Geography · GS - I

The effective management of land and water resources will drastically reduce the human miseries. Explain.

EXAM YEAR	PAPER	SUBJECT
2016	GS - I	Geography

MARKS	WORD LIMIT
15	~ 250 words

Answer Hint

Land degradation; water scarcity; food security; livelihood protection; watershed management; soil conservation; groundwater recharge; sustainable development

Model Answer

Introduction

Land and water are essential natural resources that support agriculture, livelihoods, settlements and ecosystems. Their degradation causes poverty, food insecurity, displacement and ecological stress. Effective management can significantly reduce these hardships.

Importance of Land Resource Management

- **Food security:** Soil conservation, sustainable farming and land restoration improve agricultural productivity.
- **Livelihood protection:** Productive land supports farmers, pastoralists and forest-dependent communities.
- **Reduced degradation:** Contour bunding, terracing, afforestation and controlled grazing help limit soil erosion and desertification.

- **Urban resilience:** Scientific land-use planning can reduce settlement in floodplains, unstable slopes and other hazard-prone areas.

Importance of Water Resource Management

- **Drinking water security:** Protecting water bodies and improving supply systems reduce water scarcity and waterborne disease.
- **Agricultural stability:** Efficient irrigation, rainwater harvesting and groundwater recharge reduce vulnerability to drought.
- **Disaster mitigation:** Wetland restoration, watershed management and floodplain protection can reduce flood impacts.
- **Ecosystem health:** Maintaining environmental flows supports aquatic biodiversity and riverine livelihoods.

Integrated Management Strategies

1. **Watershed development:** Treat catchments through check dams, contour trenches, vegetative barriers and soil-moisture conservation.
2. **Efficient irrigation:** Promote drip and sprinkler irrigation where suitable, alongside appropriate crop choices.
3. **Groundwater governance:** Monitor extraction, protect recharge zones and encourage community management.
4. **Land-use planning:** Prevent encroachment on wetlands and floodplains and restore degraded land.
5. **Community participation:** Involve local institutions, farmers and water-user associations in planning and maintenance.
6. **Policy convergence:** Integrate agricultural, forestry, rural-development and water-management programmes.

Conclusion

Integrated land and water management can improve food and water security, strengthen livelihoods and reduce disaster vulnerability. Its effectiveness depends on ecological sustainability, equitable access and community participation.

BECOME IAS
AI POWERED UPSC PREP