

**Sustainable Land Utilization in Central Himalaya:
Problems and Management
Inaugural address by the Chief Guest Shri J.C.Pant.**

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Experts on the subject, Ladies and Gentleman

When Dr. Palni sent me a letter about this workshop there were many hitches in my desire to make a programme to visit Almora to attend this workshop. So I had to think of ways which would enable me to attend this workshop today. I am very pleased to be here not only because Almora is my birth place but also because the subject of sustainable land utilization, to my mind, is perhaps the most important one in the realm of planning for development, which economists and experts on environment should be addressing. The most exciting part of planning for sustainable land utilization in the Central Himalaya is that we have an opportunity to ensure that it does not suffer from the follies that planning for sustainable land utilization has been subjected to in some other parts of the country. I would like to support the comments made by Dr. Palni in his address on eco-diversity, particularly, in the context of the Central Himalayas where eco-diversity is noticed at every step. To plan for land utilization on the basis of concepts of macro planning is just not possible in a situation where there is such eco-diversity as obtains in the Central Himalayas. In other words, one of the very important messages that should emerge out of this workshop is that in a situation of such eco-diversity we should evolve tools and mechanisms for micro planning which would enable the planners to take into consideration all factors obtaining in a small group of villages or mountainous terrain. What I am referring to is that we should work to evolve a manual for micro planning to enable each field worker to work out sustainable land utilization patterns for different

parts of the Central Himalayas. It would become the Bible of field workers of the governmental systems as well as the voluntary agencies working in the Himalayan regions. Such a manual would not only be useful for the Central Himalayas but would be applicable to the entire Himalayan range extending across Northern India as well as in other hilly terrains of the Shivaliks, the Aravallis, the Eastern and Western Ghats, the Jayantia and Khasi hills in the North-Eastern region of the country.

The Central Himalayas are home to Ganga and Yamuna which are the fountains of Indian culture. Even as the Himalayas are the youngest mountain range in the world they have certainly been here for a much longer time than most of us. These parts have been inhabited through the ages going back to the times of the Vedas and the Upanishads. For planning sustainable-land-utilization here the people of the land should be consulted first. What exactly are their needs and what are their problems? Unless the micro planning exercise addresses the real needs of the people, we cannot achieve our objective of evolving a sustainable land utilization pattern. On top of the problems that people here were facing there is yet another new one in the shape of the population pressure. What can be done in a situation like this is a question that must be asked to the people themselves. Do they plan to migrate elsewhere, if so where, and if not, have they ever thought of having smaller families? Can the micro planners place before the people the concept of sustainable population which can live in these parts by optimum utilization of the land resources and, if the micro planners find out that the population has already exceeded the sustainable limit then how should we manage our scant resources? Are the people to stop having children till an old person dies. Again, these are questions which the people must address to themselves.

What are the people's needs? The most important need always is drinking water; these areas abound in rainwater -- should this water be allowed to go through the drainage channels to the Kosi, to the Ganga, or to the Yamuna and then pumped back to provide drinking water in the villages, or should people think of cheaper means of achieving this objective by conserving rainwater wherever it falls. Availability of electric power is always going to be a major constraint in a developing society. It has to be used very judiciously and for the most essential purposes only. Again, women having to walk miles and miles to bring water for the family is a hardship which must be solved at the earliest. The people of the Himalayas through centuries have learnt to live within their resources. Our new development strategy compels people to beg of the state government to provide electricity, drinking water and roads. The micro planning exercise I have in mind should be able to work out the limits upto which the new development facilities ought to reach, beyond which the traditional self-reliant systems of livelihood should be modernized to reduce drudgery by inducting low cost technologies which can function through, say, solar energy or wind energy. At many places, micro hydel projects can provide cheap electricity to carry out many essential functions to reduce the burden of our womenfolk. The micro planning manual which I have in my mind would evolve methodologies to conserve the rainwater wherever it falls in tune with the principles of sound ecology.

Apart from drinking water for humans and their cattle, food, fibre, fodder, for the cattle are the next pressing needs of the local population. How can these be grown on the available land resources of the area in the most cost effective manner? The micro-planning manual should be addressing these

concerns of productivity on the basis of the capacity of the land and suitability of the vegetation species. Horticulture in the backyard in the far off areas as well as horticulture to be developed commercially in the vicinity of roadheads is yet another subject which the micro planners must address.

