PARBATI-KALISINDH-CHAMBAL LINK PROJECCT - GEOGRAPHY

NEWS: A significant Memorandum of Understanding (MoU) has been signed between the states of Rajasthan and Madhya Pradesh for the implementation of the Modified Parbati-Kalisindh-Chambal Eastern Rajasthan Canal Project (PKC-ERCP). This river link project forms a part of India's ambitious National Perspective Plan (NPP), which aims to interlink various rivers to enhance water availability across diverse regions.

WHAT'S IN THE NEWS?

Overview of the Modified PKC-ERCP Project:

The **Parbati-Kalisindh-Chambal (PKC)** initiative is a river-linking project aimed at diverting surplus water from the Parbati, Newaj, and Kalisindh rivers to the Chambal River. This project is a part of India's **National Perspective Plan (1980)**, crafted by the **Central Water Commission** in collaboration with the **Union Ministry of Irrigation**. It targets optimizing water use in the Chambal basin, benefiting regions in **Madhya Pradesh** and **Rajasthan**, primarily for domestic and industrial needs.

Rivers Included in the Project:

Chambal River:

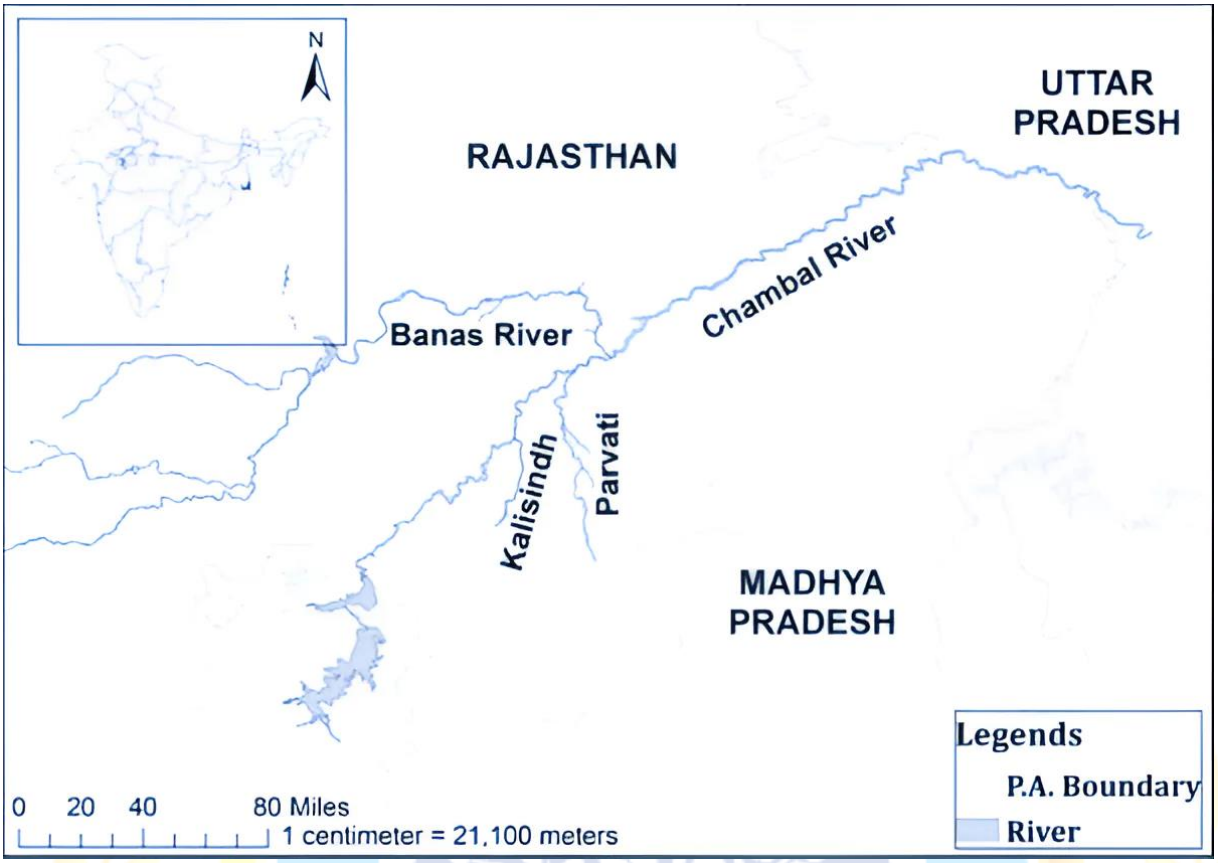
- Originates from **Singar Chouri Peak** in the Vindhya Mountains (Indore, Madhya Pradesh).
- Major tributaries include the **Banas, Kali Sindh, Sipra,** and **Parbati** rivers.

Parvati River:

- Begins in the **Vindhya Range** in **Sehore District**, Madhya Pradesh.
- Lacks significant tributaries.

