Environment & Ecology · GS - II

Examine the environmental and diplomatic challenges posed by transboundary water pollution. Suggest measures to strengthen regional cooperation in addressing such pollution.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 28/11/2026	GS - II	Environment & Ecology

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Transboundary pollution, shared river basins, arsenic contamination, mining regulation, environmental diplomacy, public health, data sharing, international cooperation

Model Answer

Transboundary water pollution occurs when contaminants originating in one country affect the water resources and populations of another. Mining-related arsenic contamination along the Thailand–Myanmar border illustrates the environmental and diplomatic dimensions of this challenge.

Major environmental and social consequences:

1. **Public health risks:** Prolonged exposure to arsenic-contaminated drinking water can cause skin lesions, cardiovascular disorders and cancers.

2. **Agricultural damage:** Contaminated irrigation water can introduce toxic substances into soils and food chains, threatening agricultural productivity and food safety.

3. **Ecological degradation:** Toxic pollutants can affect aquatic organisms, biodiversity and the ecological balance of river systems.

4. **Livelihood insecurity:** Border communities dependent on rivers for drinking water, fisheries and agriculture face economic and social vulnerability.

Diplomatic and governance challenges:

- Different environmental standards and enforcement capacities.
- Difficulty identifying and monitoring pollution sources across borders.
- Limited exchange of reliable water-quality data.
- Questions of accountability, compensation and remediation.
- Tensions between economic activities and environmental protection.

Measures to strengthen cooperation:

Countries should establish joint river-monitoring mechanisms, share real-time pollution data and conduct coordinated environmental impact assessments. Mining operations must follow strict environmental standards, including safe waste disposal and regular inspections. Bilateral agreements should provide mechanisms for early notification, emergency response and remediation.

Conclusion: Transboundary water security requires cooperation based on scientific evidence, preventive regulation and shared responsibility. Environmental diplomacy must ensure that economic activities in one country do not compromise the health and livelihoods of communities across the border.

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