

# Big Dams and Protests in India: A Study of Hirakud Dam

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This article examines the movement against the construction of the Hirakud dam in Orissa. It is evident that the domestic resistance to the project was variously compromised by nationalist rhetoric, imperatives of state development and absence of transnational support. The Hirakud dam project has failed on all of its objectives – flood management, hydropower production, irrigation and navigation. Its socio-economic impact has been devastating.

Conventional political theory generally looks at protest and participation as distinct and contradictory forms of action, yet they can be complementary in a democracy. Protest movements may contribute to the legitimacy of democratic governance, as they significantly enhance the interactive space between the rulers and the ruled. As a mode of political participation, they put pressure on the state authority. At the same time, however, the type or the form of government in a country also affects the number and intensity of such protests. The structure and ethos of democratic regime, as against an authoritarian one, better addresses and responds to protests. Consequently, protest movements in a democracy are more extensive and less deadly than those under autocratic rule (Swain 1997: 830-32).

In the aftermath of the devastating second world war, the western nations were compelled to refocus their energies on economic development. Similarly, the developing world, historically impoverished by its colonial masters and now being invigorated by decolonisation process, saw for the first time the opportunity to chart the trajectory of its own economic development. National development strategies were framed which essentially followed the western ideas of modernisation. “Mega-projects”, hence, became the dogma of the day. These countries realised that the availability of adequate infrastructure facilities was vital for the acceleration of their economic development. Dams, thus, became the symbol of development and their multipurpose utility – generation of electricity, irrigation, flood control and navigation – contributed greatly to the growth of a nation (Joyce 1997: 1050-55; Bandyopadhyay et al 2002: 4108). However, it was only selected countries, which invested heavily in dam construction. In fact, the top-five dam-building countries today account

for nearly 80% of all large dams worldwide. China, which had only 22 dams prior to 1949, has built around 22,000 large dams, close to half of the world’s total number. Other countries among the top-five dam building nations include the United States with over 6,390 large dams, India with 4,000 and Spain and Japan with between 1,000 and 1,200 large dams each. Estimates suggest that 1,700 large dams have been under construction in other parts of the world in the last five years. Of this, a total 40% were reportedly being built in India (World Commission on Dams 2000: 8-10).

Post-second world war, the rapid economic growth seen in subsequent two decades accelerated the global dam construction rate. At its peak, nearly 5,000 dams were built worldwide in the period from 1970 to 1975 (ibid). However, the construction rate slowly declined coming down to 75% in 1990s as compared to its peak period in 1970s, even when there was a growing scarcity of water and rising demands for hydropower across the world (Khagram 2004: 8-10).

Four sets of factors could be attributed to this puzzling trend – technical, financial, economic and political. Technically, the decreasing availability of sites contributed to the decline of big dam projects. Further, shortage of funds financially choked some of these projects. For the Third World, oil crises of 1973 and 1979 and the subsequent debt crisis caused huge problems, starving them economically. During this period, the international financial institutions (IFIs) pushed structural adjustment policies down the throat of many of these countries with a clear focus on privatisation and public frugality. Moreover, other foreign lenders also shifted their strategy towards privatisation, thus pushing these large and often profligate projects into backburner. Increased investments in other sources of energy-production like coal and gas, major advancements in renewable resources of energy and a qualitative shift towards harnessing nuclear energy further decreased the rate of construction of dams.

All these factors, however, only remain ancillary. The major hurdle that makes dams unviable is the mounting political opposition signified by ever-increasing protests against

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them. The enormous costs these projects entail in terms of environmental degradation and massive displacement make them vulnerable to rising demands of the anti-dam movements. By humbling the free flowing rivers, the dams have over the years invited strong reactions from various domestic environmental conservation groups across the world. In fact, some of the national environmental movements that sprung up in 1950s and 1960s primarily emerged in response to dam building (ibid).

