

NBA supporters also wrote extensively in media against SSP (Sardar Sarovar Project) and this provided a great deal of support to NBA - on different issues

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To

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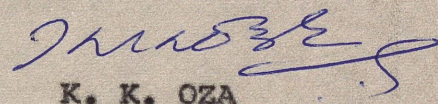
The Editor
Main Stream
NEW DELHI

Sir,

An article entitled "Big Dams - How Safe They Are?"
is enclosed herewith. If found acceptable it may be
published. Otherwise it may kindly be returned to me
^{at}
~~on~~ the above address.

Thanking you,

Yours faithfully



K. K. OZA

Encl: As above

Big Dams - How Safe They Are ?

The dams of height over 100 to 150 ft. are a new phenomenon of the second half of this century. However, seismologists, geologists and even civil engineers of great repute now express doubts about the wisdom of building such large dams. It is a known fact that at least one dam bursts every year somewhere in the world. The controversy about the big dams came in sharp focus after the 310 ft(95 meters) high Teton dam in Idaho, USA collapsed on the 5th of June in 1976 leaving behind a vast trail of destruction.

The dam had burst, within hours, after it was filled for the first time. As a consequence, the whole township of Wilford nearby simply vanished from the surface of the earth. About 4000 houses were washed away causing damage of more than 2 billion dollars. A very huge chunk of farmland was so deeply washed out that it is now no longer cultivable.

Before the Teton burst, fortunately the people had vacated the town, as the burst occurred during the day and the signs of impending disaster had become very apparent right from the previous day. 30,000 lives were thus saved. We in India have seen how the Morbi town in Saurashtra suffered when the nearby Machhu dam burst in August 1979. The town was submerged under 20 ft. of water, drowning a few thousand residents and cattle. The damage to residential houses, the shops in the bazaars and the industrial estates was enormous which ran into a few crores of rupees. The accurate assessment of

the damage could not be made ! The town turned into a ghost town and the obnoxious stench emanating from the rotting corpses in hundreds of houses, shops and temples seriously hampered even the rescue operations for quite some time. Only dedicated social workers could go around to clean up the town.

Ironically, the information about the burst of Machhu dam came from the Indian residents in U.S.A. from this town and surrounding places, as the news about the burst was televised within minutes after the incident on American television. The Rajkot district headquarters, only about 125 kilometers from the town, learnt about the disaster, as phones started ringing from America enquiring about the safety of the relatives of Indian residents there. The subsequent enquiry ^{in the disaster} has revealed very little.

The faulty construction and unexpectedly heavy downpour were blamed for the disaster. As it generally happens, the matter has now been forgotten. Heavy floods, cyclones etc are becoming the order of the day even on the west coast of India. During the monsoon, several large rivers get swollen beyond the danger mark. The downpour often is so heavy that only about six years ago the town of Porbandar suffered a similar fate like Morbi, though the reason for the disaster was ascribed to inadequate drainage system for draining out the accumulated water. Recently the Chief Engineer of Bhakra Nangal lost his life as many believed that the flooding of vast tracks of cultivable land was due to

to overflow. Owing to unforeseen pressure, the water had to be released for the dam's safety. Unfortunately it was considered as a deliberate act on the part of the Chief Engineer. The study of Ashwan dam is just out. It was undertaken by an American University and it has been noted that the flow of the water in the Nile stands considerably reduced now.

Coming to the Sardar Sarovar Project, doubts about its safety, when completed, have been emphatically expressed in various quarters. The Narmada water disputes tribunal (Vol. II) has this to say :

"Due to the numerous openings in joints and ^{Shear} ~~shear~~ zones which grouting cannot seal, the foundation cannot be made water-proof"

Soon after Koyna dam was completed, it led to an earthquake causing heavy damage to life and property in the towns around the dam. In case of SSP also, the tribunal fears that keeping in view the history of seismological disturbances numbering about 30 in the last 200 years in the Valley, the foundation of the dam itself might give way. The gross storage capacity of the SSP ^{is} 950 [^] crore cubic meters which is far more than that of the Teton dam. The reservoir will extend to 214 kilometers upstream in the Narmada valley. The forceful currents of Narmada and possibility of any other small or medium sized dam bursting upstream may add to the pressure on the dam.

Obviously, fear is expressed that water might seep through fissures and cracks in the rocks under and

around the dam. In that case even the smallest unfilled fissure left while grouting may cause the dam to give way. This is what exactly happened to the Teton and may happen to the SSP. NWDD(Vol.II) also suggests that "Heavy water loss during pressure does reveal the unsoundness of the rock". It is however doubtful whether the matter has been considered seriously. In fact the geological survey of India has also expressed grave concern and recommended that Gujarat carry out the experiments to prove groutability of the site.

Grouting is a term commonly used in dam construction which consists injecting of liquid concrete with extremely high pressure in the drill holes in the abutments and the foundation rock. The technique is still imperfect and for such a large dam there will always be a doubt whether grouting of the rocks has been perfect.

The Nigam under political pressure is stated to be speeding up the construction and a number of subcontractors are employed on the most important jobs of the dam. One would doubt whether such haste and subcontracting system for doing important jobs will not jeopardise the soundness of the SSP. The site of Navagam(SSP) falls within the seismic zone and Mr. Tiedanam, a Swiss expert, is reported to have expressed serious misconceptions about the wisdom of the World Bank accepting the flimsy assurances given by the Nigam for approving large loans for its construction.

Since 1988 the cost of the dam has been escalating and has gone up from Rs. 6406 crores to Rs. 8575 crores (this is the share of Gujarat alone). Keeping in view the runaway inflation that the country faces, one can never be sure as to what will be the ultimate cost when the dam is supposed to be completed in 10 years from now. By that time the cost may well exceed 22,000 crores and that too if the inflation rate remains at the same level as at present, in the years to come.

We may not show any concern for the poor Adivasis, peasants and thousands of other would be oustees of Narmada "Ghati" for it may not concern the politicians, big farmers and self-seeking businessmen. However, the people of Bharuch must not forget that one day the town may suddenly cease to exist as Wilford in Idaho did. One would wish that these new temples of progress and development do not cause a reversal of what we have achieved till now.
