

# THERE IS NO CASE FOR INCREASE IN HEIGHT OF THE SARDAR SAROVAR DAM

**Signal from the System: Laws do not matter** The events of last five weeks around Sardar Sarovar Project have given a clear message to the poor and struggling people of Narmada Valley and everyone else that rule of law does not matter, people can go to hell, the dam construction will not stop. Look at the facts: The Narmada Tribunal Award and the Supreme Court orders (in Oct 2000 and again in March 2005) have stipulated that at each stage, the dam height can be raised only when all the families to be affected by such construction have been given at least two hectares of cultivable and irrigated land a year in advance of submergence and full rehabilitation as per the norms have been completed at least six months before submergence. There is no provision in the norms for cash compensation. Madhya Pradesh Chief Minister said in January 2006 that if the height of dam is increased from the current 110.64 m to 121.92 m as proposed this year, then additional over 24 500 families would be displaced. The MP govt. has refused to provide

land to the displaced as legally required. When Narmada Bachao Andolan said that the permission given on March 8, 2006 by the Narmada Control Authority to increase the height of the dam to 121.92 m is illegal and inhuman, the concerned authorities were least bothered. Ultimately, after launching of indefinite protests on March 17, 2006 and indefinite fast by three NBA activists on March 29, 2006 and after a lot of efforts at each stage, a group of Union ministers visited the affected area, submitted a report, called a Review Committee meeting, passed the buck to the Prime Minister and the Supreme

Thus, when dam height was increased from 100 m to 110.64 m, Gujarat claimed that this will lead to:

- Availability of additional 3.5 Million Acre Feet (MAF) water for Gujarat and Rajasthan
- Additional irrigation to 2.18 to 5 lakh hectares.
- Increase in storage capacity from 2600 Million Cubic meters (MCM) to 3700 MCM.
- Sufficient water for taking drinking water to whole of Gujarat.

Let us look at the correct position about benefits available at 110.64 m.

**Drinking Water** According to the Sardar Sarovar Narmada Nigam's website ([www.sardarsarovardam.org](http://www.sardarsarovardam.org)), "A special allocation of 0.86 MAF of water has been made to provide drinking water to 135 urban centers and

Court. All the state governments have shown rehabilitation on paper when ground reality showed how wrong their claims were. The Prime Minister, showing the most weak, irresponsible and inhuman face of the Union government, bent down before the fascist acts of BJP. The promise of the Union govt to the Supreme Court that rehabilitation will be done in three months is violation of every legal norm. Moreover, when the Madhya Pradesh have not been able to give land for two decades, from where will they produce land for the thousands of affected in three months? The Supreme Court, refusing to see the evidence of total break down of Rehabilitation machinery including the Grievance Redressal Authorities appointed by itself and refusing ensure implementation its own orders, decided not to stop construction on the Dam on April 17 and again on May 1, 2006. This when there is no justification for increase in height of the dam as Gujarat has been unable to utilise even 10% of the water available at current height.

The message could not have been clearer.

**Benefits: Claims vs Reality** Gujarat has claimed in its affidavit in the Supreme Court in April 2006 that increase in height of the Sardar Sarovar dam from 110.64 m to 121.92 m would lead to three kinds of benefits: Drinking water, Irrigation & Power. These claims need to be closely examined. While examining these claims, the claims made by Gujarat govt when the case for increasing the height from 100 m to 110.64 m was made needs to be kept in mind.

*8215 villages (45% of total 18144 villages of Gujarat) within and out-side command in Gujarat for present population of 18 million and prospective population of over 40 million by the year 2021."*

**Water required for providing drinking water to the full 8215 villages and 135 towns was available in Aug '02 or earlier. The water could not reach the people because Gujarat could not put in place the delivery system**

Thus, water required for providing drinking water to the full 8215 villages and 135 towns was available at 110.64 m in June 2004 itself, when total water available at SSP was 3.5 MAF as claimed by Gujarat govt. The Gujarat govt's contention now that if the dam height is increased to 121.92 m, it will be able to provide drinking water to 4000 villages 57 cities/urban centers instead of 2044 villages and 57 cities/urban centers which is being provided currently is an attempt to mislead the Supreme Court and the people Gujarat. If Gujarat had put in place the delivery system necessary to take drinking water to all the 8215 villages and 135 towns as per plans by June 2004, it could have provided drinking water to all the planned areas by June

2004. If it has not been able to do it, that is only because of its own lack of capacity to put in place the required delivery system and not due to lack of availability of water at SSP.

