The World Bank's misguided advocacy for large Dams in India

By Himanshu Thakkar

In its new report, the World Bank states that India's dams can store only 200 cubic metres of water per person against the US's 5,000 cubic metres per capita. But before advocating more large water storage facilities, the Bank should consider why India is losing over 36 billion cubic metres of existing storage capacity every year

In recent months, the World Bank has taken the lead in advocating more large water storage facilities in India. Bank advocate John Briscoe (interestingly, nobody else from the Bank has come forward to support Briscoe's view) has used two comparative figures to justify this position. Firstly, he says in the Bank's latest report 'India's Water Economy -- Bracing for a Turbulent Future', released during the first week of October 2005: "Whereas arid rich countries (such as the United States and Australia) have built over 5,000 cubic metres of water storage per capita, and middle-income countries like South Africa, Mexico, Morocco and China can store about 1,000 cubic metres per capita, India's dams can store only 200 cubic metres per person." The second piece of wisdom in the report is: "India can store only about 30 days of rainfall, compared to 900 days in major river basins in arid areas of developed countries."

The Bank's advocacy appears motivated, as it is not informed by a credible review of the state or performance of India's water storage facilities. Nor does it look into the available options to achieve the objective of required storage. Significantly, it should be noted that from the point of view of the science of hydrology, the requirement for storage in a river basin depends on the local situation in each river basin; a comparison of per capita storage for various different situations does not necessarily make sense.

In recent months, however, very senior Government of India officials (secretary, Ministry of Water Resources and joint secretary [hydro], Ministry of Power) have rather uncritically been adopting Briscoe's arguments to advocate large water storage facilities.

While everyone accepts the fact that water storage facilities are necessary to take care of temporal and spatial variations in rainfall patterns, this view of the Bank makes the case for large storage facilities without considering the situation on the ground with respect to geo-climate, agriculture or water resources and requirements. This fundamentalist position -- that you require large storage facilities for every river basin, at the same per capita rate -- clearly does not come from science but from a blind belief in large dams.

Let us look at the Indian situation in its correct perspective. Firstly, the only figure that is available in the public domain about existing storage capacities in India is that the country has about 212.8 BCM (billion cubic metres) of water storage space. This figure is not backed by details about the various water storage facilities in different states and water basins in India. Nor is it clear how many and which projects are included whilst arriving at this figure. (This is typical of India's water resources establishment, where, as far as possible, no information is put out in the public domain. The Right to Information Act that came into effect on October 12, 2005, is a welcome development if it is implemented in letter and in spirit. But, as we can see from the evidence so far available, there is little hope of that happening in the functioning of the water resources ministry.)

What is important, however, is that according to a report by the Government of India's National Commission for Integrated Water Resources Development, India's water storage facilities are silting up at an alarming rate of 1.4 BCM per year. To create storage of 1.4 BCM, we would require Rs 1,448 crore at current costs.

That means that every day we are losing storage space worth approximately Rs 4 crore. And precious little is being done to stop this from happening. The catchment area treatment of reservoirs, which must be done to arrest the siltation, is just not happening. While Briscoe agreed at a World Bank workshop that catchment area treatment in India is a big scandal, the situation is not very different regarding the last two large dams funded by the Bank (Sardar Sarovar and Nathpa Jhakri). The Bank itself has shown little credibility in these matters.

Secondly, if we look at the performance of existing storage facilities we are met with a shocking picture, as seen in the table below.

Implications of idle storage facilities
This means that:

- On an average, each year around 36.25 BCM (the equivalent of 6.5 Sardar Sarovar projects) of storage capacity, out of only the monitored storage capacity, has not filled up for the last 12 years.
- This happened when, in seven of the 12 years, rainfall was average or above average (see figures in brackets in column 2 in the table below).
- That means that, on average, an investment of Rs 37,793 crore has remained idle in each of the last 12 years. It also means that the huge social and environmental costs incurred to create these storage facilities have gone waste.
- Nobody expects all water storage facilities to fill up each year, but one would expect them to fill up at least 90% of the time. Current analysis shows that they do not fill up so regularly. To give an example: Bhakra has not filled up to its full reservoir level of 1,685 feet (see www.cea.nic.in) in the last 16 years.
- Should we not be trying to understand *why* this is happening? How can we make existing storage capacities play the useful role they are supposed to, instead of pushing for more storage facilities?

The analysis needs to be done storage-wise and river-basin-wise for all large storage facilities. We could not do it as we were unable to get the necessary information in spite of asking the secretary, Ministry of Water Resources, Government of India, several months ago.

Idle reservoir capacity during 1994-2004
(BCM)

Sr No	Year (country-wide monsoon rainfall)	No of reservoirs monitored	Monitored capacity	Capacity filled up	Idle capacity
1	1994 (110%)	63	125.14	112.63	12.51
2	1995 (100%)	63	125.14	98.44	26.7
3	1996 (103%)	63	125.14	89.53	35.61
4	1997 (102%)	68	129.4	101.2	28.2
5	1998 (105%)	70	130.6	106.1	24.5
6	1999 (96%)	70	130.6	97.6	33.0
7	2000 (92%)	70	130.6	82.66	47.94
8	2001 (91%)	70	130.6	87.49	43.11
9	2002 (81%)	70	130.6	69.25	61.35
10	2003 (105%)	71	131.28	78.76	52.52
11	2004 (87%)	71	131.28	85.1	46.18
12	2005 (99%)	76	133.021	109.695	23.326

Source: Economic Survey, various years

Unfortunately, the Bank's advocacy of more large storage facilities is not informed by any performance review of the existing storage facilities.

