



International Environmental
Law Research Centre

SARDAR SAROVAR

REPORT OF THE INDEPENDENT REVIEW

Bradford Morse & Thomas R. Berger, *Sardar Sarovar - Report of the Independent Review* (Ottawa: Resource Futures International, 1992), pp. xi-xxv and 349-58

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Letter from Bradford Morse (Chairman) and Thomas R. Berger (Deputy Chairman) to Lewis T. Preston (President, The World Bank) of 18 June 1992

Dear Mr President:

On 1 September 1991 we began our Independent Review of the Sardar Sarovar dam and irrigation projects in India. Since then we have spent much time in India; we conferred with ministers and officials of the Government of India and of the Governments of Gujarat, Maharashtra, and Madhya Pradesh; we met with non-government organizations and concerned citizens; we received hundreds of submissions. We travelled throughout the Narmada valley, to villages and relocation sites, to the dam site, the upstream area, the command area, and downstream. We also visited Kachchh and other drought-prone areas of Gujarat.

We have talked to whomever we thought could help us in the task assigned to us, that is, to conduct an assessment of the measures being taken to resettle and rehabilitate the population displaced or otherwise affected by the Sardar Sarovar Projects, and of the measures being taken to ameliorate the environmental impact of the Projects.

The World Bank has made an important contribution to the advancement of human and environmental concerns by developing policies for the resettlement and rehabilitation of people displaced or otherwise affected by Bank supported projects and for the mitigation of the environmental effects of such projects. Similarly the Government of India has developed a comprehensive environmental regime to reduce the environmental impact of public works projects. In spite of these positive factors, however, we believe that the situation is very serious. We have discovered fundamental failures in the implementation of the Sardar Sarovar Projects.

We think the Sardar Sarovar Projects as they stand are flawed, that resettlement and rehabilitation of all those displaced by the Projects is not possible under prevailing circumstances, and that the environmental impacts of the Projects have not been properly considered or adequately addressed. Moreover, we believe that the Bank shares responsibility with the borrower for the situation that has developed.

The Sardar Sarovar Projects are intended to bring drinking water to Kachchh and other drought-prone regions of Gujarat, and to irrigate a vast area of that state as well as two districts of Rajasthan. This requires a large reservoir on the Narmada River and an extensive canal and irrigation system. The Sardar Sarovar dam, under construction on the Narmada River, at Navagam and Kevadia, will impound water to a full reservoir level of 455 feet. It will submerge 37,000 hectares of land in three states: Gujarat, Maharashtra, and Madhya Pradesh.

The Sardar Sarovar dam, along with planned developments farther upstream, is designed to divert 9.5 million acre feet of water from the Narmada River into a canal and irrigation system. The canal itself is the biggest in the world in terms of its capacity, and will extend 450 kilometers to the border with Rajasthan. The main canal is 250 meters wide at its head and 100 meters wide at the Rajasthan border. The aggregate length of the distribution network is 75,000 kilometers. It will require approximately 80,000 hectares of land, more than twice as much land as the submergence area.

The Sardar Sarovar Projects constitute one of the largest water resources projects ever undertaken; their impact extends over an immense area and affects a very large number of people, especially tribals. At least 100,000 people, in 245 villages, live in the area affected by submergence. In Gujarat and Maharashtra almost all are tribals. A great many of them are encroachers, that is, they have no formal title to their land. There are thousands of tribal people in the submergence area of Madhya Pradesh as well, many of whom are encroachers. In Madhya Pradesh there are also many caste villages where the inhabitants are engaged in conventional agriculture.

In addition to the 100,000 people living in the villages in the submergence area, there are likely to be 140,000 farmers who will be affected by the canal and irrigation system. Finally, there are the people living downstream, below the dam, numbering thousands more, whose lives will be significantly affected.

In 1985 the Bank entered into credit and loan agreements with the Government of India and the Governments of Gujarat, Madhya Pradesh, and Maharashtra relating to the construction of the dam and the canal. Under these agreements the Bank has treated only the people whose villages will be affected by submergence as 'project-affected' persons entitled to be resettled and rehabilitated. Our first task has been to consider the measures being taken for the resettlement and rehabilitation of these people. But our Terms of Reference refer to persons 'displaced/affected by the reservoir and infrastructure.' We were also asked by President Conable to consider, under our Terms of Reference, the status of resettlement and compensation for 'canal-affected persons.'

On the environmental side, our Terms of Reference require us to consider measures being taken to ameliorate the impact of 'all aspects of the Projects.' To do this we have reviewed the extent to which there has been compliance with the Bank's and India's requirements for the Projects. We have also considered hydrology and water management issues and their relationship to environmental impact upstream, downstream, and in the command area. Without an understanding of these matters it is impossible to appreciate what the environmental impact of the Projects may be, and thus to determine what ameliorative measures are appropriate.

The idea of damming the Narmada goes back many years, but its realization has been complicated by the fact that the river passes through three states, which could not agree upon division of project costs and benefits. In 1969 the dispute was referred to the Narmada Water Disputes Tribunal, established under India's *Interstate Water Disputes Act, 1956*. In 1979 the Tribunal handed down its award. The Tribunal, by agreement of the states, for the purpose of distribution of benefits accepted the figure of 28 million acre feet as the flow of the Narmada. It went on to apportion 9 million acre feet of water to Gujarat – the water to be diverted into the canal for use in that state (another 5 million acre feet was to be delivered to Rajasthan). The hydroelectric benefits were divided among the three riparian states. The assumptions upon which the Tribunal's award were based included a second dam project, Narmada Sagar, which was to be built, concurrently with Sardar Sarovar, upstream in Madhya Pradesh, as part of a basin-wide storage system.

In 1985 the World Bank made credits and loans, totalling US \$450 million, to India and the states of Gujarat, Maharashtra, and Madhya Pradesh, to help finance the construction of the Sardar Sarovar dam and canal. A second application has been made for US \$350 million to complete the canal. And there is now before the Bank an application for an additional US \$90 million for an associated project, the Narmada Basin Development Project.

The Narmada Water Disputes Tribunal laid down conditions regarding resettlement and rehabilitation of those who would be displaced by submergence in Madhya Pradesh and Maharashtra, described in the award as the 'oustees.' The Government of India imposed certain environmental conditions. The Bank's credit and loan agreements contain requirements relating to both. There is a dispute within India and worldwide over the question of whether India and the states have lived up to these conditions and requirements.