In fact, even from 20 August 2002 when Gujarat inaugurated the Irrigation By Pass Tunnel (IBPT), constructed at an elevation of 89.3 m to take water to the canals from the reservoir, bypassing the Canal Head Power House (CHPH) as CHPH can function only when water in reservoir reaches 110.64 m or above), sufficient water was available at SSP for providing drinking water to all the planned areas as the capacity of the IBPT at reservoir level of 98 m (achieved in 2001) is 283.12 cubic m per sec (10 000 cusecs) (see page 61 of Annual Report of Ministry of Water Resources for 2004-5), far greater than the requirement for drinking water supply. At 110.64 m, IBPT capacity goes up to 441.66 cubic m per sec (15 000 cusecs). Thus if Gujarat is not able to provide drinking water to the planned areas till date, it is only the inability of the state government to put in place the required delivery system that is responsible and there is no need to increase the height of the dam for this purpose.

Furthermore, the section 3.2 of the CAG Report for the year ended 31 March 2005 for Gujarat (Civil) states:

**“Highlights:** Sardar Sarovar Narmada Canal Based Bulk Water Transmission Project aimed at providing assured safe drinking water to scarcity-hit Saurashtra and Kachchh regions. The master plan envisaged distribution of water through regional and group water supply schemes. The Project commenced in 1999-2000 was scheduled to be completed by 2002, but, was lagging behind due to defective planning and lack of co-ordination among different agencies. Water was being supplied only to 31 per cent of the projected villages and large number of villages and towns had to rely on local sources/water tankers. Some of the significant points noticed in audit are as follows:

⇒ Only 29 % of installed capacity of water was used and only 415 of 1,342 targeted villages/ towns were covered (31 %). (Para 3.2.8.3)”

It is clear that Gujarat planned to provide drinking water to all the villages by 2002. However, it has not been able to achieve this till date because Gujarat has been unable to put the required delivery system in place and not because of lack of availability of water from SSP.

**Irrigation** When clearance was given to increase the height of the SSP dam to 110.64 in March '04, Gujarat govt claimed that this will make available to Gujarat an additional 3.5 MAF of water and help achieve additional irrigation of up to 5 lakh ha. If we consider the fact that

**This reality therefore clearly dictates that the height of the Dam be paused at the present level, till the rehabilitation of all the oustees who would be affected at 121.92 M is satisfactorily completed as required under NWDT award and Supreme Court orders. This time should be used by Gujarat to complete their canals, water pipelines and other infrastructure needed to deliver the water which is already available and which would be available at the increased height.**

Gujarat plans to provide irrigation to 17.92 lakh ha of land from its share of 9 MAF from Narmada (even after subtracting the M&I share and adding the planned GW addition), that from 3.5 MAF, it can irrigate over 6 lakh ha. However, for this irrigation benefits to be realized, the full infrastructure of taking the water to the farm needs to be put in place. However, according to official website of Sardar Sarovar Narmada Nigam Limited, Gujarat has been able to irrigate this year about 57,539 ha of land, less than 10% of what

it claimed could be possible when the dam height was increased to 110.64 m. Thus, the claim of Gujarat now that if the dam height is increased to 121.92, it would be able to additionally irrigate 3.5 lakh ha is misleading and a futile attempt to cover up its failure to utilize even 10% of the water available at 110.64 m as per the SSP plans. Use of SSP water for release into rivers like Sabarmati, or into other lakes etc that Gujarat has been doing since August 2002 (when IBPT was inaugurated) does not find any place in SSP plans and is again a sign of failure on the part of Gujarat to utilize the water available at 110.64 m.

**Gujarat could have irrigated over 5 lakh ha from water available at 110.64 m. What it has been able to achieve is only 57 000 ha. Where is the case of increasing the height of the dam?**

It is noteworthy to compare SSP's performance with other more local irrigation initiatives in Gujarat. As per page 15 the "Socio Economic Review Gujarat State, 2004-05" published by the Government of Gujarat, an additional irrigation of 3.5 lakh ha [this

figure was 2.15 lakh ha as mentioned on page 15 of "Socio Economic Review, Gujarat State, 2003-04, similarly in the Gujarat Budget speech for 2003-4, Gujarat Finance Minister said in March 2003 that "Approximately 2 lakh ha of irrigation potential has been created from check dam/ tank constructed in rainfed non irrigated area under Sardar Patel Sahbhagi Jalsanchaya

Yojana”.] has been achieved in Gujarat, through “indirect benefits through water conservation programme”. This benefit has mostly come about in Saurashtra, largely over the last five years and in this effort the local communities have played a very big role. It is also relevant to note here that the total expense on this effort has been less than 10% of the money spent on SSP so far (over Rs 21, 000 crores). It may be recalled that total area to be irrigated by SSP in Saurashtra is almost the same figure at 3.86 lakh ha. This only illustrates that alternatives to SSP for Gujarat exist and they provide faster benefits, that are much cheaper, and they come without the huge social and environmental impacts that SSP has. Moreover they are much more participatory.