With dam construction being increasingly challenged in the First World by a vibrant environmental civil society network, dam construction declined. It forced transnational corporations and the funding agencies to shift their activities to developing countries. Therefore, approximately two-thirds of big dams built during the 1980s and three-quarters of them under construction during the 1990s were in the Third World. However, even the Third World did not remain impervious to protest movements. Spread of big dam movements, growing united struggles and campaigns waged by various environmental non-governmental organisations (NGOs), movements by indigenous peoples and growing human rights activism had already begun to affect dam projects from the 1970s (ibid).

The empowerment of these actors contributed to the global spread and institutionalisation of norms. Transnational actors have over the years entrenched themselves strongly into the international system and their empowerment has been the distinct feature of the 20th century. From a meagre strength of 176 in 1909, the transnational NGOs steadily grew in the first half of the century reaching 832 in 1951 and then literally exploded in the second half to reach a strength of 4,515 in 1988 (see the table). The table shows that transnational human rights organisations got doubled in the decade between 1973 and 1983, growing from 41 to 79 and shot up in the next decade to reach 190 in 1993. Transnational NGOs on environment as well as development issues also show a tremendous increase in the decade from 1983 to 1993. Significantly, these organisations, apart from a numerical upsurge, also widened their networks and coalitions with their allied actors, both in domestic as well as transnational sphere, to promote social change in

various issues. The increasing bonds between the First World and Third World NGOs have further empowered them and granted them legitimacy (ibid 11-12).

**Table: The Growth of Transnational Non-governmental Advocacy Organisations**

Issue Areas	1953	1963	1973	1983	1993
Human rights	33	38	41	79	190
Environment	2	5	10	26	123
Development	3	2	7	13	47

Source: Khagram (2004: 12).

Opposition to big dams has a long history ever since their construction began in the ancient times. But in recent years, this has come to command wider attention. In medieval England, boat-owners opposed millers blocking rivers to create millponds to turn their water wheels (World Commission on Dams 2000: 18-19).

However, it is after the 1950s, as dam building accelerated, that such protests have become widespread. Making their first footprints in 1950s, effective anti-dam campaign first started in the United States and many western European countries from the 1950s, thus contributing to the formation of transnational coalitions. The movement intensified over the decades resulting in a formation of a strong network of anti-dam organisations. European NGOs like Ecologists, Survival International, Berne Declaration, Urgewald and the European Rivers Network increasingly played a greater role in halting big dam projects funded by public authorities as well as private actors across the world. The most successful anti-dam campaign in the United States was the Grand Canyon campaign against the 525-foot-high Eco Park dam on the Green River. This dam was halted in 1963 after six years of construction as civil society groups staunchly opposed it for economic and environmental concerns. The broader objective of anti-dam campaign was achieved with the establishment of the Environmental Policy Centre (EPC) by Brent Blackwater in 1972 which later became the Environmental Policy Institute (EPI). The EPI and the American River Conservation Council (ARCC) established in 1973, jointly lobbied the federal government against large-scale water projects. The movement led by them with the support of others stopped more than 100 big dams in the US during the period 1972-83 (Khagram 2004: 177-83).

The campaign was further given a boost with the formation of another environmental

organisation – Environmental Defence Fund (EDF), which primarily emphasised on the negative impacts of large dam projects funded by the World Bank and other bilateral and multilateral agencies. Earlier, the campaigns were basically concerned with protecting river basins, preserving tropical forests and biodiversity. But gradually anti-big dam protests were also made due to its large-scale involuntary displacement. 1980s onwards, numerous advocacy organisations like Probe International in Canada, the European Network in France, the Association for International Water and Forest Studies in Norway, Friends of Earth in Japan, Both Ends in Netherlands, the Berne Declaration in Switzerland, Urgewald in Germany, Aidwatch in Australia, Christian Aid, Oxfam and Survival International in the United Kingdom, International Rivers Network (IRN), Cultural Survival and the Lawyers Committee for Human Rights in the US, the Narmada Bachao Andolan in India, the Movimento dos Antigos Barragens in Brazil, the Assembly of Poor in Thailand and many others allied themselves together to reform and halt big dam building around the world (ibid: 183-89).

