Cry, the beloved Narmada

Baba Amte

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by Baba Amte

July 1989

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ANANDWAN - 442 914
Via Warora
Dist : Chandrapur
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Published by :

Anandwan 442914, via Warora
Chandrapur, Dist. Maharashtra
PIN : 442914

Cover Layout Design : Maruthanayagam

Printed at Nagaraj & Co., Madras-600 041.

I would like to begin from where I belong. The Narmada is a river of eternal beauty. So pure, so holy, that the mere sight of her absolves one of all sins. That has been the belief of our forefathers and it remains in the minds of millions who belong to her.

But today the word Narmada spells disaster. Her people have nowhere to go. From her cliffs, waterfalls, forests, streams and every ripple, there echoes the language of violence; all forms of life threatened with extinction. But she is our Lokmata. Will her mighty blessings help us yoke all our forces to shelter her ? Will we be able to blaze a divine halo around her that no power on earth can defile ?

Or will her cries never be heard again ? Will we bequeath to her only tombstones with a sad tale to tell ?

Baba Amte

To the People of India

A national obligation compels me to speak to the people of India. In September last year, over 300 citizens, comprising many of the most distinguished Indians of this era, submitted to the Prime Minister a Memorandum on the Narmada Valley Project (NVP). The Memorandum outlined a carefully documented case for undertaking a thorough reappraisal of the NVP. In my forwarding letter to the Prime Minister I wrote : " This is an expression of a truly national collective will by a large number of people and organizations... They are the voice of the nation. I would urge you to pay the most careful heed to the questions they have raised, the suggestions they have offered."

When I look back over the last nine months, however, I can only feel deep pain and disappointment at the manner in which the Government has responded. Far from taking the lead in promoting an open and well-informed debate on the issue, the Government has taken every conceivable step to crush the very possibility of meaningful dialogue. Its spokesmen have carried on a massive campaign of disinformation and misrepresentation regarding the essential facts of the project as well as the motivation and standpoint of those raising questions about it.

Immediately after the Memorandum was submitted, a virtual tirade was launched against the signatories. They were dubbed "anti-development, anti-Gujarat, armchair environmentalists" and worse. The witch-hunt reached its nadir with the Gujarat Government's petulant act in asking Mrinalini Sarabhai to resign as Chairperson of the State Handicrafts Corporation. In the frenetic hysteria that was whipped up by the politicians, the substantial issues raised in the Memorandum were totally obscured and lost from view.

What is worse, within a month the Government clamped the Official Secrets Act of 1923 upon the Sardar Sarovar Project (SSP). On October 18, 1988 twelve villages in the vicinity of the dam site, which were to be submerged by it, inhabited by thousands, were declared "prohibited places" under the Act - a day of shame not only for the Government but also for all those who believe in the protection of our fundamental rights under the Constitution. The sense of indignation was, I am sure, even deeper for those of my generation who fought for the country's freedom from colonial rule - that we had to live to see the day when a democratically elected government promulgates the same Draconian law which the British used to crush the people's struggle for freedom - and that too upon a multi-crore "development project" which could have a profound, incompletely understood and possibly disastrous impact on the lives of millions of our people.

The intentions of the Government became absolutely clear in the months that followed. Concerted efforts were made to undermine the fast-developing base of organizations which have been working for years to defend the rights of those being displaced by the dam. As wave upon wave of popular protest followed at the dam site, the Official Secrets Act was invoked to arrest, harass and abuse the activists. Particularly worthy of mention is the totally non-violent protest demonstration of February 22, 1989 in which nearly 10,000 people from the submergence areas of Madhya Pradesh, Maharashtra and Gujarat marched to the dam site. Completely unprepared for and unnerved by this massive show of people's power, the police resorted to brutal methods and even manhandled female activists including their tireless leader Medha Patkar. These actions must be seen in the context of the reported readiness of the Chief Minister of Gujarat to bring out troops if necessary to crush the rising crescendo of protests against the dam.

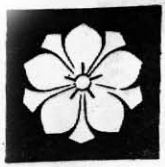
A reign of terror has been unleashed among the people inhabiting the neighbouring villages as well as the workers

employed at the dam site. The workers, principally migrants from Bihar, Orissa, Andhra Pradesh and Madhya Pradesh are said to be living in sub-human conditions. While it has been stated to be a dream of a member of the Planning Commissioon to develop Kevadia into a "modern science city", the reality is that the dam workers' colony languishes as a worse-than-typical slum settlement without even the minimum housing, water and sanitation facilities. The Chairman of the Public Accounts Committee of the Gujarat Assembly, after a visit to the colony went to the extent of telling the House that it had virtually been turned into a "Nazi concentration camp".

The workers went on strike to protest against these conditions and in favour of basic demands such as the implementation of Minimum Wages Act. An attempt was made to quell the strike by all means. On March 28, 1989 a violent assault was made on Thakore Shah, leader of the Baroda Kamgar Union which has organized the workers. Despite all the repressive tactics of the contractors, however, the strike went on at the dam site for nearly 3 months.

Finally, of course, the Official Secrets Act was used to make even more restrictive the already very tight control of Government over official documents pertaining to the project. Here, I would remind readers that in October last year, the Planning Commission cleared the SSP without a word being said in response to the Memorandum submitted to the PM only three weeks earlier. Greatly concerned at this development, I immediately wrote to the PM reiterating the fresh circumstances that had arisen in the decade since the Award of the Narmada Water Disputes Tribunal (NWDT) which make a review of the NVP absolutely imperative.

I wrote: "...It would be most instructive to know in what ways, if at all, these considerations have been taken into account by the Planning Commission in its own study. Hence, but even more crucially for ensuring proper public accountability, the en-



tire Planning Commission report, its data-base and the supportive documents on which it has relied, must be made easily accessible to the public". Till today the Planning Commission report has not been made public. The proceedings of the Narmada Control Authority (NCA) have been placed under a shroud of secrecy. As if the provisions of the Official Secrets Act were not enough, the Government also invoked its sweeping powers under the Customs Act to seize copies of a critical study on the NVP.

While muzzling the voice of dissent in this manner, the Government has at the same time made a series of utterly false claims about the project and tried to present the views of its critics in a distorted manner. It is this neo-Goebbelsian propaganda campaign that I will try to counter in the series of articles that follow. In so doing, I believe I will fulfill the sacred calling of true friendship to the people of Gujarat.

Recently, I have been very fortunate to enjoy their immense affluence of affection during the Knit India march. This ocean of affection inspires me not to fail in my difficult duty as a friend of Gujarat to tell a bitter truth. I fear with pounding heart that the SSP is arranging the funeral of an unaware Gujarat's future. When the vanguards of science and technology - USA, USSR and Japan - have recognized the hazards of big dams and are well on their way to implementing effective alternatives, Gujarat is plunging headlong and unprotected into the abyss of a fossilized technology. I humbly appeal to Gujarat to listen. It is a dear friend's caution.

Sardar Sarovar: A Financial Disaster

As I turn the pages of the Indian Express (1.3.89) a huge half-page advertisement by the Sardar Sarovar Narmada Nigam (SSNN) stares out at me : "...The Sardar Sarovar Project will close the chapter of water shortage once and for all..." A month earlier (2.2.89), in an article in the same paper the Chairman of the SSNN writes : "Seventy five percent of the command is drought prone areas. The problem of domestic water supply to arid areas of Saurashtra and Kutch would be solved permanently". In a booklet brought out by the SSNN (SSP : A Boon to Gujarat) a member of the Narmada Planning Group of the Gujarat Government says: "...most of the development in Gujarat has been concentrated in the rail-road corridor from Ahmedabad to Vapi....The most important function which Narmada Project is likely to perform is to transfer water resources in large quantities on sustained basis from South Gujarat to North Gujarat, Saurashtra and Kutch" (pp 4,8).

These statements repeated almost daily by the Government and its spokesmen constitute the most significant justification provided for the project and are probably the main reason for whatever support it enjoys among the people of Gujarat. A careful examination of the facts drawn from publication of the Government itself, however, reveals that each and every one of these statements is factually incorrect. It is my duty towards the people of Gujarat to see to it that they are no longer misled by this false propaganda of the Government.

Who will get water from the SSP

The Saurashtra region of Gujarat comprises 6 districts divided into 69 talukas. Of these, the districts of Jamnagar, Amreli and Junagadh comprising 35 talukas will get no water from the

SSP. Of the 13 talukas in Rajkot district only 2 will get water. What is more, 70 percent of the area of even these 2 talukas falls outside the gross command area (GCA) of the SSP. In Bhavnagar district only 5 out of the 12 talukas will get water. And about two-thirds of the area of even these 5 talukas is not covered by the SSP command. It is only in Surendranagar that 6 out of the 9 talukas are to get water and a significant proportion of these lies in the SSP command.

