Sustainability Issues of Lower Subansiri Hydroelectric Power Project

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Abstract: A development project is analysed from three major components- Impact on Environmental Health, Economic Profitability, and Socio-Economic Equity to measure its Sustainability. The preliminary study was conducted through Interviews with the NHPC authorities entrusted with the responsibility of construction and management of the dam and the local people residing within the vicinity of the project area. The NHPC authority clarified from their end that the dam construction will bring sustainability from the economic end by generating 2000 MW of electricity which can enrich the country as a whole and the state of Assam and Arunachal Pradesh in particular by increasing the Hydroelectric power generating potential of the country and thereby removing the scarcity of power in both the states. Clearance of the National Green Tribunal also nullifies the issues of the local organizations mostly from the downstream area of the dam i.e. Assam regarding the impact of the dam on local ecology and livelihood of the riparian people residing in the downstream area. At the Socio-economic level, under its CSR project, NHPC authorities have conducted many awareness programs and even developed an e-website to promote women weavers for its brand SAAR Subansiri Handloom. Contrasting views were expressed by the people of downstream and upstream areas regarding the impact of the dam. While the upstream people are satisfied with the construction of dams since they are receiving free electricity, monetary compensation, and permanent jobs in the project the downstream people are denying any kind of benefit either from the government or from the NHPC authority. Moreover, the high voltage electric wires that cross over the nearby residential areas of the dam and the discharged dam water during the rainy and flood seasons pose a threat to the lives of the people and domestic cattle. In the case of employment also the downstream are employed only as casual labourers. The downstream people are also denied of compensation as per the dam displacement law – people residing within the 5 km vicinity of the project if anybody is displaced should receive compensation. So, the question of the sustainability of the LSHEP remains unresolved creating protests against the dam

Keywords: Environmental Health, Economic Profitability, and Socio-Economic Equity.

Introduction:

River water is a major source of energy production, which is the utmost necessity for the all-around development of human civilization. Despite some major threats a Hydro Electric Power Project may bring to the people's livelihood, almost all countries produce energy through hydroelectric power projects. India is also no exception from this trend. Many of the rivers of Assam have prospects for the Hydro Electric Power Project. The Subansiri River is one of them. Its structure is of utmost importance as it holds soaring water resources facilitating hydropower prospects for the country. Lower Subansiri Hydro Electric Power Project is one of India's many such projects. This project has been undertaken by NHPC of the government of India on the river Subansiri, a tributary of the mighty river Brahmaputra. The Lower Subansiri hydroelectric power project (LSHEP) is positioned on the Subansiri River, which is situated on the borders of two northeastern states of India namely Arunachal Pradesh and Assam. The location of the dam site on river Subansiri is 27°33′15′′ N latitude and 94°15′30′′ E longitude. The project covers the Kamle district of Arunachal Pradesh and Dhemaji district of Assam.

The Lower Subansiri project developed by the Central Public Sector Undertaking (PSU) National Hydro-Power Corporation (NHPC) was granted environmental clearance by the Ministry of Environment & Forests in July 2003 despite major concerns about poorly studied impacts of the project in the downstream areas. The Standing Committee of the Indian Board for Wildlife (renamed as the National Board for Wildlife) had given its green signal to the project located in a wildlife hotspot in May 2003, provided no dams are built upstream of the project in the Subansiri river basin. Construction of the LSHEP started in January 2005 after the NHPC received all statutory clearances including the Environmental clearance and the consent from the State Governments of Assam and Arunachal Pradesh.

However, with the coming of this mega project, different civil society organizations have raised questions on the sustainability of the project. The protesting organizations believe that this mega project would bring devastation to the people living in the vicinity of the project site creating floods, and negative impacts on the environmental health. However, in this paper, we attempt to analyze the Lower Subansiri hydroelectric power project from three major components- Impact on Environmental Health, Economic Profitability, and Socio-Economic Equity to measure its Sustainability.

Methodology of the Study:

To achieve the objectives of the proposed research work, a qualitative method of research has been adopted. The methodology has relied on the data collected from field notes acquired by us during the visits of the site. One-to-one interviews with the local people of the dam site, leaders of local organizations protesting the construction of the dam,

academicians, and the office bearers of the NHPC. To gather information, separate questionnaires were prepared. To attain an empirical understanding and figure out the pros and cons of the construction of the dam we also analyzed data, collected from both primary and secondary sources. Data was collected from sources like the NHPC office located by the site of the LSHEP, the NHPC website, and articles published in papers, etc.

