Son La Dam, Hydropower Plant and its effect on the community

Posted on April 4, 2018

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Introduction

Son La Dam, Hydropower Plant and its effect on the community are described below in detail. It is an energy production plant in Vietnam. The plant is the largest project in Southeast Asia and is referred to as the project of the century. The construction of the project started on 2nd December 2005. Before its construction, extensive research was conducted on the project. The project was proposed in the 20th Century in the 1970s. To identify the actualization of the project several studies and research were conducted. The research and studies about the construction of the Plant were done by the Moscow Institute of Hydroelectric and Industry (Bui et al., 536).

Also, the Electricity and Power Distribution Company of Japan researched the plant's viability. Designing Research and Production Shareholding Company (Moscow) combined with SWECO (Sweden). The project started on 2nd December 2005 and according to the plan the project was supposed to take 10 years to be completed. The plant construction commenced and progressed well, and by mid-December 2010, the first turbine was connected to the power grid, implying that the project was ready to be completed. The plant was officially operational on the twenty-third of December 2012. The plant was completed in seven years instead of the planned ten years; it was operated three years earlier. Therefore, the paper considers Son La Dam a project of the century for the Vietnamese (Hill et al., 362). It had a huge impact on people's lives and made a great contribution to national modernization and industrialization.

Background Information

The Son La Hydropower Plant is located in the Ong Commune, Muong La District in the Son La Province in Vietnam. The plant is situated in the northern mountainous of Son La Province. Da River runs through that area and was a key factor in determining the place of the plant constructions. Ong Commune is a place where the plant was built 13 years ago, the lived people there, and there was Pa Vinh Hamlet with approximately 30 houses. People who used to live where the plant is located were of Thai ethnic tribe. Since 2000, the government of Vietnam has been planning to locate the households who lived or relied on Da River in other places. The actual project was done to start voluntary relocation and resettlement of over 20,000 households. People from Dien Bein, Son La and Lai Chau

provinces left their heritage land to construct the plant (Hill et al., 365). The dam workers lived in poor living conditions and under the harsh weather, but they delivered the project within seven years. The Son La Hydropower Plant was designed and built by the people of Vietnam, i.e., Vietnamese engineers designed all the items, and all the workers were from Vietnam.

The Son La Hydropower Plant was built at the cost of 60 trillion VND equivalent to$2.85 billion. The Plant was designed to hold 2,400 MW and six generators. The earlier completion of the project enumerated several economic benefits associated with project management. The plant was expected to generate 500 million USD in revenues every year. Also, the plant will substitute the use of coal as a source of energy, thus saving about five million tons of coal that are used to generate the same amount of electricity. The plant will contribute about 10.2 billion kWh/year to Vietnam's national grid.

Due to the success of the project during the time the plant was opened, its workers were planning to undertake another hydroelectric project in Chau province. The workers of the project were dedicated thus enabling early completion of the project. The Head of the Plant Management Board acknowledged that the Son La Hydropower Plant project would not have existed without risks, efforts, and dedication.

In his speech, Prime Minister Nguyen Tan praised the people who have constructed the plant as engineers, workers and local people. He noted that the Son La Hydropower plant wouldn't have existed without your sacrifices. Thus, the Son La Hydropower Plant was built out of the collective efforts of the Vietnamese people.

The purpose of the plant was not only to solve the problem in the energy sector but also to signify the Vietnamese people's great economic, political and social stand. The plant will contribute significantly to the industrialization and modernization of Vietnamese society. The project provided the people of northwestern Vietnam with opportunities to rebuild infrastructure, improve irrigation schemes in the area, improve the livelihood of local people, create employment opportunities for the people, and improve the eco-environment of the area. Also, the project helps in stabilizing the lives of the Vietnamese population.

Son La Dam, Hydropower Plant Construction

The construction of the project was affected by different factors, according to the deputy head of the project management board. To start with, to prepare for the ground ceremony, the engineers and workers had to block the river. Also, the engineers had to race against time and weather to construct a 500m-long bridge together with 125km of roads. Moreover, the engineers and workers constructed a system of approximately 200km of 110-220KV electric. Furthermore, they constructed 60,000sq.m houses for the thousands of workers and storage facilities. During the project's construction, approximately 18.4 million cubic meters of rocks and soils were excavated and transported. Also, millions of meters for the foundation were dug, about 6 million cubic meters of concrete were used,

and about 115,000 tons of equipment was installed.

The engineers used advanced technology, such as roller-compacted concrete, to build the hydroelectric plant. There were debates and disagreements on the use of this technology, and after consultation, the concrete technology was adopted with the help of the specialists. The project management imported modern roller compacted concreters from Japan and Germany. The construction went smoothly with distractions, and after 2years and eight months, the dam was already constructed becoming the largest dam in southern Asia. The dam measurement is 961.6m long and 228.1m high with a capacity of 9.26 billion cubic meters of water. The construction of the Son La Dam, Hydropower Plant showed determination, solidarity, and creativity of the management, engineers, and workers. The early success of the construction of the dam and plant showed the growth of the Vietnam mechanical engineering sector.

