

SUBANSIRI LOWER HYDRO ELECTRIC PROJECT: HOPES AND DESPAIR

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Abstract: Dam which is the creation of science and technology has provided both benefits and curse to the creation of almighty. In other words it can be said to be gamble with the nature. Water is a natural resource without which no one can live in this earth. Development of science and technology has made the innovative idea to produce energy from the current of water for the power generation which too is for the sake of development. It is beyond doubt that dam is providing effluent power and energy for the development of human's luxurious life.

In one hand dam provides artificial ease to the work of human being and on the other hand it is playing with the creation of nature causing threat and danger to flora and fauna of nearby area of dam site. The Subansiri Lower Hydro Electric Project is the big proposed dam to be constructed in the border of Assam and Arunachal Pradesh. Though the construction work has been started in 2005 but due to vehement protest by various local organizations the authority for the dam has kept the project stopped.

The object of the present study is to focus on the affects and effects of Subansiri Lower Hydro Electric Project on the downstream areas. The primary aim of the projects is to facilitate the power supply in the North East Region as well as in the rest part of the country with commercial purpose. Various committees were constituted to resolves the issues regarding the safety of the dam.

Keywords: *Subansiri Lower Hydro Electric Project, Sustenance water flow, flora and fauna.*

Introduction: The Subansiri Lower Hydro Electric Project (SLHEP) is located at Gerukamukh on the border of Assam and Arunachal Pradesh on the river Subansiri ¹which is a right bank tributary of the River Brahmaputra. The left bank of dam is in the state of Assam and the right bank of dam and power house is in the state of Arunachal Pradesh. River Brahmaputra

is regarded as only male (the masculinity of the river involves esoteric folkloric narratives) river in India flowing through Assam. The Subansiri River joins the river Brahmaputra at Majuli Island which is approximately 110 km downstream of the project site. Majuli is the largest River Island in Asia. The SLHEP Project is located at Gerukamukh (Latitude 27.33.15 N, Longitude 95.15.30 E) where the River Subansiri debouches into plains of Assam. One 125m high concrete gravity dam is being constructed by National Hydro Electric Power Corporation Ltd (NHPC) for 2000 Mega Watt hydropower generation capacity. This is the biggest hydroelectric project of India, which is under construction. The Site Specific Earthquake Design Parameters were established by Department of Earthquake Engineering (DEQ), IIT Roorkee and Peak Ground value of 0.38g was recommended for maximum considered earthquake.

Though the project was conceived in the year 1955, but the survey and investigation works started only in the year 1976 by Central Water Commission (CWC) and Geological Survey of India (GSI). The feasibility report relating to the project was submitted by the Brahmaputra Board in the year 1983. However after getting the feasibility report the proposed 257m high Rockfill dam at the initiation was reduced to 116 m and instead of a single high dam, a cascade development of the Basin was proposed by Brahmaputra Board envisaging construction of three dams, i. e., Lower , Middle and Upper Subansiri Projects.

For execution of the project, it was sent to NHPC in May 2000. The NHPC submitted the Detailed Project Report (DPR) in June 2001 to Central Electricity Authority (CEA) for 116m high concrete gravity dam at the same location as proposed by Brahmaputra Board. The Techno Economic Clearance of the project was accorded by CEA in Jan 2003.

An Expert Group comprising members from various disciplines of Gauhati University, Dibrugarh University and IIT- Guwahati was constituted at the instance of Government of Assam in May-2008 to assess the downstream impact of the project, when the construction works at the project site were at active stage.

The Subansiri is one of the principal tributaries of river Brahmaputra, originate from Tibet at an altitude of 5340m, Subansiri is more than a river tributary. It is a treasure of many valuable endangered aquatic lives. It provides the life to the riparian people of which mostly are the missing tribal people, of the Subansiri by its bank for the entire lower 130km of the river till it meets the Brahmaputra, are fully entwined with the river. Their livelihood is based on the river. Their culture, tradition and heritage and age old practice is entwined inseparably with the river.

Boating has been adopted as a major source of earning. It is considered as a means of communication by the people to cross the river from one bank to another. Boats carry not only the people but also ferried boulders, sand and other materials to the World Heritage Island of Majuli in Brahmaputra.

At present the construction works of the project stands suspended since December, 2011. As because of agitation raised by various local bodies such as All Assam Students Union, Krishak

Mukti Sangram Samiti and other organisations and members of civil society. They are opposing the construction of the dam democratically time to time and demanding the government for proper downstream impact for the greater interest of the people at large of the region before it started to resume its construction work.

We should be anticipated and taken into consideration while assessing the feasibility of the project, what would be the possible impact in future and tries to find out the corrective measures for the same.