Economic Aspects of LSHEP:

The project of Lower Subansiri hydroelectric power was developed as part of India's 50,000 MW hydropower plan kicked off in May 2003. The Central Electricity Authority of India (CEA) undertook pre-feasibility studies of 162 projects as part of the dream plan of 2003, among which a total of 5,600 MW was planned on the Lower Subansiri hydroelectric power project. This project was visualized as one of the megaprojects of India. The project proposal got clearance from the government in 2003 and the NHPC immediately initiated the task of the project.

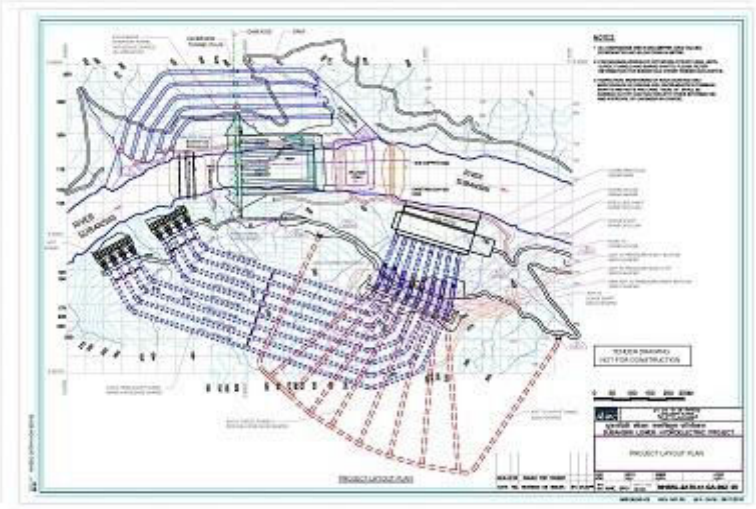

Figure1 www.nhpcindia.com

The project, LSHEP is now about to be completed and as per NHPC officials, the project is expected to be operational by the end of 2024. It is now estimated that this project would generate 7421.59 MU electricity annually and accordingly, the authority has decided to allocate its share to the states of Assam, Arunachal Pradesh, and the nation in general. From the total energy generated Assam would get 533 MW and Arunachal Pradesh would get 274 MW. The rest of the generated energy would be taken by the NHPC for use and sale to the rest of the nation.

Other Advantages of the Project:

As it's a renewable source of energy and relies fully on the water cycle driven by the sun its energy production cost is less. India is full of water resources that help the country produce sufficient energy to consume and sell it to other countries to earn foreign exchange. Lower Subansiri hydroelectric power project is one such initiative. This hydropower station is also going to create entertaining prospects like boating, swimming, and fishing for the public opening access to its reservoir**.** The site of this project has already become a source of tourist

attractions and picnic parties. It has opened ample employment opportunities in the Dam construction and management works for the local people. It is also expected that the project will provide irrigation support, and clean drinking water to the vicinity people of the project. The NHPC authority, in addition to the project-related advantages, has taken a good number of social development initiatives for the vicinity people.

Environmental Aspects of LSHEP:

Hydroelectric power projects are always environmentally friendly forms of energy production though there remain sustainability questions of the construction sites. These projects do not exploit any fossil fuels, nor do they produce any detrimental emissions. These projects provide a secure supply of fresh energy. The only pollution these dams create is from cement and sand dust during the time of construction. Once the production of energy begins it does not create any form of pollution. The gravity of a dam constructed from concrete or cement is designed to hold back water by primarily utilizing the weight of the material alone to resist the horizontal pressure of water pushing against it. Subansiri project has been repeatedly red-flagged by experts and activists for its weak sandstone base, shallow foundation, inadequate quake resistance, absence of flood-control capacity, downstream impact on ecology and livelihood, etc. As such, if the construction of the project breaks, it will lead to a huge flood destroying the existing environmental setup of the vicinity.

