

# INDIA'S BHAKRA PROJECT

## THE REALITY BEHIND A LEGEND

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The Bhakra project in India consists of a huge dam on the Sutluj River, thousands of kilometres of canals and several inter-basin diversions. The dam, built from 1947-63, brought irrigation to about 2.8 million hectares in Punjab, Haryana and Rajasthan states. -

The explosive growth in agricultural production in the late 1960s and 1970s in Punjab and Haryana was attributed to the Bhakra project. The project was credited with single-handedly pulling India out of humiliating dependency on foreign food aid, and with creating food self-sufficiency. In the process, the project has almost become a legend in India and is regularly cited to justify large dam-based irrigation projects.

The present author and colleagues have researched the long-term impacts, efficacy and sustainability of Bhakra and especially its role *vis-à-vis* India's food security. The preliminary findings of the study are startling, and indicate that the benefits and contributions of the project have been grossly exaggerated.

The preliminary findings indicate that while there was an increase in agriculture production after the project, the principal reasons for this lie elsewhere. The major forces driving productivity growth were not Bhakra, but the "chemicalization" and industrialization of agriculture – with massive inputs of financial subsidies, chemicals and energy and an explosive growth in groundwater pumping.

Bhakra first began to deliver irrigation water in 1953. Statistics show modest rates of agricultural growth between 1950-1967. Only after this did the rapid boom in productivity begin.

The study also indicates that the Bhakra system is highly unsustainable and today stands on the verge of collapse. In many areas, this collapse is already a reality. The growth rates of food grain production are falling, and have even become negative in the case of some significant crops like rice. Soils are highly degraded, and require increasing amounts of fertilisers to maintain productivity.

The agriculture system is dominated by just two crops – wheat and rice – and both are becoming highly unprofitable. Attempts over the past 15 years to diversify the crops have failed for economic, financial and ecological reasons. The soils have been rendered unfit for several crops.

While vast tracts of lands have become waterlogged and saline due to over-irrigation and poor drainage, huge areas also face serious water shortages. Over-pumping of groundwater has caused the water table to fall rapidly in many areas making groundwater use – the very foundation of the agricultural growth in the area – increasingly difficult and expensive.

All these problems have led to large numbers of farmers committing suicide in Punjab – the most prosperous and agriculturally most developed state in India. This, together with the fact that farmers with less than two acres of land are considered virtually landless, is a grim indicator of the kind of prosperity that is the result of half a century of the Bhakra project.

Furthermore, the reservoir behind the dam is filling with sediment up at an alarming rate. Loss of storage capacity reduces the amount of water that can be delivered to farmers. Today, over 10% of the live storage has been lost and continued sedimentation will likely cause deliveries to fall sharply in coming decades.

Meanwhile, 50 years after project construction, the people displaced by it are still seeking justice and proper resettlement. Many resettlement sites do not even have a proper source of drinking water.

Looking at the historical data, the startling fact emerges that the dam did not bring water to water-scarce areas. Rather, it watered areas that were already being served by a vast network of diversion canals, drawing water from the very same river. Indeed, a large part of the water of the river was already being used in the commanded areas.

In sum, it is clear that the Bhakra project's benefits have been highly exaggerated and that its actual role in agricultural growth was limited. Even this limited growth has proved to be highly unsustainable – economically, financially, ecologically and socially.