

# ***Chapter 3***



## **THE ENVIRONMENT-DEVELOPMENT SCRNARIO IN ASSAM**

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## ***3.1: INTRODUCTION:***

The quality of environment and natural resources of today's world has been notably degraded, especially in the developing countries. It is still depreciating drastically which threatens our entire life support system, endangering the survival of lives on this earth. One of the unturned truths through out the history of human kind is that the natural resource is the base for the economic development of human societies. But, the economic development itself became a threat to its own basis i.e., the very existence of nature of which humans are a part. The trade off between the environmental concern and the development is a significant issue now-a-days. Both the environment (which is the life support system of all the organisms) and development (which is the process of changing towards achieving the goal of wellbeing and improvement in all the aspects of socio-economic, cultural, academic and technological sphere), is the most essential requirement of human life as well as other creatures. If one is opted then the other gets affected. In order to deal with such a trade off, economic valuation of the natural resources is important so as to bring forth the significance of the rapidly degrading resources to generate the feeling of awareness for the protection and conservation of the resources. This present chapter deals with the discussion of the environment and on the other hand development scenarios of Assam mainly to see the extent of the need and importance of valuing the natural resources of Assam.

### ***3.2: AN OVERVIEW:***

With the advent of Industrial Revolution, all over the world, the trend of modernization and industrialization started and the environmental degradation followed. The process of attaining development with the increased economic activities reduces the quality and quantity of environmental resources and the worst affected are the developing countries. But, it assumed serious dimension in the later half of the 20<sup>th</sup> century because by then the process of development had started wielding a heavy toll on environment, at the backdrop of rapidly growing population. The principles of the economic development have given birth to consumerism, leading to the increase in the per capita consumption at an alarming rate and thus increasing the disparity between the rich and the poor. These often creates host of negative impact on the environment, affecting both the present and future generation. For achieving economic growth, in the developing countries like India, it is inevitable to depend on the natural resources of the nation as they are very rich in such resources but this process gradually lead to the exhaustion of the base of the nation's development. So, the question is to what extent this should be allowed to go on and such kind of over exploitation of resources cannot sustain development. The development activities also threaten the environment indirectly by alienating people in the process of undertaking of land by the Government for establishing economic activities from their livelihood including land, food, occupation and houses. It is to be noted here that such kind of environmental change or degradation due to developmental activities is not only the concern of local or national level but it is often governed by decisions taken far away, perhaps on the other side of the world.

As for example, if a Japanese vehicle manufacturer decides to invest in a Brownfield site in an old industrial zone, in western Europe, then the biodiversity of exotic and local plants, insects and birds on the derelict site is lost, new drainage of a huge paved and roofed area is required, and a new mode of vehicle emissions is created. The dynamics and complexities of threatening the world ecosystem by man as a result of development arise from various multi-level and multi-scale decisions (Douglas, 2002).

In general there are many factors which lead to the environmental change but the most essential and the frequently adopted activities especially by the developing countries like India for attaining growth, development and greater human wellbeing are agricultural intensification, industrialization and rising energy use. These three activities have profound impacts on the physical environment and have enormous potential for influencing human health. These lead to pressures on the environment, in the form of pollutant emissions, resource depletion, leading to the global environmental change which is perceived as the principal threat to the continued survival of the wildlife, wild lands and human as well. Merging the interest of environmental issues and the development is among the biggest challenges worldwide. However, considerable end result would be choosing the way that makes the judicious blend of the development and the protection of the environment.

In India, since the mid 20<sup>th</sup> century with the rapid increase in industrialization, massive urbanization and tremendous population growth, the demand of natural resources such as land, water, vegetation, pure air, energy etc started rising while availability is declining. This leads to the exhaustion and deterioration of the

resources for meeting the growing demands of the increasing population and to cope with the growing pace of the world. Forest in India has suffered serious depletion in spite of the several Forest Management Programs initiated by Ministry of Environment and forest. For developing industries and various growth and developmental projects, various part of forest are cut down. About 14% of India's population lives in the proximity of forest, this put enormous pressure on our forest resources in the extraction of fuel, wood, cattle over grazing etc. The per capita forest cover in India is much less (at 0.06 hectare) as compared to the world average of 0.64 and Asia's average of 0.10 hectare (Sharma, 2004). Over 50% of our land is degraded hence becoming unproductive. The Indian Coastal resources are also endangered due to various activities like shipping, fishing, and sewage disposal etc, over 70% surface water is polluted. Moreover, the encouragement given to prawn culture in a coastal areas is more dangerous. The rice fields are converted into fishing complexes, ejecting the small farmers and throwing agricultural laborers out of employment, destroying the mangrove forests, polluting and making fresh water saline water (Bahuguna, 1998).

