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Chapter 6

CONCLUSION

Dams have been a part of the economic development model of almost all the country. Dams have been built all over the world to exploit economically the water resources for hydropower production, irrigation, flood management, navigation and supplying water to big cities and to the several industries. Hydropower provides non-polluting source of energy that need to be generated in increasing amounts for the expanding needs of growing population.

The comparative study of Hirakud and Kaptai Dams shows that as far as the flood management of Hirakud Dam is concerned, it has failed to manage the floods of River Mahanadi, while the Kaptai dam has been successfully managing the floods of River Karnafully in the region. It is primarily due to the differences in their planning. Kaptai Dam is the independent plan while the Hirakud Dam is the part of the Mahanadi Valley Development Plan. The Mahanadi Valley Development Plan had the plan to construct three dams (Hirakud, Tikarpada & Naraj) across the River Mahanadi and the rest of the two dams have not built till now. Therefore Hirakud Dam alone has not been able to manage the floods. Secondly the high rate of sedimentation in the Hirakud Dam has been causing frequent floods due to its dwindling reservoir water holding capacity. But on the other hand it is also true that in spite of high rate of sedimentation in the Kaptai dam it has been managing the floods. It is largely due to the location of the dam. The distance of the Karnafully River from the Kaptai Dam to the Bay of Bengal is only 30 kilometers having sparse population covered by hilly terrain. The water of the Karnafully River gets discharged easily to the Bay of Bengal. Therefore the intensity of the floods has never been visualized in the Karnafully River. On the other hand the distance of the River Mahanadi from Hirakud Dam to the Bay of Bengal is approximately 500 kilometers. It flows through the thickly populated coastal plain belt of Orissa. The Water of the River Mahanadi does not easily discharge in the Bay of Bengal due the plain land of coastal districts and the river water gets flooded. Thus the intensity of the floods made by the
River Mahanadi is more in comparison to Karnafully River and it gets flood almost in every three years.

On the other hand as far as the hydropower installation capacity is concerned the Hirakud Dam has not fulfilled its target mentioned in the feasibility report even after fifty years of its completion; whereas the Kaptai Dam has successfully satisfied its target. The Kaptai Dam reached its target in the year 1981 and has now further increased its capacity up to 191.67% in its third installation in the year 1988, which is near to double of its capacity. So far as the hydropower production is concerned, both the Hirakud and the Kaptai Dams have failed to reach their targets. Hirakud Dam is only producing 57.55% of its target in spite of satisfactorily water level in the reservoir. It is primarily due to the frequent breakdown of machines and renovation works. In case of Kaptai Dam also hydropower production has not been up to the mark, which is below its target in spite of extra installed capacity. It is primarily due to the shortage of water in the reservoir in the non-monsoon period.

In case of irrigation the annual average irrigation of Hirakud Dam in the command area is 611580.8 acres which is only 55.85% of its target. But in case of Kaptai Dam it is not irrigating at all. It completely failed in terms of irrigation is concerned primarily due the lack of government interest to do so. This is justified on the ground that the prime intension of the Government of Bangladesh was to generate hydropower in order to provide electricity to domestic, municipal, township and industrial needs catering to many parts of Bangladesh. Now it produces 5% of the electricity consumed in Bangladesh. Although Bangladesh is an agricultural country, it did not satisfy the needs of the farmers, where majority of the people primarily depend on agriculture for livelihoods. On the other hand the Government of India made earnest effort to provide irrigation in the backward districts of Orissa. Hirakud Dam has been satisfying the farmer community in every aspect their development.

So far as the navigation is concerned the Kaptai Dam has successfully maintained the water level up to the mark to ensure navigation. But in case of Hirakud Dam navigation
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was not initiated at all. This is largely due to the non-construction of the other two dams of the Mahanadi Valley Development Plan. Since the Hirakud Dam is a part of the Mahanadi Valley Development Plan, it is not possible to provide for navigation without construction of the other two dams.

Dams once built, made substantial adverse impacts on the physical environment and disrupt the lives and lifestyle of people displaced from the reservoir area. The adverse impacts of the dam construction are compounded when the affected people belong to the indigenous groups that have close relationship to the lands on which they live. The land likely to be submerged could be supporting distinct culture, language, customs and traditions that are unique to the area.

