Geography · GS - I

In what way can floods be converted into a sustainable source of irrigation and all-weather inland navigation in India?

EXAM YEAR	PAPER	SUBJECT
2017	GS - I	Geography

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Integrated river basin management; floodwater storage; inter-basin transfers; irrigation infrastructure; inland waterways; ecological safeguards

Model Answer

Introduction

Floods in India cause loss of life, damage to crops and infrastructure, and displacement. However, with scientific planning, a portion of floodwater can be stored and utilised for irrigation and inland navigation while maintaining river ecology.

Converting Floods into Productive Resources

1. Floodwater Storage and Irrigation

- Construct multipurpose reservoirs and strategically designed retention structures where environmentally and socially viable.
- Restore wetlands, floodplains and traditional tanks to store excess water and recharge groundwater.
- Develop canals and distribution networks to transfer stored water to agricultural areas during dry periods.
- Promote rainwater harvesting and conjunctive use of surface water and groundwater.
- Improve forecasting and reservoir operations to balance flood moderation with irrigation needs.

2. Inland Navigation

- Develop and maintain navigable river channels through scientific dredging where necessary.
- Establish terminals, jetties and multimodal links connecting waterways with roads and railways.
- Use seasonal flow forecasts to plan navigation and maintain safe channel depths.
- Integrate inland waterways with agricultural markets to reduce freight costs and road congestion.

3. Institutional and Ecological Measures

- Adopt integrated river basin management involving neighbouring States.
- Protect natural floodplains and avoid excessive embankment construction.
- Conduct environmental impact assessments before large projects.
- Ensure rehabilitation and fair compensation for displaced communities.

Conclusion

Floodwater can support irrigation, groundwater recharge and inland transport when managed through basin-level planning. The objective should not be to eliminate floods entirely, but to reduce their destructive effects while using water sustainably.

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