In India as the result of growing corporate activities, considering its needs and requirements various investments has been made with a very few concern about the environmental losses, costs and limitations. The development of thermal power plants and Hydro power have generated host of environmental damages. Because of lack of attention to the environmental losses cast many undesirable effects on the social and economic lives like- Bhopal gas leakage tragedy, ash pond leakage of Nalco, polluting Ganges etc. Chemical industries are posing a great threat to life and the solid wastes are increasing constantly.

The indiscriminate use of excessive fertilizers, insecticides and pesticides in the agricultural sector which constitute the largest of the Indian economy, has adverse health and other effects. The exploitation of the minerals and metals has surpassed the limits in India. Air, in almost all the cities contains pollutants above safety levels and noise pollution is steadily rising mainly due to the growing road, rail and air traffic, it is further aggravated during various festive seasons and functions. Studies conducted by the Central Pollution Control Board (CPCB) show that ambient noise level exceeds the prescribed standards (45-75 dB) in most Indian cities (Sharma, 2004). Over all, with the advent of modernization, the face of India has been changed with the degradation of the beautiful environment and plenty of useful natural resources, threatening the ecosystem as a whole.

### ***3.3: SCENARIO OF ASSAM:***

The scenario of environment of Assam is not different from that of whole India. During the last few decades, in the urge of attaining economic growth and development and in the backdrop of high population growth, the land, forest and the environment of Assam has been shaken. The increased automobiles, pollutant from industries, various constructive works and on the other side degradation and depletion of the natural resources decreases the carrying capacity of the environment posing danger to the survival on the earth. Assam is situated in the North Eastern Region of India. It is the largest state in the North East India, with an area of 78,438 sq km and a population of 26, 38,000 as per 2001 census report. It is situated between 90-96 degree East longitude and 24-28 degree North latitude, bordered by Bhutan and Arunachal Pradesh in the North and East, Nagaland, Manipur and Mizoram to the

South. Along the South-West, lies Meghalaya, while, Bengal and Bangladesh bordered the West. Assam comprises 2.39% of total geographical areas in the country (2001 census). Assam is considered as a rich treasure house of natural resources like soil, water, minerals, flora and fauna. The conflict between man and nature which is in existence worldwide is also relevant in the scenario of Assam. With the rapid growth of population and socio-economic backwardness, the people of Assam in the craze of attaining modernization and higher standard of living have created tremendous pressure on the environment.

When we speak about environment we first think about the 'green umbrella'. One of the major forms of natural landscape is the vegetation or green cover which is one of the important natural resources of the world. It controls and stabilizes the earth's natural environment. It influences temperature, pressure, humidity, precipitation, air circulation, soil erosion and gases in the air directly or indirectly. Assam is well-known for its rich natural resources and biodiversity. Once there was very thick forest in Assam, it had a very large canopy of green cover a few decades ago. But, today only about 30-40% (on an average) of the forest remains in Assam as a whole. It can be said that we have already lost our green umbrella. The tropical evergreen forest is rarely found in the state and the eco tone zone is also almost degraded. There are a few patches of the rainforest in Assam at Tinsukia and Dibrugarh district which are the only one left in the region of the Himalayan foothills. Forest loss and land degradation cause a decline in biodiversity due to weed takeover, desertification of the site and reduce agro ecosystem and landscape stability. The richness of Assam in natural resources has been deteriorated. Because of the growing population, their aspiration and activities the area has been losing fast its biodiversity

base causing thereby irreparable harm to the state's genetic legacy and potentiality for its progress.

Out of the various factors which is responsible for Assam's environmental deterioration such as destructive means of plantation, legal or illegal trade in timber, timber logging, timber consumption, shifting cultivation, forest ownership pattern, growing population pressure and poverty, the most vital detrimental factor of the present days and which became the most debatable issue all over the world is the development activities. In Assam with the advent of modernization and the process of gaining development through economic growth, since the last few decades, various industries and factories came into existence like petroleum, tea, cement, fertilizer, mining, paper industries etc , the pollutants of these industries poses the irreparable damages to the beautiful environment of Assam in terms of water, air, noise pollution. Adding to this, In Assam setting up of various indigenous mills and industries like the saw mill, veneer mill and plywood factories causes depletion of large forest areas particularly during the last 3 decades. All this ill treatment to the environment basically the deforestation give boost to the frequent occurrence of various disastrous natural calamities like flood, soil erosion, landslide etc causing irrevocable harm to the people of Assam.

