

external damages, then the cost of damages is much more than the cost of the energy. In India, renewable wind energy is huge whereas the proportion of hydro energy is small comprising merely 15%. Also, bio mass solar energy comprises 14% and 6% of the energy source. These meagre proportions are not sufficient to serve the needs of a large population like ours.

Decentralized energy generation, like a district heating system, is not common in India, but it is otherwise an important tool for sustainable development. We have more than 800 million people living under \$2 a day while 75% of our population needs just basic energy. A possible intervention on the supply side is with regards to supply efficiency. Usually, when thermal plants generate electricity and transport energy, some energy is lost in the process. Our transmission and distribution loss is around 30%. Most of the coal power plants are very inefficient. Coal producing technology is old, and so we are not producing the maximum that we can produce without setting up new power plants. The need of the hour is to bring in energy efficiency. Ever since India has enacted the Energy Conservation Act, it is compulsory to have labels on electrical equipments with the number of stars denoting how much electricity they save. These norms need to be followed by everyone.

And, of course, everyone should strive towards the goal of reducing the size of the glass itself!

Lecture II: Water, culture and power: Economics for the 21st century

In the second lecture under this series, we were fortunate to have amongst us Dr. Amita Baviskar who is a highly renowned academician and an associate professor at the Institute of Economic Growth, University of Delhi. She delivered a very interesting and enlightening lecture on the intertwining issues of environmental economics, politics of water resources, conventional economic cost benefit analysis and valuation systems.

She began by highlighting the various conflicts that exist in the current valuation system i.e. the way different sets of people value resources. We have local traditional communities that respect and value forests and the environment and use them judiciously for meeting their basic subsistence needs of fodder, food and timber. Conversely, we have the forest officials, with their single minded focus on tapping the economic benefits by clearing large acres of land and planting it with cheer pine, which provides commercially valuable products like timber wood and gum. Thus, while no major monetary value is attributed to subsistence activities (fuel and fodder wood collection of traditional communities), the planting of commercially profitable species of trees like the cheer pine shows up as a great income source and caters to the needs of the consumerist urban class, while destroying the very source of livelihood of local communities. Moreover, it is difficult to ascertain in monetary terms the ecological and cultural loss that is entailed in the name of development and industrialization since market economies fail to put a value to the traditional belief systems of village communities, the aesthetic beauty of the environment and local indigenous culture.

It has also become increasingly important to analyze the issue of power relations, which is responsible for inequity and unprecedented destruction of forests. The question of power relations can be addressed in economics only in a limited manner that can be seen in the views of Karl Marx, who talks about industrialization as an empowering force for the worker community, which will enable them to fight for their rights. According to Dr Baviskar, since economics is the dominant discipline used in policymaking, we need to look at the broader

issues that economics does not incorporate such as valuation methods and managing development in a sustainable way.

By citing the example of Nobel Laureate Elinor Ostrom who studied common property resources and illustrated the important role that the local communities play in efficient management of local resources, she stressed on the need for integrating the local communities and involving people at the grass root level for policy making.

She also talked about the growing fetishism and the misplaced notion of scarcity of resources and hence, emphasized the need for judicious and frugal utilization of the resources rather than the myopic focus on creation of new supply sources, which has led to major ecological disturbances and environment degradation. She elaborated as to how the problem was not of resource scarcity, but rather of inequitable distribution of the resources and focused on the question of big dams in India.

She negated the popularized belief of big dams being crucial to sustain India's development needs and explained that it was the reckless use of water resources through unsustainable practices like cultivation of water intensive crops, water logging etc which has led to water problems and forced us to analyze as to how accurate our assumption of scarcity is, what should be our approach to the question of scarcity, who should bear the costs and who should get the benefits.

She also stressed on the need for a complete reassessment of the belief that "there is no alternative and someone needs to be sacrificed at the altar of development", as it is only the poor and the tribal who are time and again required to do so. She presented her experience of the Anjanwara village of Madhya Pradesh where Bhilala *adivasis* struggled against Sardar Sarovar dam project to fight for their survival and dignity, and in the process lost all. Their village has now been submerged leading to a complete loss of indigenous culture and their traditional way of living. Without any rehabilitation and resettlement programs, they are now forced to live in destitution.

Today, dams are largely seen as a visible symbol of development and a solution to the increasing energy needs of India and have captured the imagination of politicians and bureaucrats alike. However, what is largely ignored is the fact that dams mostly cater to the requirements of the urban elite, who continue to consume and demand more, and the larger costs are always borne by the most vulnerable and marginalized sections that lose their indigenous culture and ancestral land in the process. Along with the cultural and social costs, there is huge environmental damage and loss of biodiversity. Moreover, dams have also failed to deliver on the promise of greater irrigation efficiency. This can be seen in a World Bank report that states that average irrigation efficiency of big dam projects is only 40%. In fact, the most fertile plains of Punjab, Haryana and Tamil Nadu have been harmed due to excessive water logging resulting from these projects.

It was an extremely instructive session and Dr Baviskar left us pondering over extremely relevant questions such as how to try and respect the rights of the most marginalized and vulnerable people by applying appropriate tools and instruments one has as an economist, how we can live in harmony with nature within the framework of economics, and how we can address the issue of respect for mother Earth, who belongs not only to humans, but to the entire range of species that inhabit the earth.