Our Terms of Reference require us, in making our assessment, to consider all of the Bank's existing operational directives and guidelines, bearing in mind that the credit and loan agreements were approved in 1985. Under Bank policy at that time resettlement and rehabilitation and environmental impact had to be appraised at the threshold of a project. Yet there was no proper appraisal made of the Sardar Sarovar Projects; no adequate appraisals of resettlement and rehabilitation, or of environmental impact, were made prior to approval. The Projects proceeded on the basis of an extremely limited understanding of both human and environmental impact, with inadequate plans in place and inadequate mitigative measures under way.

It is noteworthy that the Bank has seen fit to establish our review. The Bank has provided us with all necessary documents, has engaged in the frankest discussions with us, and has given us the latitude we needed to do our job. We think it unlikely that any other international aid organization has ever established a review with a mandate as sweeping as ours in connection with a project, no matter how controversial. The Bank's willingness to do so is a tribute to its determination to understand what has gone wrong with the Projects. Similarly, we have had the cooperation of the Government of India, of the Governments of Gujarat, Maharashtra, and Madhya Pradesh, of non government organizations, and of people affected by the Projects.

In the past, when high dams have been built, people living in the submergence area have often been evicted without proper compensation, often without due process. This has happened in developed countries as well as developing countries. Compensation, in such cases, did not usually include anything more than cash, and the cash was more often than not inadequate, rarely if ever sufficient to buy replacement land.

Since World War II, developed and developing countries have built high dams in rural, forest, and frontier regions. Usually, this has resulted in incursions on the lands of indigenous and tribal people. It was the special situation of these people that first gave rise to measures to protect persons subject to involuntary resettlement.

The earliest international recognition came in 1957. In that year the International Labor Organization (ILO) passed Convention 107; it required that indigenous or tribal oustee families be 'provided with lands of quality at least equal to that of the lands previously occupied by them, suitable to provide for their present needs and future development.' India ratified Convention 107 on 29 September 1958.

In 1979 in India itself, the Narmada Water Disputes Tribunal stipulated that landed oustees in Maharashtra and Madhya Pradesh were to receive land for land, in fact, a minimum of two hectares (five acres) of land. Moreover, the Tribunal held that major sons of landed families (i.e., those aged 18 and over) were to be treated as separate families. Landless oustees, under the award, were to receive only a house lot.

India and the three states, Gujarat, Maharashtra, and Madhya Pradesh, take the position that under the Tribunal award, land for land was only intended for the benefit of landowners holding formal title, i.e., having what is known in India as revenue land. They say that the Tribunal did not intend that tribal people cultivating encroached land in the forest, to which they have no formal title, should receive any land on resettlement.

In 1980, the World Bank, for the first time, adopted a general resettlement policy. Indeed, the Bank made clear that there must be not only resettlement but also rehabilitation. It therefore provided that, on resettlement, displaced persons should 'regain at least their previous standard of living.' Such persons were to include those displaced by dams and canals. Moreover, in 1982, the Bank developed a policy specifically designed for tribal people. It provided that their customary usage of land should be respected, and required that they should only be displaced when the borrower can implement 'measures that will effectively safeguard the integrity and well-being of the tribal people.'

In 1985, when the credit and loan agreements were signed between the Bank and the three states, no one knew the scale of the displacement that would result from the Sardar Sarovar Projects, nor did anyone have anything like a true picture of the peoples who were to be displaced, nor had the people themselves been consulted. In fact, resettlement policies for Sardar Sarovar, both those of the states and to a great extent those of the Bank, have been based on the measures set out in the 1979 Tribunal award. But the award sought mainly to adjudicate an interstate dispute. It did not, and should not have been expected to, design policies that would meet the needs of the affected people of the Projects as a whole. It did not even mention the Gujarat oustees, nor did it concern itself with the people potentially affected by the canal and irrigation system, nor did it take into account the cultural attributes of the oustee population; in the award there is no discussion of tribal peoples, or of encroachers, or of the real meaning of 'landlessness'.

In 1985, when the credit and loan agreements were signed, no basis for designing, implementing, and assessing resettlement and rehabilitation was in place. The numbers of people to be affected were not known; the range of likely impacts had never been considered; the canal had been overlooked. Nor had their been any consultation with those at risk. Nor were there benchmark data with which to assess success or failure. As a result, there was no adequate resettlement plan with the result that human costs could not be included as part of the equation. Policies to mitigate those costs could not be designed in accord with people's actual needs.

When the Bank signed the agreements for the Sardar Sarovar dam, it adopted the definition of landed oustee as set out in the Tribunal's award, which did not include encroachers. Moreover, it did not address the question whether major sons were to receive land. This created the possibility of dispossession for the majority of tribal oustees.

At the same time the Bank, in the agreements for the canal, made no separate provision for those persons displaced or otherwise affected by the canal. Ousteas were defined as those affected by submergence and project infrastructure, even though, in 1980, the Bank had acknowledged that resettlement is necessary in the case of persons displaced by canals and irrigation systems.

In 1990, the Bank announced a comprehensive resettlement policy applying to oustees generally, and in 1991 a specific resettlement policy relating to tribals. These policy statements reiterated and elaborated the principles laid down a decade earlier.

These Bank policies reflect the global adoption of new concepts of human rights. They constitute a recognition that large-scale projects, especially in rural, forested, and frontier areas, may displace people just as do war and natural calamities. They focus on people who are being displaced by the advance of development, and require that in any project the human, rights of the oustees must be respected. According to ILO 107, these are rights not to be impaired on grounds of national sovereignty or national interest. These considerations may justify undertaking a project but, according to ILO 107, they do not justify the nullification of these human rights if a project goes ahead. The governments of the three states claim that they are prepared to implement the award of the Tribunal and to live by the Bank credit and loan agreements. There is disagreement, however, over interpretation. Gujarat, which has 4,700 oustee families, adopted a policy in 1988 which offers two hectares of land to all landed oustees. It also offers two hectares of land to those designated as landless; tribals and others who may be cultivating

encroached land therefore receive two hectares of land. Under Gujarat's policy, in keeping with the Tribunal's award, major sons also receive two hectares.