To sum up : *Of the 69 talukas in Saurashtra as many as 56 i.e. 81 percent, will not get any water from the SSP. Only 1 of the 6 districts and 10 percent of the talukas are to get substantial water from the SSP.* In Kutch district 5 out of the 9 talukas will not get any water. While the Government has not provided the detailed figures of

Table A
Distribution of SSP Water In Saurashtra

District	Number of Talukas			GCA as %
	Total	Getting no SSP Water	Getting SSP Water	of Taluka area*
Jamnagar	10	10	0	0
Amreli	10	10	0	0
Junagadh	15	15	0	0
Rajkot	13	11	2	30
Bhavnagar	12	7	5	36
Surendranagar	9	3	6	85
Total	69	56	13	-

* Gross Command Area (GCA) as percentage of total area of those talukas which are getting SSP water.

Source : ORG,1982 ("Regionalisation of Narmada Command", Operations Research Group, Baroda for the Government of Gujarat)

the percentage of each taluka's area covered by the SSP command we do know that *of the total culturable command area (CCA) of the SSP a mere 2 percent falls in Kutch.*

A more appropriate way of looking at these figures, perhaps, is to consider how much of the SSP water goes to the drought prone and arid areas of Gujarat. The SSP aims to provide water to 62 talukas in Gujarat. Of these 62 talukas, 14 have been classified by the Government as "drought-prone" and 8 as "arid". This is in accordance with the authoritative definition of drought-prone and arid areas provided by the National Committee on the Development of Backward Areas (1981). Thus only 22, i.e. one-third of the talukas which are to get water from the SSP, are drought-prone or arid.

Now let us look at the figures the other way around. Let us ask the question : how many of the total drought-prone/arid areas in Gujarat will get water from the SSP? There are 43 drought-prone and 9 arid talukas in Gujarat. Of these 52 talukas as many as 30 will not get a drop of water from the SSP. Among the 22 talukas which are to get water, 5 talukas in Bhavnagar, Panchmahal, Rajkot and Banaskantha will have only one-third or less of their area covered by the SSP command. Thus only 17 out of the 52 drought-prone or arid talukas of Gujarat will get significant amounts of water. To sum up : *About two- thirds of the 62 talukas getting water from the SSP are neither drought-prone nor arid; two-thirds of the 52 drought-prone or arid talukas of Gujarat get little or no water from the project.*

If we consider Saurashtra by itself, we find that 70 percent of the drought-prone talukas of Saurashtra will not get a drop of water from the SSP. As far as the claim of redressing regional imbalances is concerned, we may note that as much as half the CCA of the SSP lies in the relatively developed "corridor" districts of Ahmedabad, Bharuch, Vadodara and Kheda where an overwhelming proportion of Gujarat's present water resources are already concentrated.

The figures cited above are from the study, "Regionalisation of Narmada Command" conducted for the Government of Gujarat by the Operations Research Group, Baroda, 1982. They effectively destroy the Government's claims about permanently solving the water problem of Gujarat or Saurashtra or Kutch or making them "drought-proof". What is

Table B
Distribution of SSP Water in DPAP/DDP* Talukas of Gujarat

District	Number of DPAP/DDP Talukas			GCA as % of Taluka area**
	Total	Getting no SSP Water	Getting SSP Water	
DPAP:				
Amreli	8	8	0	0
Jamnagar	2	2	0	0
Panchmahal	7	6	1	5
Bhavnagar	3	2	1	13
Rajkot	5	4	1	38
Kutch	7	4	3	?
Ahmedabad	2	0	2	79
Surendranagar	9	3	6	85
DDP:				
Mehsana	2	0	2	97
Banaskantha	7	1	6	68
Total	52	30	22	-

* DPAP: Drought Prone Areas Programme
DDP: Desert Development Programme

** Gross Command Area (GCA) as percentage of total area of those talukas which are getting SSP water.

Source: Same as in Table A

even more disconcerting is that the SSP could end up actually worsening the situation. We have already seen that it is not even meant to provide water to the vast majority of Gujrat's drought-prone and arid areas. On top of that the SSP's financial burden will be so heavy that it will draw money away from various other schemes which could provide water to these areas. And finally it is more than likely that there will be no money left to build the branch canals of the SSP. Without these canals no one in Saurashtra and Kutch will get even a drop of water from the SSP.

I will now take a close look at the staggering financial dimensions of the project as well as the resource crunch facing Gujarat, to show that these are not in any way alarmist speculations but tragically very real possibilities.

Financial Dimension of the SSP

We must first take note of the fact that last year the construction programme of the SSP was completely rescheduled by the Government of Gujarat. This followed the report by C.C. Patel and Associates Ltd (CCPAL, July 1988) which was commissioned by the Government to examine ways of accelerating construction of the SSP. The Government's original time schedule of 17 to 22 years has been cut down to 10 years so that the final date of completion of the project has now been fixed as July 1998. While this was necessitated by the fact that following the original time-schedule would have rendered the project economically unviable,the new schedule has brought in its wake equally grave questions regarding the financial credibility of the project. This is quite apart from the virtually intractable practical problem of quickening the pace of construction activity to such an extent.

Project Cost: a Gross underestimation

The total final cost of the SSP (including physical contingency and cost escalation) has now been estimated as Rs.11,154 crores (CCPAL, 7.4). It is truly astonishing that although the

Table C: Financial Costs of SSP (Rs.crores)

Headworks :	
Main Dam	827.53
Narmada Sagar Dam	122.60
Vadgam Saddle Dam	83.67
Garudeshwar Weir	84.45
Rock-Fill Dam	10.94
River Bed Power House	809.21
Canal Bed Power House	153.72
Transmission System	70.17
Hydromet Network	34.21
Training Technical Assistance	4.13
Land Acquisition and Rehabilitation	476.41
Headworks Sub-Total	2,677.04
Canal System :	
Main Canal and Infrastructure	2,848.24
Branch Canals, Distribution Systems and Infrastructure	5,272.04
Training and Technical Assistance	129.08
Command Area	228.42
Canal System Sub-Total	8,477.78
Grand Total	**11,154.82**

Source : CCPAL, July 1988, Vol. II, Annex 7.3 "Review and Rescheduling of the Implementation Programme, Sardar Sarovar Narmada Project, Final Report, July 1988" by C.C. Patel and Associates Ltd., New Delhi (for SSNN, Government of Gujarat)

Comment : Rehabilitation and Command Area Development costs have been definitely underestimated as even studies and surveys let alone action plans are still not complete. Catchment Area Treatment and Compensatory Afforestation costs have not been included at all.

CCPAL estimate was made in July 1988, the Planning Commission while giving clearance to the SSP three months later mentioned Rs. 6,406 crores as the total cost of the project. However, even the CCPAL figure is a gross underestimate.

To take just a few examples : the latest reports of the NCA reveal that Madhya Pradesh has not even prepared rehabilitation

Table D

Year-wise Financial Costs of SSP (Rs. crores)

Year	Total. Costs	Share of. Gujarat
Revised Schedule:		
Upto 1986-87	321.82	223.21
1987-88	183.61	93.59
1988-89	362.99	250.13
1989-90	994.32	646.40
1990-91	1,430.83	951.06
1991-92	1,391.28	956.83
1992-93	1,255.94	1,030.83
1993-94	1,298.84	1,177.06
1994-95	1,503.15	1,407.97
1995-96	1,289.17	1,246.96
1996-97	749.41	736.07
1997-98	300.67	299.42
1998-99	38.58	38.58
Total upto completion	11,120.61	9,058.11
Old Schedule:		
Total upto completion (2008-09)	12,623.65	10,361.54

Note: For some unspecified reason, there is a minor difference in the figures for Total Costs in Tables C and D.

Source : Same as in Table C

survey reports for 85 percent of its submergi villages. This is really significant because 80 pe cent of the SSP submergence is going to be in M So the actual cost of rehabilitation will only l known after MP provides firm estimates regar ing the number of oustees, their land requir ments, where and how they are to be rehabilitated etc. For Con mand Area Development (CAD), so far studies have been con pleted for only about 25 percent of the SSP Command Area. Tl CCPAL estimate for CAD would have to be revised upwards onc these studies are completed. Even more significant, however, the complete omission by the CCPAL of any allocation for Catcl ment Area Treatment (CAT) and Compensatory Afforestatio CAT which has a vital bearing on the life of the dam has been pu into serious jeopardy because of an interstate dispute. These e amples provide sufficient evidence of the fact that the CCPAL ha underestimated the cost of the SSP

Mammoth Financial Burden on Gujarat

For the sake of the present analysis, let us leave question of underestimation aside and take the CCPAL figure as the actua project cost. The enormity of this amount can be gauged from th fact that it is as much as the total outlay on all major and mediun irrigation projects of the Centre and all the states in the entir Seventh Plan period. The amount is also nearly six times the entir money spent by Gujarat on all its irrigation projects in the last 2 years.