Both the Hirakud and Kaptai Dams displaced approximately similar numbers of people and faced same kind of situation so far as the proposed and actual submergence of lands and the displacement of people are concerned. Both the dams have submerged more lands and displaced more people than what it was proposed in the feasibility studies. But the intensity of the problems occurred more in case of Kaptai Dam than the Hirakud Dam. There was a large gap between the proposed and actual estimation especially in terms of the submergence of total lands of Kaptai Dam is concerned. People in the early phase settled in places which were not supposed to be submerged according to the declaration made by the government, but later it submerged more than the estimation when the dam was completed. People displaced for the second time after their first settlement. Such kind of situation caused frustration among the displaced people and it was so pitiable for them to resettle once again in other places, where there is acute scarcity of cultivable lands. But in case of Hirakud Dam displacement for the second time did not occur. People already settled in their first settlement in a safe place since there was availability of cultivable lands.

So far as the compensation is concerned, the affected people of the Hirakud Dam were relatively in better position than the displaced people of Kaptai Dam because no Social Impact Assessment study had been done by the Government of Bangladesh and therefore
there was no proper estimation of compensations in terms of the expected loss of property. Each and every developmental project has Social Impact Assessment study and accordingly compensation of the probable loss of property gets estimated to compensate the likely affected people. Social Impact Assessment study had been done in case of Hirakud Dam and proper estimation was made for the compensation of likely loss of properties. However, initially the Government of Bangladesh had made an arrangement to give compensation to the affected people. But that got stopped when government declared that the affected tribal communities of CHT are nomadic people. The tribal people of CHT argued that Bengali people were given the first priority for compensation. It is largely due to the unpleasant history between the Chakmas (Buddhist) of CHT and the Bengali (Muslim) since the partition of India in 1947. Discrimination had been made on the ground of religion by the government and the displaced minority marginalized from their compensation. In the case of Hirakud dam, displaced people more or less got the compensations. There was no such discrimination made on the ground of religion so far as the compensation was concerned. It its true that there was corruption among the government official administrating the Hirakud Dam, but it was minimal as compared to situation of Bangladesh.

So far as the livelihood is concerned, both the displaced people of Hirakud and Kaptai Dams are similarly affected due to their submergence of their agricultural lands. But the livelihood crisis is more severe among the displaced of Kaptai Dam than the affected people of Hirakud. At first this is primarily due to the land scarcity in Bangladesh and it further intensified when large area of cultivable land got submerged especially in CHT. Secondly the government sponsored Bengali population transfer programme in the CHT put acute land pressure in the CHT. Lands of the CHT cultivated earlier by the Chakmas were forcefully acquired by the Bengali settlers and therefore livelihood crisis was more intense among the displaced people of Kaptai Dam. Thirdly most of the forests lands of the CHT were declared as reserved forests and the displaced people lost their right to use them as a source of their livelihood. Fourthly various commercial plantations were taken by the government in the name of social forestry, which was very unsocial for the displaced people. All the factors led to acute food crisis among the displaced people in
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CHT. These policies are intentionally promulgated by the Government of Bangladesh in order to place the CHT within their hold and the displaced community in their grip. Such discriminatory policies made by the Government of Bangladesh were largely due to their differences of religion as well as culture. But the livelihood crisis among the displaced people of Hirakud Dam was comparatively less than the displaced of Kaptai Dam because in case of the former there were lots of barren lands as well as forests land available for cultivation and somehow the displaced people managed their livelihood after struggling few years.

As far as the impact of displacement on the health of the displaced people is concerned both the cases are similar. The displaced people of both the places have been the victim of several diseases and Malaria is very much rampant among them. It is largely due to similar geographical conditions covered with forests. Initiatives to facilitate health facility was highly absent by both the governments. But in the recent periods the conditions have been improved as compared to the earlier period in both the cases. The government interventions in case of Hirakud Dam and the NGOs intervention in case of Kaptai Dam made the health status of the displaced people comparatively better now.

The impacts of displacement on women among the displaced people have been more in case of Kaptai Dam as compared to Hirakud Dam. Displaced women of the Hirakud Dam faced less problems in managing their livelihood and household activities. But the displaced women of Kaptai Dam faced all types of problems including human rights violations. This is largely due to the deployment of military in the region. There were rampant human rights violations on the displaced women made by the military personnel. But such kind of situation was not seen in case of the displaced women of the Hirakud Dam. Here women were rather well protected by the host communities.

So far as the displaced people and the host communities is concerned, the problems only lies with the displaced people of Kaptai Dam when some of them crossed the border of India and were resettled by the Government of India in NEFA and remained as refugees. Even after 30 years they have been staying as stateless persons in India. They have not
got citizenship till now. It is largely due to the opposition of local population to accept them as their guests. At first the rising population of the displaced communities is the major cause of opposition, which is causing resource constraints and decreasing the employment opportunities for the host communities in the region. Secondly, differences between the displaced and host communities is the another view of their opposition. But in case of the displaced people and the host communities of the Hirakud Dam no such situation has occurred. The displaced people were welcomed by the host communities as their guests and there has been a harmonious relationship among them. It is primarily due to the homogeneous character of the displaced and host population which enabled them to stay together without any conflict. Besides, the ample amount of forests land laying vacant during that period easily accommodated the displaced people with the host communities.