The Government of Gujarat and the Governments of Madhya Pradesh and Maharashtra contend that Gujarat's policy goes beyond the requirements set out in the Tribunal award and the Bank agreements. Maharashtra, which may have as many as 3,000 families to be resettled, and Madhya Pradesh, with as many as 23,000 families to be resettled, are prepared to offer two hectares of land to landed oustees. But they are not willing to provide two hectares for major sons. Neither Madhya Pradesh nor Maharashtra acknowledges any rights of encroachers to adequate land on resettlement.

This disparity in state policies has resulted in a dispute over the meaning of the Tribunal award and the requirements of the Bank credit and loan agreements. The dispute may seem technical but upon its outcome depends the chances of thousands of oustees to land on resettlement.

The first aspect of the dispute relates to major sons. It is said that Madhya Pradesh and Maharashtra are obliged under the Tribunal award to provide two hectares for major sons of families displaced from revenue lands. The states say they are not. Yet the direction by the Tribunal that every major son be treated as a separate family stands without qualification, express or implied. What other purpose would this provision serve except to enable each major son to claim the same entitlement as the family to which he belongs? In our view the failure of Madhya Pradesh and Maharashtra to provide a minimum of two hectares of land to each major son in any landed family constitutes non-compliance with the Tribunal award.

Of course, even if the Tribunal's award were to be adopted, as regards major sons, by Madhya Pradesh and Maharashtra, it would still benefit only the major sons of landed families, for the Tribunal did not acknowledge any right in encroachers to be treated as landed.

This brings us to the second aspect of the disagreement, relating to encroachers. As noted above, Madhya Pradesh and Maharashtra say that encroachers must be treated as landless oustees with no entitlement to adequate land for cultivation on resettlement. The dispute here is whether tribal people, holding their land by customary usage, are entitled to be treated as landed oustees. Madhya Pradesh and Maharashtra say they are not, that they are illegal occupiers.

The result is that, in Madhya Pradesh and Maharashtra, thousands of tribal families, who are classified as landless but who are in fact cultivating land, may not receive any or adequate land on resettlement. Both states have provided that encroachers who can prove that they were cultivating encroached land prior to a certain date (in Maharashtra, 1978; in Madhya Pradesh, 1987) will be entitled to have their interests recorded. But these arrangements depend on documented proof which does not often exist. We estimate that, under the states' view, at least 60 percent of tribal oustees engaged in cultivating land in Madhya Pradesh and Maharashtra will not receive adequate land on resettlement.

There are more than 60 million tribal people in India, many of them dependent on land they and their forebears have cultivated for generations. In 1987 the United Nations World Commission on Environment and Development (the Brundtland Commission) addressed the need for respect for indigenous and tribal land and resource rights. It said:

The starting point for a just and humane policy for such groups is the recognition and protection of their traditional rights to land and the other resources that sustain their way of life – rights they may define in terms that do not fit into standard legal systems. [wced p. 115]

Central to the Bank's credit and loan agreements with India and the three states is the objective requiring that *all* oustees, including those described as landless, be enabled as a result of resettlement and rehabilitation measures taken on their behalf, to '*improve or at least regain* the standard of living they were enjoying prior to their displacement' (emphasis added). How can this be guaranteed in the case of oustees for whom cultivation is their one skill and at the heart of their social, economic, and cultural lives, except by providing them, on resettlement, with land to cultivate? In 1984 the Narmada Control Authority, established to oversee the Projects, declared that: 'For tribals, there is no rehabilitation more effective than providing land as the source of livelihood'. We have concluded that it is in fact the only way to ensure that they improve or at least regain their standard of living. The result of classifying encroachers as landless oustees means that people who are in fact cultivating land they regard as their own will become landless labourers. This is not rehabilitation. It does not leave them at least as well off as before.

The tribal people in Madhya Pradesh and Maharashtra are aware of the issue, and what it will mean for them if they are resettled as landless labourers. When we visited Bamni, a tribal village in Maharashtra, the people told us, 'We are farmers, not labourers.' In our view Maharashtra and Madhya Pradesh, in failing to provide adequate land on resettlement for rehabilitation of encroachers, have not complied with the Bank credit and loan agreements.

The states point out that under the award and World Bank agreements all oustees have the right to resettle in Gujarat, where landed and landless oustees alike are to receive two hectares of irrigable land. Madhya Pradesh and Maharashtra contemplate that a very large number of oustees will therefore resettle in Gujarat. In fact, under Madhya Pradesh's plan for resettlement, its resettlement sites are to provide only 10 percent of the land needed for its oustees.

But many oustees do not wish to go to Gujarat, for reasons which have to do with language, culture, and other ties to their region. It would, for many of them, be a long cultural journey. Under both the Tribunal award and under the Bank credit and loan agreements, oustees have the right to be resettled in their own state. It is true that in the last eighteen months Gujarat has achieved a measure of success in implementing resettlement, but Gujarat has thus far resettled something like 3,000 families. To resettle and then rehabilitate so many more oustees – perhaps 15,000 families – from Maharashtra and Madhya Pradesh would be an enormous task for Gujarat, and would impose a severe strain on its resources, which are not unlimited. Moreover, it is not just a question of resettlement; it also entails rehabilitation. The states may be able to effect the physical removal of thousands of families to land in Gujarat, but we do not think that it will be possible for Gujarat to rehabilitate them all.

It is important, we think, not to leave the matter there. The fact is that in Madhya Pradesh virtually no steps have been taken towards resettlement and rehabilitation. Even if Madhya Pradesh were to alter its policies, would it be reasonable to expect that Madhya Pradesh could implement a policy conforming to the Tribunal award and Bank agreements, if it were prepared to adopt one, within the time remaining before inundation? Could the implementation of resettlement and rehabilitation be done in time? We have reluctantly concluded that the answer must be 'No.'

In Maharashtra there are 33 submergence villages divided between two talukas or districts—Akkalkuwa and Akrani. Because of cultural links between Akkalkuwa and adjacent districts of Gujarat, a Maharashtra-to-Gujarat migration has always been part of the resettlement and rehabilitation plan for some Akkalkuwa villages. So far, some 400 Akkalkuwa families have relocated in Gujarat.