Impacts of Vietnam's Son La Hydropower Project

The impacts of the Son La Hydropower Project on Social, economic, cultural, environmental and health, include:

Social, Economic, cultural and Environment Impacts

Resettlement of the ethnic groups, local culture, graves, and graveyards: The resettlement of the people means that they will abandon their cultural heritage which will impact them negatively. Cultural heritages symbolise communities such as land, which gives people a sense of association. Therefore, when resettling the community won't be able to go with graveyards, which are part of culture and they won't be able to build cohesion in society as they were. This will impact the community negatively. Although the community will be affected negatively the government's resettlement plan includes an improved house with the design of the traditional and cultural values of the community. Thus, on the positive side, resettlement will improve the living standards of households under the resettlement plan.

Loss of traditional crafts: due to resettlement and relocation, the communities involved will not be able to preserve some of their traditions due to the project. Also, disruption of basic education: due to resettlement school activities in the area are disrupted, and this causes school drop-out.

Loss of forest cover: The project's construction led to the cutting down of trees, hence deforestation. This environmental impact the project will cause. The project caused the loss of natural resources and the loss of balance of ecosystem biodiversity.

Dam construction: increased employment of unskilled labour, tourism attraction sites and fishing recreation. Also, dam construction will interfere with fish species movement, and the people downstream will use the Da River negatively. Also, the dam construction increases irrigation due to

water availability and promotes more fishing. The dam construction will be used as a mode of transportation. This helped in creating an easier way to access market and agricultural inputs.

Improvement and construction of the project led to the improvement of the infrastructure: the construction of roads and bridges led to the improvement of the area. Thus, this led to business growth in the area due to easier access to the market and reduced transportation costs. The project led to the growth of the infrastructure.

Creation of employment: The project led to the employment of thousands of Vietnamese people. The project led to the employment of both skilled and unskilled labour, i.e., managers, engineers, and workers (Bui et al., 540). The project led to direct and indirect employment, for instance, the inflow of workers meant the need for food supply thus which led to food salespeople. The project reduced employment during this time since it absorbed quite a substantial number of unemployed people in the population.

Improvement in the living standard of people: the project created employment for the people implying that they depended on the income of the project to feed, clothe and shelter their family. Hence, the project helped in reducing the poverty level of the workers and the local communities.

Assumptions and Resettlement Program

There are several assumptions that the government made to reduce the risk of the project while maximizing the benefits for the local environment. These assumptions include:

Open public participation between a local government official and the local people: Involvement of the local people by the government in formulating the resettlement plan. The local people of Son La, La Chau and Dien Bein provinces collaborated with authorities to uphold and protect their cultural values. This policy of the local people having greater influence helped in reducing the negative impacts on the local environment and people.

The improvement of the living standards upon resettlement of the local people: The project aims to improve the general welfare of the population, and assumptions have helped the government persuade locals to resettle. For instance, the La Ha and Kho Mu the minority ethnicities living in a congested place on the banks of the Da River were the more spacious places to resettle. The gesture created the willingness of the locals to participate and cooperate in the resettlement program.

The government assumed that the resettlement would be successful if it could address the environmental health issues. Thus, the issues of potable water, environmental health, housing problems, and unemployment were addressed. In the settlement, the government created healthcare stations.

The government assumed that, in the long run, the project would improve agriculture due to the

availability of water for irrigation. Also, aquaculture will improve due to the construction of the dam (Dao, 324). Moreover, the government noted that the local communities would be the first to benefit from the water distribution from the dam.

The Outcome of the Son La Dam Hydropower Plant Construction

The purpose of the construction was to solve energy problems in Vietnam. The Plant was designed to hold 2,400 MW and six generators. The plant was expected to generate 500 million USD in revenues every year. Also, the plant will substitute coal as a source of energy, thus saving about five million tons of coal that are used to generate the same amount of electricity. The plant will contribute 10.2 billion kWh/year to Vietnam's national grid therefore, it has achieved its purpose and promise. Therefore, the plant contributes significantly to the industrialization and modernization of Vietnamese society. The project provided the people of northwestern Vietnam with opportunities to rebuild infrastructure, improve irrigation schemes in the area, improve the livelihood of local people, create employment opportunities for the people, and improve the eco-environment of the area. Also, the project helps in stabilizing the lives of the Vietnamese population. Also, the plant has helped the country to save millions of tons of coal every year. Furthermore, early completion of the project saved the country from incurring more expenses on the project. Therefore, the Vietnamese could consider Son La Dam a project of the century. It was the largest dam in Southeast Asia that had been proposed since the 1970s. After much research and financial support, the project started on December 2nd, 2005 and was completed on December 20th, 2012 (Hill et al., 455). In fact, the project was completed three years ahead with the success of achieving the multi-purpose project.

Conclusion

The Son La Dam, Hydropower Plant deserves to be called the project of the century by the Vietnamese. The project has enormously contributed to the modernization and industrialization of Vietnam. Also, the project has solved problems in the country's energy sector and positioned Vietnam as Southern Asia emerging economically, politically and socially. The project provided the people of northwestern Vietnam with opportunities to rebuild infrastructure, improve irrigation schemes in the area, improve the livelihood of local people, create employment opportunities for the people, and improve the eco-environment of the area.

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