

# A Review on Major Dam Projects and its Environment Impacts Assessment Study of Gujarat State, India

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**Abstract:** *All nations in the world have been developing with some technology. Usually, countries want to progress faster using the water resources major effectively. The construction of a large major dam to accelerate the speed of economic development of India without taking into consideration their environmental dimensions has devastating effects. It has constantly perceived that environmental conservation should be the basis of every development process. Resettlement and rehabilitation were freely discussed and how the people were affected adversely by major dam projects. So far from my study, research has come with few alternatives for construction of the major river dam project of Sardar Sarovar dam on Narmada river valley project and how the displacement of people and the Environment Impact Assessment (EIA) took place. Therefore, a present study is attempting to critically examine the EIA of Major River Dam Projects like the Sardar Sarovar Dam Project on Narmada River Valley.*

**Keywords:** Major Dam, Narmada River, EIA

## 1. Introduction

Sardar Sarovar Narmada Nigam Ltd. was assigned through the Narmada planning group, the EIA of the command area of the canals of the Sardar Sarovar (Narmada) project.

Some Critical Milestone: As per the term reference (TOR) appendix the following objects are covered in our EIA studies:

- 1) Study of existing flora and fauna of the command area.
- 2) To distinguish the ecozone in the study area.
- 3) To predict the change in the pattern of plant and animal species on the commissioning of Narmada water in the command area.
- 4) To emphasize positive as well as negative impacts on the ecosystem and socioeconomic status of the people of the command area.
- 5) To give an estimate of the cost incurred in implementing corrective measures.

The construction of dams in India was described and considered as the "Temple of Modern India" by the first generation of leaders (Paramjit et al. 2001). The supporters of dams justify the construction of large dams because dams are useful to control floods, eradicate poverty, and provide water for irrigation and drinking purposes. In addition to the above-mentioned reasons favoring the construction of dams, I believe that large dams and multipurpose river valley projects have provided food security to India. But it is a well-documented and proven fact that dams have failed to deliver projected results. Despite this, the government is undertaking the construction of more large dams without taking into consideration their adverse Environmental Impacts. Environment Impacts have become serious worldwide including in India that we can no longer ignore this issue of Environmental Impacts in the name of development.

Environmental Impact Assessment is one of the fruitful approaches of the twentieth century for ecological preservation. 37 years prior, there was no EIA except for now, with the assistance of this strategy numerous The Sardar Sarovar Dam on the 4 territories of Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan has been quite possibly the most disputable and fervently discussed mega projects in contemporary India and across the world.

## 2. Review of Literature

A review process for this work was studied. A number of papers, pre-reviewed journals, and literature regarding this topic such as irrigation water deficit areas, electricity generation, water supply for domestic and industrial uses, flood control, recreation and, fish breeding. The primary focus of this present study is to critically examine the EIA of Major River Dam Project like Sardar Sarovar Dam Project on Narmada River Valley.

In 1972, after the Stockholm Conference, another cognizance of natural issues arose. In India, as somewhere else, during the 1970s and 1980s this was reflected in new natural laws, rules, and practices. In the ecological field, in any case, the public authority of India has fostered a far-reaching design of strategies for natural assurance and appraisal of ecological effect.

Despite this tough system, the historical backdrop of the natural parts of Sardar Sarovar is a background marked by rebelliousness. It was not until 1987 that a contingent ecological leeway for the Projects was given by India's Ministry of Environment and Forests. It was given in the freedom that, rather than ecological effect examine being done before endorsement of the Projects, they were to be done stop pass, that is, simultaneously with a development, a methodology that we closed subverts the very reason for natural arranging. There was, be that as it may, in the

restrictive natural leeway, a timetable for the consummation of the ecological effect concentrate by 1989. The majority of the examinations were not finished by 1989, many have still not been finished.

The Narmada Water Disputes Tribunal (NWDT) in its last request in December 1979 has given definite bearings in regards to the Apportionment of the Utilizable Quantum of Narmada Waters, Sharing of Power, Costs, Benefits, and setting up apparatus for carrying out the choices of the Tribunal. Narmada Control Authority (NCA) is a between State managerial position, set up with the end goal of execution of the choice and headings of the Narmada Water Disputes Tribunal.

