crises of material kind, for which alternatives can be found or worked out with the help of sense and science. In addition to these we have a crisis due to the excessive and fast flow of information in the recent past. It has quantitatively exceeded our capacity to apprehend the nature of things going to happen. As a result, it is affecting our nature and the behaviour qualitatively and is leading to confusion regarding our place in the constantly changing society. We fail to recognise our own self-esteem, our intrinsic value, and our own personality and individuality. **We, in mountains, are running in search of our identity in society.** To a great extent, the flood of information about elites and the elite societies has made us ask for fast rate of development. There is nothing unusual in it.

It has to be kept in mind that **development is a never-ending process, until some environmental components become a limiting factor or the superiors (elites) in society have a fixed target.** The trap of development becomes more and more complicated with the process itself. A feeling of antagonism between environment and development has arisen. This antagonism has grown to such an extent that the persons involved in the execution of a plan are facing utter confusion, which one can see from the differences in the advocacy made by the development planners and environment planners. While development planners advocate that natural diversity is valuable as a source for us the environment planners consider that natural diversity has its own (intrinsic) value.

Although some statements made by environment planners are reflections of a well-established metaphysical doctrine and concern everyone, but on the individual level no one really follows them in his own life. There is an obvious weakness in the environmentalist’s planning. It does not take into account the potential of man. It does not recognise that an infinite possibility lies hidden in man, which makes him a mystery.

Another criticism, which can be levelled at environmental planners, is their core value assumption, based on the claim of biospheric impartiality. This view is motivated by the claim that all living things have an equal right to live and flourish. However, how many of us will allow the multiplication of the AIDS virus or a hazardous bacterium or any organism that threatens our own existence? Should we be concerned more about the endangered species or dangerous species even among the human beings? One needs to ask who is planning and for whom? Who will say how much is too much? who will realise what is going to collapse and how? In my perception, it is man, a visible supreme on this earth, behind all that has happened and will happen. Everything is for him, no matter what the environmental planners may say. In this context, let us keep in mind that there is a multiplicity in the behaviour of man and it will continue forever. No two persons can be identical in their behaviour



probably in future, when the “test tube babies” with identical genome, start coming out of the high-tech factories, we might have a population of uniform nature, similar behaviour, and identical perceptions. Till such time, there has to be conflicts in perceptions. Some people will crave for peace other for economy and many other things. Although from the physical point of view we are interdependent, but psychologically we are far apart even from our nearest neighbour and our own parents. There is much talk of think globally and act locally. However, in reality the concept of globalisation appears Utopian. However, the tensions can be reduced if everyone tries to mould himself. The fact is that all individuals are influenced by social set-up but there are only a few who make efforts for changing the set-up, and still less in number are those who succeed in changing social norms. Environmental and developmental concerns are inseparable from individual and social concerns. Therefore, problems are complex. With respect to mountains, some of these need to be mentioned briefly here.

### Nature of problems

***Differences between perceptions and reality with respect to mountains:*** it is felt by outsiders that there is lack of balance between nature and man, mountains are fragile, deforestation has caused all erosion, and native people are ignorant of environmental problems in the area. The reality is that there is lack of appropriate technology to be adapted, mountains are dynamic, also fertile, steepness is the main cause of surface erosion, and natives intimately know the real environmental issues. It is also perceived that mountains have only limited resources. Reality is that these areas can meet the requirement of the International market by way of it human resources, tourism, biodiversity, cultural diversity, water, and above all they have the international value by way of being the natural boundaries between the countries. The real problem is that the exact quantification of these resources is difficult.