A tripartite Meeting under the chairmanship of Hon'ble Minister of power was facilitated by Government of Assam on 6th Dec, 2013, which was attended by Representative of Civil Society, Protesting Groups, Officials of Government of Assam, Government of India and National Hydro PC. As a result of the meeting another meeting was convened among experts of Assam and experts of Government of India and NHPC to resolve the issues. Following this a meeting was convened by ministry of Power on 10th and 11th Dec 2014 at New Delhi with expert group of Assam, stakeholders of Assam and representative of Government Of Assam to address the issue concerning resumption of works of the projects. Resulting the meeting a Project Oversight Committee was constituted on 13.01.2015 comprising 4 members from expert group of Assam and four experts from Government of India, and one each from CEA, CWC, GSI and IIT-Roorkee.

Geographical Feature of Dam Site

The Subansiri Hydroelectric project is located in outer Himalaya over Middle Siwalik Group of rocks. The project site is bounded between two major tectonic features i.e., Main Boundary Thrust (MBT) in the north and Himalayan Frontal thrust in the south.

The site of Dam is located in Sandstone (Middle Siwalik) which is soft and friable in nature and has salt and pepper texture. The composition of the Siwalik formation shows that they are alluvial detritus derived from the mountains swept down by the river system and deposited if fore deep, which have been folded and elevated into their outer most foot hills.

It is pertinent to mention that several projects are successfully functioning constructed in Siwalik foothills after taking adequate precautionary measures in the geological set up akin to that of Subansiri hydroelectric project. The instances may be cited of the mega projects that have been constructed and functioning well on the rocks of Siwalik Group, such as Bhakra on river Sutlej, Ramganga dam on river Ramganga (Uttarakhand) in India and Tarbela dam in Pakistan.

The above study reveals that the rocks at the project site are soft, weak and friable in nature. The rock has low density, very low compressive strength, low deformation modulus and low elastic modulus, besides being porous with potential to slake in water and losing strength when saturated. However the rock behaves satisfactorily under confined conditions particularly with respect to slackness.

The economic planning and development has been started in India since 1952. Production of power is also contributing towards the economic development of the nation. The rapid development in the power sector throughout the country indicated a clear policy shift transforming the status of electricity service from essential service to a commercial one. In the pre globalization period the exploration of hydroelectric power was vested with the government. However in the era of globalization a large change can be identified in the area of investment. The joint venture of private and public managed to get sufficient fund for investment in the power sector. And accordingly the power potential of the North east region is drawing their attention. Due to lack of adequate fund the public sector promoters of hydro projects in the region was forced to limit the plant size to 50 MW and 100 MW. But in the present situation public and private sector jointly has targeted about 50000 MW of power to be generated from hydel sources of the region.

Violation of Constitutional Provision

Release of insufficient water from the project may jeopardize the scope of livelihood and avenues of the downstream riparian people are a grave infringement of Article 21 of the Constitution of India as right to life. For the ecological survival of any river and the livelihood needs of riparian people thereof is a must because of the provisions of the constitution and the National Water Policy 2005.

The state cannot hold up adequate “sustenance water” from being released from any hydel power project as release of adequate sustenance water is a requirement as per National Water Policy 2005 and Article 48A and Article 21 of the constitution of India².

As per the sixth schedule of constitution of India the inhabitants of the Subansiri river are under Missing Autonomous Council, constituted by the Government of Assam by enacting an Act in the Legislative Assembly in 1995. The Missing Autonomous Council (Amendment) Act 2005 provides for constitution of core and satellite areas with at least 50% Schedule Tribe population. Though constitutional provision is there but planned dam and its downstream affect in these areas of Missing community reflects another picture of violating the ethos of constitutional provisions of the 6th schedule by gambling with fortune of the riparian people by the Government of India itself. This reflects that they want the dam at any cost for power and profit generation from the same.

Public interest litigation was filed in the Gauhati High Court objecting against the construction of a big dam at Subansiri undertaken by National Hydro-Electric Power Corporation. However after hearing the litigant parties the honorable High Court rejected the same on the ground that according to Article 262 of the Constitution a hearing related to the interstate river water dispute is beyond the scope of any court.

As per Clause 4 of Interstate Water Dispute Act of 1956, tribunal or special Court formed at the behest of the Central Government has the jurisdiction to resolve such disputes.

Features of the River Subansiri

The Subansiri River is considered as a safe haven for the river Gangetic Dolphins (*Platanista Gangetica*), declared as a State and National Aquatic Animal in 2008 and 2010 respectively. Even the local fishermen used to take the help of these dolphins for fishing as per the technique of Traditional Indigenous Knowledge System, where both fishermen and dolphins cooperate each other and advantage goes to both the fishermen and the dolphins. The Gangetic Dolphins have been declared in the red list of IUCN in 2002. It is listed in the 1st schedule of the Wild Life (Protection) Act, 1972. According to law not a single Gangetic Dolphin can be killed, violation of the provisions will attract the strict sanction under law as imprisonment up to 7 years, 3 years being the minimum. Hence release of sufficient water for the sustenance of the same is a legal requirement for the river as per the Wild Life (Protection) Act 1972 for survival of this endangered species.