Gujarat has created irrigated potential of only 25 000 ha from SSP (including through conjunctive use, which basically means pumping of groundwater, not only through canal irrigation) by June 2004, as per the Socio Economic Review of Gujarat for 2004-05. In fact, page 15 of Gujarat Review for 2003-04 also gives the identical figure of 25 000 ha achieved by June 2003, which means that no additional irrigation was achieved from June 2003 to June 2004 and only 32 000 ha has been added (to make the total to 57 539 ha by March 2006) between June 2004 to March 2006.

Page 18 of Socio Economic Survey for Gujarat for 2003-04 says about irrigation planned from SSP:

**“(vi) Irrigation :** *It is planned to irrigate about 47800 ha area during the current year 2003-04. Irrigation about 29306 ha area directly and 73756 ha indirectly is done up to March, 2003.”*

However, as we have saw above, Gujarat did not achieve these targets in June 04 or even in March 06.

Further, it is also useful to note here what Gujarat’s Finance Minister said while presenting the budget for 2005-6 on Feb 18, ‘05:

**“Narmada Yojana** *The volume of works carried out for Sardar Sarovar Yojana during the year 2004-2005 has been the highest compared to the works carried out in all the previous years. Formerly, the height of the dam was increased maximum 5 meters at a stretch in a year, but for the first time it was increased up to 10.64 meters in a year and reached the remarkable height of 110.64 mts.*

*Irrigation facilities will be made available in 3 lakh hectare area by taking up the works of irrigation area development during the year.”*

However, it is clear from SSNNL website that Gujarat has been unable to achieve this target as of April 2006.

**Power** Many contradictory claims are being made about power generation possible if the height of the Sardar Sarovar Dam is increased from the current height of 110.64 m to 121.92 m. Simple physics tells us that actual power generation would depend on three factors: quantum of water available for power generation, height through which the water falls and availability of power generation units (machinery). If all other factors remain

constant, then power generation would be directly proportional to the height through which water falls. Thus, the loss of power if height of the dam takes a pause at 110.64 m instead of raising it to 121.92 m would be about 10.9% for power generation from River

Bed Power House (RBPH) and 35% for power generation from Canal Head Power House (CHPH). These loss figures also take into account the fact that at 121.92 m there is some additional storage available. Taking into consideration the fact that in 2005-06, of the total power generation at SSP, CHPH generated 9.3% and RBPH generated 90.7%, the loss in power generation at SSP if the dam height is halted at 110.64 m, would be 13.14 %. Thus, if the claim is that SSP can generate 400 crore units at 121.92 m, then the annual loss in generation, if the dam height takes a pause at 110.64 m, would be 52.5 crore units. In reality the loss would be much lower if the dam construction is halted now as the dam has already been raised beyond 110.64 m. Thus the claim made by Gujarat government that

increase in dam to 121.92 mts would lead to additional 350 crore units of electricity generation at SSP is totally baseless. In fact the increase due to additional height will only be 52.5 crore units, equivalent to Rs 105

crores.

There is an easy way to verify that the claimed 350 crore units of additional power generation is an exaggeration. Since SSP generated about 196.2 crore units in ‘05-06 (even though all the power generation units were not in place), if this claim were true, SSP would generate 545 crore units a year at 121.92 m. This claim is proved false by the Narmada Control Authority Document “Need for Hydro-electric Power Development at SSP” of July 1990.

**In 21 months from July 2004 to March 2006, SSP produced 445.5 crore units less than what it could have produced if all the power units were in place by June 2004. They are not in place even today... it seems power generation is not the priority at SSP**

**It is clear that the current R&R mechanism has completely failed. Any way forward will require a new transparent, participatory and accountable machinery with teeth to stop construction when required**

According to this official document, even at full height, SSP can generate about 546.9 crore units. Thus when 121.92 m is full 17 m below the full height, SSP cannot generate 545 crore units as claimed. It is clear Gujarat is once again making baseless and misleading statements to falsely push its case for increasing the dam height.