Thirdly, advocates of large storage facilities do not look at the available storage options. For example, storage space can also be created through small storage facilities; groundwater aquifers emptied over the years could also be used to store water in certain cases. But we do not have credible figures for basin-wise storage available through small storage facilities. For over two decades the only figure that's been floating around in India is the figure of 3 BCM of storage space created through small storage facilities. However, there are no details about what this figure is based on, nor what the break-up is, district-wise, state-wise and basin-wise.

In fact, if we look at the ground situation we see that there is no definite correlation between the available large storage spaces and the situation with respect to water resources. For example, Maharashtra and

Madhya Pradesh have the biggest number of large water storage facilities, but they are not necessarily as well-off as they should have been were there to be such a correlation. Similarly, the Krishna and Cauvery basins have the storage capacity to capture rainfall for a large number of days, but they are not necessarily among the most well-endowed or better-managed river basins.

Advocacy of large hydro projects
Let us look at more evidence to support that contention. The World Bank report under discussion also advocates more large hydro projects in India. However, the generation per unit MW installed capacity has been dropping steeply over the last 11 years; the figure has fallen by a huge 31% from 1994 to 2005. The Bank's advocacy of more large hydro projects too is not informed by any performance review. In fact, the performance of large hydro projects funded by the Bank (the latest being Nathpa Jhakri and Sardar Sarovar, from which the Bank withdrew before they were completed) has been far from satisfactory.

In praise of Bhakra
The World Bank report sings the praises of the Bhakra project. However, it appears grossly ill-informed about the basic parameters of the project. For example, it claims that the Bhakra project irrigated 7 million hectares and has an installed power capacity of 2,800 MW. According to a Central Board of Irrigation and Power publication dated August 2005, Bhakra has irrigated 1.3 million hectares and has an installed generation capacity of 1,480 MW. Such errors do not help the report gain any credibility.

Advocating the new agriculture dream
The report has the following prescriptions for a "new vision" of Indian agriculture: dreams of producing tomatoes for supermarkets in the UK, the great promise of contract farming, agro-tourism to Israel to learn about "precision agriculture", dozens of drip irrigation companies, etc. But it does not ask how many people who depend on agriculture will actually benefit from these prescriptions, and how many will be left out. The report also prescribes flexible water entitlements that are tradeable so that farmers can sell their entitlements. Again, there is little discussion about who will benefit and who will lose out, and what the impact on the poor will be.

Attempt to rubbish Manthan's Bhakra study
While presenting the World Bank report at the October 5, 2005, workshop Briscoe showed a slide with a picture of Nehru speaking at Bhakra, with the caption "For Nehru: 'The temples of modern India'," alongside a picture of writer Arundhati Roy with the caption: "For Arundhati Roy: 'Dams spell disaster'." Briscoe then said that, according to Dharmadhikary (referring to Manthan Adhyayan Kendra's *Unravelling Bhakra*), Bhakra was a disaster. This was clearly an attempt to give a totally wrong picture of the Manthan book, which does *not* say that Bhakra was a disaster. What the book does indeed say is captured in the title of a report in *The Hindu* that Briscoe used for Roy's picture: 'Punjab's prosperity not linked to Bhakra, says study'. By misrepresenting what the Manthan study says, Briscoe was clearly trying to rubbish the first credible attempt at a performance review of Bhakra -- the icon of India's large dams legacy. Briscoe did not use the Manthan study in the World Bank report, as was expected. But his attempt to misrepresent the study was certainly not expected.

Some welcome findings

- "Water is not a national issue but an intensely local one." This, in fact, should be the silver bullet for all water resources practices, which is not the case today.
- It is wishful thinking that supply-side options will solve all problems.
- India's water sector has an enormous backlog of deferred maintenance.
- Building more big dams is a zero sum game for an increasing number of basins.

Noteworthy imperatives
Among the imperatives listed in the report, the following are noteworthy. The trouble, however, is that the imperatives are not backed by action.

- Give clear, enforceable entitlements (rights).
- Make environment a high priority.
- Make local people the first beneficiaries.
- Bring groundwater abstraction in line with recharge.

- Bring down demand to match sustainable supply in many parts of the country.
- Put in place transparent information and decision support systems.

Wishful omissions

The report completely omits any mention of the World Commission on Dams (WCD) report. The Bank and Briscoe were involved in the work of the WCD right from the start; one would have expected them to use insights from the WCD report. The thinking behind this seems to be that the report will disappear if ignored long enough!

While discussing the issue of floods one expected the report to emphasise the importance of flood forecasting, which could play a major role in reducing flood damage. However, there is no mention of this important imperative.

Turbulent future for the World Bank

The World Bank has had a rather turbulent history in India's water sector in recent years. The current phase too appears troubled, with the Bank's prescription for more large dams and water privatisation (in Delhi, for example) facing stiff opposition. And, it would seem, the Bank is likely to have a rather choppy future as well with it apparently having learnt no lessons from its past experience in India's water sector.

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