Let us now see how much of a financial burden the SSP' cost will prove for the Gujarat Government. In accordance wit the NWDT Award, MP, Maharashtra and Rajasthan are requirec to contribute Rs. 2,063 crores towards the SSP cost. Rs. 600 crore has already been spent on the project. Thus in the next nine years i.e. between 1989-90 and 1997-98, Gujarat has to muster about Rs 8,500 crores (CCPAL, Annex 7.3).

Where are these mammoth funds going to come from? The government has already turned abroad for help. However, so far only the World Bank with a promised loan of $450 million (about Rs. 720 crores) and Japan with assistance of $150 million (about Rs. 240 crores) have responded. One must also realize that the Central Government is strapped for resources and is not in a position to make special allocations for the SSP. The Ninth Finance Commission has already turned down Gujarat's request for a special allocation while making its financial awards to the states in 1989-90. Chances are that with the serious resource crunch all around there will be no

Table E
Sources of Finance for SSP

	(Rs crores)
Money Already Spent	600
Contribution of Madhya Pradesh, Maharashtra and Rajasthan	2,063
World Bank Loan	720
Loan From Japan	240
Public Bonds Scheme	2,500*
Total	6,123
Funds to be Generated by Gujarat Government by 1997-98	5,031
Total Costs per Revised Schedule	11,154

Source: Same as in Table C and Press statements of the Gujarat Government

*** Comment: Rs.2,500 crores is what the SSNN claims it will raise through public bonds. As shown in Table F in actual fact the SSNN will, in issuing these bonds have available for construction only Rs.850 crores during the first ten years and in the next ten years become liable to repay much more than it will raise.**

change when allocations are made for the Eighth Plan period (1990-95). We must also note here that the total Central contribution in the entire Seventh Plan period for all major and medium irrigation projects throughout the country was only a paltry Rs. 50 crores.

Ill conceived Schemes for Fund Mobilisation

The Chairman of the SSNN has said that it will raise money from non-government sources. He has mentioned, for example, loans from State Cooperative Banks and investments by Non-Resident Indians (NRIs). But nothing substantial can be obtained from either of these. The Gujarat Urban Cooperative Banks Federation, which hoped to provide the SSP with a loan of Rs. 200 crores, has been told by the Reserve Bank of India that banking guidelines do not permit the use of cooperative bank deposits in this manner. Then the ubiquitous NRI, on whom everyone pins so much hope, has in the past rarely shown any eagerness to make domestic investments on a large scale. He has always preferred to put his money in the fully repatriable foreign exchange schemes of Indian banks.

But both these are relatively minor sources compared to a grandiose plan of the SSNN: raising Rs.2,500 crores in the Eighth and Ninth Plan periods (1990-2000) through mobilization of public deposits and more so through issue of bonds. The Centre has yet to grant permission for the bond scheme. However, even if the SSNN were successful in raising so much money, rather than easing the situation this would paradoxically end up placing an even greater strain on government finances.

The Bond Scheme - a Trap

Let me explain how. The Chairman of the SSNN claims that the SSP will earn a "good income". But let us not forget that while a few central power corporations do show financial viability, no multi-purpose river-valley project in India has ever raised enough revenue to cover even annual working expenses,

Table F
Why the SSNN Bonds FinanceScheme is Really a Debt Trap

Year	Money Raised (Rs.crores)	Money to be Paid Out Interest + Principal (Rs.crores)	Net Inflow (Rs.crores)
1	250	30 + 0	+220
2	250	60 + 0	+190
3	250	90 + 0	+160
4	250	120 + 0	+130
5	250	150 + 0	+100
6	250	180 + 0	+ 70
7	250	210 + 0	+ 40
8	250	240 + 0	+ 10
9	250	270 + 0	- 20
10	250	300 + 0	- 50
Sub-Total	*2,500*	*1,650 + 0*	*+850*
11	-	270 + 250	-520
12	-	240 + 250	-490
13	-	210 + 250	-460
14	-	180 + 250	-430
15	-	150 + 250	-400
16	-	120 + 250	-370
17	-	90 + 250	-340
18	-	60 + 250	-310
19	-	30 + 250	-280
20	-	0 + 250	-250
Sub-Total	-	*1,350 + 2,500*	*-3,850*
Grand Total	**2,500**	**3,000 + 2,500**	**-3,000**

Note: The above calculations assume:

- a 12 % per annum rate of simple interest
- that the bonds are repayable 10 years after issue

let alone earn a return on capital invested. So what will happen if the SSNN issues Rs.2,500 crores of bonds over a decade? Let us project the possible scenario.

Suppose the SSNN issues bonds worth Rs. 250 crores every year for the ten years, 1990-2000, at a minimal 12 percent simple interest per annum. The total interest payments for this bonds issue of Rs.2,500 crores will come to Rs.1,650 crores in this period. Thus what the SSNN will really get during 1990-2000 is only Rs.850 crores. From the next year onwards the SSNN will have to start repaying the principal also. This will continue till the year 2009-10. The total repayment (interest + principal) during 2000-2010 will come to Rs.3,850 crores. Thus in trying to raise Rs.2,500 crores by way of bonds, the SSNN would end up becoming liable to repay Rs.5,500 crores over twenty years.

In this situation the SSNN will have to turn to the Government of Gujarat for funds to service its staggering debt. But will the State Government be able to bail out the SSNN? Most unlikely because this is a government whose financial situation is worsening by the year. Since 1986-87 it has been coming up with larger and larger budgetary deficits every year (1988-89 deficit - Rs.340 crores). Its present annual debt service liability is of the order of Rs.350 crores. The mobilization of fresh tax revenue is close to impossible. Gujarat is already one of the highest taxed states in the country. And as the State Government's retreat this year following public protests over levy of new taxes to fetch a paltry Rs.68 crores shows, there is little scope to meet the commitments on bond finance in this manner.

The SSNN may yet decide to pursue this reckless course of issuing Rs.2,500 crores of bonds and let us for the sake of the SSNN assume that a divine miracle saves it from the debt trap spoken of above. Yet Gujarat has no escape from a serious financial crisis.

Gujarat Faces Bankruptcy and Stark Neglect of Vital Sectors

Despite the bond issue a considerable amount will have to be still raised by the Gujarat Government in the next nine years (by 1997-98): about Rs.5,000 crores - assuming that somehow Rs.2,500 crores do get raised through bonds (wishing away the Rs.1,650 crores interest payment), Rs.240 crores come from Japan and the Rs.720 crores loan from the World Bank comes through in full. This means that Gujarat must find from somewhere an additional Rs.600 crores for the SSP every year for the next nine years, apart from all the contributions we have already mentioned.

When we examine the documents of the Gujarat Government we find that its annual plan allocation for all major and medium irrigation projects during the Seventh Plan was on an average only Rs.294 crores. The absurdity of the situation becomes obvious when we realize that Gujarat would have to first find twice this amount of money every year for the next nine years and then channel it exclusively to meet the requirements of the SSP. And what will then happen to Gujarat's other irrigation projects some of which, like the proposal to pipe water across the Gulf of Cambay from Bharuch to Saurashtra, could be of vital significance to the people of this area which hardly gets any water from the SSP? The fate of this project, currently estimated to cost Rs.600 crores, can be imagined if the Government single-mindedly goes ahead with the SSP. If such projects are to be protected and the SSP finished in nine years the axe would then have to fall on vital sectors like Health, Housing, Education etc. Are the people of Gujarat going to allow the Government to jeopardize their lives in this manner?

Surely not and so, not withstanding all the rhetoric, it is clear that the SSP can never be completed according to the revised schedule. Any attempt to do so can only lead to the Gujarat Government falling over the precipice of bankruptcy. Indeed far from being speeded up, it is much more likely that the completion

of the SSP will go beyond even its original time-schedule. This has in fact, been the fate of each and every large scale irrigation and power project in the country so far.

Even according to the original time-schedule, the Gujarat Government needed to raise about Rs.9,100 crores over the next thirteen years (1989-2002) of peak construction activity (CCPAL, Annex 7.3 A). Generating Rs.700 crores per year for thirteen consecutive years would be as much beyond the means of the Gujarat Government as the raising of Rs.8,500 crores over nine years according to the revised schedule. And the Report of the Comptroller and Auditor General for 1986-87, released recently, provides startling evidence which further strengthens this possibility of delay by raising serious questions about the way the work is proceeding on the SSP.

