

**(AG509) Watershed Planning and Management**

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**Unit 1**

Watershed management - problems and prospects; Principles, Objectives, benefits and components of watershed management, Identification of watershed problems,

**Unit II**

watershed based land use planning, watershed characteristics – physical and geomorphologic, factors affecting watershed management, hydrologic data for watershed planning, watershed delineation, delineation of priority watershed,

**Unit III**

Water yield assessment and measurement from a watershed; hydrologic and hydraulic design of earthen embankments and diversion structures; sediment yield estimation and measurement from a watershed, sediment yield models; rainwater conservation technologies - in-situ and storage,

**Unit IV**

Design of water harvesting tanks and ponds; water budgeting in a watershed; effect of cropping system, land management and cultural practices on watershed hydrology;

**Unit V**

Evaluation and monitoring of watershed programmes; people's participation in watershed management programmes; planning and formulation of project proposal; cost benefits analysis of watershed programmes; watershed modeling-optimal land use models; case studies.

**TEXT BOOKS:**

1. Dhruva Narayana, V.V., Sastri, G. and Patnaik, U.S. (1990). *Watershed Management*. ICAR., New Delhi.
2. ICAR. *Soil and Water Conservation Research in India*.
3. Singh, G., Venkataraman, C., Sastri, C., Joshi, B.P. (1985). *Manual of Soil Water conservation practices*. Oxford IBM Publishing Co Pvt.Ltd. New Delhi.
4. Singh, R.V. (2000). *Watershed Planning and Management*. Yash Publishing House, Bikaner.

**REFERENCE BOOKS:**

5. Suresh, R. (1997). *Soil and water Conservation Engineering*. Standard Publishers and Distributors.
6. Wasi Ulla, Gupta, S.K., Dalal, S.S. (1972). *Hydrological measurements for watershed research*. Jugal Kishore & Co, Dehradun.