However, let us see the SSP track record. The dam height of 110.64 m was reached in June 2004. Thus, if all the power generation units were to be in place by that date (it should have been as installation and dry test run of power generation units do not depend on increase in dam height), all the units could have started generation from July 2004. Unfortunately, all the power generation units were not in place in June 2004, nor are they in place even today, entirely due to the mismanagement of the project authorities, leading to massive loss of power generation at SSP even after the dam height of 110.64 m was achieved. Even taking into account the seasonal variation in water flow at SSP, in the 21 month period between July 2004 and March 2006, SSP could have produced about 667 crore units when the dam was at 110.6 m. In reality, it produced 221.5 crore units. Thus, SSP produced about 445.5 crore units less than what it should have produced in this 21 month period. This massive under performance and loss is entirely due to the inefficiency and mismanagement of the Sardar Sarovar Nigam and responsibility needs to be fixed for this loss. This loss is more than what SSP would lose even if height is halted at 110.64 m for over 8 years. It does not seem that power generation is a big priority at Sardar Sarovar Project. It is also relevant to note here that T&D losses in the three beneficiary states (Gujarat: 32.36%, Maharashtra: 36.62%, Madhya Pradesh: 37.71%) are much above the accepted norms of 15-20% and that little efforts are being done to reduce the losses. There is little justification for increasing the height of the SSP dam to 121.92 m even from power generation point of view, till acceptable, legal and just R&R is achieved.

Another false and misleading claim which has been made by Gujarat govt is regarding the Water Diversion from SSP. The Gujarat govt has claimed that water for any purpose cannot be drawn below 110.64 m is again false and misleading. Gujarat in fact has been using water from SSP since at least 5-6 years. Before August 2002, it was pumping water from the existing reservoir into the canal. Between August 2002 and August 2004, it was diverting water through the IBPT and since August 2004 it has been diverting water through the CHPH. This water has been used for all the designated purposes of drinking water supply, irrigation and for power generation. It needs to be kept in view that Narmada is a perennial river, so some water is always available in the river. Moreover, with the construction and commissioning of the massive Narmada Sagar Project upstream on the Narmada river in Madhya Pradesh in Jan 2004, the downstream SSP has received regulated releases from the upstream dam that stores

the monsoon flows and allows gradual release of water across the river. The fact that the RBPH and the CHPH have been generating power in every month of the year and not just the monsoon months implies that there is water through out the year. Thus, a huge quantity of water, almost comparable to the Gujarat's full share of water from Narmada is available at SSP.

#### Power Generation at SSP and ISP

MU (MW)

Month	RBPH (IC)	CHPH (IC)	SSP (IC)	NHDC (IC)
0104	0	0	0	55 (250)
0204	0	0	0	71 (375)
0304	0	0	0	66 (375)
0404	0	0	0	29 (500)
0504	0	0	0	23 (500)
0604	0	0	0	76 (500)
0704	0	0	0	95 (625)
0804	0	4 (150)	4 (150)	326 (625)
0904	0	33 (200)	33 (200)	280 (625)
1004	0	38 (200)	38 (200)	100 (750)
1104	0	26.62 (200)	26.62 (200)	114.46 (750)
1204	0	26.14 (200)	26.14 (200)	90.01 (875)
0105	20.97 (200)	0 (200)	20.97 (400)	89.35 (875)
0205	53.87 (200)	12.55 (200)	66.42 (400)	74.17 (875)
0305	35.88 (200)	10.01 (200)	45.89 (400)	46.93 (875)
0405	17.92 (400)	1.69 (250)	19.61 (650)	25.58 (1000)
0505	17.02 (400)	2.73 (250)	19.75 (650)	23.34 (1000)
0605	103.82 (400)	10.05 (250)	113.87 (650)	112.92 (1000)
0705	217.69 (400)	18.95 (250)	236.64 (650)	489.95 (1000)
0805	200.20 (600)	22.30 (250)	222.50 (850)	483.90 (1000)
0905	245.40 (600)	29.93 (250)	275.33 (850)	379.62 (1000)
1005	304.57 (600)	16.35 (250)	320.92 (850)	267.72 (1000)
1105	209.91 (800)	17.52 (250)	227.43 (1050)	190.19 (1000)
1205	143.49 (800)	20.51 (250)	164.00 (1050)	190.84 (1000)
0106	147.94 (800)	19.54 (250)	167.48 (1050)	167.66 (1000)
0206	114.5 (1000)	16.92 (250)	131.42 (1250)	133.37 (1000)
0306	30.40 (1000)	32.26 (250)	62.66 (1250)	98.88 (1000)

