

Class X - Social Science

Water Resources

CBSE NOTES

Water Resources - Challenge Worksheet

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Challenge Questions

1. Evaluate the implications of multi-purpose river projects on the environment and local communities.

Hint: Consider both the developmental benefits and the ecological and social costs.

Solution: Multi-purpose river projects have both positive and negative impacts. Positively, they provide irrigation, electricity, and flood control. Negatively, they can lead to displacement of communities, loss of biodiversity, and disruption of natural river flows. Examples include the Bhakra-Nangal project's benefits versus the Sardar Sarovar Dam's controversies.

2. Analyze the reasons behind water scarcity in regions with high annual rainfall.

Hint: Think about how mismanagement and pollution can negate the benefits of high rainfall.

Solution: Water scarcity in high rainfall regions can be due to poor water management, pollution, and unequal distribution. For instance, Kolkata faces scarcity despite heavy rains due to flooding and contamination.

3. Discuss the role of traditional water harvesting systems in addressing water scarcity in arid regions.

Hint: Consider the efficiency and sustainability of indigenous practices.

Solution: Traditional systems like 'khadins' and 'johads' in Rajasthan effectively conserve water by capturing runoff and recharging groundwater. These methods are sustainable and culturally adapted to local conditions.

4. Compare the advantages and disadvantages of rooftop rainwater harvesting in urban versus rural areas.

Hint: Think about spatial and infrastructural differences between urban and rural settings.

Solution: In urban areas, rooftop harvesting can reduce dependency on municipal supply but faces space constraints. In rural areas, it's easier to implement but may lack maintenance. Tamil Nadu's success contrasts with challenges in densely populated cities.

5. Examine the impact of industrialisation on freshwater resources in India.

Hint: Consider both consumption and pollution aspects.

Solution: Industries consume large amounts of water and often pollute it, exacerbating scarcity. The Damodar valley's industrial growth has led to water pollution and conflicts over usage.

6. Assess the effectiveness of government initiatives like Jal Jeevan Mission in ensuring water security.

Hint: Evaluate both the objectives and the practical challenges.

Solution: Jal Jeevan Mission aims to provide piped water to rural households, improving access and quality. However, challenges include implementation gaps and sustainable management.

7. Debate the statement: 'Dams are the temples of modern India' in the context of current environmental concerns.

Hint: Balance developmental benefits against ecological and social costs.

Solution: While dams have driven development, their environmental costs—like habitat destruction and sedimentation—question their sustainability. The Narmada Bachao Andolan highlights these conflicts.

8. Explore the potential of bamboo drip irrigation systems in sustainable agriculture.

Hint: Consider the efficiency and adaptability of traditional technologies.

Solution: Bamboo drip systems in Meghalaya are highly efficient, using gravity to deliver water precisely. They minimize waste and are adaptable to hilly terrains.

9. Critically analyze the inter-state water disputes in India with examples.

Hint: Focus on the root causes and governance issues.

Solution: Disputes like Krishna-Godavari arise from competing demands and poor governance. The Cauvery conflict between Karnataka and Tamil Nadu exemplifies these challenges.

10. Propose a comprehensive plan for water conservation in your locality using modern and traditional methods.

Hint: Integrate both technological and community-based approaches.

Solution: A plan could combine rooftop harvesting, community tanks, and awareness campaigns. For example, Gendathur's success in Karnataka shows the potential of community-led initiatives.

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