Apart from campaigns, the rise in number of publications against big dams by activists and researchers across the world further strengthened the movement. Edward Goldsmith and Nicholas Hildyard published *The Social and Environmental Effects of Large Dams* in 1984 and its subsequent volume in 1986 and 1992, respectively. Their worldwide distribution expanded the transnational network. On the other hand, the California-based bi-monthly *International Dam Newsletter* started by Philip William in late 1985 and IRN publication of another newsletter *Bankcheck Quarterly* accelerated the movements increasingly institutionalised the transnational network (ibid 185-88 and 198-99).

Further, several international conferences strengthened the transnational anti-dam network. The First International Conference of People by Dams, held in Curitiba, Brazil on 11-14 March 1997 and workshop promoted by the World Bank and World Conservation Union (IUCN), "Large Dams, Learning from the Past, Looking to the Future", held in Gland, Switzerland on 10-11 April 1997 attempted to bring together leading experts and representatives from

various countries to initiate and open a transparent dialogue on the future of large dams around the world. The severe criticism by all participants and representatives of transnational anti-dam network resulted in an agreement to establish an independent World Commission on Dam (wcd) to review all big dams and their experiences built around the world to generate guidelines for the future (ibid 198-205).

On the other hand, numerous campaigns against World Bank-funded big dam projects during the 1980s and 1990s from many countries, and especially from developing countries, further strengthened and institutionalised the transnational anti-dam network. As a consequence, it compelled the World Bank to reduce its involvement in big dam projects and adopted various new policies on resettlement, environmental assessment, indigenous peoples and information disclosure (World Bank 1996: 75-108; Khagram 2004: 189-190). It influenced various other multilateral and bilateral agencies to adopt similar policies of World Bank – for instance the Inter-American Development Bank (IADB) in 1990 and the Asian Development Bank is now in the process of consideration (Bartolomeo 2000: 10). Individuals within the World Bank like Michael Cernea and Robert Goodland in their various reports began to explain about the socio-economic impacts caused by big dams during the 1970s and it brought certain reforms (Khagram 2004: 190-91; Michael Cernea 1988, 1995, 1997a,b, 1998, 1999, 2000).

### Dams and Protests in India

There are ample historical evidences of dams-induced displacement in India since the British colonial period. The first struggle against dam-induced displacement took place in India in 1927 against the Mulshi Dam (hydroelectric project) located in western India, in the erstwhile Bombay Presidency (about 20 kms south-west of Poona). The struggle was a great landmark in the history of involuntary displacement in India. The project was owned by the corporate industrial house of the Tatas, and was commissioned in 1920. A total of 11,000 people were displaced and alienated from their traditionally paddy field from this project. The indigenous people, Malva men, women and children

staged a satyagraha to stop the work on the dam site, but failed to do so. At last several hundred people were arrested and the struggle lasted only for two and a half years. It was largely due to the colonial British autocratic regime (Fernandes 1997: 1-34).

In India, the Silent Valley movement in Kerala in the 1980s was the first significant victory for the anti-dam movement. Unlike other dams, a large number of people would have been displaced from their ancestral land and from source of their livelihood. The opposition came mainly from environmentalists apprehending the prospective destruction of the country's undisturbed areas of rainforest. The active support and involvement of international organisations like the World Wildlife Fund (WWF) and the International Union for Conservation of Nature (IUCN) along with the grand support from the local people ensured international attention and exerted heavy pressure on the Indian government to stop the construction of the Silent Valley project. As a result, the government of India ordered the project to stop in 1983 (Centre for Science and Environment 1999: 134). The success of Silent Valley protest prompted the morale of dam opposition in other parts of India. In this project, environmental consequences were the central focus rather than the displacement. However, alliances between environmentalists, scientists and tribal rights activists not only succeeded in securing the withdrawal of the Silent Valley but also the Bhopalpatnam, Ichhampalli and Bodhghat projects proposed over the Godavari and Indravati rivers (Hemadri 1999: xxvi).