Maharashtra oustees, however, have the right to relocate within their own state. To this end, after its release was agreed by the Ministry of Environment and Forests in 1990, 2,700 hectares of forest land near Taloda were made available for resettlement.

Resettlement and rehabilitation in Maharashtra are beset by serious difficulties. As noted earlier, Maharashtra's policy fails to provide adequate land to encroachers (and major sons). The significance of this failure is revealed by the fact that none of the 24 Akrani villages are deemed by the Maharashtra plan to have any revenue land. The villagers of all 24 communities can only qualify for encroacher status, with one-acre land benefits.

Also, the number of oustee families in Maharashtra is much larger than originally anticipated; the Tribunal estimated 450 families; by 1988 the figure had grown to 2,000; it is now judged to be approximately 3,000. The Taloda forest land is not large enough to provide the land to which this number of oustees is entitled, even if the tribal people in the 24 Akrani villages are treated as landless. Additional forest land is unlikely to be released – the Taloda case is seen as unique.

This raises questions about the right of choice provided for in the Tribunal award and by the Bank agreements. That right ensures that displaced families, though obliged to leave their homes, ought not to be compelled to leave their home state. It is true that the bare right of choice remains. But the disparity in benefits means that they must choose between migrating to Gujarat or giving up their standard of living.

The only resettlement policy applicable to all three states is the Bank's. But Bank policy has not been respected. The Projects were not appraised in accordance with Bank requirements, basic information had not been gathered and adequate plans for resettlement and rehabilitation were not in place.

Notwithstanding Gujarat's success in providing land for submergence oustees, it has not provided land on resettlement for those oustees displaced in 1960-61, when the lands of six villages of Kevadia were expropriated to establish the construction site for the dam. To be sure, some of these villagers have received a measure of cash

compensation. But since 1985 these people have been covered by the Bank agreements. Their entitlement to land should have been acknowledged seven years ago, yet the Bank has failed to secure an acknowledgment by Gujarat of their entitlement under the Bank agreements, let alone conveyance of appropriate lands.

Indeed, it is only recently that the Bank has urged – though it has never insisted – that India and the states comply with the 1979 Tribunal award regarding major sons, and develop policies to match the overarching objective of the Bank agreements in order to ensure land for encroachers.

Nor is it only that the Bank has failed to enforce the award and agreements. It has, in the case of the canal, failed to obtain a covenant in its agreement with Gujarat to require compliance with Bank policy. What about those villagers living in the path of the canal? Construction of the canal and irrigation system will affect as many as 140,000 families, of whom perhaps 13,000 – no one knows how many – will lose much or all of their land. People losing land to the canal and irrigation system are offered compensation under the Land Acquisition Act of 1984. The number of such persons is a matter of competing estimates. But this much is clear: acquisition of land under the Land Acquisition Act has often meant that farmers losing land have been compensated at rates substantially lower than replacement costs.

The responsibility in this regard appears to us to rest with the Bank. It did not include resettlement benefits for canal oustees in the 1985 credit and loan agreements, even though such had been a part of Bank policy for five years.

Evolving respect for human rights has established new norms for resettlement and rehabilitation. The Bank's policies have been influential in establishing these norms, and India has adopted many of them. It ratified ILO 107 in 1958. India and the three riparian states signed the 1985 credit and loan agreements with the Bank. At the end of the day, however, the failure of India and the states to enforce the relevant provisions of the Tribunal award and the Bank agreements, and the Bank's failure to enshrine its policies in the agreements, mean that involuntary resettlement resulting from the Sardar Sarovar Projects offends recognised norms of human rights—human rights that India and the Bank have been in the forefront to secure.

In 1972, after the Stockholm Conference, a new consciousness of environmental issues emerged. In India, as elsewhere, in the 1970s and 1980s this was reflected in new environmental laws, guidelines, and practices. We have already noted the absence in India of a national policy in the field of resettlement and rehabilitation (the matter is regarded as a state responsibility). In the environmental field, however, the Government of India has developed a comprehensive structure of policies for environmental protection and assessment of environmental impact.

In 1983 environmental clearance for the Sardar Sarovar Projects was not forthcoming from India's Ministry of Environment and Forests because of a lack of information on environmental impact. In 1985 the Bank approved the credit and loan for the Projects. An appropriate environmental assessment was not made. In the Bank's 1985 Staff Appraisal Report no mention is made of the controversy that was holding up environmental clearance in India. The Bank required an environmental work plan by December 1985. It was not done. The date was extended to 1989. The workplan is still not available.

It was not until 1987 that a conditional environmental clearance for the Projects was given by India's Ministry of Environment and Forests. It was provided in the clearance that, instead of environmental impact studies being done before approval of the Projects, they were to be done *pari passu*, that is, concurrently with construction – an approach that we believe undermines the very basis for environmental planning. There was, however, an explicit schedule providing for the completion of the environmental impact studies by 1989. Most of the studies were not completed by 1989. Many have still not been completed. Without proper data and studies, proper assessments of environmental impact cannot be made and effective ameliorative measures cannot be developed.

The history of the environmental aspects of Sardar Sarovar is a history of non-compliance. There is no comprehensive impact statement. The nature and magnitude of environmental problems and solutions remain elusive. This feeds the controversy surrounding the Projects. As with the resettlement and rehabilitation issues, this has placed our review in a difficult position. To complete our work, we have had to assemble basic ecological information to establish the likely effects of the Projects upstream, downstream, and in the command area. This work should have been done by others before the Projects were approved.

The design and operation of a multi-purpose project like the Sardar Sarovar Projects depends on the hydrology of the river. Understanding impacts, therefore, begins with an understanding of the hydrology and the nature of the changes that will be caused by the engineering works.

During the proceedings before the Narmada Water Disputes Tribunal, the states agreed on a figure of 28 million acre feet as the average annual stream flow to be expected three years out of four. The Tribunal accepted this figure as a basis for the apportionment of the benefits of the Projects. It also provided a benchmark for design of the dam and canal.

We found discrepancies in basic hydrological information related to these works. We therefore examined the streamflow data and did our own analysis. We found that there is good reason to believe that the Projects will not perform as planned. The problems relate to the sequence and timing of streamflows and the capacity of the dam and canal to store and divert water. The effects of Sardar Sarovar upstream, downstream, and in the command area, therefore, will be different from what has been assumed to date whether or not the upstream Narmada Sagar Projects are built as planned. A realistic operational analysis upon which to base an environmental assessment is lacking. This alarmed us and it should alarm others, especially for a megaproject with such far-reaching implications as Sardar Sarovar.

