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## **Interlinking of Rivers in In-A Comprehensive Analysis**

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### **ABSTRACT**

The interconnection of rivers in India has sparked a great deal of discussion and disagreement over the effects on the environment. In order to assess any potential environmental effects as well as policy ramifications, this research article will undertake a thorough examination of the Indian interlinking of rivers project. The study looks at the literature that has already been written, empirical data, and expert opinion in order to offer recommendations for sustainable water resource management and to shed light on the opportunities and problems related to river interlinking.

Keyword: NRLP, Interlinking of Rivers and Environmental Impact.

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### **Introduction**

India's water resources are to be managed efficiently through the massive River Inter-linking Project. establishing a system of canals and reservoirs to connect Indian rivers in order to enhance groundwater and irrigation replenishment, lessening water scarcity in some places and recurring floods in others. River interlinking is based on the observation that while some areas of the nation have annual flooding, many others suffer from drought. India's river network has attracted a lot of interest as a potential remedy for the nation's ongoing problems with water management. India confronts complicated challenges related to the management of its water resources, including a large population, growing water demands across several sectors, and an increase in floods and droughts. These challenges call for creative solutions. To transfer excess water from water-rich regions to water-deficient areas, the idea of "interlinking rivers" entails connecting rivers through a network of canals, reservoirs, and diversion channels. The overall objectives of this approach are to maximize water utilization, increase agricultural productivity, and lessen the effects of water scarcity.

Water issues between states resulting from the execution of extensive interconnection projects. India has long debated the issue of connecting its rivers; talks about it date back to the late 1800s. However, with the launch of the National Perspective Plan for Water Resources Development in 1980 and the ensuing feasibility studies and project proposals, coordinated efforts to pursue interlinking projects acquired impetus in the early 21st century. The execution of river interlinking projects in India is still a hotly debated topic due to differing viewpoints, competing interests, and regulatory complexity, even after decades of discussion and patchy success on some fronts. In light of this, the purpose of this research study is to present a thorough examination of India's river network, taking into account its historical development, socioeconomic ramifications, and environmental factors.

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### **Research Methodology & Objectives**

Extensive secondary data analysis served as the foundation for this research. The secondary data was gathered from trade publications, books, periodicals, and the internet. The primary aim of this study is to provide an overview of the river interlinking project and its consequences.

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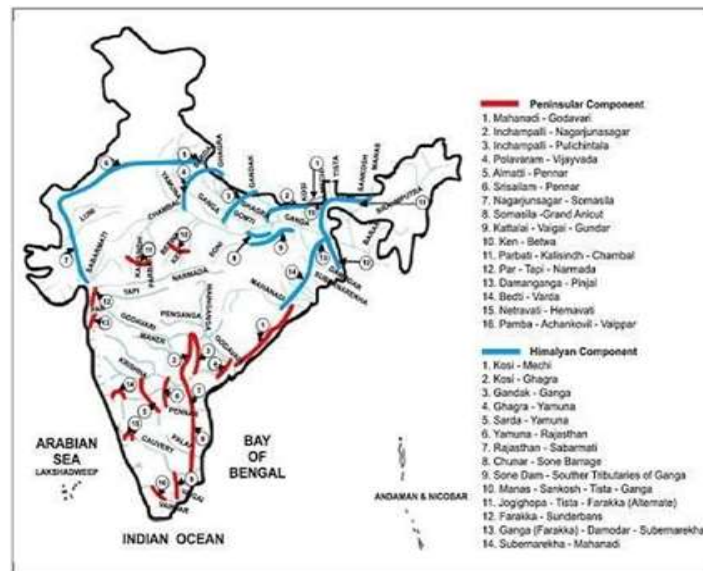
### **History of Interlinking of River**

Sir **Arthur Cotton**, Chief Engineer of the Madras Presidency, proposed the idea of connecting rivers in 1919. Former Prime Minister **Indira Gandhi** established the **National Water Development Agency in 1982**. National water grid for transferring water from water-rich regions to water-deficit areas. This demand has been made from time to time. In the early seventies, a proposal was put forth, first the national water grid and garland canal by **KL Rao** and **Captain Dastur** respectively. This proposal was not implemented by the government due to techno-economic concerns. The National Water Development Agency (NWDA) was established on 17th July 1982 by the government of India to study the feasibility of links under the peninsular component of NPP (National Perspective Plan) and later the Himalayan component. The Hon'ble Supreme Court gave a judgement on "Networking of Rivers" according to the judgement dated 27-02-2012 on the matter of writ petition (Civil) No.512 of 2002. The Hon'ble court has directed that an appropriate body should be created to plan, construct and implement the networking of rivers program for the benefit of the nation as a whole. On the Hon'ble court judgement union cabinet in its meeting approved the constitution of the "Special Committee" on the interlinking of rivers in 2014.

## The Interlinking of Rivers

The National Water Development Agency Under the NPP, the National Water Development Agency (NWDA) was founded to investigate the viability of connecting rivers. The NPP is divided into two parts: the development of rivers in the Himalayas and the Peninsula. Thirty link projects have been recognized under the NPP. The first connection project funded by the NPP is the Ken-Betwa project. The project (<https://nwder.gov.in/>) has already commenced. A project called the National River Linking Project aims to link rivers all throughout the nation. The goal of all interlinking plans is to move water between river systems, one of the biggest civil engineering projects that the Indian President and Supreme Court have jointly suggested. There are sixteen projected canal links in the peninsular component and fourteen in the Himalayan component.

Interlinking rivers is a way to transfer excess water from the regions which receive a lot of rainfall to the drought-prone areas. This way, it can control both floods and droughts. This will also help solve the water crisis in many parts of the country.