The overall picture that emerges in this study is that the involuntary displacement caused by the Kaptai Dam is more repressive in comparison to the Hirakud Dam. The intense livelihood crisis caused by forceful acquisition of lands, and severe human rights violations made by the Government of Bangladesh by deploying huge military force along with religious persecution forced the displaced people to take armed rebellion against the government in order to get back their rights and demands. But the way the Government of Bangladesh responded to the displaced people clearly shows the domination of Bengali Muslim over the Buddhist Chakmas and this is largely due to the civil-military regimes of Bangladesh. On the other hand comparatively, the democratic regime of India better addressed the problems of displaced people of Hirakud Dam without human rights violations and religious persecutions. Thus the first hypothesis of this study (The involuntary displacement caused by Kaptai Dam is more repressive in comparison to Hirakud Dam due to the dominance of one religion (Bengali Muslim) over the other (Buddhist Chakmas) stands validated.

As far as the rehabilitation is concerned, the displaced people of Hirakud Dam were rehabilitated in 18 different camps. These camps resettled 2,243 families out of 2,6501 displaced families. Only 8.46% of people have been rehabilitated. The Hirakud Dam
submerged 123,000.00 acres of cultivable lands and replaced 8468.80 acres of land, which is 14.52% of the total submerged cultivable lands. On the other hand the resettlement and rehabilitation of the Kaptai Dam were made in seven new locations. Out of the 18,000 families displaced by the Kaptai Dam only 4,938 families have been relocated. The dam submerged 54,000 acres of plough land but the Government of Bangladesh only replaced 24,801 acres of plough land to relocate the displaced. It signifies that only 27.43% of families have been relocated by replacing them with 45.92% of plough lands. The statistics shows that the Government of Bangladesh rehabilitated the displaced of the Kaptai Dam comparatively better than the Government of India in case of Hirakud Dam.

But a closer look shows different pictures of resettlement and rehabilitation. There were differences in thinking of the displaced people of both the dams. In case of Hirakud Dam only 8.46% of people were rehabilitated in spite of strong initiative taken by the government. The displaced people did not want to resettle in the rehabilitation camps made by the government. This is clearly evident from the two rehabilitation camps of Udsing & Hotapali of Kuchinda bloc and Maneswar blocs respectively where the oustees were not resettled. The displaced people had no faith on the government and they themselves settled in different places according to their own suitability. Given the large area of land availability during that period, the people actually did not want to rely on the government scheme for rehabilitation. On the other hand the displaced people of Kaptai Dam really wanted to be rehabilitated by the government. But the scarcity of land in Bangladesh and the shortage of funds limited the Government of Bangladesh only to rehabilitate 27.43% of displaced people. This is clearly evident from the rise of armed rebellion and insurgency in the later period by the displaced Chakma people. But no such situation has occurred in India so far as the rehabilitation of the displaced of the Hirakud Dam is concerned. The large area of lands availability in India satisfactorily accommodated all the displaced people and therefore there was no armed rebellion by the oustees in case of Hirakud Dam. Hence the second hypothesis of this study (Given the large area of land availability in India, the process of rehabilitation of Hirakud Dam...
oustees has been more satisfactory as compared to the oustees of Kaptai Dam) stands validated.

It can be argued that the armed rebellion or the insurgency in Bangladesh made by the displaced people did not spring up suddenly. The displaced people democratically demanded their rights from the government and the movement was very much democratic in the early period. But the Government of Bangladesh intentionally introduced anti-Chakma policies in the CHT. The civil-military regimes of Bangladesh did not address the displaced people better in fulfilling their demands and therefore the movement turned into insurgency. An agreement has been signed between the Government of Bangladesh and insurgent groups known as CHT Peace Accord of 1997 in order to bring peace in the CHT. But the agreement is not being implemented in a full scale due to the rise of Bengali Muslim nationalism in Bangladesh. Therefore it can be rightly argued that the civil-military regimes of Bangladesh along with fundamental policies were unable to address the displaced properly and failed to rehabilitate them. Thus the third hypothesis of this study also (The democratic regime of India better addresses the displaced as compared to the civil-military regimes of Bangladesh) stands validated.

