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*Sardar Sarovar Project*  
PROGRESSING AMIDST CHALLENGES

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GOVERNMENT OF GUJARAT

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*October, 1992*

## **SARDAR SAROVAR PROJECT PROGRESSING AMIDST CHALLENGES**

Sardar Sarovar Project, visualised by the great leader Sardar Vallabhbhai Patel, and a hope of millions of people in the western region of the country, is today progressing fast on one side, whereas on the other, the challenges are also increasing manifold particularly after the report of the Independent Review Team led by Mr. Bradford Morse. It is ironical that such a respectable international figure was dragged into signing a report which is totally biased and without suggesting any improvement for which the IRT was appointed by the World Bank. In fact, Gujarat and all the 3 beneficiary States were expecting innovative and thought-provoking suggestions from the IRT, so that Gujarat can still improve the measure of rehabilitation and environment. But it is sad that hopes of millions of people were forgotten.

### **Progress of the Project :**

Despite the challenges and hurdles being created every day by the activists, the progress of the project is satisfactory and as per the planned schedule. Till August '92, Rs. 2,053 crores have already been spent. The technical works in the first phase of SSP are accelerating. Against the 60.78 lac cubic metres of excavation for main dam, 47 LCM i.e. 77% is already over. Similarly, for concreting of the dam against 63.20 LCM of total quantity, 26.95 LCM i.e. about 40% of the work is already over by now. For the main canal in Phase-I from 0 to 144 kms, against the earthwork of 944 LCM, 673 LCM, i.e. 71% and for the lining work against 155 LSM, 61 LSM i.e. about 40% is already completed. For the Power house, open excavation is almost 100% over and underground excavation is 78% over. Similarly,

in the Branch Canals, also in the first phase, works are being accelerated. This gives a picture that people of Gujarat and Govt. of Gujarat are determined to finish the project in time.

#### **Need of the Project :**

Time and again, it has been explained why this project is badly needed for Gujarat. As is known, during last 31 years, after the formation of Gujarat, Gujarat has faced 10 droughts, i.e. once in every 3 years. In 1961 drought, 2,500 villages were affected, whereas in the 1987-88 drought, 15,000 villages were affected. Secondly, all the perennial rivers of the State namely Tapi, Narmada and Mahi as well as other small perennial rivers are located in South Gujarat from Kheda to Bulsar. The rainfall in the South Gujarat area is also good - 200 cms and above annually. Whereas North Gujarat is getting around 60 to 100 cms. annual rainfall and most part of Saurashtra and entire Kutch receive less than 60 cms annual rainfall. Thus, all the rivers in Saurashtra, Kutch and North Gujarat have some water only during the monsoon and thereafter for 8 to 9 months they are totally dry. the surface water resources in Gujarat are only 14% and ground water resources are 6%.

Salinity ingress has advanced upto 5 kms from the coastline in many areas of the State, as a result, the ground water in the coastal areas has become saline. The water levels in tube-wells in several areas have gone beyond 1,000 ft. Because of this, the number of villages getting fluoride content in waters are increasing, resulting into health hazards for the people.

According to Irrigation Commission report of 1973, 99 districts in the country i.e. 21% of total are declared as drought-prone. As against this, Gujarat has 12 districts

out of 19, i.e. 63% drought-prone, which is 3 times the national average. The SSP is covering 10 out of 12 such drought-prone districts. In fact 72% of the irrigation command area of SSP would be drought-prone area. This clearly tells about the utility and planning of this great project. There is hardly any other irrigation project in the country that has such a high percentage of drought-prone area under its command.

