

entirely different things. If the water stored in the flood plain is supplied through tankers, then the same Rs 6000–9000 crore will have to be spent then also with no saving. And if it is to be supplied through piped system, then the same piped system can be used to replace the tankers even now, using the same water that is supplied in tankers now.

• However, if this be the acceptable manner for computing ‘saving’, then it would be better to use the market rate for bottled water which at Rs 12 per litre costs 100 times more than tanker water. Then the same scheme can ‘save’ Rs 600,000 to 900,000 crores!!

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I. Vikram Soni, Gosain, A. K., Datta, P. S. and Diwan Singh, *Curr. Sci.*, 2009, **96**, 1338–1342.

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The views expressed here are the author’s personal views, and not to be taken as the views of his employer.

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### Response:

• The CGWB data recorded in their hydrographs shows that in 2008 when there was partial flooding in the Palla area the floodplain groundwater level came up by 3 m over the average recorded in the previous years.

Given these facts, the scheme of floodplain or basin recharge by the best means (e.g. inundation between barrages or by running overflow channels) to spread the monsoon discharge to cover the floodplain and flow back to the river, would

result in substantial augmentation of groundwater recharge and extractable water. The scheme has been completely misunderstood. No reservoir is to be created. Once the floodplain aquifer is so recharged it will look exactly as it does now with no surface water on it.

Barrages are just one suggestion for basin recharge from monsoon discharge, and just one barrage may be adequate. The Delhi Jal Board has already formulated a scheme for a barrage about 3 km downstream of Palla. The backflow of this barrage will reach till 20 km upstream. This will help recharge a large area of the floodplain. Flood channels can be run out of the barrage and made to run along the inner pushta embankment to cover recharge for the remaining floodplain downstream. We need to find the most benign solution.

The CGWB data shows that even without surface recharge, the continuous and extended aquifer of the floodplain and river is recharging the dewatered aquifer effectively. Further dewatering will not cause much decrease in the groundwater level. This will allay any ecological concerns and is promising for increasing the yield in our scheme.

• The paper is not addressed to policy matters of interstate agreements on sharing of flows. The recharge needed for the Yamuna floodplain is not more than 0.3 bcm and can easily be accommodated in Delhi’s share.

Interstate agreements, obviously, cannot arrest the whole monsoon flow – it would be ecologically disastrous. They need to be revised.

Delhi is getting water from far away and at great expense from Tehri Dam and the Sutlej–Beas system. Clearly the local solution of using the floodplain as a plausible natural storage that can store excess monsoon water for 6 million people without any ecological damage seems far more sensible. It can be seen as an alternative to both dams and river linking

which also stores monsoon water but at huge ecological damage.

• Yes, we have noted that the scheme will work only if treated discharge goes into the river. Water treatment of sewage discharge is essential, regardless, unless we want to kill all our rivers and other water sources. Again, this is not the main issue in the paper.

• The cost of good water can easily be assessed as recycling cost. We have got quotations from private companies, which give an average cost of secondary recycling as ~Rs 100/kilolitre. This is all recorded in the paper.

If a 10,000 litre private tanker of good water costs Rs 1200 today, then the costs of supply – depreciation, extraction and transport will cost about Rs 300, leaving Rs 900 as the cost of 10 kilolitres of water.

The comment that we have not given costs for the scheme is correct. But a little consideration will show the costs of one barrage or channels and a tubewell grid are one time costs and small compared to even the annual benefits of Rs 6000 crores of water every year.

It is rather imaginative of Pandit to suggest, ‘However, if this be the acceptable manner for computing “saving”, then it would be better to use the market rate for bottled water which at Rs 12 per litre costs 100 times more than tanker water. Then the same scheme can “save” Rs. 600,000 to 900,000 crores!!’

• There are already many tubewells and Ranney wells in place and many water headworks, like Sonia Vihar, Chandrawal, etc. along the floodplains. The water we get from the floodplain will be piped to these stations and automatically supplied from these.

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