Severe indictment by Comptroller & Auditor General, Estimates & Public Accounts Committee

The Report of the Comptroller & Auditor General lists several instances of the way resources are being squandered by the Government. For example, in April 1986, the government ordered utilization of 1,270 tonnes of sub- standard cement (cost Rs.10 lakhs) in the dam, canals and colonies, ignoring findings of the Gujarat Engineering Research Institute, Baroda, and the Narmada Project Laboratory which clearly showed that the cement did not have the required compressive strength. The Government also failed to make the cement company agree to replace the cement or reduce its price.

The Report reveals that in 1983 and 1984 the Government purchased 803 tonnes of mild steel angles. Even at the end of September 1987, 90 percent of the angles had not been used. "The injudicious method of procurement of MS angles without reference to likely requirement" resulted in the waste of Rs.45 lakhs. A similar amount was lost in the purchase of 6 vibratory compactors in 1982 which were never used for the SSP. The Report describes

this investment as "injudicious and without reference to requirement". Examples of "avoidable" expenditure and that incurred "without obtaining technical sanction or budget provision" worth crores of rupees abound in the Report (pp 242- 49, 265).

The Auditor General's views find strong confirmation in the latest reports of the Estimates Committee and the Fourteenth Report of the Public Accounts Committee (March 1989) of the Gujarat Assembly which were tabled in the House recently. The Public Accounts Committee was extremely anxious to know how far the Government had taken steps to remove existing "drawbacks in the system of purchase of machinery and spares and their storage.... Considering all aspects of the case, the Committee has no hesitation in concluding that the Narmada Development Department has not drawn any lessons from the drawbacks pointed out by the PAC in the case of Ukai Project even though it was recommended specifically to do so by it." When the Committee visited the dam site on September 13-14, 1988, it "was shocked when it saw imported machinery lying idle in the open land under the sky, with dust mounted on them, which were unused or negligibly used" (pp17-18). All these reports must surely dampen the enthusiasm of the people of Gujarat to invest in the project, while at the same time placing serious question marks on its being able to keep to the planned time-schedule.

Disastrous Consequences of Delay and Incompletion

The consequences of such a time-overrun would be utterly disastrous. The World Bank in its Economic Appraisal of the SSP (SAR Report 5108 IN) has calculated that a delay of 22 percent (4 years) over the original 17 year schedule will lead to costs exceeding benefits, *making the project worthless in economic terms*. The CCPAL report confirms this calculation. "For 17-22 year schedule, the benefits are delayed considerably and cost escalation is also higher. These two factors have seriously affected the economic

viability... net benefits aggregate to a negative figure which indicates benefits are less than costs" (7.5, 7.6). The report shows that net present value of costs exceeds that of benefits by Rs.385.29 crores (Annex 7.4 A).

Alternatively it may happen that the SSP is left incomplete - full development of the main and branch canals to Saurashtra and Kutch may never be undertaken. Considering the long-standing experience of irrigation projects in Gujarat as well as India as a whole, this possibility must be regarded as the *rule* rather than the exception. Thus even the few scarcity-hit areas of Gujarat which were supposed to get water from the SSP would also get left out. At the end of the day the people of Gujarat would be left wondering why in the first place they ever embarked upon this project of destruction!

Sleight of Hand to Justify Project

Given the patent financial unviability of the project, readers may wonder how it was ever given economic approval by the Government. The Planning Commission report giving clearance to the SSP has, of course, been kept top secret so far. We have, however, with some difficulty been able to procure the economic appraisal of the SSP conducted for the Gujarat Government by the Tata Economic Consultancy Services (TECS). A careful reading of the report shows that its approval to the SSP crucially hinges on one key assumption : that if the SSP were not undertaken agriculture in Gujarat would not develop at all. To quote the TECS report :

> "Without the project, agricultural development will take place, its magnitude depending on alternative courses... These courses of action may range from passive to the most active. In the passive concept, the future development may be visualized as an extension of trends in the past...In the concept referring to the most active course of action, Government may consider other irrigation projects including medium and minor projects...For the

purpose of this study, the passive concept of development is considered relevant. Consideration of any active course of action...will be simply impracticable, apart from its irrelevance" (p 12)

This stunning methodological confession right at the beginning of the report is a complete give-away of the trick by which the "net benefits" (i.e.,benefits available from the project *minus* those available without it) have been exaggerated. The TECS has assumed that if there is no SSP, the growth rate of agricultural yields in Gujarat will totally stagnate for 40 years between 1991-92 and 2031-32. In this manner it is easy to inflate the extent by which the SSP will *increase* agricultural productivity.

Is it, however, realistic to assume that the SSP in its present form is the only possible means of irrigation or agricultural development over the next 40 years? What about the possibility of a lower SSP, lift irrigation, development of dry farming technology, greater emphasis on water conservation methods and a consequent recharging of groundwater resources over the next four decades? Are these to be completely ruled out of hand - are they irrelevant? Whether or not alternatives exist, is something that needs to be thoroughly investigated and not assumed away at the very outset in a premeditated attempt at justifying investment in the SSP.

Even if the TECS were not to visualize alternate scenarios in detail, it should at the very least have conducted a sensitivity analysis to test whether its assumption of stagnation without the SSP can be considered reasonable. Sensitivity analyses are always an integral yet elementary aspect of all cost -benefit studies which tell us how much confidence we can place in our conclusions. For instance, the sensitivity analysis could reveal that it is not worth going ahead with the project under consideration if the actual situation is likely to deviate greatly from the assumption we have made. To go ahead with the project fraught with such dangerous possibilities - some known, so many unknown - without even evaluating it properly can only be regarded as a monumental

fraud upon the people who are being asked to pay for it - whether in the form of additional taxes or cuts in vital programmes or by being rendered homeless and devastated socially.

The Planning Commission Must Come Clean

It is, of course, the ultimate irony of history that 6 years after the TECS completed its study, a path-breaking evaluation by the Government of India's Department of Environment and Forests (DEF) rendered the conclusions of the TECS study completely invalid. I refer to the DEF's estimate of the "environmental cost of loss of forests" which it placed at a staggering Rs. 30,923 crores for the NSP and Rs. 8,190 crores for the SSP! The inclusion of these figures in the benefit-cost evaluation, of course, makes it quite impossible for either project to satisfy the Planning Commission's benefit-cost ratio stipulation of 1.50:1. Considering how defenceless these estimates leave the Government, it is perhaps no wonder that the Planning Commission thought it safest to hide behind the cover of the Official Secrets Act while withholding the contents of its own report granting clearance to the SSP. If, even at this late hour, the Planning Commission is to retain its credibility as the watchdog of the nation's economic interests, it must take courage to come clean and face the consequences of a public debate on the issue.

The Farce of Conditional Environmental Clearance

In 1987 the SSP and the NSP were being considered for sanction from the environmental angle and under the Forest Conservation Act of 1980. The Union Department of Environment and Forests (DEF) had then in a note to the PM stated : " In an objective sense the NSP is not ready for clearance from environmental angle... it is neither desirable nor recommended that the SSP should be given approval in isolation". However, it went on to state that in case these projects were cleared despite this gross lack of preparedness it must only be on the stringent condition that environmental safeguards are implemented *pari passu* with their construction.

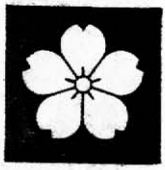
The DEF wanted a Narmada Management Authority to be set up which " should not be just a Monitoring Committee to be treated as a doormat but should possess the authority to stop the engineering and other works by all means including withholding of sanctions, approvals, tenders, contracts and funds to ensure that the Environmental Management Plan gets implemented as per the approved plans and time schedules. The power to withhold funds should be applicable to the funds made available from the states, the centre and foreign agencies." Despite the DEF's strong stand I suspected even then that the conditional clearance would be the first step on the path of retreat which would eventually lead to a complete forsaking of the environment.

Sadly, events since have proved me right. No sooner had the ink run dry on the DEF note than the teeth were removed from its proposals. This followed a specious plea by the Union Ministry of Water Resources (MWR) that "it seems more appropriate to rely on the persuasive powers of a high level monitoring committee".

The Narmada Control Authority (NCA) is entirely in line with this suggestion. An Environment Sub-Group (ESG) has been formed within the NCA to monitor the fulfillment of conditions pertaining to Catchment Area Treatment (CAT), Compensatory Afforestation (CA), Command Area Development (CAD) etc, under which clearance was given to these projects. However, a careful examination of the minutes of the meetings of the ESG shows that it has played no effective role in ensuring the implementation of any of these conditions. In the five meetings of the ESG held so far its members appear to be helpless observers as written conditions, explicit deadlines and even desperate oral warnings have been brazenly ignored and, if at all, only superficially implemented by the project authorities and the state governments.