The most celebrated anti-dam protest in India is the mega Sardar Sarovar Project on the river Narmada. A number of protests were organised under the charismatic leadership of activist Medha Patkar in 1988. The movement is known as Narmada Bachao Andolan (save the Narmada River) supported by the local people. The strategy of resistance was borrowed from the Gandhian satyagraha including non-cooperation and civil disobedience, refusal to cooperate with project authorities, blocking all project-related works and refusal to leave their villages. Further, the movement was strengthened by extensive studies on social and environmental impacts of big dams. Activists and intellectuals

from India and other parts of the world expressed solidarity with the struggle. The Narmada Bachao Andolan was confined not only against the dams constructed over the river Narmada, its influence also spread to other parts of India. It led to the withdrawal of the Rathong Chu project in Sikkim in 1997 and the Bedthi project in 1998. Determined protests have led to the review of the rehabilitation package for Tehri and Koel Karo projects. By ensuring these voices, these movements have succeeded in compelling governments, both at the central and state levels, and powerful funding agencies like the World Bank to rethink their policies on displacement and rehabilitation (Centre for Science and Environment 1999: 136-41; Hemadri 1999: xxvi-xxvii).

People's struggle against big dams in the post-colonial period has become one of the most prominent phenomena on the sociocultural and political picture. The anti-dam movement has got a boost by the active support from the diverse groups – the displaced, economists, social science experts, human rights activists, national media and international media. Anti-dam struggles have created an atmosphere that is more receptive to issues like displacement and environmental impacts and it has empowered the displaced or mostly the tribals to raise their voices against their human rights violations. Even if there were anti-dam struggles during the pre-independence period, these were not organised. The resistance in the post-independence has been more organised, sustained and has had a profound influence on the entire discourse of dams, displacement and development (Centre for Science and Environment 1999: 133-34).

### A Case of Hirakud Dam

There was large-scale opposition from the local population as soon as it was decided to build dam at Hirakud. Radhakrishna Biswas Rai, a minister, first announced that the construction of Hirakud dam would save the delta from the ravages of flood, the most fertile land and thickly populated region of Orissa. As the first notification came on 13 September 1946 for acquisition of land in 95 villages, strikes were organised in Sambalpur town. This provoked the local people to ask as to why Sambalpur

should suffer for coastal people. It is irrational to displace a large number of people from Sambalpur district in order to save the prosperous coastal delta from floods. Besides, it was opposed by M G Rangaiya, ex-chief engineer of Mysore. He subsequently released a 26-page report and submitted his logics for the opposition of the dam at Hirakud. The argument made by him was that the dam would destabilise Orissa's economy due to the absence of any proper estimate of cost and benefit of the dam construction. The idea of generating electricity from Hirakud was shown by him to be very expensive as there was no natural waterfall and he rather suggested for the creation of a thermal power plant. He viewed the idea of navigation as a doubtful proposition, especially in the context of modern locomotives and changes the nature of trade and commerce. He also expressed his doubts on the life span of dam due to the large amount of silt in the river.

The local leaders along with some ex-bureaucrats took an active role in opposing the dam construction. Prominent among them were Bodhrum Dube, L N Mishra, Prasanna Panda and Sradhkar Supakar. Dube pointed out that the flood problem in Orissa dates back to the introduction of canals at Cuttack and Puri; therefore, construction of dam would not solve the problem. Further, he argued that the establishment of various industries in and around Sambalpur district would not provide any benefit to the local people. Rather the rich and the industrialists would reap the benefits and the local people would be employed as daily labourers. On the other hand, L N Mishra added that it would result in the loss of fertile land of 310 villages and loss of abundance of minerals. Bharat Nayak, an ex-deputy minister, in a public meeting rejected the idea of dam construction and argued that the displacement would create enormous emotional problems for those leaving their ancestral homes. Alternately, he suggested, due attention should be given to the improvement of embankments.

