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**Large Dam: an alarm for identity of ethnic tribes of Arunachal Pradesh, India**

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**Abstract**

Arunachal Pradesh lies in the extreme North Eastern part of India (26°28' and 29°30' North latitudes and 97°30' and 97°30' East), comprising diversified topography ranging from floodplain cultivable land to step hills and mountain, high altitude plateau and snow covered hill top. The 61.5% (51540 sq. km.) of the state is forest covered with fully loaded floral and faunal diversity. The state is also important for its diversified ethnic tribe having varieties of anthropological features, culture, language and gene pool. It has altogether 26 major tribes and many sub tribes living in 3863 scattered villages. Individual population of some tribes is too small like, Idu-Mishmi having 9350 and Mijis having only 5720. Most of the tribes prefer to live on the bank of the rivers like, Singphos live on Teang and Noa Dihing River, Hill Miris inhabiting Kamala River bank etc. Recently Central Electricity Authority has proposed to commission altogether 168 large dams for hydro power generation having capacity more than 77 thousand MW from the available water resources of the Arunachal Pradesh. Out of which 33 projects have already got their clearance from the MOEF, Govt. of India. Most of the projects will cause submergence in certain areas of the upstream. The project reports itself signifies the problem of rehabilitation in the concerned hydropower projects. Significantly, the tribal

peoples are nature dependant; they earned their livelihoods from the neighbouring natural resources. Submergence and rehabilitation in certain localities will adversely affect their livelihood options and consequently it will impact on culture and identity of the ethnic tribes in near future.

**Key words-** *Ethnic tribe, Hydropower, Submergence, livelihood*

## **INTRODUCTION**

The water and energy crisis is the two main challenges for the people in the last century. Currently, 2 billion people have no access to electricity, while around 1.1 billion people are lacking to access safe drinking water and 2.4 billion to adequate sanitation services (WWF). Commitments such as the Millennium Development Goals aim to address this energy and water poverty. As the pressure to solve water and electricity demands grows, dams are being considered by many decision-makers as a key solution. Furthermore, commitments to reduce greenhouse gas emissions under the Kyoto Protocol provide new incentives for developing hydropower dams. Globally, more than 45,000 large dams are operational in over 150 countries (WCD, 2000) and another 1500 or so are currently under construction.

The environmental impacts of dams are well documented but it is equally significant direct and indirect social impacts associated with the construction of large dams. The direct social impacts are associated with human population displacement. The construction of dams and storage reservoirs requires large areas of land to be flooded, sometimes productive agricultural land or land which has historic or cultural significance and often land occupied by villages or communities. Displacement is not uncommonly forced and, whether forced or voluntary, there are usually social impacts associated with resettlement. The WCD estimated the overall global level of displacement by dams to be between 40 and 80 million people (WCD, 2000). The alteration of flow regimes is often claimed to be the most serious and continuing threat to ecological sustainability of rivers and their associated floodplain wetlands (Naiman et.al 1995, Sparks 1995, Lundqvist 1998, Ward et.al 1999). Flow regulation by dams, often compounded by other structural modifications such as channelization and levee banks, normally results in reduced

connectivity and altered successional trajectories in floodplain rivers (Ward and Stanford 1995). Dams typically dampen flood peaks, reducing the frequency, extent, and often the duration of floodplain inundation. Smaller channel-forming flows modify patterns of channel migration, lowering habitat diversification on the floodplain. These changes ultimately reduce the biological diversity and ecological integrity of floodplain rivers (Ward and Stanford 1995). While the obvious and often irreversible impacts of large impoundments are now well recognized, there is also growing awareness of the pivotal role of the flow regime as a key driver of the ecology of rivers and their associated floodplain wetlands (Junk et.al 1989, Poff et.al 1997, Richter et.al 1997, Puckridge et. al 1998, Hart and Finelli 1999). People are equally vulnerable; not only those who are displaced by dams, but also those who depend on these freshwater ecosystems for their livelihoods, for example through fisheries. Those most affected by dams still do not necessarily benefit directly and often remain without access to power and clean water. Natural flood regimes are an important part of aquatic ecosystems, and whenever they are altered, it can be expected that serious impacts to aquatic life will ensue (Roberts, 1993; Kottelat and Whitten, 1996). The most radical effect is on aquatic flora and fauna of its dependent wetland from hydropower development of rivers is usually due to reduction or elimination of the seasonal variations in water level (Bunn and Arthington, 2002). Drop in vertical connectivity may reduce the down stream floodplain ground water recharge capacity gradually and can lead to the destruction of riparian wetlands. Unfortunately, our riverbanks have suffered a high level of disturbance over the last 200 years and are heavily degraded because of operation of hydroelectric power projects. In many cases, riverbanks are being “eaten away” at a rate far greater now than in the past. Riparian communities along stream reaches that lose water through seepage into their bed or banks are at particular risk from diversions (Kondolf 1989). Riparian vegetation has essentially disappeared where no water is permitted to flow in the natural channel (Taylor 1983; Stine 1991). Yet today wide spread concern remains that despite improvements in dam planning, design, construction and operation, they continue to result in significant negative impacts to a wide range of natural ecosystem and to the people whose livelihood depends upon river and their associated ecosystem (WHO 1999 ; WWF 2005). The economically exploitable hydropower potential in India through medium and major

schemes has been assessed at 84,044 MW at 60 per cent load factor - that is about 148,000 MW installed capacity. The North and North Eastern regions contain the lion's share of this, with 54,000 and 59,000 MW respectively.