Catchment Area Treatment

It is important to treat the Catchment Area of a river by engineering and vegetative means in order to reduce soil erosion. This places a check on the rate of siltation of reservoirs, thereby extending the life of dams to be built on the river. The M.L. Dewan Committee, which was set up by the Government to study the status of soil erosion in the Narmada catchment area, had already stated in 1985 that siltation had reached a dangerous level of 5 hectare-metres per 100 sq kms in the Narmada River. It had warned that without urgent intensive CAT there was every danger of a drastic reduction in the lives of the proposed reservoirs. The Committee recommended a minimum expenditure of Rs. 515 crores for the areas needing priority treatment which comprised only 16 percent of the total catchment of 95,700 sq kms. Following this the DEF, while issuing clearance to the projects in 1987, had expressly stipulated that CAT should be completed ahead of reservoir filling. Hence it demanded that action plans for CAT must be submitted by the state governments by 30.11.1987. Today, more than eighteen months later, it emerges that more time and energy has been spent in passing the buck and bickering about finances than in formulating action plans. The dispute has centred around the SSP's CAT.



The Government of Gujarat has persistently evaded responsibility for treating the entire SSP catchment by taking advantage of the fact that it is distributed over three states. It has sought to pass the burden on to the other states or even to the Centre. As a consequence Gujarat has indicated preparedness to treat only the catchment area falling within its territory at a cost of Rs. 11 crores while it was estimated during the third meeting of the ESG (19.7.88) that Rs. 276 crores would be needed for treatment of the area between NSP and SSP. The Centre on its part has taken no initiative to ensure speedy resolution of the dispute and the matter lies pending with its MWR for over a year. Whatever little funds have been released for Gujarat's own CAT have been stuck with the State Forest Department on flimsy procedural grounds revealing a total lack of administrative preparedness.

It is not just that the sources of finance of CAT are unclear-even the surveys necessary for action plan formulation are still incomplete. The minutes of the Fifth ESG meeting (7.3.1989) record that "the pace of work is too slow compared to the engineering works which will be completed in 1994". The pattern of behaviour of the project authorities is clear: first ignore deadlines; when pressed, grudgingly acknowledge the bare minimum responsibility and when further pressed, start a few surveys while postponing the vital questions of spheres of responsibility, action plans and budgets, on flippant grounds.

Compensatory Afforestation

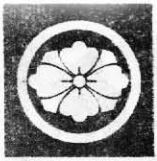
The loss of forests has been even more callously ignored. The NSP is expected to submerge around 40,000 ha of forest land and the SSP around 13,000 ha (although the SSNN, considering only the Gujarat forest submergence, constantly quotes the SSP figure as about 4,500 ha). In fact, in a recent article M.N. Buch argues: "The projects on the Narmada will cost MP 50,000 ha by direct submergence, another 50,000 ha which will degrade because of additional grazing, fuel and timber pressure from the dis-

placed villages and about 2 lakh of hectares which will be encroached upon for cultivation."

The official estimate of the environmental cost of loss of forests due to these two projects is around Rs.39,000 crores. Even this may actually turn out to be an underestimate because the studies necessary for a complete evaluation have not yet been conducted. Floral studies in the NSP area have been barely initiated while the SSP survey has run aground as a 'willing' research agency has not yet been found. The only completed study is that by the Zoological Survey of India (ZSI) on fauna in the NSP area.

This study provides sufficient indication of the incredible variety of wildlife that is to be lost because of the NSP and the problems involved in CA. The ZSI survey questions the estimate of forest land to be submerged due to the NSP. It points out that the forest area which will be left on the south bank as well as the area left on islands to be formed by hilltops whose lower portions will be submerged, have not been taken into account. No wildlife will be able to thrive on these patches in the absence of contiguous foraging area. It adds: " The idea of green belt or planting equal number of trees in the adjacent area of submergence is not practicable because of topography, soil conditions and other factors. Most of the forests covering these areas are thriving because of natural regeneration and not plantation "

Nothing can be more illustrative of the insensitivity of the Gujarat Government than its comments on the ZSI findings which seem to make a mockery of the whole exercise. "It is stated that no wildlife worth the name will be able to thrive without contiguous foraging area. It is true that carnivorous and herbivorous animals will not be able to thrive, but such patches of hilltop that will be left behind will be ideal to protect and foster a large number of water birds" (Letter from Secretary, Narmada, Government of Gujarat to Secretary, NCA, 7.9.1988).



In view of such remarks the proposal to make up for the enormous loss of forests through CA must be regarded with considerable trepidation. Just as in rehabilitation, there is the basic problem of unavailability of equivalent non-forest land for CA. For the NSP, the idea of afforesting around 10,000 ha of non-forest land plus 70,000 ha of degraded forest land has been put forward. This is a clear violation of the condition laid down in the DEF's clearance letter. The letter (7.10.1987) clearly states that in addition to using twice the area of degraded forest land, equivalent non-forest land must also be found for afforestation.

That the DEF itself is about to provide sanction to the above mentioned scheme is an indication of the utter worthlessness of the DEF's conditional clearance. Seeing how it is being compelled to compromise on so crucial a question, it would come as no surprise to the reader that the DEF's deadlines concerning CA are also being honoured only in the breach. More than eighteen months have passed since the deadline for submitting CA action plans expired (30.11.1987). Till today neither MP nor Maharashtra have submitted detailed plans for the SSP - as far as the NSP is concerned it would perhaps be too embarassing to even ask such a question.

In any case we must remember that the whole concept of Compensatory Afforestation is of dubious value. The forests which are to be lost represent a uniquely symbiotic universe of countless living species which have evolved through millions of years of adaptation. The possibility of regenerating such a system can only be regarded as a pipe-dream.

Command Area Development

The area irrigated by a project is called its Command. CAD is aimed at prevention of water-logging and salinity, the optimization of water utilization and the maintenance of water quality through land levelling, provision of sufficient surface and

sub-surface drainage as well as pollution control measures particularly against fertilizer and pesticide run-off. Action plans have once again not been submitted by either Gujarat or Madhya Pradesh.

A study for the NSP conducted on behalf of the Narmada Planning Agency by the Indian Institute of Science (IISc), Bangalore, has brought to light the startling fact that nearly 40 percent of the NSP Command Area faces potential water logging if the original design of the project is followed. According to R.L. Gupta, former Irrigation Secretary, Madhya Pradesh, even this figure is an underestimate because the IISc study ignores the effect of the SSP reservoir which would stand between the NSP Command Area and the natural drainage of the Narmada River and its tributaries. "Would not the water body rising to 283 ft above the river water level obstruct the ground water level to such an extent as to make it impossible to provide relief from water logging" asks Mr. Gupta.

The SSP drainage study covers only a quarter of its command area. As the CCPAL study (July 1988), conducted for the SSNN, points out : " the detailed project for the canal system beyond Mahi has not yet been formulated....There are several problem areas in the SSP Command, such as saline soils, coastal areas having water logging and drainage problems, areas liable to flooding etc....Bhal areas and flat areas are likely to present problems of drainage congestion which is further complicated by the presence of salinity of soils." Indeed it was a condition of the Planning Commission in its clearance to the SSP that Command Area studies for Saurashtra, Kutch, Bhal and Sami-Harij be completed. Once again there is little evidence to show that these studies are being conducted *pari passu* with the engineering works. The possibility that the irrigation benefits of these projects may thus be soured because of problems of water logging and salinity cannot be ruled out.

One could go on in this vein multiplying examples. The experience of studies and plans on seismicity, health, fisheries development etc has not been very different. But the illustrations I have chosen are sufficient to demonstrate the farcical nature of the conditional environmental clearance granted to the NSP and the SSP. When the NWDT gave its Award in 1979, it failed to say even a word about the potential environmental consequences of the NVP. However, in the decade following the Award, environmental consciousness developed throughout the country and the creation of a Ministry of Environment and Forests generated the hope that henceforth environmental aspects would be given their due. The experience of the NVP has, however, revealed that this supposed awareness and concern of the Government for the environment is little more than a sham - a classic instance of Orwellian "doublethink" - of saying one thing to project a certain image but quietly acquiescing in the occurrence of its opposite.

The Government of India, though, is still left with one option of actually proving the genuineness of its concern for the environment. When it clearly sees that its own *pari passu* conditions of environmental clearance are not being fulfilled it should take the natural and unavoidable subsequent step of revoking its clearance to these projects. Will the Government show the necessary courage and political will to act in this manner? That is the Rs.39,000 crore question.