***Competition and Identity Crisis:*** The problem of identity has assumed global dimensions in recent years. Evidence of this is clear when we use words

western and eastern, developed and under-developed, north and south blocks, rich and poor, paharies and non-paharies and so on. What is meant by ‘identity’? Quite schematically one can say that it is a matter of man’s understanding of his own place in relations with others but the reality is that the identity depends on the type of recognition given by others. Slow speed of **required development** in mountains has evokes a feeling of not being wanted and under developed in inhabitant. At present, **people in mountains feel and think more about the disparity in the pace of development between hills and plains, urban and rural areas within mountains, more developed and less developed hill villages, than about the scope of improving their life by themselves.** It alienates, makes them confused over the goal of life and creates spiritual emptiness. In contrast to that there are the aspirations underlying the structure of the society. *In relation to mountains, people are looking for elementary comforts. They are concerned more for standard of living rather than standard of life. They are looking for induction of prosperity and modern culture. Finally, they are in search of employment rather than emoluments.*

***Search for Leisure:*** While in non-mountainous regions, during the last century, the average hours of daily work of most of the people have been halved and man is trying to reduce them still further in mountains there is nothing like leisure time, especially for women. It is another matter that ultimately, leisure, the available free time with the man, is going to become one of the biggest problems of man because he has yet to learn how to use the leisure.

Adverse changes in environment have an underlying common cause, in a certain sense, characteristic both developed and developing countries and also mountains and plains. They are all connected with the socio-economic contradictions of capitalism, extension of the scale of society’s production activity, and imperfection of traditional technological processes, and other factors. Some of them like, geographical conditions, the low level of educational infrastructure, exploitation of the natural resources



of mountains by downstream beneficiaries, low level of scientific and technical development, and finally, low number of political representation at national level and comparatively high level of political pressures are specific to mountains.

### **Solutions to the Problems**

At individual level, no one has time to think globally and act locally in the present day situation. Everyone thinks locally and acts individually because the basic nature of human beings is selfish. The poor perception of environmental indicators of specific problems in one as compared to another is probably due to differences in cognitive habits, language, knowledge, values, ideologies, organisation, power and control over resources, behavioural styles, professional styles and many others (Sederbaum, 1991). **We are not able to reduce the magnitude of development-induced necessary evils mainly because of the diversities in our motives.** In practical life, different sections of a society or, for that matter even different individual of the same society have different motives; for example, bureaucrats want mainly to maximise budget control by minimising the expenditure. Costly alternatives to reduce the magnitude of adverse effect of development, therefore, will not be accepted easily by them, if it needs their financial approval. Politicians seek to maximise their votes and therefore, they will go all out to press their demand, even if it adversely affects the environment, to strengthen their vote bank. Similarly, farmers have the motive to maximise their income and will not hesitate to use any input within their reach, even if these affect other parameters adversely. Therefore, man is basically ruled by his motives, which vary from person to person. Such diversities in motives are realities in economics and have recently been advocated as public Choice Theory.

Above all the biggest problem is that in practice all thinking habits relate to economics and management of resources at an individual level rather than national or international level. The monetary concept of resource allocation predominates at all levels. Insufficient and fragmentary knowledge and information, which

most of the time is contradictory, complicates the problem further. It can be concluded that the problems are more due to behavioural changes than due to anything else. The slow progress in environmental awareness has certain basic reasons, which need to be looked into before remedial measures can be thought about. **Unless a man, by experience, finds where his difficulty lies he does not realise the importance (or utility) of the knowledge to be applied for surmounting the difficulty.** Therefore, perceptions of problems in time and cultural context are a prerequisite for finding solutions to problems. The importance of environment and development are realised by everyone individually as well as in groups, however, whether the former two are equally important or one of them is more important than other depends on personal perceptions in practical life. There is a dichotomy in perceptions at the individual and societal levels. In practical life, every individual wants rapid change and rapid improvement which when compounded leads to rapid use of resources. However, for society a gradual change is proposed. This leads to disparities between perceptions and situations at the societal level. The truth is that environment is being given more importance by those who have used it to reach a level of development and then perceive stagnation ahead so far as their further development is concerned. They have realised that the inability of others to recognise mistakes committed by them will threaten further advancement, or might even worsen the situation perceived so far. Their life style, commonly known as Western life style, has strongly penetrated other societies because it is required as a mark of superiority. This perception continues to persist in underdeveloped or developing societies, which still feel that development is more important than environmental concerns. Therefore, while some societies argue that western civilisation is not the answer for sustainability, others still feel that there is a need for following it to achieve rapid progress and improve the quality of life. The basic problem however, is not the classification of civilisation but how to choose a criterion of a better