Assam produces over 65% of India's plywood during the past decades. As per records of the Directorate General of Commercial Intelligence and Statistics, (DGCIS) nearly 80% out of total volume of national inland trade via rivers and railways in teak originated from Assam (1993-94) and much of which found their way to international markets. In case of other timber another category in the DGCIS

classification scheme, Assam accounted for 66% of the country's national intra-regional trade (Saikia, 2004). The Karbi Anglong district supplies the bamboo to a large extent as raw materials for the Nagaon Paper Mill at Jagiroad, which reduces its capacity for growth and a large areas have undergone the evil process of deforestation. The immediate victim is the poor people leaving them poorer by decreasing their base of livelihood. This force them to over exploit the limited resources, over use marginal lands, their livestock overgraze grasslands. Sometimes they indulge in the illegal activities like poaching, hunting, illegal trade of the available resources. All these actions will create a multitude of negative and harmful effect to the environment. It is correctly quoted in the Brundtland Report (World Commission on Environment and Development, 1987) that poverty is a major cause and effect of global environmental problems. Some of the instances of developmental projects and its negative effect on environment of Assam are mentioned here:

The proposal of establishing a fertilizer manufacturing plant at Topatolli, Dimariya Block, in the Kamrup district by the Progressive Fertichem Pvt. Ltd (PFPL), Jagiroad, Assam will be the pioneer of cheap fertilizer manufacturing plant in entire North East India but the harmful effluent would heavily affect the environment and hence the people of that area.

The raging debate of development and environmental degradation in Assam is further brought forward by the various activities of the corporate giants like Oil India Limited (OIL), Oil and Natural Gas Corporation (ONGC) and Indian Oil Corporation (IOC) affecting the environment adversely. The proposal for seismic survey on the Brahmaputra river bed by OIL in search of oil would definitely cause irreparable

harm to the endangered river dolphin that is now on the verge of extinction and its habitat in particular and also the ecology of the river as a whole.

The Cement factory at Bokajan extracts the limestone from Karbi Anglong, destroying the large forest tracts in blasting. There are other cement industries in the State which consumes forest areas recklessly and in turn emit all kind of poisonous waste products.

The paper mills and industries like the Nagaon Paper Mill at Jagiroad and the Pachgram Paper Mill leads to the depletion of resources and also the waste flow out of the mill pollute the neighbouring areas to a large extent. Further, its establishment leads to the displacement of the poor people.

The open cast mining is another threat to the environment. The open cast mines in Margherita, Tinsukia by North Eastern coalfields an arm of coal India Ltd rendered large farming areas unproductive due to its coal particles. The discharge of acidic effluents from excavated pits has damaged the water sources and pollutes the neighboring areas with vast quantities of over burn. These are later dumped on the hill slopes or on low lying arable lands, it get washed away with rain, joining the streams and channels and comes down to the Buridehing river which causes severe water pollution due to deposition of coal particles. According to the Agriculture department officials, production has declined sharply, over 100 hectares land has been affected while, over 30 hectares has become wasteland. More over the health condition in Margherita had declined and became prone to the diseases like tuberculosis, liver cirrhosis, allergy and asthma. The Government hospital data of 2006 shows that

Margherita had more than 450 cases of tuberculosis, both among mine workers and general public (Borah, 2008). There is also report to open up other open cast mine at different areas of Assam and also in other states of North East India.

The unbridled industrialization on the fringes of the forest of Jaipur, Upper Dihing and Dirak and the pressure of burgeoning population are hampering the existence of the rainforest in Assam in Tinsukia and Dibrugarh which area spread over 500 sq km spanning the three contiguous reserved forests (Ghosh, 1999).