A major UGC research project was conducted on present Environment and Biodiversity of Downstream Subansiri River Basin³ which has provided the following outcomes among various other details are as follows:

- a. 169 fish species which include 15 international union of Conservation of Nature (IUCN) endangered species.
- b. IUCN's red listed Gangetic Dolphins (*Platanista Gangetica*) with a high density in Subansiri (32 numbers in 110km stretch, 2010)
- c. Two of IUCN's red listed turtles amongst many varieties are found in the river.

Different organization has protested time to time and criticized vehemently the effort of government and NHPC for ignoring the apathy of the aboriginals. The proper downstream affect study may reveal the other factors of the ongoing dam. However the construction work of the Dam is keeping stopped due to the aggression made by the civic bodies.

The dam is located in a highly seismic Zone i.e., Zone V which is itself a great concern for the dam and its safety. There was also a precedent of earthquake of 3.6 in the Richter scale has already rocked the region in 1950 with epicenter very near to the dam site. The devastating nature of earthquake may not possess threat to the dam but may to the flora and fauna of the downstream areas.

Points of consideration

1. Sustenance flow from the dam without the control of any human is the main point to be considered in respect of saving and balancing the ecology of the river and the downstream areas.
2. The requisite amount of water to be released by the Subansiri lower hydroelectric dam all year long for the ecological sustenance of the river during the lean period of water.

3. Strengthen the existing embankment and construct new ones up to the confluence of Brahmaputra so the 'sand' is not deposited in the agricultural fields making them unfit for cultivation in a scientific way.
4. So far the livelihood of riparian people of Subansiri are concerned they can be classified into various groups... Driftwood collection, river transportation business, sand and ground mining, agriculture in the river flood plain, fishing, commodities from the river, for example food, fiber, building materials from reeds etc. which support livelihood of many rural people. In such circumstances sudden stoppage of such practices are fatal blow directly to the inhabitants thereof.
5. Rehabilitation and resettlement of the affected people should be the primary concern of the project authority. As because they are forced to leave their natural habitat for the greater interest of the nation. Hence priority should be given to them in their resettlement. Proper planning to be made and executed for their resettlement, so that they should not feel insecure in relinquishing their property for the development of the country.

The recent incident of Ranganadi dam which is under the authority of North Eastern Electric Power Corporation (NEEPCO) has released the water resulting submersion of more than 100 of villages of Lakhimpur districts of upper Assam.⁴ The unexplainable pathetic conditions of people of flood affected area has raised the question of equality before law and right to live under article 14 and 21 respectively of the constitution of India. It has destroyed the main embankment of Ranganadi River. Resulting unexplainable pain for both human as well as to the animal at large.⁵ Releasing of water forced the animal as well as human being to live together. It has compelled all to pass days and nights without food. As per the report of district administration about 368 crores expenses were incurred in constructing the embankment.⁶ It has to be mentioned here that NEEPCO has released water in earlier occasion also. In 2008 it has opened many gates to release water resulting the same occurred situation, where more than 20 people were dead.⁷ Repetition of same incident by the same organization is not commendable at all. Instead of releasing water in bulk the NEEPCO authority can release it in reducing amount. It has submerged this time more than 400 villages. It has devastated 20272 hectares agricultural land and more than three lakhs people got affected and 80000 animals were suffered.⁸

Frequent release of water from the Ranganadi dam by NEEPCO from the month of July to August 2017 has affected the daily life of all, of some particular areas. It involves the issues like education, health and marriage also. Schools and colleges have to remain closed for number of days. It takes lots of time to return to one's normal life and condition. Though the relief to the flood victims are given by various NGO's, district administration etc. but such is not sufficient to reinstate them. It is also worth mentioning here that the NEEPCO authority is not made accountable to indemnify the flood victims, despite of their sabotage for the same.

The River Ranganadi is one of the major tributary of river Brahmaputra and lies in the north-eastern part of Assam. It is originated at an elevation of 3440.00m near the border of Lower Subansiri and East Kameng districts. The total 2941 sq. km catchment area of the Ranganadi River is divided between Arunachal Pradesh and Assam of which 700 sq. km lies in the Lakhimpur district of Assam and the remaining 2241 sq. km lies in the Arunachal Pradesh.⁹

The Ranganadi hydroelectric project is a run-off-river scheme, the biggest power plant in North East Region producing 405 megawatt power till date, by the part of stage I of the scheme. It is a concrete-gravity diversion dam on the River Ranganadi, in Arunachal Pradesh. Its construction began in 1988 and started to function in 2001. As per NEEPCO the design of the dam is such that it will preserve water to its full capacity in the reservoir.¹⁰ The capacity of the reservoir is 567.00m¹¹. Therefore if flood occurs and water level rises beyond its capacity, the reservoir will not be able to retain it hence bound to over flow.