#### **Drinking Water Supply :**

Drinking water is very precious not only in the drought-prone years, but even in normal years. The people of Saurashtra, Kutch and North Gujarat in the districts of Amreli, Surendranagar, Jamnagar, Bhavanagar, Kutch, Banaskantha etc. have so critical time, particularly during drought years, that millions of cattle have to be migrated to South of Ahmedabad, where water is available. Scarcity means very heavy strain on the State and the people. 1985-88 scarcity meant a loss of Rs.5,000 crores of agricultural produce and Rs.1,500 crores expenditure to the State to provide work, drinking water and maintaining 16 lakh cattle incattle camps. The figures of huge expenditure and migration under the drought years have to be born in mind. The point here is that from the SSP, drinking water would be supplied to 135 urban centres and 8,215 villages of Gujarat including all the cities and villages of all the districts of Saurashtra and Kutch and all the no-source or inadequate-source villages of North Gujarat. This is being planned in much detail by the Gujarat Water Supply and Sewerage Board.

#### **Progress under Rehabilitation :**

Gujarat has a very liberal package for Rehabilitation and Resettlement of the Project Affected Persons (PAPs) and those PAPs from Maharashtra and Madhya Pradesh, who

want to settle in Gujarat, would also get the same benefits. The norms for individual benefits are listed hereunder :-

**Norms of Rehabilitation & Resettlement in Gujarat :**

1. Allotment of Land for Land for purpose of cultivation.
2. Grant of land for cultivation of the size equal to the area of land acquired, subject to a minimum of 2 Ha.
3. Every major son of the landed oustees would also be treated as a separate family and be entitled to land for cultivation.
4. Every joint holder and every major son of the joint holder would also be eligible for land for cultivation.
5. Every landless agriculture labourer in the area going under submergence and each of his major sons would be entitled to land for cultivation free of cost.
6. Every person cultivating by encroachment in the Govt. lands/forest in the area going under submergence and each of his major sons would also be eligible for land for cultivation.
7. Resettlement grant will be payable at Rs.750/- per family, the grant will be increased at 8 per cent per annum to account for escalation considering January 1980 as the base year for working out the increment.
8. Grant-in-aid is also payable, which is inversely related to the amount of compensation paid for the land acquired. This is also increased at eight per cent per annum taking Jan. '80 as the base year.
9. Every oustee family will also be paid subsistence allowance of Rs.15/- per day for 25 days a month for a period of one year from the date of actual

residence at the new village.

10. Where the oustee prefers to purchase private land for cultivation in preference to the cultivable land offered by Government, he would be assisted by a committee in settling a reasonable price for the lands. The amount in excess of the amount of compensation that he may have to pay towards the cost of the private land will be treated as ex-gratia.
11. The amount of compensation is not paid in cash to prevent frittering away of the money on consumptive expenditure. The amount is deposited in a Bank account in the name of the oustee.
12. 100% subsidy, limited to Rs.5,000/- is given to agricultural tribals to encourage them to avail of schemes under other development programmes and to own productive assets.
13. Insurance cover of an amount of Rs.6,000/- to the oustee family against accident and death.
14. Free plot of 90 ft x 60 ft. for each family for constructing a house.
15. Employment opportunity on priority basis.
16. Assistance for construction of plinths.
17. Cultivation assistance.
18. Construction of community latrines through N.G.Os.

Till July '92, total 5,058 PAPs have been allocated 2 ha. of land in Gujarat, which include 3,813 from Gujarat, 424 from Maharashtra and 821 from Madhya Pradesh. A total of 10,107 ha. of land has already been distributed. 4,120 PAPs have been given residential plots. 3,306 PAP families have been given productive assets amounting to Rs.1.6 crores and 4,519 families have been given subsistence allowance of Rs. 1.61 crores.

373 PAPs and their children have been provided employment. A great deal of progress is also achieved in providing civic amenities at the new sites, such as primary schools, wells, hand-pumps, roads, tree platforms, electrification, plinth etc.

16 NGOs of Gujarat are actively involved in the R&R work and they closely monitor the satisfactory implementation of this policy. The grievances and difficulties of the PAPs are patiently heard and they are solved to their satisfaction. The Government is so open that even the Chief Minister has made statements number of times for improving this policy even further, if there are concrete suggestions. The World Bank has also appreciated this R&R policy as one of the most liberal in the 3rd world countries. I again repeat that we are open for liberalising this policy even further in the interest of the PAPs.