The Authority coordinates the construction program of the Sardar Sarovar Unit-II (Canals) with a view to obtain expeditiously optimum benefits during and after the completion of the construction of the projects, keeping in view the availability of funds. Earlier the Authority also coordinated the construction program of the Narmada Sagar (now, IndiraSagar) Project. The Authority also coordinates in power generation scheduling and sharing of power of SSPP(Sardar Sarovar Projects Program) , Reservoir Regulation of Narmada Basin, Monitoring of R&R of SSP(Sardar Sarovar Projects) and Environmental SafeGuard Measures of SSP & ISP, etc. Sardar Sarovar Construction Advisory Committee (SSCAC): Sardar Sarovar Construction Advisory Committee (SSCAC) performs the advisory function over the construction program of the Sardar Sarovar Project. Audit council of Narmada Control Authority (RCNCA): The RCNCA may survey any choice of the NCA and furthermore may allow a stay of any request for the NCA's forthcoming official conclusions on audit.

In 1991 the World Bank set up its first Independent Review of any of its activities. The Independent Review was set up to inspect the Sardar Sarovar Projects (SSP) in India.

Decisions as to the future of the Sardar Sarovar Projects and the Bank's participation in the SSP are within the exclusive domains of India and the Bank. But implementation of the Projects requires measures that go to the heart of the problems in which the resettlement and environmental components of the Sardar Projects have become mired. Environmental impact has brought about extensive environmental consequences such as negative effects on downstream fishing, threat on wildlife natural habitat, waterlogging and salinization of water, silting of river bed, deforestation (Morse report) 1992, Kothari & Ram 1994 gave this report on EIA Topic.

The Terms of Reference given that our evaluation ought to incorporate, as fitting, proposals for the development of execution. The shortfall of appropriate affect appraisals and the lack of undisputed information restricted our capacity to make project-explicit proposals of the sort that were considered. We confined ourselves, therefore, to recommendations with respect to the Kevadia villagers (the earliest oustees), the canal oustees, downstream policy, and the protection of public health, that should be coming through regardless of the fate of the Projects.' Our findings indicated that the Sardar Sarovar Projects are beset by

profound difficulties. These troubles have their beginning in the soonest period of the Bank's association in the Projects, for they turn on the shortfall of a satisfactory data set and inability to talk with individuals whose lives and the climate was and keep on being influenced.

### 3. Material Method

The phases of Environment Impact Assessment EIA interaction comprises eight stages with each progression similarly significant in deciding the general execution of venture, the EIA cycle starts eight stages of Screening, Scoping, Impact investigation, Mitigation, Reporting, Review of EIA, Decision production, and Post observation.

Environment Impacts Assessment EIA of dam and reservoir project mainly focuses on water temperature, aquatic living, terrestrial living, hydrological regime, Environmental geology, landscape and heritage, and the resettlement of migrants from reservoirs.

- 1) Water Temperature: EIA of water temperature mainly includes analyzing the vertical and horizontal distribution of the measured data on water temperature in different areas of the reservoir.
- 2) The hydrological regime and downstream: EIA of hydrological regime mainly concerns the statistical analysis of the measured runoff and sediment downstream after the operation of the project, the actual changes in river erosion and deposition data, and the investigation of the Impact on hydrological projects and thus proposing the measures for reducing adverse effects of the projects.
- 3) Water quality: EIA of water quality mainly focuses on the source distribution of pollutants after storing water, changes in water quality in the reservoir.
- 4) Environment geology: EIA of Environment geology mainly includes investigating the reservoir-induced earthquake, running time, magnitude, and putting forward security measures of the projects.
- 5) Terrestrial living: EIA of terrestrial living focuses on the effects of the operation on animals and plants, especially rare flora and fauna, and the investing of the efficiency of measures for the protection and thus providing further protective steps to be taken.
- 6) Landscape and heritage: EIA of landscape and heritage include investigating the natural landscape and heritage to be affected, analyzing and evaluating the efficiency of protective measures, and putting forward better measures for further utilizing heritage landscape.
- 7) Migrants: EIA dominantly focuses on resettlement of migrants which is one of the important measures to ensure the development of the social economy of migrants without the great effects of the project. And the resettlement level reflects the influencing degree of dam reservoir construction.