IC: Installed Capacity; NHDC: Narmada Hydroelectric Development Corp; ISP: Indira Sagar Project; MU: Million Units; MW: Mega Watts  
Source: Central Electricity Authority, [www.cea.nic.in](http://www.cea.nic.in) Monthly Generation Reports

One can see from the above table that since Aug '04, the CHPH at SSP has produced power in every single month, except Jan '05. In Jan '05, while CHPH could not generate power due to breach in SSP main canal, the RBPH did produce 20.97 MU power. This means that every month since Aug '04, the level of water in SSP reservoir has been above 110.2 m and there has been sufficient water in the river for diversion of water into the SSP canal through CHPH. Even in Jan '05, since RBPH produced 20.97 MU of power, it means that level of water in SSP reservoir was above 110.64 m.

This is further substantiated by the figures in the last column in the above table, where the power generation at the upstream Indira Sagar Project on Narmada in MP is given. Here we can see that ISP has been producing power every single month since Jan '04 when power generation at ISP was commissioned. It should be noted here that ISP has a greater storage capacity and releases water into the river after power generation, most of which is available at the downstream SSP. Thus

regulated, predictable water has been available at SSP every month (actually every day, we can show this if we are given the CHPH, RBPH and ISP daily power generation figures since Jan '04), for release into the canals and to be used for irrigation or water supply in Gujarat since Aug '04 at least. Thus the contention of Gujarat that reliable or regular water supply from SSP dam at 110.64 m is totally wrong.

Moreover, there is a huge water storage of 366.5 crore cubic meter at 110.64 m and 260 crore cubic meter at 100 m. SSP has been using that water since 2000-01, first by pumping water from existing reservoir into the canal, then since Aug '02 through IBPT and since Aug '04 through CHPH and this water has been used for water supply and irrigation, besides allowing the water to flow into rivers like Sabarmati and into lakes in Gujarat. Thus contention of Gujarat that no usable water is available when SSP height is at or below 110.64 m is totally wrong.

CHPH in 2005-6 produced 208.65 MU power. This means that if on average the reservoir level remained around 11.64 m (it could have gone up slightly some times in Monsoon and could have gone down lightly in summer) and that power generation efficiency is 90% (that is 90% of the potential energy is converted into power) than we see that at least 3.80 MAF water had flowed into SSP canal during 2005-06 even if no water had flown through IBPT. In fact the efficiency is more likely to be about 80%, in which case, at least 4.28 MAF water had flown into canals during the year. This is even more than the 3.5 MAF water claimed by Gujarat when the clearance was given to increase the height of the dam to 110.64 m. And this water was available almost on daily basis. However, Gujarat has been unable to put even 10% of this water to use as is clear from the area irrigated in 2005-6 (57 000 ha) and water supply provided during 2005-6 (2044 villages and 57 towns).

**In every month since Aug '04, the level of water in SSP reservoir has been above 110.2 m and there has been sufficient water in the river for diversion of water into the SSP canal through CHPH... Gujarat has been unable to use even 10% of that water for irrigation and water supply...**

Thus there is no justification in allowing the increase in the dam height even from benefits point of view.

**Way forward** From rehabilitation point of view, any credible independent assessment would show (as did the latest one by the Group of Minister, even though only through a snapshot visit) that rehabilitation is lagging far behind the norms set by the Narmada Tribunal, the Supreme Court orders and the governments' accepted policies. If the signal is to be sent from the system (including the govts, the judiciary and others) that indeed there is some value for the law of the land and some value for the people of this country, than minimum

accepted step, in view of the above situation, would be to ask for a pause in the dam construction. In the meantime, firstly, a credible mechanism (that is transparent, accountable and participatory) is put in place to ensure just and proper rehabilitation. The initial step in this regard would be to put up a village wise list of the all the affected families affected at 110.63 m and 121.92 m, when they have been given land, how much land has been given, where they have been given land, when did the affected family take possession of the land, and when and what civic amenities were provided at such sites, on the government websites.

This reality therefore clearly dictates that the height of the Dam be paused at the present level, till the rehabilitation of all the oustees who would be affected at 121.92 M is satisfactorily completed as required under NWDT award and Supreme Court orders. This time should be used by Gujarat to complete their canals, water pipelines and other infrastructure needed to deliver the water which is already available and which would be available at the increased height. They should also use this time to complete the installation of the remaining power generation unit/ turbines and complete the infrastructure of the power stations.

SANDRP