

## India's river linking project: will it benefit or backfire?

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Rivers are considered holy in India and the river Ganges is the most revered of all<sup>1</sup>. The Government of India has decided to pursue a monumental engineering project to build a lengthy network of canals reaching up to 15,000 km for linking major rivers across India. This innovative river link is expected to transport 174 billion cubic meters of water annually, from water-rich rivers to water-scarce regions<sup>2</sup>. Although the national river linking project has been talked about for many years, the Central Government has finally decided to spend USD 168 billion to jump start this unique mission. The newly elected Prime Minister has called this undertaking 'a national dream'<sup>2</sup>.

This technological task will yield one of India's largest developmental structures in recent history. This unique endeavour is expected to boost irrigation in water-deficient rural India, eventually expanding agriculture growth while minimizing poverty, famine and food insecurity. Nevertheless, the question is, can the implementing agencies curtail past ecological mistakes? To answer this thorny query, one may need to look at the historical aftermaths of this century.

After the independence in 1947, India's first Prime Minister, Jawaharlal Nehru praised the construction of large dams as 'temples of modern India'<sup>3</sup>. Nevertheless, the problems involving

millions of dam displaced villagers and the negative environmental costs were also obviously visible after a decade of big dam building. Realizing the frustrations and pain suffered by the displaced people due to building of dams, Nehru spoke at the Central Board of Irrigation and Power in 1958 and said 'we are suffering from what we may call a disease of gigantism'<sup>4</sup>. The above example shows that even the desperately needed development projects such as the construction of big dams materialized with heavy cost of environment impact and human shift.

As a matter of fact, India is a prolific dam builder. It holds the third rank globally, in the records, for completed large dams, closely following China and USA. For decades, India has been building dams to boost electric power supply and enhance irrigated agriculture while reducing flash flood casualties ultimately leading to the reduction of hunger and food insecurity. But the Planning Commission of India has admitted in its tenth plan (2002–2007) document that the water-use efficiency in most canal irrigation systems connected to large dams was low (30–40%, as against an ideal value of 60%) due to leakage, silting, weed growth, broken structures and poor maintenance<sup>5</sup>. So, there is an inherent historical difficulty to maintain canal structures without seepage. Therefore

this inefficiency must be addressed thoroughly, before the government embarks on this long canal march. To make matters worse, India's hot and dry summer months may vaporize the open canal water further, before it reaches the final destination. Hence reckoning and mitigating this evaporation crunch needs to be addressed scientifically and technologically.

India has done well in terms of micro-watershed projects through rainwater harvesting. They include the construction of eco-friendly check dams (Figure 1), percolation tanks and the execution of lift and drip irrigation systems. These minor irrigation systems do enrich efficiency in agriculture production in dry lands located out of reach of the large dam-linked canal irrigation system<sup>6</sup>. So the government, non-government and corporate sectors must continue to strengthen these minor irrigation structures, while refreshing in the major river link project. It is about time for India's politicians, bureaucrats and scientists to have a relook at the country's environmental history so that the repeat of the old mistakes linked to mega-engineering projects can be avoided in time. If not, this monumental river link project may backfire.



**Figure 1.** A view of the dry Chambal River near Sindhla village (Rajasthan, India) in January 2002 before the construction (above) of check dam and in November 2003 showing the backwaters of check dam (below), indicating the great potential of minor irrigation structures (photo courtesy: Sadguru Foundation).

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