For the area upstream of the dam there are piecemeal studies that suggest that the impact on biodiversity will be minimal. But there has been no attempt properly to assess the cumulative effects of the impacts arising from the Narmada Sagar Projects. Although the Narmada Sagar Projects are not within our Terms of Reference, the resulting cumulative impacts will almost certainly be serious. The Bank has placed itself in a difficult position by agreeing to proceed with Sardar Sarovar Projects before the environmental implications of directly related projects upstream are understood.

Programs in the upstream region for compensatory afforestation and catchment area treatment are under way. We believe that these programs, however successful in the short term, are likely to fail because of the lack of participation by local people. It is our view that achieving the necessary cooperation is not likely to be possible within the construction schedule imposed by Sardar Sarovar.

The backwater effect of sedimentation upstream of the dam is also an issue which has been ignored. Our analysis indicates this effect could mean a rapid, continuing, and cumulative rise in water level in the river above the reservoir. This can cause flooding to extensive areas of densely populated farmland. The human and environmental impacts could well be severe.

The construction of a dam on a free-flowing river has obvious implications for the downstream ecosystem, all the more so when proposed developments upstream will divert most of the river flows. But we found that no assessment of downstream impact has been done. Some of the basic information is only now being gathered. The implications of the Sardar Sarovar Projects for the geomorphology of the lower reaches of the river and its estuary and for the fishery and the people living in the region are unknown. We were able to assemble enough information to indicate that the impacts will be serious. It is likely, for example, that the hilsa fishery, the largest on the west coast, on which thousands of people depend, will suffer severe losses or be eliminated completely. The mitigative measures currently proposed are inadequate.

The shortcomings we have found in environmental assessment also extend into the command area. Although properly integrated studies are lacking, we have found that there are likely to be serious problems with waterlogging and salinity. Assumptions used in design of the canal and irrigation network, and on the development of mitigative measures, are questionable. We can only conclude that, when taken together, the problems that will arise in the command area will be quite similar to those identified by the Bank in many other irrigation projects in its 1991 India Irrigation Sector Review.

The priority water use is domestic consumption. We were surprised therefore to find that the plans for the delivery of water to the people in the villages and other centers in the drought-prone regions of Gujarat were only in the earliest stages of development. Apart from guidelines and intentions, we had little to review. We could not make any proper assessment as required by our Terms of Reference.

We have been conscious throughout our review of the close connection between the Projects' engineering design and the human and environmental impacts. This can be most clearly observed in the field of public health.

Large-scale irrigation projects such as the Sardar Sarovar Projects are known to carry health risks. From the first phases of construction, through creation of canals and ponds, to establishment of the reservoir itself, there are inevitable dangers, of a large-scale increase in water-borne diseases. These have been documented since the 1930s, and World Bank-assisted projects have witnessed some of the problems that can occur.

Yet, as recently as January 1992, we find that the Bank's consultant says that the Sardar Sarovar Projects appear to have been 'planned, designed and executed without incorporation of Health Safeguards.' He describes various parts of the Projects as 'death traps' and as 'taking Malaria to the doorsteps of the villagers' and as creating 'ideal breeding sites' for malarial mosquitoes. He reported a total collapse of vector control measures. The incidence of malaria has risen sharply in villages near the dam; local clinics have recorded deaths from malaria. The failure to anticipate and prevent malarial hazards is a part of the failure to implement measures to mitigate the impacts of the Projects.

The Bank is now proposing a Narmada Basin Development Project, and is considering providing a US \$90 million credit for this purpose. The connections between this project and Sardar Sarovar are many. Although the Basin Development Project appears to address many of the problems raised during our review, and we recognise that some parts have merit, we have concluded that it will not succeed in meeting the stated objective as 'a comprehensive program to tackle the growth and sustainability needs of the basin.' Furthermore, the staff appraisal report for the proposed Basin project fails to acknowledge the linkages that also exist with the Narmada Sagar Projects. The Bank may be moving incrementally towards involvement in another major development project without prior consideration of the possible social and environmental consequences.

In spite of non-compliance with Bank resettlement and environmental requirements, the Sardar Sarovar Projects are proceeding – in the words of Chief Minister Patel of Gujarat – as 'an article of faith'. It seems clear that engineering and economic imperatives have driven the Projects to the exclusion of human and environmental concerns. Social and environmental tradeoffs have been made that seem insupportable today.

The Bank has followed what it describes as an incremental strategy, in an attempt to secure compliance with its resettlement policies. India has done much the same in its adoption of the *pari passu* principle with regard to environmental issues. These approaches, however, have failed to achieve their objectives. Moreover, they signify that these crucial matters – resettlement and environment – are of only secondary importance.

We are well aware of the scale of the development task facing India, of the importance India places on irrigation in increasing production in the agricultural sector, and of the longstanding partnership between India and the Bank in this endeavor. But our Terms of Reference are specific. They require us to consider the Bank's policies, India's environmental regime, and the credit and loan agreements. These emerge from the context of Bank-India relations just as surely as does the longstanding partnership in the enhancement of agricultural production between the Bank and India. If there was no intention of following Bank policy or India's regulatory regime, it would have been appropriate to acknowledge this. In any event, the incremental strategy has been counter-productive.

The Bank, in crafting our Terms of Reference, invited specific recommendations which 'should include, as appropriate, any recommendations for improvement of project implementation (...)'. If essential data were available, if impacts were known, if basic steps had been taken, it would be possible to know what recommendations to make. But we cannot put together a list of recommendations to improve resettlement and rehabilitation or to ameliorate environmental impact, when in so many areas no adequate measures are being taken on the ground or are even under consideration.

Important assumptions upon which the Projects are based are now questionable or are known to be unfounded. Environmental and social trade-offs have been made, and continue to be made, without a full understanding of the consequences. As a result, benefits tend to be overstated, while social and environmental costs are frequently understated. Assertions have been substituted for analysis.

