

# Multipurpose River Valley Projects in India

Multipurpose river valley projects are single projects that are used for multiple benefits. Initially, it involves the construction of dams for storing rainwater and its utilization in dry areas for agricultural purposes.

However, these projects have been used to grow the agricultural and industrial sectors, especially for generating power after the introduction of advanced technology. Thus, it contributes a significant amount to economic development.

## List of Multipurpose River Valley Projects in India

Damodar Valley Project was the first multipurpose river valley project in India. There are more than 70 multipurpose river valley projects constructed on the major River System in India. The list of the important multipurpose river valley projects in India, along with their respective states, are as follows-

Multipurpose River Valley Projects	States	Comments
Bhakra Nangal Project	Punjab, Haryana, Rajasthan	It supplies water to support irrigation in Punjab
Chambal Project	Madhya Pradesh, Rajasthan	It includes two dams- Jawahar Sagar Dam and Gandhi Sagar Dam
Koyna Project	Maharashtra	It is the largest completed hydroelectric power plant in India.
Damodar Valley Project	West Bengal, Jharkhand	It is the most prominent multipurpose power project in Jharkhand.
Farakka Barrage	West Bengal	It is the largest Barrage in India.
Hirakud Dam	Odisha	It is the first multipurpose river valley project of free India.
Indira Gandhi Canal	Punjab, Rajasthan	It is the longest canal in India
Nagarjuna Sagar Project	Andhra Pradesh	It is the world's largest masonry dam.

Rihand Project	Uttar Pradesh, Madhya Pradesh	The installed capacity is 300MW.
Ranjit Sagar Dam	Punjab	It is one of the largest multipurpose river valley projects on Ravi.
Tungabhadra Hydroelectric Project	Karnataka	It has a height of 49.5 meters with an installed capacity of 72MW.
Kakrapara Project	Gujarat	It has a nameplate capacity of 1034 MW.

## Important River Valley Project in India

Following are the details about few important Multipurpose River Valley Project in India.

### Bhakra Nangal Project

Bhakra Nangal Project is one of the biggest multipurpose river valley projects in India that was combinedly started by Rajasthan, Haryana, and Punjab over the Satluj river in Himachal Pradesh. It includes two dams- Nangal and Bhakra dam. The sole purpose of the Bhakra Nangal Project is hydropower and irrigation, and it generates 1204 MW of electricity. Also, the project's canal system irrigates 14.8 lakh hectares.

### Chambal Project

The Chambal project is a project jointly executed by Rajasthan and Madhya Pradesh that produces 368 MW of power. It involves three dams-

- **Gandhi Sagar Dam-** In the project's first stage, the 115 MW power station of the Gandhi Sagar Dam, along with the Kota barrage, was completed.
- **Rana Pratap Sagar Dam-** In the second stage, the dam's powerhouse with 172 MW capacity was inaugurated.
- **Jawahar Sagar Dam-** In the project's third phase, the Jawahar Sagar dam with a 99 MW power station was completed.

### Damodar Valley Project

Damodar Valley Project is a cooperative project established in 1948 and administered by the Damodar Valley Corporation. The project is executed by Jharkhand and West Bengal for power generation, flood control, and irrigation. This is one of the earliest projects, with a power capacity of 1181 MW and an irrigation potential of 5.51 lakh hectares.

### Koyna Project

Koyna Project is India's largest completed hydroelectric project, constructed on the Koyna Nagar in Maharashtra's Satara District. It consists of four dams, one of which is the largest constructed dam among the various [Dams in India](#), with a height of 208ft. The total power generation capacity of the Koyna Project is 1960 MW.

### Farakka Barrage

Farakka Barrage is a barrage located in the Murshidabad district, West Bengal. It consists of two barrages across Ganga and Bhagirathi to preserve and maintain the Calcutta port. The primary connectivity line between these two barrages is the road-cum-rail-bridge. The barrage was constructed to cut cubic meters per second of water from Ganga to the Hooghly river.

### Indira Gandhi Canal

Indira Gandhi Canal was established as the Rajasthan Canal in 1958. It is one of the biggest irrigation projects in India that provides irrigation facilities to a few parts of the country, including the Thar desert and northwestern parts of Rajasthan. It consists of a 215 km long feeder canal and 445 long central canal that spreads throughout the state. Indira Gandhi Canal irrigates 14.5 lakh hectares.

### Hirakud Dam

The first multipurpose river valley project of free India is the Hirakud dam, constructed on the Mahanadi river in Sambalpur, Odisha. It is the longest dam, with a length of 4801.2m, built for the purpose of flood control, irrigation, and power generation in the coastal parts of Odisha. It has an installed power capacity of 27.2 MW.

### Ranjit Sagar Dam

The Ranjit Sagar Dam, also known as Thien Dam, is a part of Punjab's government hydroelectricity project on river Ravi. It is constructed on approx 24 km upstream of Madhopur Headworks in an idyllic and serene location in the Pathankot district of Punjab. It has an installed capacity of 600MW.

### Nagarjuna Sagar Project

Nagarjuna Sagar Project is a project constructed by the Andhra Pradesh government for proper water utilization, situated in Nalgonda District. Nagarjuna Sagar Dam is 1450m in length and has a height of 92m. It provides irrigation water to Prakasam, Guntur, West Godavari, Khammam, Palnadu, Eluru, Bapatla, NTR, Krishna, Suryapet, and Nalgonda districts. Nagarjuna Sagar Project is estimated to irrigate 8.95 lakh hectares.

### Kakrapara Project

Kakrapara Project is a nuclear power station constructed in Tapti, Surat, under the administration of the government of Gujarat. The project is 14m high and 621m long. It was built in two phases-

- Phase 1- KAPS-1 and 2 were constructed with a gross MW of 220.
- Phase 2- KAPS-3 and 4 were constructed with a gross MW of 700.

### Tungabhadra Hydroelectric Project

Tungabhadra Hydroelectric Project is constructed in the Ballari district of Karnataka across the Tungabhadra river for flood control, electricity generation, and irrigation. The project's height is 49.5m, and it has an installed power capacity of 72MW. The storage capacity of the reservoir is 101 TMC.

### Rihand Project

Rihand Project includes the construction of the concrete dam in the Mirzapur district of Uttar Pradesh across the Rihand River. Along with the dam construction, it contains necessary transmission lines and a powerhouse at Pipri.

## Objectives of Multipurpose River Valley Project

Multipurpose river valley projects serve various objectives like soil conservation, electricity generation, irrigation, fish breeding, flood control, etc. The advantages of the multipurpose river valley projects in India are as follows-

- Flood Control- As water is stored in such projects, these projects help to control the flood.
- Generation of Power- It results in the generation of clean, pollution-free, and economical energy.
- Soil Conservation- It decreases the speed of the water, thus, conserving the soil.
- Irrigation- The water stored in the dams is utilized for irrigating dry areas.
- Fisheries- It creates an ideal condition for fish breeding of chosen variety.
- Tourist centers- since these projects are developed scientifically and cared for well, it becomes the center of attraction for tourists.

Multipurpose River Valley Projects in India have got a lot of advantages. However, there are specific challenges that are causing a delay in achieving its objectives. Because of the change in rainfall patterns in the catchment areas, there are challenges in the way flood control. Floods decrease the storage capacity in the reservoir, and all these factors have increased the management crisis.