The Impossibility of Rehabilitation

The Adivasis inhabiting the Narmada Valley are the direct descendants of one of the most ancient cultures in the world. Alarmed at the prospect of their devastation following the NVP, the Director of the National Centre for Human Settlements and Environment, Bhopal (the organisation monitoring their rehabilitation) has remarked : "If anyone should have rights in India, it is these tribals." Those expressing concern on their behalf, however, have met with the most violent reaction from the Gujarat politicians. In the view of their pre-eminent representative: "Those who say that tribal culture will be damaged really mean that tribals should remain a showpiece or specimen in museums.... I know the people of each and every village. I have calculated everything.... We have worked out the whole scheme of rehabilitation. We are providing everything" (CM of Gujarat, interview to Indian Express, 22.9.88).

For those of us who have spent our entire lives working among the Adivasis this rhetoric has a familiar ring. The same tones, the same voices are echoed each time Adivasis are called upon to sacrifice their lives at the altar of the "great develop- ment deity". What we want to do this time, however, is to give out a warning loud and clear - that the days when you could fool us in this manner are gone. This time we will closely question you - every word you have spoken, every claim you have made will be scrutinised with the greatest care. And if your promises turn out to be hollow you will have to face the consequences of our non-cooperation! Let us then lose no time and begin our scrutiny.

The Policy

The rehabilitation policy formulated for the Sardar Sarovar Project (SSP) makes a number of promises to the oustees.

Every family from whom more than a quarter of its land holding is acquired will be provided irrigable land to the extent acquired from it. A minimum of two hectares will be given to every family. Every major son will be treated as a separate family. Every landless family has been promised 2 ha. of land by Gujarat, a provision not made by MP and Maharashtra. Apart from resettlement grant and compensation in cash, a number of civic amenities including primary schools, dispensaries, village ponds, drinking water wells, roads and a residential plot for every family have been assured. The question really is, how far this policy can and will be implemented. Doubts arise as soon as we consider the fact that hardly any other development project has ever displaced so many people in our country.

Sheer Numbers Make the Policy a Mirage

The figure the Government mentions for the number of oustees is 66,675, about 80 percent of whom live in Madhya Pradesh. It is generally overlooked that this is a figure based on the 1981 Census, while rehabilitation is planned to be undertaken in the 1990s. If we assume a growth rate of 2.26 percent per annum this figure would be 83,372 by 1991. We must also remember that this figure excludes 6,222 families in 52 villages of Madhya Pradesh who will suffer from the "backwater effect of submergence". When an artificial reservoir is created on a river the free flow of water from its tributaries into the river is blocked. During heavy rainfall this backwater can build up several metres high causing severe floods in the adjoining areas. No provision has been made for the people living in these 52 villages.

Another category of people for whom no allowance has been made are those who will be *left behind* in the so-called "partially submerged" villages. The problems of these people are only now coming to light following the work of activists and reports of organisations monitoring rehabilitation for the Government. There is a substantial number of oustees, only a portion of whose

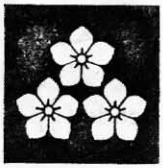
land has been acquired by the Government. Their families will be split between the new relocation sites and the old submerged villages, the distance between which can at times be as much as 140 kms (Centre for social Studies, Surat (CSS), Report, Sept 1987, p. 10). The access to means of livelihood for those getting left behind is also often cut off due to submergence. On the whole the entire economic and social existence of these people has been torn asunder because much of the village they live in now will cease to exist following submergence.

The most tragic instance perhaps is of those 700 families who were evicted in the 1960s to clear the area for the dam site at Kevadia. These people have till today not even been recognised as 'oustees' on the ground that their lands are not to be submerged by the reservoir ! If we count all these people together, the number adversely affected by the SSP and in need of rehabilitation would far exceed the figure given by the Government. Finally, if we are to get a full picture of the number of people to be ousted we must include those affected by the Narmada Sagar project (NSP) also. A major justification for the NSP is that it provides vital water storage for the SSP. The two projects are integrally interlinked and cannot be considered separately from each other. The number of oustees of the NSP is stated by the Government to be 1,29,396. By 1991, assuming a 2.26% p.a. growth rate, this would become 1,61,800. Thus, if we have to consider the rehabilitation programme for both the projects, we must remember that we are talking about at least 2.5 to 3 lakh people.

Government Land Not Available for Rehabilitation

Where is the land required for the rehabilitation of these people going to come from ? An examination of the minutes of the meetings of the Narmada Control Authority (NCA) clearly shows that land required is simply not available. At a meeting of the NCA on June 3, 1988, the Union Welfare Secretary categorically stated that land for relocation of oustees from the Sardar Sarovar

is not available "not only in Gujarat but that would be the situation in other states also". The Gujarat Government representative at this meeting also admitted that the 65,000 ha. of Government wasteland identified by it were "saline, rocky and mostly unfit for agriculture". Even the Gujarat oustees had rejected these lands.



This situation is reiterated in a note (dt 5.11.88) from the Vice-Chairman, Narmada Valley Development Authority, Bhopal (NVDA) to the Union Welfare Secretary : "Upto now on different dates an area of 30,134 ha. of Government ceiling surplus and wasteland was proposed by the Government of Gujarat, most of which was found generally unfit for cultivation and also in small pieces.... Upto now only 220 ha. of Government land in Gutal Village of Baroda District has been found fit for cultivation and hence reserved for MP oustees." The Union Department of Environment has also ruled out the possibility of releasing *forest land* for rehabilitation.

Resettlement on Private Land is Also No Solution

Increasingly, therefore, the idea of purchasing *private land* for rehabilitation has been mooted by the Government of Gujarat. Here too the progress has been tardy. In the same note cited above (15.11.88) it is stated : "The Government of Gujarat have sent us a list of 2,644 ha. of private lands but they have neither supplied us the maps nor the copies of Khasras. The rehabilitation officers of Gujarat are not making sincere efforts in showing these lands to our teams of rehabilitation officers." The Gujarat Government has worked out a scheme under which its officers help the oustees in purchasing private land directly. Purchase Committees certify the reasonableness of the price of the land. The NVDA has, however, pointed to the unworkability of the system in practice : "This system cannot function in the case of MP oustees who are mostly tribals and do not have the requisite skills of negotiating with landholders of a different state. The World Bank has also objected to this procedure".

Many oustees have already run into deep trouble as a result of this system. The CSS Report cited above presents evidence from 17 relocation sites to which oustees from 8 submerging villages have shifted. In five resettlement sites oustees ended up purchasing land from sellers who had outstanding bank debts of Rs.2.6 lakhs. The oustees were either ignorant of this at the time of purchase or were assured that the land was free from encumbrances. No encumbrance was noted in the land records at the time of purchase. Now banks are not only refusing the oustees any loans, they are pressing them for recovery of loans which they never took!

The NVDA note (15.11.88) has also pointed out that 894 ha. of private land in Dabhoi taluka of Vadodara District identified by the Gujarat Government cannot be considered for MP oustees since it is encumbered. There are also cases when portions of land allotted to oustees have been reacquired by the Government for canal construction. The CSS Report also reveals that 254 households had not occupied house plots allotted to them because, among other things, these were located in wastelands which needed extensive clearing or were on lands under cultivation by others. Lack of any adequate source of earning is also mentioned as a reason discouraging oustees from coming in.

Parveta - a pathetic experience

The most shocking account of the plight of the oustees comes from the study, conducted by the Tata Institute of Social Sciences, Bombay (TISS), of 80 families resettled in Parveta village of Gujarat after being moved from their own village Manibeli in Dhule District of Maharashtra. In their new home ("home" it hardly was, with unsanitary conditions and lack of drainage), the death rate among the oustees has shot up to 49 per thousand - higher than what it was in their own village and higher than what it is among the original residents of Parveta. The reasons are not hard to find. Food reserves have fallen, so also has per capita income. Cattle, earlier a major source of income, are slowly dying.

Diversity of consumption is also disappearing with the oustees, who are used to a range of cereals and pulses in their diet, now being forced to live on rice and jowar. The land allotted to them in Parveta can meet only a third of their subsistence needs. So far, they meet onethird of their needs by continuing to cultivate their lands in Manibeli and another third from the subsistence allowance they receive. We can only hang our heads in shame when we visualise the plight of these people once their lands in Manibeli are submerged and they no longer receive the subsistence allowance.