Every decision as to the Sardar Sarovar Projects has always been, and will continue to be, a decision for India and the states involved. Together, they have spent a great deal of money. The foundations of the dam are in, the dam wall is going up, the turbines have been ordered and the canal is completed to the Mahi River. No one wants to see this money wasted. But we caution that it may be more wasteful to proceed without full knowledge of the human and environmental costs.

We have, decided that it would be irresponsible for us to try to patch together a series of recommendations on implementation when the flaws in the Projects are as obvious as they appear to us. As a result, we think that the wisest course would be for the Bank to step back from the Projects and consider them afresh. The failure of the Bank's incremental strategy should be acknowledged.

Whatever decisions the Bank makes about its role in the Projects, it must bear in mind the critical importance of consultation with the people of the valley and along the route of the canal. Such consultation would be in accord with the Brundtland Report, which said that in the case of tribal people, 'they must be given a decisive voice in the formulation of resource policy in their areas.' The same must be achieved for non-tribals as well. As Prime Minister Rajiv Gandhi said to the United Nations on the adoption by the General Assembly of the Brundtland Report, 'The search for the right answers must go on relentlessly. It is a worldwide endeavour to which India pledges its unstinting support'.

Our job has been to make an assessment. We have done so. We have, in the course of our work, made many friends in India. We wish to assure them that our sole desire has been to find the truth and report it. We hope that our assessment may advance the search for constructive and creative solutions.

Chapter 17: Findings and Recommendations

We have completed an assessment of resettlement and environmental aspects of the Sardar Sarovar Projects. In this chapter we draw together the findings of our review, already explained in the preceding chapters, and set forth the recommendations which, in our judgment, are appropriate to these findings.

The Findings

Resettlement and Rehabilitation

- The Bank and India both failed to carry out adequate assessments of human impacts of the Sardar Sarovar Projects. Many of the difficulties that have beset implementation of the Projects have their origin in this failure.
- There was virtually no basis, in 1985, on which to determine what the impacts were that would have to be ameliorated. This led to an inadequate understanding of the nature and scale of resettlement.
- This inadequate understanding was compounded by a failure to consult the people potentially to be affected.
- Failure to consult the people has resulted in opposition to the Projects, on the part of potentially affected people, supported by activists. This opposition has created great obstacles to successful implementation.
- In drafting the terms and conditions of the 1985 credit and loan agreements, the Bank failed to take adequate account of the fact that a large proportion of those at risk from the development of the Sardar Sarovar Projects are tribal people. This meant that insufficient account was taken of the principles enshrined in the Bank's 1982 Operational Manual Statement outlining its policies regarding tribal people.
- In these and other ways, the Bank failed to follow the principles and policies it set out in 1980 and 1982. In addition, the Bank's overarching principle embodied in the 1985 credit and loan agreements by which resettlement and rehabilitation were to be judged, namely that oustees improve or at least regain their standard of living as quickly as possible, was not consistently advanced or insisted upon with sufficient force or commitment.
- The Bank failed to consider the effects of the Projects on people living downstream of the dam. We recommend that the Bank develop a policy to deal with the plight of persons affected downstream. They may not come within the rubric of resettlement, but their situation should be addressed.
- As a result of both the inadequate database and the failure to incorporate provisions of the Bank's policies in the 1985 credit and loan agreements, the provisions for resettlement and rehabilitation do not adequately address the real needs of those to be affected.
- In particular, the agreements allowed a distinction between 'landed' and 'landless' oustees which failed to recognise the realities of life in the submergence villages.
- Similarly, the rights of encroachers were not acknowledged. The only way of implementing resettlement policy, at least in the case of the Sardar Sarovar Projects, in a way that restores oustees' previous standard of living is by provision of adequate land. This is of special relevance to the oustees of Maharashtra and Madhya Pradesh.

- The people of the six villages affected by construction and development of Kevadia Colony were not appropriately and adequately compensated. The Bank failed to ensure that this be done as required by the 1985 agreements. We recommend that the Bank require India to provide land for the families of the six villages, with an adjustment for cash compensation received in the interim, as appropriate.
- Relocation and resettlement of the people of the rock-filled dyke villages was implemented in a way that meant that the Bank's overarching principle of resettlement and rehabilitation, i.e., that no one should suffer a fall in standard of living, was not likely to be achieved.
- The Bank failed to ensure that those affected by construction of the canal and irrigation system would be entitled to resettlement benefits.
- We recommend that the Bank should use its good offices to ensure that Gujarat provides resettlement benefits to canal-affected persons, especially those farmers who are rendered marginal or landless.
- The policies of the riparian states failed to anticipate the needs of major sons, and adopted what we regard as an unduly restrictive interpretation of the Tribunal award's provision for major sons. Maharashtra and Madhya Pradesh continue to maintain this interpretation and provide inadequate benefits to major sons of landed families.
- In 1987-88 the Government of Gujarat expanded its resettlement and rehabilitation policies to provide two hectares of irrigable land to all oustees, including the landless, encroachers, and major sons. This represented a policy package that came nearer than any thus far set out anywhere in India to establishing a basis for successful resettlement.
- Despite Gujarat's improved policy, Maharashtra and Madhya Pradesh continued to limit the provision of two hectares of land to 'landed' oustees. This means encroachers and major sons (including the major sons of landed oustees) are not entitled to benefits in their own states that meet the Bank's overarching principle of resettlement and rehabilitation. The proportion of oustees thus vulnerable to a reduced standard of living is at least 60 percent.
- The disparity between Gujarat's policy and the policies of Maharashtra and Madhya Pradesh has meant that oustees' right to choose between relocation in Gujarat and their own state has been rendered meaningless.
- Implementation of resettlement in Maharashtra has been limited by both policy deficiencies and availability of irrigable land.
- Implementation of resettlement in Madhya Pradesh has been limited by policy deficiencies, inadequate institutional commitment, continuing failure of consultation, and limited availability of suitable resettlement land.
- This state of affairs in Madhya Pradesh has produced a situation in which, even if Madhya Pradesh were to adopt a policy with benefits equal to Gujarat's, such a policy could not now be implemented, given the time necessary to meet the requirements of the Sardar Sarovar Projects.
- Resettlement of oustees in Gujarat has entailed a scattering of families and villages among many different sites. This is in part a result of choices made by oustees. It is also a result of inadequate land at resettlement sites to accommodate all oustees who wish to have land there. This has contributed to some separation of families, especially in the case of oustees from the rock-filled dyke villages.
- Gujarat is unlikely to be able to resettle a large proportion of oustees from Maharashtra and Madhya Pradesh. Even if land were available for relocation sites, resettlement and rehabilitation at these sites presents major problems.
- The record of resettlement and rehabilitation in India, which has been unsatisfactory in virtually every project with a large resettlement component, should reasonably have prompted the Bank to adopt a less flexible standard for resettlement and rehabilitation of project-affected people. In this context, the Bank's incremental strategy to obtain compliance, made explicit in 1989, greatly undermines prospects for achieving successful resettlement and rehabilitation.