### 4. Result and Discussion

From this article, we can get the result that Major River Dam Projects play a significant role in socio-economic development. The Sardar Sarovar Dam Projects on the Narmada River system plays an important role in the socio-

economic development of Madhya Pradesh, Gujarat, and to some extent Maharashtra.

Consumption used of river water is rapidly increasing and cannot be replaced unless suitable alternative sources are found. Conservation of deeper areas of the river would help in protecting the broodstock of fish and aid in the recovery of their depleted stocks. The entire Narmada basin is being developed under a comprehensive river valley project programmed through a series of dams, which contribute additional fishery resources in reservoirs and enhance inland fish production for India.

Thirty large dams were proposed under the Sardar Sarovar and Narmada Sagar Projects of which the Tawa, Bargi, and Indira Sagar dams have been completed in Madhya Pradesh with the Sardar Sarovar Dam in Gujarat. This reservoir area is available for the facilitation of irrigation, hydropower projects, industrial and domestic water supply, and fisheries.

The current discussion additionally showed that the primary word-related movement of both "close to the dam" and "a long way from the dam" networks was fishing and had different sources like sachet and filtered water. People close to the dam have likewise advantages for the mark of diversion and for well-being reasons. The government had created two side nursery territories that can be used by individuals close by there for strolling and outing for the end of the week. The government has additionally projected STATUE OF UNITY OF SARDAR VALLABHBHAI PATEL, THE IRON MAN for residents, for visit and fostered this site as an outing point.

## 5. Conclusion

Dams provide numerous economic benefits and can mitigate the adverse impacts of water variability and extreme climate events. However such large-scale water infrastructure had also caused significant social and environmental costs, prompting calls for alternative, nature-based solutions. Dams are renowned both for the positive changes they bring about, such as flood control, irrigation, and hydropower, and for their negative impacts, including displacement of people, changes in water-sediment flows, and disruption to Environment services and livelihoods.

### Merits and Demerits of Dam

The Sardar Sarovar Dam Project (SSP) was proposed as a multipurpose dam and was planned to be valuable to the four states. The water of the Narmada waterway would stream into the ocean being unused and could be utilized for serving many dry towns, and locals of Gujarat. There are numerous locales in Gujarat and Rajasthan that are out of power nearly constantly. To defeat this issue, the force to be reckoned with was introduced with a limit of 1450 MW, which would give power to those spaces in the pinnacle hours of the day. The SSP will give flood security to around 200 towns in Gujarat, beginning from Bharuch to Navsari. The SSP additionally said that it would profit from the fish business and improve the transportation framework in each one of those dry season inclined regions. The state government and administration of India didn't satisfy the guidelines of the World Bank or their strategies. As per

World Bank, the Venture began with next to no evaluation and ecological effect. Individuals who lost their territories and were under submergence got almost no pay, which incorporated greenbacks. The province of Madhya Pradesh and Maharashtra gave next to no land to resettlement and didn't perceive the encroachers. The Narmada Bachao Andolan (NBA) is shaped by the gathering of individuals and had numerous struggles with the public authority of India. Its arrangements and activities.

The solution to this article is not to forego investment in built infrastructure, which remains essential for socio-economic development but to give greater consideration to the role of nature in planning and operating large built infrastructure. This system operating synergistically can present options to reduce negative impacts and achieve more equitable and sustainable outcomes. This study shows, for example, that reservoirs can be designed and managed to create better fish habitats, and farmers can be supported to adopt farming techniques to new flooding regimes. Combining such approaches with an understanding of local livelihoods and utilizing participatory approaches to negotiate outcomes with maximizing benefits.

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