Policy Objectives Stand Betrayed

Our account of the manner in which the rehabilitation of SSP oustees is proceeding shows that the fulfillment of the main objectives of the rehabilitation policy has become impossible. As discussed in Rehabilitation and Resettlement of Project Affected Persons of SSP, Status Report, 31.1.89, pp 33,34, NCA these are :

i) Improve or at least regain the standard of living they were enjoying prior to their displacement;

ii) be relocated as village units, village sections or families in accordance with the oustees' preference;

iii) be fully integrated in the community to which they are settled;

iv) be provided with appropriate compensation and adequate social and physical rehabilitation infrastructure, including community services and facilities.

We have already shown the violation of condition (i). The relocation of oustees on scattered bits and pieces of land means that condition (ii) is also violated. Again for the fulfillment of condition (iv), it is essential that the oustees be relocated in large clusters. This is because the NWDT specified that every cluster of 500 families would get a panchayat ghar, a dispensary and a village pond; every 100 families would get one primary school; every

50 families one drinking water well, etc. Now that the oustees are being made mere adjuncts of already existing settlements, they no longer remain entitled to these facilities. What facilities have been given so far also reveal a shocking picture: drinking water is not available because wells constructed have collapsed and/or handpumps broken down, roofs of classrooms in schools have blown off, and approach roads to the settlement areas are in poor condition (CSS Report, pp 18,19).

Such resettlement has given rise to acute social and economic tensions between the "host" villages and the oustees, thus violating condition (iii) also. Intermixing of tribal and non-tribal population, increased pressure on grazing lands, drinking water facilities, etc and heightened competition in the labour market (especially when sharecroppers dependant on land purchased for resettlement are displaced), have all added up to a very difficult situation. The oustees are, to say the least, highly unwelcome guests in their new environment.

As the note prepared by the National Centre for Human Settlements and Environment, Bhopal, says : "These are disturbing portents for the future" (Note presented at the meeting of the Rehabilitation SubGroup, NCA, 19.12.88). Indeed the future is likely to be terribly murky considering the utterly casual manner in which the state governments are approaching the problem. The NCA's latest Status Report cited earlier (31.1.89), shows that in MP even survey reports have not been prepared for as many as 164 of the 193 submergence villages. "Proper action plans" are not ready for any of the three states. MP has asked Gujarat to buy 13,000 ha. of land for its oustees but the NCA has remarked that this figure is without any basis when MP has not even completed its village surveys. To buy land in advance without knowing the oustees' preference or oustees seeing the land is also a violation of the NWDT Award.

The Government is left morally defenceless

What we have before us, therefore, is a rehabilitation policy which is not only unimplemented in practice but is also *unimplementable in principle.* A close look at the policy raises the serious doubt in our minds whether it was ever meant to be implemented at all - or was its formulation merely a device to buy time by silencing critics of the project and making it ultimately a *fait accompli*?

What the Government is doing is nothing short of brazen genocide of a segment of our people whose sense of alienation from the mainstream development process is already very deep and certainly well justified. This time around, however, they are determined to resist this onslaught on their lives and have resolved not to let the dam be built. Morally of course, but even legally, the Government is utterly defenceless - the manner in which it is evicting people from the submergence areas is a flagrant violation of the NWDT Award as well as ILO conventions. The Government really has no choice - it must climb down from its stance of false prestige and listen to the voice of the time.

Narmada Valley Crisis: Towards A Resolution

For over three decades now the NVP has been the centre of fierce controversy and dispute. When I think back over these years my heart goes out to the people of Madhya Pradesh and Gujarat who have been left thirsting for water while the conflict remains unresolved. In persistently trying to make an impossible defence of the project at any cost, the government has completely lost track of what must be regarded as its basic objective: finding the best possible way of providing water to the people - a path, moreover, not laden with blood and tears, sorrow and suffering. Today I want to share with you my firm determination and resolve that the dispute must not be allowed to go on any longer - that we must ponder seriously what we have learnt from the NVP experience and put it to practice without delay.

What Should be the Optimum Size of River Valley Projects?

The principal lesson of the NVP experience is that river-valley projects *beyond a certain size* imply a cost which we as a nation cannot afford and must not be made to bear. Such projects, apart from being economically unsound and financially unviable give rise to an impossible rehabilitation problem and have the potential of causing irreparable damage to the environment. The most important task therefore becomes the formulation of principles on the basis of which the size of these projects can be determined.

It is not very well known that the submergence caused by dams *increases exponentially after a certain height*. What height this is, depends on the nature of the site at which the dam is built and

the topography of the surrounding area. This means that it is possible to build dams upto an optimal height which does not involve excessive submergence. One has also to consider the nature of this surrounding area - whether it is inhabited and if so how densely, whether it includes fertile land, whether it is forested etc. Thus it is not merely the extent of the area submerged but also its nature that must be taken into account - and then the question asked : can the nation afford to bear such a cost?

We know that in our country the extent of forest cover has declined precipitously in the last few decades - so much so that in 1985 forest area formed only 10 percent of total geographic area as against the government's target of 33 percent which was formulated way back in 1952. Instead of moving towards this target each year we have progressively fallen short of it. The latest satellite data confirm that India is losing 1.3 million hectares of forest every year. The growing pressure of population has at the same time placed a great premium on agricultural land also.

In defence of the SSP, the SSNN has argued that the area it submerges is very small in comparison to the area it commands. However it would not be right to merely consider this ratio. We have to also look at the absolute levels and nature of submergence and decide whether we regard the loss as bearable in itself. If we have to consider a ratio then we must take the cost per hectare of irrigation implied by the dam. On calculating such a ratio for the SSP we find this cost to be at least Rs.80,000 per hectare (irrigation component of total project cost Rs. 9,148 crores, given by CCPAL + Rs. 8,190 crores, DEF's estimate of environmental cost of loss of forests = Rs. 17,338 crores divided by 21.19 lakh hectares, the CCA of the SSP). This makes the SSP the most expensive irrigation project ever undertaken in our development history.

In such a situation there seems to be no alternative to building dams only if they lead to what may be regarded as an acceptable level of submergence. Indeed the way forward in river -

valley planning seems to lie in first formulating guidelines for deciding the *level of maximum permissible submergence* - in terms of people, forests and agricultural land - and then working out a strategy for maximizing water use. In arriving at such a decision, we must give central consideration to the interests of those living in the area of potential submergence.

A way of reducing submergence without sacrificing irrigation capacity lies in a greater reliance on *lift irrigation* rather than irrigation by gravity flow. It is true that the NWDT favoured irrigation by flow but given the much greater concern that has arisen in the last decade regarding the need to minimize submergence one must argue the case in favour of lift irrigation.

A review of the NVP must in any case be undertaken because *the value of run-off availability from the Narmada* assumed in the NWDT Award has recently been officially (DEF, 1987) stated to be an over-estimate. The NWDT while allocating the share of different states in the Narmada water used a total figure of 28 million acre feet (MAF). The revised estimate is of only 23 MAF. This invalidates the key assumption on which the project was designed. Thus even on purely *technical grounds* a reappraisal of the NVP becomes an absolute necessity. We must also remember that apart from the NVP itself there are several other ways available for alleviating the water crisis.

Let us Begin by Improving the Present Pattern of Water-use

First and foremost, immediate efforts must be made towards *fuller utilization of our already existing irrigation potential.* Our record in this is so poor that the Planning Commission in a review in 1983 recommended strongly that the emphasis in irrigation planning must move away from setting up any more major projects to better management of existing ones. Till 1984-85, Gujarat had about 58 percent of its irrigation potential in major

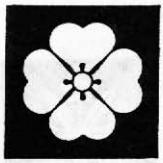
and medium projects unutilized. For Madhya Pradesh this figure is 70 percent (Seventh Five Year Plan Vol. II, GOI). It is amazing that these states can even remotely think of making fresh investments in this sector - and that too on the gigantic scale of the NVP - when so much of their existing potential lies unutilized.

Steps must also be taken for *preventing excessive and wasteful use of water*. There is reason to believe that uneconomic use of existing water resources has greatly contributed to the severity of droughts facing our country. A major culprit in Gujarat for example are the excessively water - consuming industries. We must have a policy guideline restricting the setting up of such units in drought prone areas. Even in our irrigation projects water is badly misused. The original aim of these projects was protective - insulation against drought years. However the cropping patterns that have emerged in such areas reveal a different story. Rich farmers especially those at the head reaches, have pushed for water intensive commercial crops.

The pricing policy for water which is based on surface area served rather than volume or quantity of water used has aided this process. The flat rate charged for power which has reference only to the horse-power of the engine rather than the amount of power used for pumping has also led to overdrawal of groundwater. This has already had grave consequences in low rainfall areas where the rate of groundwater recharge is very low.