civilisation and a better quality of life. It is in this context, one has to seek the shelter of philosophy. After satisfaction of his elementary biological needs, man widened his exchange with the environment, which ultimately led to the beginning of contradictions. The focal points of modernisation of society are : (a) the devaluation of the past, i.e. of historical traditions; (b) adoption of modern ( Western) behaviour patterns ( education would have to play the role of the lever in the transmission of values from the West to the newly independent nations; (c) urbanisation as the global path towards modernisation; (d) adoption of ‘ cosmopolitan attitudes’ supported by the culture, industry, the press, television and other mass media systems; (e) economic growth by promoting industrialisation, and by a relative neglect of agriculture, being too traditional a sector. At the political level, this model was opted for nation building and the state was designated as the prime mover of development. Priority for the urban elites, with a relative skimming off of the surplus produced by the rural masses. This knowledge has started selling even in the mountains, which are totally different in their set-up We, the inhabitants of this area need to remember a statement made long ago by Plato that “.....If, therefore, you have understanding of what is good and evil you may safely buy knowledge of Protagoras or any one; but if not, then, O my friend, pause, and do not hazard your dearest interests at a game of choice, for there is far greater peril in buying knowledge than in buying meat.

Above version of development will lead to economic colonisation, by projecting that those who live in plains are the elites and need to be followed if we in mountains want progress. It will result only in elite absorption and leave the common mountain masses out in the cold. The final result of such a transformation will lead to more tension among the masses in mountains.

Rostow postulated another influential development theory called ‘the stages of economic growth’ for the developing countries. According to Rostow all countries would have to go through the same stages. After a first ‘traditional’ stage

these have to follow a second one, in which the ‘preconditions of modernisation’ were established. The third stage called ‘take off,’ is followed by the ‘drive to maturity’ After this the last stage of ‘High Mass consumption’ arrives. This theory made nations to aim for too much in too short a time. They started to work for alienation and this led to change in their priorities and those of their people. This model of economic growth shows an almost exclusive interest in capital accumulation as a central agent of development. It influenced the developing countries to orient their planning for rapid development rather than gradual transformation without changing from colonial administrative approach to management approach. This was the case with all these countries, but the effects were different in different countries depending on their old traditions.

The above mentioned approached of development are now being considered as traditional economic approaches, which is increasing the gap between developed and the developing under developed countries. Globalisation and equity is being talked about. To achieve this, “trickle down theory” is being proposed by some development planners. According to which the rich must increase their demand and buy even more resources from the poor so that the money flows from them to the poor. Another view is that the rich must stabilise their rate of resource consumption so that the resources are available to the poor, which they should transform into their own necessities. To me both the approaches and the very idea of globalisation are a utopian approach. Unfortunately, we are opting for solutions without analysing the fundamental nature of problems. The problem is not of equity in economic growth but of man / nature inter-relation.

I still continue to believe in my earlier statement (Purohit,1995) “ See globally, think locally and act accordingly – probably is an approach for proper action and excess, which is an in-born sense of fear in doing or gaining any thing beyond a limit, of any action is bad for everything” There are two distinct philosophies of life. According to one, man can freely manipulate his environment for his own purposes. Man sets his objectives,



develops a plan to achieve to achieve them and then acts to change the environment accordingly in order to execute the plan. The opposing philosophy is that although man has the power to manipulate the environment, it is in his interest that he should avoid this; he should try, however, to adjust himself to the changing environment. Since environment itself consists of a constantly changing continuum of the gradients, which are not perceived very quickly, man should be able to apprehend and adapt to these changes. Once man refrains from manipulating the environment, he will be able to watch the interfaces between environment and development and will also be able to sense the ripples of possible changes, their potential affects and the changes required for his survival.

Out of these two philosophies, the first leads to short-term gains and the second, to long-term societal solutions. The former results in abrupt changes while the latter brings about gradual ones. I would venture to point out here that inherent in the second philosophy is sustainability. However, in the recent past those who have followed the first philosophy of life have demonstrated that their quality of life is superior to those following the second. Therefore, in the present day context there is, not surprisingly, a tilt towards the first philosophy, which is basically because of our perceptions of development. However, what is the time span of a perception?