#### **Environment :**

Several steps are taken for enhancing environment many times more than the loss. Against a total submergence of 4,523 ha. of forest land in Gujarat with 9,81,000 trees, Gujarat is to grow new forest in the non-forest area of 4,560 ha. in the drought-prone Kutch district. Besides this 9,300 hectares of depleted forests will be replanted under the project impact area plantation scheme, 27,204 hectares in catchment area forests and 3,025 hectares in non-forest catchment area, 235 hectares in dam vicinity forest and 225 hectares in dam area, canal sides plantation, project colonies plantation, ravines plantations etc. will cover 45,089 hectares for plantations against submergence of 4,523 hectares of forest area in Gujarat. Out of this, plantation in 16,350 hectares with 2,16,12,000 trees is already carried out before 31-3-1992.

The number of trees that would be planted would now be more than 100 times throughout the State. Not only

the Government but even the people of Gujarat have taken this as a sacred mission to plant trees wherever possible.

The IRT has charged that SSP would be an environmental disaster and that no studies are made on the impact of the project on environment. This is far from the truth. Total 48 environmental studies have been undertaken by SSP. Out of these, 22 studies were completed prior to the project clearance in 1988 by Government of India, 11 studies were undertaken after the clearance and they are since completed, 8 studies are ongoing and 7 more studies are proposed to be undertaken. The environmental studies are going on pari-passu with the progress of the project and all the recommendations of these studies are being implemented without any hesitation. The studies include the upstream environment, downstream environment including fisheries, wild life sanctuaries, afforestation, command area environment including water logging and salinity, health aspects, mathematical modelling of ground water upto Mahi, cropping pattern, wasteland development, benchmark studies of 62 talukas, migration, land used survey and mapping, archaeological, aspects, catchment area treatment, techno-economic study for using village tanks, area development strategies, water management, silting, drainage system, on farm development and many more. This proves that care is taken to study each and every aspect of environment which may have direct or indirect impact of SSP. But sadly, the IRT could not appreciate these studies and found no time to go into details of these studies.

#### **Submergence :**

The project submerges 1.65% of land compared to the land likely to be irrigated by it, compared to 25.5

per cent under Ujeni in Maharashtra, 29.7 per cent under Hirakund and 32.6% under Rana Pratapsagar of Rajasthan. Submergence per one megawatt of installed capacity of hydro power under S.S.P. is 24 hectares compared to 1,206 ha. in Shri Ram sagar, 1,875 ha. under Tilaiya and 3,313 ha. under Paithon.

Upper Krishna is also World Bank assisted project. Under that, total submergence is 8.8 per cent against 1.65 per cent in SSP. Submergence per storage of 1 million cubic metres of water is 16.55 ha. in Upper Krishna compared to 3.67 ha under S.S.P.

Against 1 ha of submergence, Upper Krishna would irrigate 11.35 ha. whereas S.S.P. would irrigate 54.85 ha. per submergence of 1 ha. Upper Krishna would submerge 37,436 hectares of which 31,818 hectares would be cultivated lands. SSP would submerge 34,867 ha. of which 11,279 would be cultivated land. Number of people affected would be 1,80,000 under Upper Krishna against 1,00,000 in S.S.P.

S.S.P. is serving 30 out of 76 scarcity affected talukas. 8 out of 11 desert talukas come under S.S.P. command.

52 per cent of beneficiaries are small and marginal farmers. 9.1 per cent of beneficiaries are Scheduled Caste and 8.7 per cent are Scheduled Tribe. There are 7 S.T. beneficiaries against 1 S. T. PAP.

#### Human Rights :

The project is charged by the IRT of violating human rights. This is ridiculous argument. When we are trying to rehabilitate the PAPs including the tribals in the best possible way, according to the decision of the Narmada Water Dispute Tribunal and improved by the Govt. of India, the World Bank and by the Govt. of Gujarat, were

is the question of human rights violation ? The FAPs are bound to have better quality of life after resettlement. On the contrary, I would tend to agree to a view expressed in the media that abandoning of SSP would be violating the human rights for depriving millions of people of water and 210 villages and city of Bharuch from the constant danger of recurring floods, which in one case resulted in the loss of 367 human lives besides lives of several cattle and destruction of several houses thereby depriving them of the right of living. The charge of IRT is nothing, but dragging the project into a legal controversy under the influence of the activists and thereby creating a wave of sympathetic opposition against the project at international level.

