

Introduction

CH-01

What is irrigation? ✓

∴ The process of artificial application of water to the soil for the growth of agricultural crops is known as irrigation.

Necessity of irrigation : ✓

Through out the crop period adequate quantities of water is required near the root zone of the plants for their growth at times during the crop period the rain fall may not be adequate to fulfil the water requirement. These are the factors which govern the necessity of irrigation.

1. Insufficient Rain fall : ✓

When the seasonal rain fall is less than the minimum requirement for the satisfactory growth of crops the irrigation system is essential.

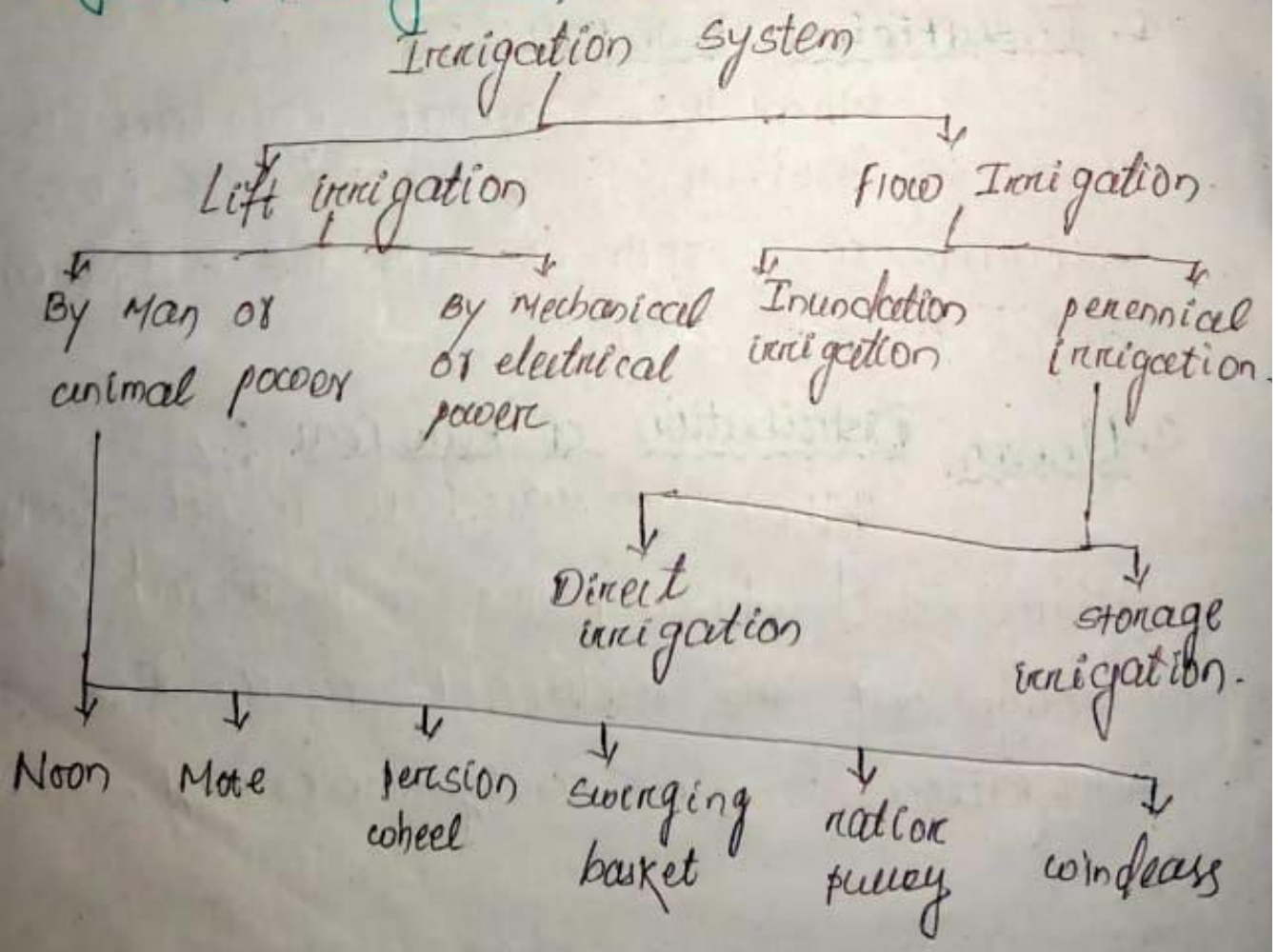
2. Uneven Distribution of Rain fall : ✓

When the rain fall is not evenly distributed during the crop period or through out the culturable area. The irrigation is extremely necessary.

3. Improvement of perennial crops : ~
 Some perennial crop like sugarcane, cotton, etc. Major part of the year but the rainfall may fullfil the water required in rainy season only, so for the remaining part of year the irrigation.

4. Development of Agri-culture in Desert Area : ~
 In desert area where the rain fall is very scanty irrigation is required for the development of agri-culture.

system Irrigation : ~



Lift Irrigation :-

When water is lifted from surface or under ground source by man or animal power, mechanical or electrical power and directly supply to the agricultural land then is known as lift irrigation.

Flow Irrigation :-

When the water flows under gravitational pull to the artificial canal towards to agricultural land it is termed as flow irrigation.