Socio-Economic Equity aspects of LSHEP:

Energy is crucial for economic development and for the fulfillment of all basic human needs. According to the present inter-state power-sharing regime determined by the Gadgil Formula, the host state which also includes the downstream state i.e. Assam is given free power allocation of 12% of the generated power from the available capacity. In addition, the power output is apportioned among sharing states for the purchase of power. It has also been claimed by the NHPC authorities that the people residing in the vicinity of the project area have benefited in terms of their socio-economic development, infrastructure development, better education facilities, indirect employment, business, tourism, and communication opportunities, etc. Eligible and qualified local people have been appointed by the NHPC authorities as executives and supervisors. Many are also engaged as laborers at the construction site on a contractual basis. The project hospital at Gerukamukh provides health facilities to the local people and the laborers at the site. The 16 K.M. road constructed between Gogamukh and Gerukamukh has made the lives of the local people easier. Earlier the communication systems of the areas were extremely poor. NHPC has also been organizing medical camps from time to time and has been providing medical support to control bacteria-borne diseases at the construction sites and labor camps. The NHPC has also ensured effective communication among local people, social groups, *gram sabhas*, and

the NHPC authorities during any disaster and has provided training to state officials to redress the same.

Issues raised by Local Activist towards the sustainability of LSHEP:

The Lower Subansiri Project has been facing resistance from the people of both Assam and Arunachal Pradesh from its very inception. The people have been resisting the progress of the project under the banner of various civil society organizations like the People's Movement for Subansiri Valley, the Subansiri Bachao Committee, the Krishak Mukti Sangram Samiti (KMSS), the North East Dialogue Forum, the Brahmaputra Valley Gana Sangram Samiti, etc. Various student organizations like the All Assam Students' Union (AASU), the All Dhemaji District Student Union (ADDSU), and the Takam Mishing Parim Kebang (TMPK) etc. are also active in raising their voices.

The following issues have been raised by the protesting organizations-

- The Protesters are in fear that the construction of such a big dam will destroy the downstream River Ecosystem.
- NHPC did not plan for a fish ladder or fishway, built along dams and locks to allow the natural migration of fish.
- Without the technologically sound embankments to the confluence with the Brahmaputra, the flushed sediments from the reservoir might destroy the agricultural fields of the villages in the downstream areas.
- The local people particularly the downstream people raised their dissatisfaction towards the project as they did not receive any package from the government and NHPC ends like the upper stream Arunachali people. The crossing of the high voltage electric wires over their residential areas is also a concern of fear in the minds of the people.
- The downstream people also mentioned the threat to their lives and property due to the discharge of water from dams during the rainy season.
- The livelihood of the downstream people will be destroyed due to the release of minimum flow in the tributary of the Brahmaputra, which is also home to the Gangetic dolphins. The destruction of the river ecosystem will impact the fisherman communities particularly.
- Regarding employment also, the downstream people are employed as casual labourers only.
- The downstream people are denied compensation as per the dam displacement law. People residing within the 5 km vicinity of the project, if anybody is displaced, should receive the compensation which also raised questions on the law as it has not made

clear regarding the amount of compensation to be received by downstream people from the future threat to their lives that might come from the project.

Delay in project implementation impact on the Economic Sustainability of LSHEP:

Due to huge protests and blockages created by the protesting organizations, the NHPC authority could not complete the works of the LSHEP to date. This delay in the project overrun the financial cost at a massive amount of Rs 13,211 crore for a project whose original estimate was pegged at Rs 6,285 crore when it was conceived in 2002 and now the revised estimate puts the total cost at Rs 19,496 crore. The time overrun of the project also increased as the original schedule of commissioning was back in September 2010.

Conclusions & Way Forward:

Energy is crucial for economic development and for the fulfillment of all basic human needs. Thus, a lack of energy services means that people's basic human needs are not being met. For this, the Government of India has envisaged hydropower as one of the energy sources as a path to oscillate between aspiration and achievement and has adopted hydropower as the most viable source of sustainable development of energy security. The importance of sustainable development ranges between three different elements, namely the environment, the society and the economy. The sustainability of the LSHEP is still unresolved since it has not been able to give equal emphasis on environment, the society and the economy. Dam has been considered as the most acceptable alternative of power generation without considering its adverse socio-economic, environmental, cultural and psychological impacts. No doubt, dams have made important contributions to human development, but to secure the benefits of dams the price has been paid in social and environmental terms by displacing people and by adversely affecting downstream communities and natural environment. So, to maintain the sustainability of the LSHEP issues raised by local communities and activities should be taken balancing the three pillars of sustainability - environmental Health, Economic Profitability, and Socio-Economic Equity. None of these should be compromised to achieve the Economic aspects. The high voltage electric line passes over the habitation of the local areas should immediately be diverted trough safe passes. Showed disappointment of the local people and organizations should be respected by the NHPC authority and resolve it taking all precautionary measures if there is any lacuna in the construction of the dam. As soon as the issues get resolved the economic aspects of the project will be less impacted since delay in implementation increases the financial costs of the project.

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