From the national point of view we have to bear in mind that but for large projects like Bhakra, India's foodgrains problem would have continued to depend on imports of food grains on a large scale. India has gone up from production of 53 million tons to 180 million tons in 40 years largely due to major irrigation projects. Punjab for instance, used to produce 3.8 million tons of foodgrains before Bhakra project. It now produces about 15 million tons.

Punjab has 1.5 per cent of India's area. It now produces 10 per cent of India's foodgrains. Gujarat with 6 per cent of India's area produces only 3 percent of India's foodgrains. It imports about 1.5 million tons from other States. After the completion of Sardar Sarovar Project, it is likely to overcome the deficit and produce about 1 million tons more than its current requirements. India's fast growing population needs equivalent additional foodgrains production to keep up the standard. Large dams like Bhakra alone can meet this demand adequately.

Limitation of coal, fuel, oil etc. and their contribution to environmental damage, demands hydro power, which is harmless and cheaper. This is possible only through large dams. SSP is very attractive from this point of view also, as it is likely to generate more power per hectare of submergence than many other projects. India has a hydropower potential of 84,000 megawatts. So far only 17,650 megawatts has been harnessed. SSP with only 24 hectares submergence per megawatt is very attractive compared to other projects with submergence of over 1,200, 1,800 and 3,000 hectares of submergence per megawatt.

Submergence ratio per million cubic metres of storage under medium dams in Gujarat is 24 hectares and 9.74 hectares under large dams, whereas it is 3.67 hectares per million cubic metres under SSP.

These dams contribute significantly to flood control as also economic development as Ukai has done in the case of Surat, which is no more suffering from floods and has developed tremendously industrially.

Storage capacity of large dams is substantially higher than that of small dams and tanks. In India large dams have achieved storage capacity of 14 million hectare metres. 8 million hectare metres will be added by those under construction and another 8 million hectare metres will be added by those under contemplation making a total of 30 million hectare metres compared to a total of 3 million hectare metres that is just ten per cent storage capacity created by the millions of small dams and tanks put together.

Some of the countries that are opposing the Sardar Sarovar Project have already executed many large dams wherefrom they are benefitted. U.S.A. has constructed 8,300 large dams. China has constructed 19,000. Japan

with 10 per cent of India's area has constructed 2,500 large dams whereas India has about 3,000 large dams.

Just as large dams are more advantageous from the point of view of less submergence per irrigated area and power generation, they are economically also more advantageous. Taking into consideration the capital cost, maintenance cost, expected life, average annual cost per hectare is Rs.600 per major dam, Rs.500 per medium dam, Rs. 935 per small dam and 1,040 for tuçewell.

Impact of river valley project on forests also is worth analysing. During 30 years between 1951 and 1980,

2.623	million hectares have been diverted to agriculture,
0.502	million hectares for river valley projects,
0.134	million hectares for industrial and urban expansion,
0.061	million hectares for transmission lines and roads,
1.008	million hectares for miscellaneous purposes,
Total	<b>4.328</b> million hectares for development purposes.

As against this 1.5 million hectares per year on an average are being destroyed illegally for fuel and other needs every year.

As far as CO<sub>2</sub> fixation is concerned fixation in the SSP command will be 70 times that being affected in the submergence area at present. That means instead of environmental damage it is likely to improve the environment.

The fear expressed about the economic viability of the project too is not justified. The world bank found out internal rate of return for SSP - 12 per cent in 1985. It is feared that rising costs would affect the rate of return. This is not justified as the rising prices of foodgrains and power more than compensate the rising cost of construction. Index number of wholesale prices in June 1992 compared to 1981-82=100 fully allay the fear of reduction in return due to the price rise.