Here a comparison can be made that if only the dam producing 405 megawatt power can brought miseries to lakhs of people, thousands of animals and destroys hectares of agricultural land, inundating villages, submerging houses, schools and other property, by collapsing bridges, national highways and roads i.e. means total disruption of public life, then it can be anticipated that what disaster the Lower Subansiri Hydro Electric Project can brought to the life of people and flora and fauna of downstream areas, once construction is completed and started to generate power.

6. Majuli which is considered as world heritage is affected this time worsely by the water of Ranganadi River. Repeated submersion of Majuli may enforce to delete its place from the map of Assam in the coming days if we were unable to gauge upcoming disasters and its impact thereof which might occur from the Lower Subansiri hydroelectric project on its functioning and provide adequate and required protective measures.

SUGGESTIONS

1. The project authorities and government should take constant care and effort to provide security to the downstream flora and fauna. They should confirm it that the downstream affect should be only nominal.
2. For survival of endangered species, like survival of the Gangetic Dolphins, average natural lean period flow for their sustenance through the year is a must, and hence adequate water to be released for the same.
3. Justified compensation should be paid to the villagers who will lose their everything in shifting for the greater interest of the nation for construction of the dam.

4. Sustainable development is an important factor to be considered throughout the running of the development once it is completed. Sustainable development with ecological balance, in the fragile Himalayan foothills of Arunachal to avoid innumerable environmental and human catastrophe that has occurred in Uttarakhand resulting devastation of all in great scale.
4. Alternative vocational training and opportunity should be provided to the distressed people of the affected areas. So that they would not have to suffer economically and also emotionally to earn livelihood and to loss of their age old vocation.
5. Adequate protective measure should be taken to address the problem of artificial flood created by the release of dam water. The protective measures should keep in ready to confront any possible disaster might by created because of the dam.
6. Massive awareness has to be generated among the people regarding the pros and cons of the said dam. To cope up with development we need to have scientific thinking and adherence thereto but not at the cost of life of flora and fauna of the targeted site.
7. We have no right to play with the life of aborigines of the dam site. They are entitled to enjoy the same right and privileges under the constitution of India like any other citizen of the rest of the country. But making dam and force to shift them without their consent is a blow to guaranteed rights imparted under the constitution of India. Hence it is quite logical to convince them and seek their permission by making them fully aware to the merits and demerits of dam beforehand construction of a dam.
8. Early flood warning system to be installed in the downstream areas. So that the affected places can be evacuated as early as possible. For this purpose both disaster management system and district administration has to be remaining too cautious and cooperative in gauging and mitigating the problems of the downstream inhabitants.
9. Strong embankment and regular inspection of the same is considered as vital to fight against flood. Especially before the arrival of rainy season, repairing of the embankment has to be completed and continuous checkup of the banks are quite necessary for the safeguard of the downstream inhabitants.
10. Instead of big dam which is a matter of serious concern form the point of its safety, small or medium dams in large scale may be an alternative to walk hand in hand with the development as well as public safety and welfare. In welfare country like India where all are equal before law and equal protection to be given to all, with such guaranteed rights in one hand and to play with the feelings and livelihood of a section of people in another is contradictory of guaranteed fundamental rights of the Constitution. Welfare of the people should be utmost priority of the country. In such circumstances the feel of insecurity among the indigenous masses of a particular region in its own land is a question towards the democracy of the country.

Conclusion: The man made innovation should not dig the hole for the man itself. Beyond enmity it is true that we all want development but at the same time it is unjustified to achieve that at the cost of the life and happiness of others. Development is an inevitable process as well as natural calamities are the corollaries thereto. But in the name of development we have no right to play with the life of anybody. Nevertheless all the creature in the earth takes birth with their given life expectancy by the nature. Development and existence both should go hand in hand and for that alternative may be small dams in place of large dams to prevent the adverse consequence of the big dams on the people and environment as well.

Power generation and at the same time ecological balance, downstream affect and the life of innocents are vital areas to be considered before projecting a big dam.

The recent incident of Ranganadi dam where the North Eastern Electric Power Corporation has released its water due to incessant rain and capacity beyond its storage, resulting heavy flood in Lakhimpur district submerging more than 192 number of villages within few hours causing innumerable hardship to the inhabitant as well as flora and fauna of the downstream areas. Besides, thousands hectares of fields are under water causing lots of damages to the crops. Which have consequential losses to the family of the farmers who are mostly dependent on agricultural production, again compel us to rethink before resumption of construction work of proposed lower Subansiri Hydro Electric project?

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