Environment

- Measures to anticipate and mitigate environmental impact were not properly considered in the design of the Projects because of a lack of basic data and consultation with the affected people.
- The Bank's appraisal took no account of the fact that environmental clearance in India was not forthcoming in 1983 from the Ministry of Environment and Forests because of insufficient information.
- Under the 1985 credit and loan agreements, the Bank required an environmental workplan to be developed by the end of 1985, later extended to 1989. It is still not available, resulting in a disjointed, piecemeal approach to environmental planning that is both inefficient and ineffective.
- In 1987 India's environmental clearance for the Projects was given, despite the fact that the information required prior to the Projects' clearance was unavailable. In order to overcome this deficiency, studies were to be conducted *pari passu* with construction. The clearance was conditional on completion of these basic studies by 1989. Most remain to be completed. We believe that the *pari passu* policy greatly undermines the prospects for achieving environmental protection.
- Significant discrepancies in the hydrological data and analyses indicate that the Sardar Sarovar Projects will not perform as planned either with or without the upstream Narmada Sagar Projects. A realistic operational analysis of the Projects upon which to base an impact assessment has not been done.
- The cumulative impacts of the Sardar Sarovar Projects together with the related upstream developments, especially the Narmada Sagar Projects, are very likely to be far reaching, yet they have not been studied.
- The afforestation and catchment area treatment programs proposed upstream are unlikely to succeed within the timetable of the Projects because of the lack of consultation with, and participation of, villagers in the affected areas.
- The compensatory afforestation approach being taken by Gujarat in Kachchh, if continued, will lead to a steady decline in the quality of forests. The practice of replanting marginal forest lands in substitution for better lands that will be submerged, means that the forests will be diminished in value.
- The impact associated with the backwater effect of sedimentation in the upper reaches of the reservoir has not been considered. Our assessment has concluded that it will be significant.
- The downstream ecological implications of dam construction have not been considered. Important but limited data have only recently begun to be collected. The downstream impacts are likely to be significant, including severe losses to, if not the elimination of, the last important hilsa fishery in western India.
- There has been no comprehensive environmental assessment of the canal and water delivery system in the command area. Information we have gathered leads us to believe that there will be serious problems with waterlogging and salinity. We also found that many of the assumptions used in project design and for the development of mitigative measures are suspect.
- Despite the stated priority of delivery of drinking water, there were no plans available for review.
- The existing threat from malaria within the command area is serious. The Projects have been designed and executed without appropriate safeguards. The failure to adopt measures to reduce the likelihood of the spread of malaria illustrates the breakdown between assurances offered by the Bank and India and the reality on the ground. We recommend that the Bank use its good offices to ensure that preventive measures are taken as a matter of urgency to address the public health problems posed by water-borne diseases in the Projects area.
- The newly proposed Narmada Basin Development Project, although it appears to address some of the problems highlighted in our review, fails to address key issues, many of which are the same as have caused problems with the Sardar Sarovar Projects. Although some specific elements have merit, the Basin Development Project adopts a piecemeal approach, falling far short of the work that the Bank's own missions have said is needed for proper basin development. The implications of Narmada Sagar for basin development are overlooked.

- Bank requirements that the Basin Development Project not entail forced relocation and proceed on the basis of a participatory approach to forest management and catchment area treatment, as proposed, are laudable but unrealistic, given the hostility towards the Projects in the region and the time frames envisaged by the Projects.

The Bank

We have made findings that reveal a failure to incorporate Bank policies into the 1985 credit and loan agreements and subsequent failure to require adherence to enforceable provisions of these agreements. Much of what has gone wrong with Sardar Sarovar Projects is the result of such failures over a range of resettlement and rehabilitation and environmental matters.

How did this happen?

It is apparent that there has been, and continues to be, deep concern among Bank officers and staff that India should have the means to enhance agricultural production. The Sardar Sarovar Projects were seen as offering enormous benefits, especially in terms of delivery of drinking water and irrigation.

There developed an eagerness on the part of the Bank and India to get on with the job. Both, it seems, were prepared to ease, or even disregard, Bank policy and India's regulations and procedures dealing with resettlement and environmental protection in the hope of achieving the much-needed benefits.

Experience worldwide, in developed as well as developing countries, has shown that by factoring in and allowing for human and environmental considerations at the outset, projects can be substantially improved. To be effective, resettlement and environmental planning must be integrated into the design of projects; otherwise they become costly and burdensome add-ons.

These considerations lead to an examination of issues that focus on the Bank itself. Our work in conducting the independent review has encouraged us to make a number of observations which may be of value.

Embedded in the World Bank's operational directives is a resolve to establish *ex ante* project assessment. This requires an investment by the Bank of time and money and personnel with appropriate expertise, with on-the-ground studies and consultation as part of the planning of a project.

There should be a review of Bank procedures to ensure that the full reach of the Bank's policies is being implemented. The Bank should establish whether the problems we have found in the case of Sardar Sarovar are at issue in other projects in India and elsewhere. Our findings on this project may well indicate a need on the part of the Bank to strengthen quality control.

The Projects

The Terms of Reference provided that our assessment should include, as appropriate, recommendations for improvement of implementation. The absence of proper impact assessments and the paucity of undisputed data have limited our ability confidently to make project-specific recommendations of the kind that were contemplated. We have limited ourselves to recommendations with respect to the Kevadia villagers, the canal oustees, downstream policy, and the protection of public health, that should be carried through regardless of the fate of the Projects.

Our findings indicate that the Sardar Sarovar Projects are beset by profound difficulties. These difficulties have their genesis in the earliest phase of the Bank's involvement in the Projects, for they turn on the absence of an adequate database and failure to consult with the people whose lives and environment were and continue to be affected.