Inundation Irrigation System :-

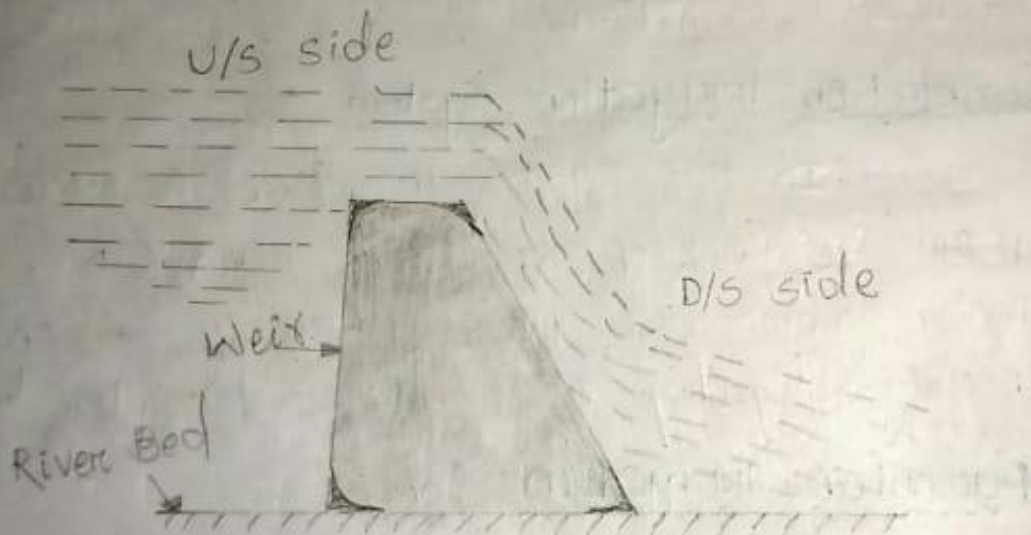
In this system in canal is excavated from the bank of inundation river (i.e. the river which over flows is mainly season but nearly dried up in summer and winter)

Perennial Irrigation :-

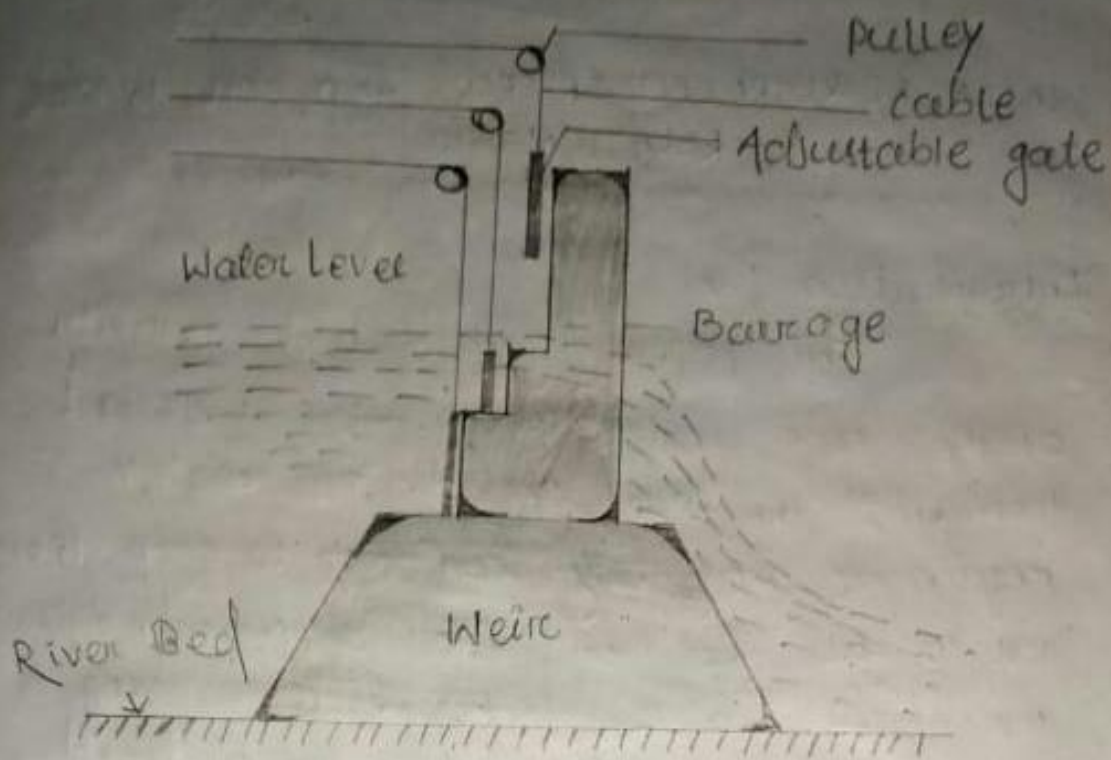
In this system a weir or barrage is constructed across the perennial river (i.e. the river which flows through out the year in it's full capacity) to raise the water on the up stream side or a dam is constructed to form a storage reservoir.

Difference betⁿ weir, barrage & Dam

Weir :- (An improvised barrier which is constructed across river to raise the water level on the up stream side is known as weir.) Here the water level is raised up to the required height & the surplus water is allowed to flow over the weir, generally it is constructed across a inundation river.



Barrage :- (When adjustable gates are installed over a weir to maintain the water surface at different levels at different times, then it is known as barrage) the water level is adjusted by the operating the adjustable gates or shutters the gates are placed at different tiers and these are operated by cables from the cabin ~~are operate~~ the gates are supported on the piers at both ends, the distance betⁿ pier to pier is called (BAY)



Dam : ~ (The high impervious barrier constructed across a river valley to form a deep storage reservoir is known as dam.) the surplus water is not allowed to flow over the dam, but it flows through the spillways provided at some designed level.

