

Chapter-12

Irrigation

12.1 Irrigation in India : Irrigation Projects in India are classified into three categories viz. **Major, Medium and Minor Irrigation**. Projects which have a Cultivable Command Area (CCA) of more than 10,000 hectare are termed as Major Projects, those which have a CCA of less than 10,000 hectare but more than 2,000 hectare are termed as Medium projects and those Irrigation Projects which have a CCA of 2,000 hectare or less are known as Minor projects.

12.2 Sources of Irrigation: Various sources of irrigation in India are canals, tanks , tube wells and other wells, with tube wells and canals together accounting for about 70 % of total irrigation.

12.3 Types of Irrigation Technique: Various types of irrigation techniques differ in how the water obtained from the source is distributed within the field. The various irrigation techniques are as under:

- **Surface Irrigation:** In surface irrigation systems, water moves over and across the land by simple gravity flow in order to wet it and to infiltrate into the soil. Surface irrigation can be subdivided into furrow, border strip or basin irrigation.
- **Localized Irrigation:** Localized irrigation is a system where water is distributed under low pressure through a piped network, in a pre- determined pattern, and applied as a small discharge to each plant or adjacent to it.
- **Drip Irrigation:** Drip irrigation, also known as **trickle irrigation**, functions as its name suggests. Water is delivered at or near the root zone of plants, drop by drop. This method can be the most water- efficient method of irrigation, if managed properly, since evaporation and runoff are minimized.
- **Sprinkler Irrigation:** In sprinkler or overhead irrigation, water is piped to one or more central locations within the field and distributed by overhead high-pressure sprinklers or guns.
- **Sub-Irrigation:** Sub-irrigation also sometimes called seepage irrigation has been used for many years in field crops in areas with high water tables. It is a method of artificially raising the water table to allow the soil to be moistened from below the plants' root zone.

12.4 Recent Initiatives: ‘Pradhan Mantri Krishi Sinchayee Yojana’ was launched with the motto of ‘Har Khet Ko Paani’. Micro irrigation would be popularised to ensure ‘Per drop-More crop’ . Amongst various objectives in the Scheme are convergence of investments in irrigation at the field level, physical access of water on the farm, and expansion of cultivable area under assured irrigation (Har Khet ko pani), enhancement of the adoption of precision-irrigation , reduction of wastage of water etc.

12.5 FLOOD FORECASTING: The Ministry of Water Resources through its apex technical arm, namely Central Water Commission performs the activity of flood forecasting on major rivers and their tributaries in the country. For this purpose, CWC maintains a network of 176 flood forecasting stations which consists of 148 level forecast stations and 28 inflow forecast stations. The level forecasts issued by CWC help the local administration in drawing programmes for evacuation of people from flood affected areas to safer places. The Inflow forecasts help the Dam authorities in optimum regulation of reservoirs. In order to meet the requirement of expeditious flood forecasting, CWC has been making continuous endeavour for modernization of its flood forecasting network

12.6 CWC has prepared “Inventory of Glacial Lakes/Water Bodies in the Himalayan Region of Indian River Basins” in cooperation with NRSC, Hyderabad and started monitoring of these glacial lake water bodies on monthly basis during monsoon season from 2011 onwards. The work “Snowmelt Runoff Forecasting in Himalayan River Basin” has been taken up by CWC in association with NRSC, Hyderabad. The model development for the study has been completed and experimental forecasts were formulated by NRSC. Refinement of models is under progress as per validated data received from field offices of CWC.

12.7 Source of Information : Various components of irrigation are dealt by different Departments/ Ministries. The information have been collected from website of Department of Agriculture and Cooperation, Ministry of Agriculture & Farmer Welfare and its Annual Report 2015-16, Ministry of Water Resources and its Annual Report 2015-16 - “Agricultural Water Management for Sustainable Rural Development”.

Name of Chapter : Irrigation		
List of Tables		
Sr. No.	No. of Table	Name of Table
1	12.1(A)	Net Area Under Irrigation By Source - All India
2	12.1(B)	Net Area Under Irrigation By Source - State-wise
3	12.2(A)	Gross Area Under Irrigation By Crops - All India
	12.2(B)	Gross Area Under irrigation By Crops - State-wise