In the last week of May 1947, a satyagraha was started under the leadership of Danardan Pujari and his wife Kamala Devi in Sambalpur to stop the construction of Hirakud dam. But they were arrested on the first day of the satyagraha. Later, on the third day Sradhakar Supakar, Prasanna Kumar

Panda, Satrugna Panda, Chintamani Hota, Purandar Panda and Srinibas Mishra, etc, were arrested. Sankar Prasad Mishra, Hari Charan Padhi, Durga Prasad Mishra, Sairendri Nayak, Anantaram Mishra and Ishwar Prasad Mishra, etc, had made immense contribution in this movement. A series of public meetings were also organised under the leadership of *Gountias* (village headman) of different villages. A resolution was adopted to oppose the project work through peaceful agitation under the leadership of Bodhrum Dube, to take steps to separate Sambalpur from Orissa and to demand withdrawal of prohibitory laws. The demand for separation of Sambalpur from Orissa formed an important basis for organisation of the masses against the dam (Pattanaik et al, undated: 52-53). Once the demand for separation of Sambalpur from Orissa formed an important basis for the organisation and mobilisation of the people, the local Congress leaders withdrew from the agitation charging it for conspiracy by the former rulers of Garjats against democratic planning and development and trying to perpetuate feudal rules propagated against national sentiments. The move was also disapproved by the state and the Indian National Congress including Gandhiji, and gradually the movement lost its momentum. The arrest of important leaders, withdrawal of Congress leaders and betrayal of Bodhrum Dube stopped the progress of the agitation. Finally it came to a halt once the construction work was inaugurated on 12 April 1948 by the governor of Orissa (Baboo 1991: 2374; Pattanaik et al, undated: 53; Supakar 2004: 10-11).

Although the nature of the domestic opposition to the Hirakud dam was strikingly similar to domestic anti-dam struggles that emerged in the greater numbers in India during the 1970s, it failed to prosper due to the absence of NGOs, transnational allied advocacy networks, legitimised global norms on human rights, indigenous peoples and the environmental lobbies. The domestic resistance to the Hirakud dam was politically too weak to influence the institutions of India's democratic regime to either halt or even reform the Hirakud project (Khagram 2004: 36-37). Besides the failure to attract larger alliances, the resistance to Hirakud dam was overshadowed by the nationalistic rhetoric of nation building in these early

years of post-independence (Hemadri 1999: xxvi). The Prime Minister of India Jawaharlal Nehru had, in fact, once said "Dams are temples of modern India".

The resistance to Hirakud dam could be justified on the ground that none of the four objectives – flood management, hydropower production, irrigation and navigation of the dam has been fulfilled even after its 50 years of completion. The failure of Hirakud dam could be easily seen through an empirical scrutiny of the fulfilment of its main objectives. The dam had four main objectives – flood management, hydropower production, irrigation and navigation, and in all four criteria, the performance has been dismal, to say the least. The claims about flood management fall flat when the empirical data shows that floods in river Mahanadi occur almost once in three years, causing havoc in Orissa (Government of India 1947: 50; Government of Orissa 2006: 132). The original plan envisaged a target of 1,524 million units of electricity generation. The target, however, even after 50 years, looks far-fetched as the dam generates only 948.65 million units as annual average which is merely 62.24% of the original claims (Government of India 1947: 59-65; Government of Orissa 2006: 40). In terms of irrigation, the target was set at 10,94,953 acres, empirical record shows that only 6,11,583 acres of land – 55.85% of the target – is annually irrigated (ibid). The final objective – navigation, has only remained a distant dream (Government of India 1947: 67-70).