A Strategy to Restore Ecological Balance

The depletion of our groundwater resources is part of a prolonged process of environmental neglect and degradation which needs for its reversal a long-run strategy aimed at the restoration of the ecological balance. A recent authoritative study on Indian agriculture has, moreover, revealed : "The disparity in land productivity, income and employment between drylands and irrigated lands has widened in the post - Green Revolution period.



Even if the entire irrigation potential is realized, nearly 40 percent of cultivated area will still remain unirrigated. Therefore, development of dryland farming technology is essential from considerations of growth, equity and stability" (C.H. Hanumantha Rao et al, *Unstable Agriculture and Droughts, 1988, p.77).*

In order to make dry farming a success, we have to carefully conserve and replenish our water resources. The crucial factor to note here is the very particular pattern of rainfall that we experience in our country. Rainfall in India is generally concentrated within a few hours over a few days during the monsoon months. This does not, in the natural course, leave enough time for its absorption by the ground. It has been estimated that only between 1 and 20 percent of rainfall over a year gets absorbed into the ground while surface run-off is as much as 20 to 60 percent (p. 72). This constitutes a vast reservoir of untapped water potential. Every attempt therefore must be made to increase groundwater retention and reduce run- off. The Memorandum on the NVP submitted to the Prime Minister outlined precisely such a package of measures :

- Afforestation (with appropriate region-specific species) and Agro-forestry (the system of growing together arable crops and trees which are compatible and complementary to each other);
- Improved dry farming technology (drought resistant varieties of seeds, mulches, strip-cropping, minimum tillage, suitable forms of inter-cropping and crop-rotation etc);
- Erosion control measures both mechanical (contour bunds, bench terracing, grassed waterways, gully revetment structures etc) and vegetative (grass cover, pasture development, special anti-erosion crops etc);
- Water harvesting methods (check dams, farm ponds, percolation tanks etc)."

Wherever they have been tried, these measures have yielded excellent results. However, for them to be able to make a decisive difference, they must not remain isolated experiments. A massive shift in policy is needed to give this alternate strategy its requisite emphasis. It is clear that so far this has not been done. The percentage of total crop research expenditure spent on dryland crops is much less than their share in gross cropped area. The overwhelming proportion of budgetary allocation still goes to rice and wheat. There is also evidence of inadequate credit, input and marketing facilities for dryland crops. All this must change in a big way if we are to effectively tackle the grave water crisis facing our country.

Big Dams are Not a Must - Even for Power

As far as the question of *power* is concerned, the main beneficiary from the projects is Madhya Pradesh which is also the state that is bearing the main cost of submergence. A redesign of the NVP would lead to such enormous savings in submergence cost that the comparative loss of power must be regarded as minimal.

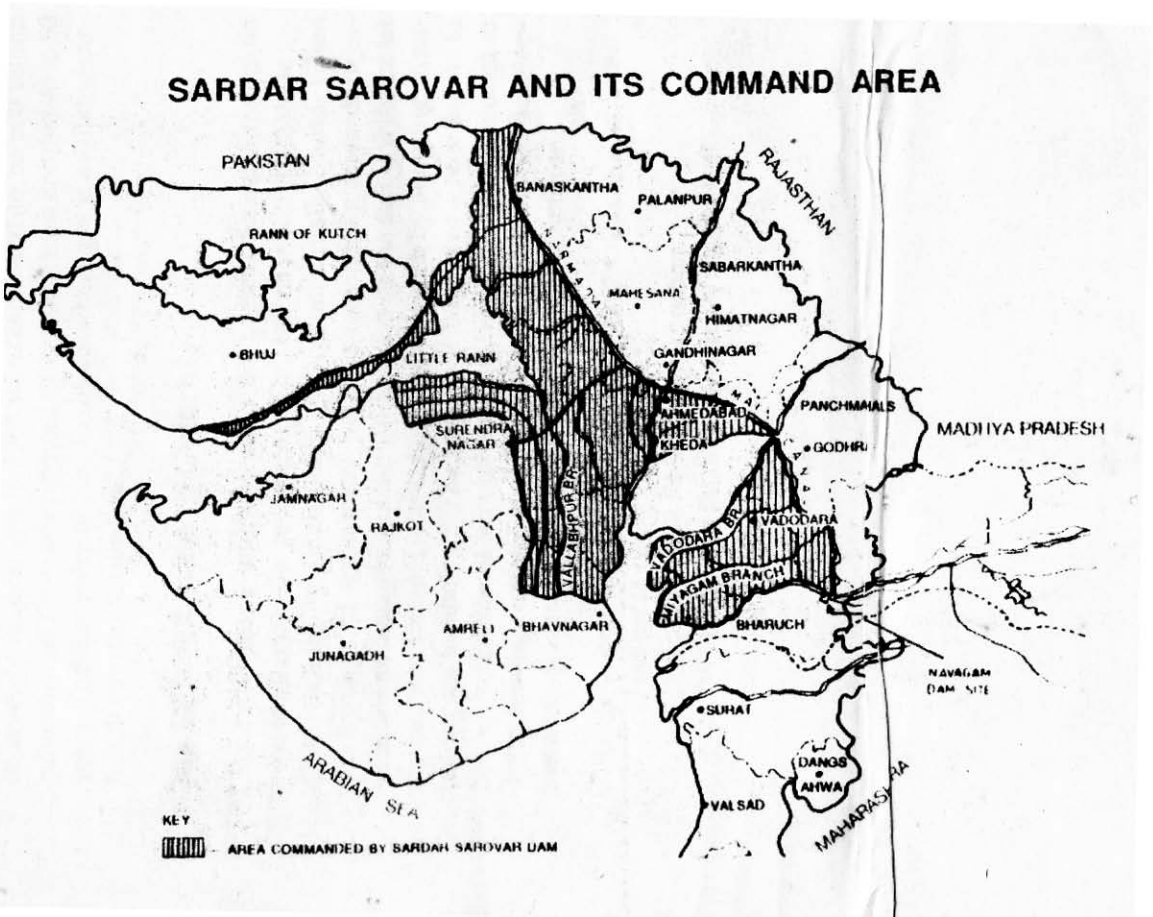
It must also be noted that for power generation as well, there do exist alternatives. In the first place, there is the miserably low level of utilization of installed capacity in our power projects. Fuller utilization of this capacity is therefore the first option. The potential of small hydro-power stations in meeting local power needs must also not be underestimated. All over the world this potential is being recognized - even in places such as the USA and the USSR. It is not generally known that early in the next century the USA is going to meet 25 to 50 percent of its demand for electric power by means of small and mini power dams. Even in the Soviet Union there is widespread opposition to large dams. On the whole 30 power stations with an aggregate capacity of 80 million kilowatts are under question. Non-conventional sources such as wind, solar and tidal are being emphasized (*Soviet Union*, No.5 (470), 1989, pp 36-37).

As far as power for industry goes, in our country the greatest potential seems to lie in the area of natural gas. Natural gas is a freely and abundantly available source of energy which also happens to be the least polluting of all fuels. The reserves of natural gas in 1988 were estimated to be 580 billion cubic metres. These are expected to last for at least another 40 to 50 years. The discovery of new locations where gas is available cannot, of course, be ruled out.

My Beloved State of Gujarat ----

So many alternatives to the present Sardar Sarovar do exist to alleviate the problems of Gujarat. Alternatives that are socially, technically, financially and environmentally sound. When the frontiers of science are pushing relentlessly towards technologies as dispersed as the golden rays of the sun, I will not let my beloved state of Gujarat fulfill a death wish by adopting an antediluvian technology. The science of large dams now seems to belong to the age of superstition; the coming century belongs to the technology of mini- and micro- dams and watershed development ensembles. I want Gujarat to join this bright future.

I ask not to know
I ask not to see
I ask to be used in the service of the nation
Till I lie down in the silent company of Mother Earth.


SARDAR SAROVAR AND ITS COMMAND AREA
PAKISTAN
RANN OF KUTCH
BHUJ
LITTLE RANN
BANASKANTHA
PALANPUR
RAJASTHAN
SABARKANTHA
MAHESANA
HIMATNAGAR
GANDHINAGAR
AHMEDABAD
KHEDA
PANCHMAHALS
GODHRA
MADHYA PRADESH
SURENDRA NAGAR
JAMNAGAR
RAJKOT
VALLABHIPUR BR.
VADODARA BR.
VADODARA
NIYAGAM BRANCH
BHARUCH
AMRELI
BHAVNAGAR
JUNAGADH
NAVAGAM DAM SITE
SURAT
DANGS
AHWA
VALSAD
ARABIAN SEA
MAHARASHTRA
KEY
AREA COMMANDED BY SARDAR SAROVAR DAM