Dams are very much needed for the progress and development of mankind, but should not be at the cost of the certain sections of the society. It is obvious that displacement is must when construction of dams takes place. But dams can not be claimed as development when it fulfills the interest of particular section of the society and neglects others existence. It can be called as development when all the intended objectives (Flood management, hydropower production, irrigation and navigation) are fulfilled. Besides, the most important aspect of addressing dam as development will be justifiable when all the displaced people get fair compensations and their proper resettlement and rehabilitation without any human rights violation. In order to ensure dam as development it needs to follow the following suggestions mentioned below.
• M.G. Rangaiya an Engineer of Mysore who has opposed the construction of dam at Hirakud in his report in 1946, opined that Naraj was the right place to construct dam rather than at Hirakud. Flood management could be possible at Naraj by making dam of 65 feet height. Dam at Hirakud would not check the flood if heavy rain occurs. Irrigation and generation of electricity could not be possible if there was scanty and medium rain falls. Now dam at Hirakud after its fifty years of experience is facing the exact situations what M.G. Rangaiya had earlier reported. But the Government did not pay any attention to his suggestion by that time. Dams should not be constructed in the most favorable zone of the matrix that gives exclusive weightage to only high technical-economic advantages. The process of dam building should be based on a thorough analysis of alternatives. The site of dam should not be identified on the basis of local energy and water demands. Efforts for alternative dam site should be identified on the same river to fulfill the same objectives with least social, cultural and environmental impacts.

• The Kaptai Dam built at Kaptai caused enormous social, cultural and environmental impacts on the indigenous people. The region was inhabited especially by minority tribes of Bangladesh. They lost of their distinct identity, livelihoods and environmental degradation led to the rise of armed rebellion. There should be greater emphasis and scrutiny on the social, cultural and environmental impacts of dams while evaluating and selecting for its construction.

• The land acquisition made for offices, residential colony for the dam officials, reservoir power houses and the irrigation canals of Hirakud Dam had not been assessed in the baseline survey, therefore lots of people were indirectly affected after the dam was constructed. Compensation to those displaced people was very late by the Government of Orissa. They did not get their compensation in right time and many of the cases are still in controversy. The Social and Environmental Impact Assessment Study of the dam must survey the details of the directly affected as well as the indirectly affected people or communities. The omission of such indirect impacts has been embroiled in controversy and claims
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made by communities. Resettlement planning must focus not only on those directly affected by the reservoir, but also identify others affected by the construction of irrigation canals, power house and auxiliary facilities. In the absence of thorough surveys in the earliest stages of project planning, it is very difficult to determine the extended range of impacts. Consequently it has become difficult to assess feasibility of resettlement options in preparing accurate budgets or delivering resettlement entitlements to all the affected people.

- The Hirakud Dam completely submerged 116 villages and partially affected 133 villages. Among the 133 partially affected villages, in 48 villages houses submerged but the cultivable land and some houses remained outside. In the rest 85 villages lands have been submerged but the houses remained outside. But they were not given proper compensations and deprived from rehabilitation. Emphasis needs to be laid on the partially displaced people who often remain marginalized from compensation and rehabilitation programme.

- The likely displaced people of Kaptai Dam were not informed properly about the area to be submerged and therefore they got displaced for the second time after their first settlement. Such frustrations forced 40,000 displaced people to cross the border of India and remained as stateless citizen in the North Eastern states of Arunachal Pradesh, Tripura and Mizoram. It is basic human right of displaced population to get information about the project, its impact and the proposed mitigation strategies. Displacement affects in various ways- occupations, housing conditions, lifestyles, social relationship and social support system. Lack of reliable project related information and the inability to involve the affected people in resettlement aspects of the project contributes to development of resettlement related conflicts. The pace of dam construction needs to be linked to the process in completion of the resettlement activities to ensure that the dam is raised to successfully higher levels only after specified resettlement activities are completed.

- The Government of India did not consult the local communities of NEFA (present Arunachal Pradesh) while rehabilitating the displaced Chakma migrants there. Now conflicts have been going on between the displaced migrants and the
host communities. It intensified when the displaced migrants population increased to a great extent and it exerted heavy pressure on social, cultural and especially on the economy of host communities. Therefore host communities should be consulted before the resettlement site is demarcated in order to avoid the likely conflicts between the resettled and the host communities. Resettlement site should be acceptable to resettled having the capacity to support their current population and make provision for the population growth. Inadequate analysis of these issues can give rise to serious problems during implementation. It is very important for the likely affected people to participate in the decision making process while selecting the resettlement sites.