Kali Sindh River:

- Starts in **Bagli, Dewas District** of Madhya Pradesh.
- Important tributaries are **Parwan, Newaj,** and **Ahu** rivers.



Eastern Rajasthan Canal Project (ERCP):

The **ERCP**, proposed by the Rajasthan government in 2019, aims to improve water resource management by facilitating intra-basin water transfers within the **Chambal Basin**. The project's objective is to utilize surplus monsoon water from the **Kalisindh, Parvati, Mej,** and **Chakan** sub-basins, redirecting it to areas with water shortages, such as the **Banas, Gambhiri, Banganga,** and **Parbati** sub-basins. This water will serve 13 districts in eastern Rajasthan, including **Alwar, Bharatpur, Sawai Madhopur,** and **Jaipur**.

Benefits of the ERCP:

- The ERCP is anticipated to increase irrigation coverage by **4.31 lakh hectares** and create an additional command area of **2 lakh hectares**.
- This project will contribute to improving groundwater levels in Rajasthan, thus enhancing socio-economic conditions in rural areas.
- It is also designed to support industrial growth, particularly the **Delhi-Mumbai Industrial Corridor (DMIC)**, by ensuring sustainable water sources.

Integration of PKC and ERCP:

The **Modified Parbati-Kalisindh-Chambal ERCP** is a merged project that combines the PKC link with the ERCP. This integrated approach tackles concerns such as water-sharing, fair distribution of costs and benefits, and the exchange of water between different states.

Rationale for the Project:

Rajasthan, despite being India's largest state in terms of area (10.4% of the total landmass), holds only **1.16% of the country's surface water** and **1.72% of groundwater**. The state's water scarcity emphasizes the need for a comprehensive water management strategy, such as the PKC-ERCP, to ensure a sustainable water supply for both domestic and industrial purposes.

Interlinking of Rivers

- In 1858, Arthur Cotton (British general and irrigation Engineer) came up with even more ambitious proposals such as connecting all major rivers of India, and interlinking of canals and rivers. He suggested drought-relief measures for Odisha.
- The National River Linking Project (NRLP) formally known as the National Perspective Plan, envisages the transfer of water from water 'surplus' basins where there is flooding, to water 'deficit' basins where there is drought/scarcity, through inter-basin water transfer projects.
- The interlinking of river project is a Civil Engineering project, which aims to connect Indian rivers through reservoirs and canals.
- The farmers will not have to depend on the monsoon for cultivation and also the excess or lack of water can be overcome during flood or drought.
- Since the 1980s, the interlinking project has been managed by India's National Water Development Agency (NWDA) under the Ministry of Water Resources.
- **It has been split into three parts as follows:**
    - A northern Himalayan river interlink component.
    - A southern peninsular component.
    - An Intra-State river linking component.

Importance of River Interlinking Projects:

- **Flood Control**: These projects help manage and reduce the risks of flooding, particularly in regions prone to floods like the **Ganga-Brahmaputra-Meghna basin**.
- **Addressing Water Scarcity**: They are instrumental in tackling water shortages in drought-affected areas of **Rajasthan**, **Gujarat**, **Andhra Pradesh**, **Karnataka**, and **Tamil Nadu**.
- **Boosting Agriculture**: By improving irrigation in regions with water scarcity, these projects contribute to enhanced agricultural productivity, which could result in a significant increase in farmers' incomes.
    - Example: **Ken-Betwa link project**.
- **Supporting Inland Waterways**: The projects also enable the development of **inland waterways**, like **National Waterway-1**, promoting more efficient transport for goods.
- **Water Resource Optimisation**: A key goal is to make better use of surface water to prevent **groundwater depletion** and reduce the amount of freshwater that flows into the sea without being utilised.

Challenges and Concerns:

- **Impact on Biodiversity**: Redirecting rivers can disturb natural habitats, leading to potential **biodiversity loss** and environmental changes.
    - Example: The **Ken-Betwa link project** could submerge areas of the **Panna Tiger Reserve**, endangering the wildlife there.
- **Social and Human Displacement**: These projects often lead to the displacement of communities, bringing up major **social and humanitarian issues**.
- **Financial and Technical Obstacles**: High costs, coupled with **technical challenges** and issues related to **land acquisition**, make these projects difficult to implement effectively.
- **Global Comparisons**: China's **South-to-North Water Diversion Project (SNWDP)**, which aimed to transfer water from the **Yangtze River** to the **Yellow River Basin**, encountered many obstacles, serving as a warning for large-scale water diversion projects.
- **Water Disputes**: The limited availability of water resources can lead to disputes between states, as seen in the **Krishna Water Dispute**.
- **Environmental and Social Consequences**: There are concerns about the long-term sustainability of such projects, including the potential for worsening existing social and environmental problems.