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Q14

The interlinking of revivers can provide viable solutions to the multi-dimensional inter-related problems of droughts, floods and interrupted navigation. Critically examine.

UPSC Civil Services Mains 2020 · GS I · 15 marks · Geophysical Phenomena

Important Geophysical phenomena such as earthquakes, tsunami, volcanic activity, cyclone etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Core demand of the question

- The interlinking of rivers can provide viable solutions to the multi-dimensional inter-related problems of droughts, floods and interrupted navigation. Critically examine
- Keep a 15-mark length

Revision summary

ILR claims to send flood water to drought land and to aid boats.

Ken-Betwa is the test case and already hits **Panna** ecology.

Flood, drought, and navigation follow different hydrology.

Climate change makes 'surplus' rivers an unstable idea.

Watershed, zoning, and dedicated waterways are the least-cost complements.

Introduction

The **National Perspective Plan** for interlinking rivers promises to move flood water to drought districts and to restore inland boats. **Ken-Betwa** is the first living test. Hydrology, ecology, and federal politics say the promise is partial, costly, and not a standalone viable fix.

Body

The case made for linking

- Surplus-to-deficit transfer could, in theory, shave Ganga-Brahmaputra flood peaks and refill dry Peninsular tanks.
- A long navigable contour would cut diesel trucking, a logistics argument the question names as interrupted navigation.
- Ken-Betwa is sold as Bundelkhand drought relief plus a dam that also claims hydropower and tourist water.

Why floods, droughts, and boats are not one pipe

- Flood and drought can occur in the same basin in one year. A canal does not cancel cloudbursts or a failed monsoon on the receiving side.
- Himalayan rivers are silt-heavy and seasonal; Peninsular rivers are monsoon-pulse. Linking unlike hydrographs needs storage that submerges forests and villages.

- Navigation needs assured draft, terminals, and low silt. Interlinking is a water-transfer project first; inland waterways (IWAI, **National Waterways**) can proceed without a subcontinent-wide plumbing grid.

Ecological and social critique

- Ken-Betwa threatens the **Panna** tiger and vulture landscape and a dry deciduous ecology that is not 'wasted surplus'.
- Delta shrinkage, reduced **environmental flows**, and the Ganga-Brahmaputra sediment budget are climate-sensitive. Yesterday's surplus is not a treaty with 2050 glaciers and a wilder monsoon.
- Displacement, interstate disputes (Sutlej-Yamuna, Cauvery memories), and huge capital cost fail a least-cost test against watershed, aquifer recharge, crop shift, and urban storm drains.

Critical verdict

- Some local links and storage may help. A pan-India grid as the viable solution to three distinct problems oversells engineering.
- **Viable packages:** floodplain zoning plus reservoirs for floods; rainwater and Atal Bhujal-type groundwater work for drought; dedicated waterways on already navigable stretches for boats.

Flow diagram

River linking -> Claimed flood drought nav
River linking -> Forest displacement silt
Watershed waterways zoning -> More viable mix
Claimed flood drought nav -> Only partial
Forest displacement silt -> Only partial

Conclusion

River interlinking can move some water. It cannot by itself solve drought, flood, and navigation, which have different physics. Ken-Betwa shows the ecological bill. Critically, treat ILR as one optional project class, not as India's water philosophy.

Facts & figures

National Perspective Plan

Central scheme of Himalayan and Peninsular inter-basin links.

Ken-Betwa

First major ILR project, aimed at Bundelkhand, contested for Panna impacts.

Panna

Tiger reserve ecology at risk from Ken-Betwa submergence and fragmentation.

National Waterways

Navigation programme that does not require a full interlink grid.

Environmental flows

Water a river needs for sediment and delta health, often cut by transfers.

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