Like the sequence of change in development, the perception in relation to changes are also basically sigmoidal in nature, starting slowly then accelerating in the middle and settling finally at saturation on the top level. The historical events indicate that all developmental activities show this type of pattern. Even in the cognitive habits, knowledge and information, the sigmoidal pattern is apparent. **A change in perception is age dependent so is environmental awareness is expected to take some time.** Societies, which are considered to be well developed at present, have already aged to the extent that they are finally settling at the saturation top level in the sigmoidal curve. Therefore, they have become more environment conscious than their counterparts,

which are still at the starting level or near the middle of this curve. Perceptions lead to change in behaviour resulting in cultural evolution in due course of time.

This tantamount to an acknowledgement that all cultures have an essential contribution to make in preserving the diversity required for sustainability. This may be achieved in two ways. First, each of them may help to bring out certain values and views bearing on man and society, man's relationship with nature and the importance of spiritual dimension in values and views specific to tradition. This may convince people that each culture is advanced in some respects and awareness of plurality will result in working out of several developmental models, each one tailored to the community to which it is intended. In recent past western intellectuals have projected that values and outlook on life rooted in classical paradigms have lost their force and ability to provide guidance, but I strongly feel that it is a wrong perception. Let the guidance be researched by those who need to be guided.

The origin and remedies of suffering are know and it is accepted by the majority that in order to overcome them we must follow certain norms for living (religion) and change our present approach of life. In this connection it is necessary to mention how "religion" should be interpreted. The word religion has roots in a Latin word "religio" meaning bond. In other words, the rules by which all beings are held together by customs or precepts or interests in religion. Therefore, directly or indirectly, religion is worldly morality or the systems laid down for the maintenance of the society. Similarly, faith is another component of religion. In fact, absence of this component is the root cause of all sorrows. In this context, it is necessary to point out that as time changes laws relating the worldly life also change. It one has to consider the propriety or otherwise of anything pertaining to a particular time one has necessarily to consider the requirements of the society prevailing at that time. One cannot find a religion that is beneficial to everybody at all time. However, the basic fact remains that the principle



of religion is always the same that is worldly morality in relation to time and space.

Faith in religion will make the people to realise that production should serve the real needs of the people rather than the demands of an economic system. Exploitation should be replaced by conservation; mutual antagonism should be replaced by solidarity, the aim of all social arrangements should be human being and the prevention of ill being, sane consumption and not maximum consumption. Further well being should be striven for, and all individuals should become active, not passive participants in social life, as visualised by Fromm (1981) for a sustainable society. Can we bring these changes? Many people advocate that there is a need for an evolutionary movement in the society to bring about the changes mentioned above, but I strongly believe that true change is possible only when it begins in persons who advocate the change. Society as such does not act, it only gives directions and if the individuals fail to act then the directions have no meaning. Here it is pertinent to mention Sri Aurobindo's concept of individual and the society. He attaches primary importance to the individual and not to the society, and then it comes to the question of reforms. Sri Aurobindo points out: "... The community exists by the individual, or its mind and life and body are constituted by the mind and life and body of its comprising individuals; if that were abolished or desegregated its own existence would be abolished or desegregated, though some spirit or power of it might form again in other individuals; but the individual is not a mere cell of the collective existence; he would not cease to exist if separated or expelled from the collective mass... the individual can exist and find himself elsewhere in humanity or by himself in the world....".

**Since environment is a framework of perceptions and ideas in relation to time and space it is sure to change in the next century as it did in the pervious century.** There is a general perception that the present developmental pattern is already showing a declining trend, therefore, working out an alternative developmental model will be the biggest challenge in the next century.

At present, most development planners are advocating sustainable development as an approach for future. According to which development should meet the needs of the present generation without compromising the ability of future generations to meet their own needs. Four basic questions are relevant in this connection: what is the nature of our problems? Is development dependent on the needs only? Can there be a scale to measure sustainability or it is only a message that development can not be infinite? Moreover, if it is only a message than how can it be achieved? Attempts need to be made to analyse human as well as the appropriate method for desirable development. **Once we identify the suitable approach of development, education is the only way to propagate the idea. Let the educational Institutions take the challenge of augmenting the evils of development. This is possible if we, working in these Institutions, understand that these are not the industries but the Institutes of social reforms.**

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