I would like to mention here the importance of scientific and controlled grazing in the Himalayas particularly in the context that environmentalists have termed grazing as inimical to the eco system. I am firmly of the view that grazing carried out scientifically and in a controlled manner can become an effective strategy of land management. Cattle graze and while doing so traverse over the length and breadth of the grazing area leaving their dung and eating away dry and other vegetation not useful to the humans. In this manner, they are not only preparing the common lands for the new grass to come up but they are also performing an essential function in the cycle of regeneration of the common lands. Apart from that, these cattle are giving valuable milk and are providing valuable energy to the farmer to till the land. How do we enable the people residing here to improve the quality of their production by scientific input to improve their livelihood from the existing subsistence level while not affecting the sustainability of the production system? This should be the concern of the micro planners. The cattle provide valuable dung which helps the farmer maintain the soil fertility. In other words, cattle rearing is an essential part of hill agriculture and to improve the breed of cattle to bring about higher productivity of milk, wool etc, should be subjects of research for the micro planners. I think an institution like the Govind Ballabh Pant Institute of Himalayan Environment and Development has a task cut out for it. How to evolve a pattern of development which is sustainable and does not

disturb the delicate balance that is in tune with bio-diversity as well as the agricultural practices? What is the carrying capacity of land here? Is the land sick? What is the cause of this sickness and how do you put the land to the best possible use to cure its sickness as well as provide some useful product for the people residing here? I am talking of a farming systems approach to evolve out of the research system. Milch cattle and sheep have to form part of this farming systems approach. How to evolve the best system of controlled grazing which matches with the farming systems approach as well as the bio-diversity prevailing in the area. Then within the farming systems we have to evolve the cropping systems. How do you change the crops from one season to another so that the deficiency in soil caused by one crop is made up by the next crop etc. This is what is understood by the term cropping pattern and is a well understood term among agricultural scientists.

While talking of the manual for micro planning, I would emphasize the importance of use of simple language that people can understand in preparing such a manual. I am glad that here in this Institute you have a team of young and dynamic workers and you have the full backing of an active lady officer Mrs. Mridula Singh who is Joint Director of the State Land Use Board. The task of preparing such a manual can be taken up as a project. I was talking earlier about the traditional practices of rainwater conservation. Now in Meghalaya already rainwater harvesting from roofs is in practice. In Rajasthan you have an established system of collecting rainwater. Rainwater happens to be the purest form of water which should be conserved at the highest point where human activities are going on. Then you can take up water conservation in Naulas and water springs. There is need to take up Naula Sambardhan. How to replenish and recharge the catchment areas

of the Naulas? Almora and Kumaun in general has Naulas everywhere. Four years ago, I had occasion to visit Almora when there was a severe drought prevailing here. I had then spoken about a programme of Naula Sambardhan to the Soil Conservation Department and had advised them to take up this activity on a small scale in Almora. As a result, 14 Naulas were taken up, in Almora and I am told that in all these 14 Naulas the water discharged has increased several folds. I am glad that the Soil Conservation Department took up this experiment and succeeded. In fact, I would request the Soil Conservation Department to take up this activity in the entire Uttarakhand region of the Central Himalayas.

I want to mention a very interesting word I have heard about the sustainable agriculture. Tikao Kheti stands for sustainable agriculture and Bikao Kheti stands for commercial agriculture. What sustains itself is Tikao Kheti and what sells is Bikao Kheti. Researchers are required to find out how to make Bikao Kheti into Tikao Kheti. I would also like to assert here that the better off people amongst us should forsake this idea of becoming rich overnight. It is the temptation of the few farmers who want to adopt a faster track Bikao Kheti which comes in the way of it becoming Tikao Kheti. We should, in fact, be working for a slow moving sustainable Bikao Kheti in order to make it Tikao Kheti. A faster track Bikao Kheti has the tendency to render your land and soil impoverished quickly which in the longer run tends to render you homeless and helpless. I am glad to hear Dr. Dhyani's remarks when he said that environment consciousness means wisdom and sustainable development means appropriate action. That wisdom which cannot be put to action cannot be called real wisdom. In, fact, this tendency of amassing wisdom which cannot be put to practice has given rise to a tendency amongst the academia to pursue only the

path of research and research which may earn them a Phd. or a fellowship abroad but which does not benefit the people who are being taxed to pay for that research.