## The Need for Interlinking of Rivers

India has seen a wide range of issues, the most significant of which have been droughts, floods, and famine. Improving irrigation is necessary for agriculture to thrive. A major issue facing the nation is the unpredictability of rainfall, dry spells, and variations in seasonal and yearly rainfall. It becomes increasingly important to have access to water, even for drinking, especially during the summer when rivers dry up and groundwater levels drop. Situations where some regions of the country do not have adequate water even for growing a single crop arise from regional variations in rainfall. However, excessive rainfall that falls in some regions of the nation causes devastation because of floods. India, with patience, took steps to solve these problems. The government of India proposed an NPP under (NWDA).

The NPP has two components:

### Himalayan River Development Component

In addition to connecting the main Brahmaputra with the Ganga, the Himalayan River development plan calls for building storage reservoirs on the principal tributaries of the Ganga and the Brahmaputra and connecting canal systems to transfer excess flows from the eastern tributaries of the Ganga to the west. In addition to producing around 30 million kilowatts of hydropower and supplying irrigation to an extra 22 million hectares, it will significantly reduce floods in the Ganga-Brahmaputra watershed. If river flow control treaties are successfully signed, the Scheme will benefit not just the States in the Ganga-Brahmaputra Basin but also Bangladesh and Nepal.

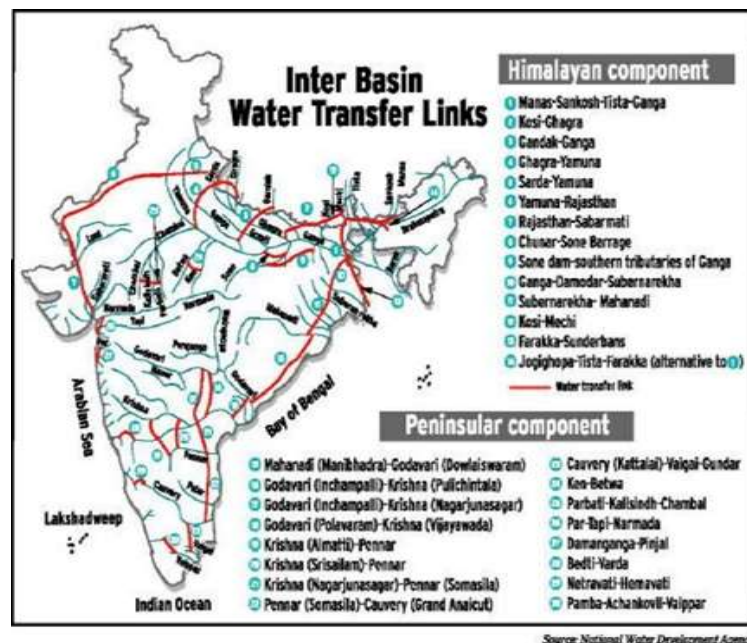
### Peninsular River Development Component

This Scheme is divided into four major parts:

The connection between Mahanadi, Godavari, Krishna, Palar, Pennar, and Kaveri West Flowing Rivers Interlinking, North of Mumbai and South of Tapi, Ken and Chambal are connected, and part of the water from the West Flowing Rivers is diverted.

The project's primary goal was to transport water to India's west and south from its eastern region. There would be four primary components to the southern development project. Godavari, the Mahanadi, comes first. The rivers Krishna and Kaveri will all be connected by canals. Dams and reservoirs would be constructed alongside these rivers.

## DIAGRAM of HIMALAYAN & PENINSULAR COMPONENT



### Challenges in Interlinking of Rivers

Thoroughly evaluating the environmental impact of India's river interconnections is a major scientific challenge. In order to assess potential effects including altered river flow patterns, habitat destruction, biodiversity loss, and changes in water quality, a complete Environmental Impact Assessment (EIA) must be carried out. It's also critical to comprehend the social and cultural ramifications, which includes looking at problems like livelihood loss, displacement, and effects on indigenous populations. In addition, evaluating the institutional and legal context of river interlinking initiatives is crucial to determining how well they handle social and environmental issues. Prioritizing economic viability and cost-benefit analysis also means evaluating building costs, possible irrigation and flood control benefits, and long-term economic sustainability. These difficulties call for multidisciplinary research initiatives that combine environmental science, social sciences, economics, and policy analysis in order to offer thorough understandings of the intricate problems related to river interlinking initiatives in India.

### Conclusion

This river linking project in India is built on cutting-edge techniques for connecting manmade and natural water drainage systems to transfer water between and between basins. This is a novel method of conserving rainwater; it makes use of runoff from floods and replenishes natural and manmade bodies of water by using channels for natural and artificial water drainage.

India's vast Rivers Inter-linking Project seeks to efficiently manage the country's water resources, establishing a network of reservoirs and canals to connect Indian rivers in order to enhance irrigation and groundwater recharge, lessen recurring floods in certain regions, and alleviate water scarcity in other regions. The project's improvement of the inland waterways transportation network will also help the economy.

Additionally, fish farming will be one of the alternative sources of income available to rural communities. Every developing initiative is accessible in terms of the socioeconomic, financial, and mostly environmental effects it has. The feasibility study was initiated by the NWDA in the 1980s. The NRLP project's initial link was just launched. In the previous thirty to forty years, social, economic, and environmental conditions have transformed. We need to strike a balance without negatively affecting the nation's ecosystem as a whole or the environment. Scientists and environmentalists have raised worries about the environment, but we also can't overlook natural disasters like droughts, floods, and water shortages. The connecting project is a massive undertaking with the goal of efficiently managing India's water supplies.

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