Further, it can be argued that the Hirakud dam has submerged more lands and displaced more people than estimated in the feasibility report. It was estimated in the feasibility report that about 168 villages would be submerged covering 1,35,000 acres of land under the Hirakud dam reservoir. Out of which 70,000 acres will be cultivated land (Government of India 1947: 315-17). But after the construction, it submerged 325 villages covering 1,83,000 acres of land. The submerged cultivated land was estimated at 1,23,000 acres. It submerged 291 villages in Orissa and 34 villages in Madhya Pradesh and displaced about 26,501 families (approximately 1,00,000 people) (Government of Orissa 2007: 01).

Most of the displaced villagers were dependent on agriculture and for many



centuries, who lived in close proximity of the Mahanadi and its tributary, the Ib River. The rates of compensation for likely submerged lands proposed in the feasibility report ranged from Rs 50 to Rs 1,000 per acre, according to their classification in terms of productivity. It was classified into six kinds (*bahal, berna, barcha, mal, bari and at*). But in actual, they were paid more or less in a uniform rate ranging from Rs 200 to Rs 600 per acre, which was much less than the market value. Similarly, the amount of compensation for submerged houses was too less to construct a new home elsewhere' (Government of India 1947: 315-19). In the process of rehabilitation, the government resettled 2,243 families in 18 different rehabilitation camps, which is only 8.46% of the total displaced people. Similarly, it replaced 8,468.80 acres of cultivable land, which is 14.52% of the total submerged cultivable land (ibid: 13-15). Lack of proper compensations and rehabilitation by the government forced the displaced people to move to different places to settle themselves on their own initiative. It resulted in severe livelihood crises, health hazards and diseases made them victims in their initial period of self-resettlement. Submergence of their lands under the Hirakud reservoir forced them to reel under various socio-economic crises and marginalised them in various aspects of their life.

M G Rangaiya, an engineer of Mysore, who opposed the construction of dam at Hirakud in his report in 1946, opined that Naraj was the right place to construct the dam rather than at Hirakud. Flood management could be possible at Naraj by making a dam of 65 feet height. The dam at Hirakud would not check the flood if heavy rain occurred. Irrigation and generation of electricity could not be possible if there was scanty or medium rainfall. Today, after 50 years of its construction, the dam is facing exact situations that M G Rangaiya had predicted. But neither did the government pay any attention to his suggestion then, nor has it done anything to improve the situation now (Supakar 2004: 15-18).

## Conclusions

The study of World Commission on Dams report (2000) found that large dams display a high variability in delivering predicted performances and related social benefits

with a considerable falling short of physical and economic targets. It is also less profitable in economic terms and has a range of extensive socio-economic and environmental impacts. Thus the true profitability of these schemes remains elusive (World Commission on Dams 2000). A close look at the performance of Hirakud dam clearly shows that it has underperformed in every respect and has had large-scale socio-economic impacts.

Given these circumstances, the question arises that should large dams be built? The unfortunate answer is yes. Large dams remain a necessary development option for providing water and energy resources to populations in developing countries that are in crisis. Taking the case of India, its growing population and rising need for food and water present a difficult situation. Further, it is compounded by dwindling monsoons that concentrate rainfall within a relatively short time period and in such a situation, it is hard to see an alternative in some large storage reservoirs. But dams should only be constructed after a "best practice" options assessment process that gives sufficient emphasis to environmental and social issues and only where adequate policies exist and are implemented and where project authorities, contractors and consultants have a legal responsibility to follow whatever contractual conditionalities are necessary to implement the project as intended. Besides, dams should not be constructed in the most favourable zone of the matrix that gives exclusive weightage to only high technical-economic advantages. The process of dam building should be based on a through analysis of alternatives. Efforts for alternative dam site should be identified on the same river to fulfil the same objectives with least social, cultural and environmental impacts.

## NOTE

- 1 The study was done by me during my field study (1 June 2008-5 July 2008). I have surveyed two resettled villages (Goudpali and Jammal) and two rehabilitation camps (Kadlipal and Nua-Barangmal).

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