In the area of Borhat / Namrup, of Upper Assam there was a very good commercial and seed cocoon production center. But, the installation of the Hindustan Fertilizer Corporation and Assam Petrochemical Limited at Namrup, make the age-old Muga culture in this area almost impossible. These industries affect the environment to such an extent that in that area, the pollutants of these industries exerts devastating effect on the sensitive and delicate Muga silkworms and also its host. Millions of Muga silk worm were killed as a result of air pollution. Moreover, the pesticides flow from the nearby tea gardens affect the Muga silk worm reared in the nearby villages. Thus, along with the environmental degradation it creates a set back to the unique Muga silk industry where sericulture has been the cultural heritage and rural avocation since times immemorial (Gogoi and Goswami, 1998)

The tea gardens of Assam sometimes create havoc to the environment and *ecology as well as the wildlife*. The pesticides sprayed over the plantations in the tea gardens leave host of adverse affect on the environment affecting the habitat and

wildlife of the near by National Parks, Sanctuaries etc and also the Muga silk worm for sericulture activities.

Modernization of agriculture, improved method of cultivation together with high yielding varieties brings forth the application of chemical fertilizers, insecticides and pesticides in the crop field which gradually reduces the fertility of the soil leading to the unproductiveness of the soil. The unplanned urbanization and construction of buildings, construction of road and railways by cutting down trees and destroying forest for improved communication and transportation, increasing automobiles all of which is the child of development create immense harmful affect to the environment.

The disposal of domestic and industrial waste, new habitations and settlements, construction of big reservoirs and dams made for various uses such as irrigation, water supply and power, unscientific mining and extraction of raw materials from the ground leads to the destruction. It adversely changes the land surface and also induces displacement of people. Sludge from the sewage plant is deposited on the land surface and it affects the fertility of the soil and hence the humans and the biodiversity of the region (Ghosh, 1999).

The development induced displacement or deprivation of the people which alternatively pose a danger to the environment is cropping up in various parts of Assam since Independence. As per the official count, during 1947-2000, Assam used around 3.9 lakh acres of land for development purposes which affected some 400,000 persons. But in practice the total is a little over 14 lakh acres which caused more than

19 lakh development induced deprivation including the common property resources as these people are considered as encroachers and are not included in the deprived person's count (Bharali, 2006). Several major development activities are undertaken in Assam like the mega projects of construction of dams and bridges on the river Brahmaputra, construction of roads, quarrying and mining operations, railways and other huge industries like Assam Gas Cracker Project etc. All these though aimed at building the state socially and economically sound and developed but such activities results into environmental degradation with the flow out of waste and polluted affluent and welcomes new diseases which is further added by the hundreds of displaced people because of their impoverishment. Their pressure on the resources doubled. In Assam, 71.43% of the deprived had started cutting trees (Bharali, 2007) for their own survival, while the industries destroys the environment for making profit. The Assam gas Cracker Project near the oil township in Duliajan in Dibrugarh, Upper Assam is feared to have removed nearly 150 families with around 1500 people. The Pagladia Dam Project on the river Pagladia in Nalbari district, lower Assam is feared to destroy over 70,000 Bighas of agricultural land, leaving tribal people of 27 villages homeless. Further the Bogibeel Bridge Project, on the river Brahmaputra, connecting Dibrugarh on its Southern part and Lakhimpur on its Northern part is feared to make hundreds of families belonging to the Mishing tribe deprived of more than 1000 bighas of cultivable land. It is also come into news that sometime no steps has been taken for rehabilitating the displaced people. The same scenario of displacement was there while setting up of Nagaon Paper Mill in Upper Assam and Dinjan Army Cantonment in Dibrugarh district and also implementation of NEEPCO Project in Duliajan.

Thus, various development projects undertaken for economic growth have often become one of the major threat to the people of Assam whom they deprive of their original habitat without any alternatives other than to over exploit and misuse the natural resources. It has its negative aspects one is impoverishment and the other is polluting the environment. Sum and substance we can say that such series of development projects, affecting the environment, may pose extreme hazard not only to the health and lives of human beings but also to the wild lives and other creatures. We are now going with yellow signal. No doubt development is essential but the question is what the value of that development is if it paves the path of extinction of the human beings for whom the development is actually meant for? Now the challenge is to set a right balance between development and the environmental issue ensuring a sustainable growth and development.

In the context of the importance of the preservation of the natural capital, it is necessary that the process of development should be oriented. Technology needs to be developed and applied according to the dynamic characteristics of each social and natural system, aimed at the achievement of its environmentally sound and sustainable development (Reddy, 2006). Again, the conflicting question regarding the relationship between humanity, environment and development requires choices considering the costs and benefits. The choice needs to be made by comparing the benefits (both short and long term) of economic activities and cost of their environmental consequences, this lead to the popularization of the concept of valuation of environmental resources since 1950's. The Environmental Economics deals with such assessing of cost and benefit and to take a rational approach to sustainable development.