## **METHODOLOGY**

The present study area Arunachal Pradesh is situated between 26°28' and 29°30' North latitudes and 97°30' and 97°30' East Longitudes covering an area of 83743 sq. km. Bio-geographically it is situated in the Eastern Himalayan province, the richest biogeographical province of the Himalayan zone. The entire territory forms a complex hill system with varying elevations ranging from 50m in the foot-hills and gradually ascending to about 7000m, traversed throughout by a number of rivers and rivulets.

The present study based on the EIA (environment impact assessment) reports of three large dams under construction at Arunachal Pradesh of Eastern Himalaya (Lower Subansiri Project 2000MW, Dibang 3000MW project and Demwae II 1750 MW project). Both primary and secondary data have been collected and analyzed on the basis of standard literature

## **RESULT AND DISCUSSION**

In the Lower Subansiri 2000MW Project, as per report 38 families will be displaced where 238 people of two villages i.e. Gansi and Siberite will be primarily affected according to 2001 report. The latest report of 2008 of the same project shown that there are actually 77 families of Galong and Adi tribe will be displaced. In the Dibang 3000MW project overall 301 people of 86 families of Idu Mishimi tribe will be displaced. The Dimwae II 1750MW project of the Luhit River will displaced 1349 people of Tayang and Thalai sub tribe of Digaru Mishimi. Idu-Mishmi is the major tribe in the project area. Population of the Idu-Mishmi tribe is 11,021 as per EIA but according to latest census report their population is only 9350. Again according to the EIA report of the project, it is expected that a workforce numbering about 5800 will come into the area from outside. With such a ratio one can well imagine the impact on the local population. It is significant that the Idu-Mishmi tribe and language has been identified as one of the

'endangered languages and locations' of the world by the UNESCO as a part of its Endangered Languages Programme. Like these, there is lot of similar threats likely to be there in Arunachal Pradesh due to construction of large dams. The people of Arunachal Pradesh are predominantly living in rural areas (86 %). Most of the domestic requirements are made of cane and bamboo. All the ethnic tribes having different types of bamboo, thatch, palm leaves and cane made huts, various kinds of baskets, cane vessels, a wide variety of cane belts, woven and plains, elaborately woven brassier of cane and fibre, bamboo mugs with carvings, a variety of ornaments and neckless are some of the products that deserve special mention. All these materials are collected from their neighbouring natural forest and these are the identity of the people of different ethnic groups. The people of Arunachal Pradesh resort to hunting in their leisure to supplement their food. Fishing of hill stream fishes by using their traditional fish gear is also a part of culture and livelihood. Fish migrations in the tropics are probably best known in the Neotropical region. Hydroelectric dams in the Amazon basin as a whole have halted the long distance migration Construction of hydropower dams without any appropriate and adequate provision for fish migrations is considered responsible for the depletion of the indigenous hill stream fish in Nepal (Shrestha, 1995). Similar instances may occur in Arunachal in a near future due to construction of dams. Nature has been exceedingly kind and has endowed this beautiful State of Arunachal Pradesh with diverse forests and magnificent wildlife. The richness of life forms i.e. the flora & fauna that occur in these forests presents a panorama of biological diversity with over 5000 plants, about 85 terrestrial mammals, over 500 birds and a large number of butterflies, insects and reptiles. Such an unparalleled occurrence of life forms can be attributed to the peculiar location of the State which is at the junction of the Paleoarctic, indo-Chinese, and Indo-Malayan bio-geographic regions, biotic elements from all these regions occur in this state making it very rich in floral & faunal resources

The World Bank's report prepared in 2005 on strategic issues for the water sector in India, says that the hydropower sites in India's Himalayan region are among the "worlds most environmentally and socially benign sites for hydro power." It is true that due to low population density the numbers of people displaced directly by dam projects in these areas appear to be too small as compared to the project site of the other parts of

country. However the social impacts of these projects are likely to be tremendous, because majority of the population consists of tribes with distinct identities and customs, dependent directly on land, forests and rivers for their sustenance. The damming of the river has already adversely impacted fishing, another important component of the community's sustenance of the ethnic tribe. Material for housing is brought to this area by the people using rafts on the river. This movement has already been disturbed due to the construction activities on the dam and will be permanently blocked when the dam is completed. The situation in Arunachal is complicated by the fact that rehabilitation or compensation for the loss of resources is not easy as the 'ownership' of land, forests and even rivers is attached to specific clans and tribes (Dharmadhikary, 2008). Perceptions so far available for the tribal people, the rivers, the mountains and the forests are very much a part and parcel of their identity and existence. According to a memorandum submitted by Kotige Mena and Ingore Linggi to the chairman of the state pollution control board of Arunachal Pradesh on 29 January 2008. Conclusively, the proposed hydropower projects (Large Dams) in Arunachal Pradesh may pose threat to identity of nature dependant ethnic tribal people. According to 2001 Census, total of 100 STs have been enumerated from Arunachal Pradesh, out of these only twenty-five of them have returned 5,000 and above population. The report itself signifies that a lot ethnic tribal communities are there in Arunachal Pradesh, those required some special interest to sustain their ethnic identity.

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