• The Government of Orissa made 18 rehabilitation camps for the oustees of Hirakud Dam. But the people were rehabilitated in 16 camps and still no body is staying in the other rehabilitation camps. Even the 16 rehabilitated camps are sparsely populated, less than its intended capacity and many people left the rehabilitation camps after staying few years due to the crisis of livelihood and other infrastructural problems. Systematic stakeholders’ involvement acts like self correcting mechanisms that enable timely identification of problems and helps in finding solutions for them. The key stakeholders in the resettlement programme are the affected people, their representatives, host populations, NGOs or other civil society organizations working in the area, local governments of the affected and the resettlement areas, project contractors, funding agencies, consultants conducting various studies and engineering and resettlement units in the project design and implementation agencies. Resettlement institutions need to have multi-sectoral involvement conducting a diverse range of activities, such as land taking, impact measurement, physical relocation, job provision, land development, credit provision and training to ensure livelihoods. The most important factor that need to be addressed, both in selecting a particular dam for construction and facilitating smooth implementation of resettlement is the institutional capacity of the resettlement implementation agencies.

• The displaced people of both the Hirakud and Kaptai Dams were resettled in the non irrigated areas. They lost their land, livelihoods and their native places for
the development of their respective countries. But it is really pathetic for them to remain aloof from the process of development. They did not get any benefit either of electricity or irrigation provided by the dams. It is very much important for the project authorities to entitle the affected groups a share in project benefits. Baseline surveys must establish the nature and extent of loss to livelihoods and enumerate all categories of adversely affected and displaced individual families and communities. The beneficiaries include all people in the reservoir, upstream, downstream and catchments areas whose properties livelihoods and non-material resources are affected; and also those affected by dam related infrastructure such as canals, transmission lines and power houses. All adversely affected people are entitled to benefits. The level of benefits must be assessed, agreed upon by the parties involved (affected people, government and funding agencies). The affected people should have the share of equity of the project royalties and its other benefits. Provision of irrigated land or an opportunity to purchase irrigated land, access to irrigation water, provision of electricity supply, domestic water supply from the project as appropriate must be provided. Right to fisheries must be reserved for the affected communities.

- Both the dams displaced tribal population, but its number is more in case of Kaptai Dam. The tribal people did not get compensation for their lost land because they had no legal title ownership of those lands. Those lands are cultivated by the tribals for their livelihood known as common property resources was declared by the state as public property. Therefore they were deprived of compensations. The indigenous people or the tribal people who primarily depend on the common property resources should not be deprived from the compensation. All the displaced including the indigenous people should get their compensation. The basic criteria for their compensation should be the replacement value of the livelihood costs, and not just the market value of the individual assets. Besides this, providing infrastructure is very much needed including health, education, communication facilities, drainage and institutional mechanism to their sources of livelihoods and good life.
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• The Kaptai Dam displaced both the Bengali Muslims and Buddhist tribes. But the numbers of Bengali Muslim were considerably less in comparison to Buddhist tribes. The worst victims of the Kaptai Dam were the Buddhist people, but interestingly Bengali Muslims were given the first priority to compensate and rehabilitation. Such situation aggravated among the Buddhist minority and led to armed rebellion. Compensation, the resettlement and rehabilitation programmes should not be biased on the ground of religion, caste or community. The human rights of the affected people and most importantly the women must be protected from any kind of violation. Human rights must be respected with dignity.

• Both the Dams are under performing in terms of hydropower production which are too less than their targets. Irrigation has not been produced at all in case of Kaptai Dam. Both the dams have failed to harness maximum benefits as per with their potentials are concerned. The post-phase of dam construction must keep emphasis on the potential and increasing benefits of a dam and therefore different strategies should be taken. There should be modernization and up gradation of all the equipments and facilities associated with the dam, so that it would give the maximum output. Dams should have flushing and sluicing practices during monsoon floods to reduce sedimentation in order to restore the live storage of the reservoir. If the live storage of the dam is restored there would be good output in terms of all the objectives of dams (flood management, irrigation, hydropower production and navigation as well).

• The decreasing trend of areas of irrigation in case of Hirakud Dam has brought massive unrest among the farmers. It is due the increasing industrial use of water from the Hirakud reservoir. Besides it, the lack of maintenance of irrigation canals and government changing policies towards agriculture are the other reasons of it. Agriculture should be given first priority instead of industries and. The water policy of the government should be pro farmer rather than pro industries. There should be heavy investment in secondary and tertiary canal system and drainage system which would accelerate the surface irrigation systems attached to large dams.
Other gains can also come from investment necessary in hydrological monitoring equipment, computer software, and the preparation of the basin and system level optimization plan. At last dams must be explicitly linked with the option assessment phases of planning clearly showing the scope of improvements to existing dams. Dams as development can be argued while it satisfactorily fulfills all its objectives with equity and accountability. Therefore practices of above strategies are very much important for the successful output of a dam.