Lack of data meant that the Bank was not able, in the early 1980s, to appraise the Projects properly. No one is sure about the impacts of the reservoir and the canal on either people or the land. Without knowing what impacts were likely to be, we found it difficult to the point of impossibility to assess measures by which they might be mitigated; much of our work has therefore been devoted to gathering our own limited information base.

People who live in the villages and depend on the resources of the valley should have played a central part in determining the Projects' impact. Both their knowledge and their vulnerabilities are integral to any understanding of what is at issue. At the same time, failure to consult has fuelled intense opposition to the Projects which, as we have pointed out, has itself become a serious obstacle to design and implementation of mitigative measures.

These factors – absence of adequate data, failure of consultation, and hostility towards the Projects in the Narmada Valley – bear on every aspect of implementation. Our Terms of Reference invite us to recommend measures to improve implementation. It seems to us that the essential condition, the very starting point of any such recommendation, requires that these underlying difficulties be addressed.

But the underlying difficulties – the failures that reach back to the origin of the Projects – cannot be overcome by a patchwork of studies. The limited information base which we constructed is inadequate for the purpose. Nor is it a question of applying more intense pressure to Maharashtra and Madhya Pradesh in order to secure improved resettlement policies. As we say, the difficulties are profound. The Bank's incremental strategy and India's *pari passu* policy, adopted to deal with resettlement and environmental problems, have for the most part failed. A further application of the same strategy, albeit in a more determined or aggressive form, would also fail. As long as implementation continues in these ways, problems will be compounded rather than mitigated.

Absence of human and environmental assessment *ab initio* creates the impression that the demands of engineering carry far more weight in the Bank than the needs of the people to be affected or of the environment. The Bank's incremental strategy (and the Bank's concurrence in India's *pari passu* policy) strengthen this impression. Readiness to bear with non-compliance thereafter confirms it.

Decisions as to the future of the Sardar Sarovar Projects and the Bank's participation in them 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 Sarovar Projects have become mired. We have been at pains in the section of this chapter summarizing our findings to demonstrate how those problems of human and environmental impact encompass all aspects of the Projects, including the uncertainties of hydrology, the upstream questions, the impact downstream, the command area issues, the health risks, the deficiencies in resettlement policy and implementation in each of the three states as well as the canal. None of these issues can be ignored.

It seems to us that the matters we have raised are fundamental. It would be prudent if the necessary studies were done and the data made available for informed decision-making before further construction takes place. Implementation requires that the Bank take a step back. Otherwise, the possibility of making sound decisions will be further compromised.

Little can be achieved while construction continues. What would a step back achieve? First, it would afford an opportunity to design the kinds of human and environmental impact studies that are still needed. Second, it would permit the assessment of the results of such studies, to see whether modifications of the Projects might be in order. Third, it would provide a chance to consider what resettlement and rehabilitation policies might meet the needs of the oustees, and how these could be implemented in a way that is consistent with the Bank's policies and principles as set out in its Operational Manuals and Directives.

Even though proponents describe Sardar Sarovar as the most studied and least implemented project in India, we do not agree. The Projects may well be the most talked about in India, but the fact is that their human and environmental consequences have not been studied, and their engineering, design, and operation would profit from further analysis.

There is a need to consider Sardar Sarovar in the social and environmental context of the Narmada valley as a whole, to consult, inform, and involve the people affected by the Projects throughout the Narmada valley, those affected in the command area, and those living downstream. The opposition, especially in the submergence area, has ripened into hostility. So long as this hostility endures, progress will be impossible except as a result of unacceptable means.

A way must be found to rebuild confidence, to demonstrate goodwill, and to send out an unambiguous message that the Bank continues to be committed to its principles and its policies.

Reflections

In the case of the Sardar Sarovar Projects, India has bound itself to meet standards for resettlement and rehabilitation more exacting than any it had agreed to in the past.

We do not expect perfect justice; in an imperfect world it cannot be obtained. There is no doubt that in the national interest, people can be required to resettle. However, India, in conformity with the development of international standards of human rights, has subscribed to certain minimum conditions that must be observed even when the national interest is involved. They reflect the inalienable human rights of the oustees. We believe that these norms must be adhered to.

Nor do we insist upon an unattainable standard in environmental impact assessment and mitigation. However, to construct the Sardar Sarovar Projects, India has availed itself of world-class engineering technology. Should it settle for less than adequate standards in the application of social and environmental science?

We are aware of the statement in the eleventh principle of the Rio Declaration presented to the 1992 United Nations Conference on Environment and Development:

Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

But the environmental standards for the Sardar Sarovar Projects were established by India itself. On the resettlement side, standards were determined by the Narmada Water Disputes Tribunal and agreed to by India and the states in the credit and loan agreements.

We have felt obliged to illuminate what we think are flaws in the Sardar Sarovar Projects. It should not be thought that these would only be found in India or confined to the Sardar Sarovar Projects. The fragile assumptions which have supported this project can be found elsewhere. Failure to consider the human rights of the displaced and failure to consider environmental impacts occur in the development of megaprojects in both developed and developing countries.

If the human rights obligations identified by ILO Convention 107 and in Bank policy are acknowledged and respected, if the commitment to the environment is real, and if these are properly integrated into project design at the outset, more effective and equitable development will ensue. Some believe that these requirements make it more difficult, often more costly, to build megaprojects like Sardar Sarovar. This implies that human and environmental costs are to be heavily discounted in project planning and execution. But hard lessons from the past have taught us that this is unacceptable. In some cases it may be that alternatives to projects that cause compulsory relocation on a large scale or severe environmental impact may have to be sought.

We have found it difficult to separate our assessment of resettlement and rehabilitation and environmental protection from a consideration of the Sardar Sarovar Projects as a whole. The issues of human and environmental impact bear on virtually every aspect of large-scale development projects. Ecological realities must be acknowledged, and unless a project can be carried out in accordance with existing norms of human rights – norms espoused and endorsed by the Bank and many borrower countries – the project ought not to proceed.

The Bank must ensure that in projects it decides to support the principles giving priority to resettlement and environmental protection are faithfully observed. This is the only basis for truly sustainable development.

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