Cement index went up to	221.2
Steel index went up to	220.4
Mechanical equipment went up to	251.9
Electrical equipment went up to	209.6
Transport equipment went up to	213.8

As against these, foodgrains prices index number went up to 244.6 and power 244.8

Therefore, rising prices do not affect adversely the benefit cost ratio.

In fact the Ajit Prasad Jain Irrigation Commission in its report in 1972 had recommended sanctioning of irrigation projects with just 1 per cent of benefit in case of scarcity areas. In the case of SSP, 72 per cent of the project area is scarcity affected and the benefit is 12 per cent of the cost.

Cost benefit ratio does not cover indirect benefits like drinking water supply, flood control, development of fisheries etc.

If the project is judged dispassionately from all these angles, there would be hardly any justification to putting up any further hurdles in the speedy execution of the project under any pretext.

It is often argued that Kutch and Saurashtra regions are likely to benefit only nominally due to SSP. It is true that Gujarat needed 22 million acre feet of water to meet its full requirement covering the desert areas of Kutch also and substantial areas in Saurashtra. However, the Tribunal allotted only 9 million acre feet of water to Gujarat. It dropped several needy areas out of the command. But Gujarat decided to allot priority to drinking water and therefore, decided to reserve 1.06 million acre feet of water allotted to it for drinking water purpose and cover the whole of Kutch and Saurashtra as also fluoride affected areas of North Gujarat with drinking water.

In Kutch about 6,56,000 hectares are actually cultivated. 37,855 hectares are to be covered by SSP. Currently 22,000 ha. irrigation potential is created in Kutch. Average actual irrigation during last 10 years is about 4,868 ha. SSP is covering over 7 times this area with irrigation. The total potential storage created by all the projects put together in Kutch is 0.21 million acre feet. Against this water allotted by SSP is 0.28 million acre feet that is much more than the created potential which is hardly filled up. For covering falls at 3 places and lifts at 2 places will have to be arranged for.

Similarly Saurashtra has actual cultivation in 36,68,300 hectares. 2,28,000 hectares potential is created through about 46 medium and major irrigation projects completed. 34 more are under execution. Total irrigation through these projects has been about 78,300 hectares on an average during the last years. As against this, SSP is going to cover 3,86,000 hectares i.e. about 5 times the existing irrigation. The storage capacity created so far is about 1.6 million acre feet in Saurashtra. Due to scanty rainfall most of this has to be used for drinking water only. As against that SSP will provide 2.43 million acre

feet of water to Saurashtra which is 50 per cent more than its total existing capacity and that is all dependable. Carrying water to Kutch and Saurashtra will have to be through 8 falls and 7 lifts costing Rs. 11,000 million and generating 87.4 M.W. of power and needing 149.49 M.W. of power for lifting water involving sizeable recurring cost. Water going to Kutch will be 3 per cent, Saurashtra 27 per cent and Gujarat 70 per cent. It is the same percentage as their population, but Kutch and Saurashtra will be irrigated through very expensive lift, cost.

Systematic campaign on national international level is going on against this project and despite clarifying all aspects of Narmada with facts, figures, related studies by national and international scholars/institutions, nothing has satisfied the activists. There are large number of examples in the world including the USA and Europe of having built large number of large dams and all have proved to be of great economic boon. Last example is of Aswan Dam in Egypt on river Nile. When it was coming up, it was opposed by the vested interests, so that Egypt cannot develop and remain poor and beggar. Now, after 50 years of completion of Aswan Dam, the UN experts are now telling that the quality of life of poor people and farmers in the command area of Aswan Dam has improved a great and the whole area has become prosperous.

It is not understood why some people turn a blind eye on such good examples and always try to pose negative aspects and negative thinking? I once again request all the people who are opposing SSP to sit together, to think of the large benefits which will go to the people of Gujarat and to suggest all possible measures to improve this great project and its policies. If this approach is adopted in our country, I am sure, we will certainly improve the quality of life of people.