Therefore, ladies and gentleman, this manual of micro planning should become an instrument of action. Now when we have said all these things regarding people's needs we have to also address the issue of raising the level of their existence from the existing subsistence level. In terms of quality of life also it has to be a sustainable quality of life. We should not promote a quality of life which is neither affordable nor sustainable in a given bio-diversity environment where people reside. I would like to pose a question to our scientists of all such institutions that this challenge of sustainable land utilization has brought about an opportunity of collaboration between different disciplines of science. Environment management essentially is a combination of disciplines of science which is compelling the experts of many disciplines to come together. Unfortunately, intellectuals do not want to use their hands and do not want to waste time in action. In fact, manual work in experimenting through action is considered a degenerated way of existence. This mind block prevailing amongst our intellectuals has been there over a period of time, but I am glad to notice that there are many scientists today who are prepared to shed it. There are many intellectuals and scientists who have begun to practice the "gospel of the dirty hands". Unless we soil our hands in the mud of mother earth we cannot realize the importance of sustainability. In fact, our farmer is the only scientist who is experimenting and practicing with his hands day in and day out. When we go to a farmer with a piece of advice we must be very cautious.

How are we helping the farmer to improve what he has been experimenting with? Our micro-planning manual should incorporate methodologies to enable our farmers to take risks in experimenting with new ideas which may enable them to make possible agriculture above the subsistence level and at the same time allow it to continue to be sustainable.

I have earlier touched upon the issue of health of mother and child as an essential aspect of the quality of life. The World Health Organization came out with the slogan 'Health for All by 2000 A.D.'" When we talk of health for all we are talking of physical and mental and spiritual health for every human being residing on this planet. I do not have to remind this august gathering that our county is unique where spiritual and mental health has always been considered as essential for physical health. We have received this wisdom from our heritage. Here is a culture which talks of the whole world as a family "Vasudhaiv Kutumbakam". The mother who is giving birth to a child has to be happy because if she is not happy she cannot give birth to a healthy and happy child. A healthy body can only come about through a healthy mind. We know of Abhimanyu, he learnt how to penetrate the chakravyuha when he was in the womb of his mother Subhadra. We must evolve a strategy for starting the education of our children from the womb. So taking care of a child starting from the womb is another way of looking at health for all. We cannot have health for all unless we have a clean environment. Now, these concepts should be incorporated in the concerns of every governmental department. Unfortunately, here also there is a problem where each department wants to protect its own area of work. Each department is working within itself and is bent upon maintaining its empire and cannot tolerate collaboration with their sister departments. I call this practice as departmental fundamentalism which must be overcome in our manual of micro planning. Here is an

opportunity of evolving a system of development which will enable field workers and the people working together hand in hand right from the planning stage up to the completion of the various projects.

A special feature of the Central Himalayas and may be the rest of the Himalayan ranges also is that the upper hill forest areas are within the reserve forests under the control of the state forest department. In other words, unless these areas are treated appropriately to promote rainwater conservation and consequently soil conservation the preservation or restoration of the eco system at lower altitudes would be very ineffective. Since within the reserve forest areas only the forest department can operate a programme of rainwater conservation must be taken in hand by that department. Dr. Palni has rightly pointed out the immediate need for restoration forestry. So far, forest policy has mostly been to support industrial forestry or commercial forestry. It is necessary that they now shift their mode of working to eco-restoration or as described by Dr. Palni to restoration forestry. There is yet another term "mosaic forestry" which means that you plant the most appropriate vegetation in the shape of grasses, shrubs or trees keeping in view the soil depth and moisture in a given area. Suitability of these plants species in tune with the local eco system as well as the biotic needs would have to be ensured. In fact, the forest department should now be promoting bio-diversity in the reserve forest areas and should develop them as a kingdom of bio-diversity.

In the Indian conditions, you have geographical and topographical features which make for extremes of weather, hot, moist or cold. The monsoon spells in the hills result in heavy downpour at intervals to contain which masonic structures and check dams in the gullies are insufficient and inappropriate.

They break up within a season or two and get washed away. The best of engineering structures with quality material and high craftsmanship under such extreme weather conditions will not sustain for more than 4-5 years and if the quality of material and workmanship is poor or indifferent, which is so in most cases, then these masonic structures do not even last for one season. So we should have a strategy to conserve rainwater flowing down in the streams starting right from the top of the stream by means of vegetative measures and ditches at appropriate intervals down the stream wherever this slope is less. These ditches at appropriate intervals serve as recharge systems to the terrain in the neighborhood giving rise to rich and luxuriant vegetation all along the drainage line. Similarly, the agricultural practices have a major role to play in conserving rainwater. Cultivating paddy has been found to be the most effective way of conserving rainwater over large stretches of land. So the soil conservation department which is part of the agricultural department and is major discipline also within the forest department should really be known and become the rainwater conservation department. Rainwater conservation is bound to lead to soil conservation while mere soil conservation neither conserves rainwater and also ends up by failing to conserve soil as well because of the broken engineering structures.

These are some of the tentative thoughts which have come to my mind today on this occasion. I thank Dr. Palni, his colleagues and all the experts present here for their patient listening and I offer my salutations to all of you.

Thanking you.

