Unit 2 : Water Conservation

Chapter 1: Water structure - Well, Lake, etc.

Well

The construction of a pit to draw water from the ground is called a well. The well is one of the most popular structure designed to reach groundwater level and make water available for use. Water from wells is extracted by electrical equipment or manpower and is used for domestic use as well as for irrigation.

Structure - First the proper place is selected and a pit is made there. It leads deep to the groundwater level. Then the walls of the pit are constructed with stone / bricks / concrete. To get the water out, a moat (pulley) or a pump that works on electricity or other energy (diesel, solar, etc.) is arranged. The width of the well depends on how much water is stored. The structure of a well is generally circular.

Types of wells

1. **Aad (आड) -** A well which is narrow and often square in shape and deep, is called an Aad. These wells are found in areas where groundwater is very deep.

2. **Narrow and deep well (कूप) -** A deep well which is narrow is called a coop **(कूप)**. It is not square in shape. Well and Aad are similar sources.

2.1.1 Narrow and deep well

3. **Round well -** This is the most widespread and visible well. It is circular. The only difference is in its diameter and in the construction material (using stone, bricks, concrete, concrete ring,etc)

2.1.2 Round well

4. **Square well -** It is square in shape. The rest of the well is similar to a round well.

2.1.3 Square well

5. **Elongated well (दिर्घिका) -** As the name suggests, this well is long. All other features are similar to round wells.

6. **Tube well -** In areas where the soil content is very high, it is very difficult to dig a well as the soil is constantly falling. In such places water is made available

2.1.4 Tube well

by going to a deep water level using pipes. This well occupies less space and less cost. But its storage capacity is less than that of wells.

7. **Pushkarani/Pond (पुष्करणी)-** In general, it is a popular type of pond with steps in the shape of a square, shaped stones. Most of the time this structure is built and maintained in temples, palaces, etc.

2.1.5 Pushkarani

Do you know ?

Baramoat (बारामोट – well with 12 pulleys) a historical well at Limb in Satara district is a marvel of Shivaji maharaj period architecture. There is also a spacious palace in the well and tourists always flock to see this well.

8. **Barav (बारव)-** In some places you can see large, stepped wells with good stone construction. It has steps from the ground to the water. In many places, side accommodations are also available. Many baravs also have a moat that can be used to pull water up.

2.1.6 Baraw

9. **Budki (बुडकी)-** A well which has water only in the rainy season and then dries up due to lack of living springs is called Budki. This type of structure is found in large numbers in the tribal areas in the hills of the Sahyadri. Generally this structure is done along a stream or river.

2.1.7 Budki

10. **Bore well -** When ground water level is deep, soil layer is low and sloping area is high, bore well is drilled. In this, by selecting the right place, digging by

2.1.8 Bore Well

machine and going to the reservoir, the water storage is used. This is a very useful solution where the groundwater level is very deep. Unfortunately, this measure is currently being misused due to the lure of benefits like low cost, less space required and less time, machine work, etc.

11. **Ringwell -** This is done using a small diameter well concrete ring. This solution works best where the groundwater level is good and close to the beach. This well is usually 10 feet to

2.1.9 Ring Well

20 feet deep. This measure is especially useful when conserving rainwater in urban areas.

Pond / Pool

A pond is a natural or artificial reservoir in a shallow part of the land which is given a definite shape by the construction of edges, ridges, sculptures etc. Ponds are usually smaller in size than lakes and larger than wells. There are also names like talaaw, Pushkarani, Vapi, Vapika. Some of these names are characteristic. For example, a Pushkarani is a lotus pond. Depending on the size, its subtypes Sun Pushkarani and the Moon Pushkarani are found .

Like rivers, ponds have gained religious significance in India. Ponds, especially Pushkarani's are found in the premises of most temples. Areas where large rivers are less, the number of ponds is high there. It was customary to build Ghats, pillars for lamps (Deepmaala), overpasses (Owari), pillars, large gates etc near these ponds. It was not the king's job to supply water in those days, but the people were able to meet their water needs by their own efforts. At that time, building a pond for public use was considered a sacred act according to Dharmashastra. Such ponds

2.1.10 Pond/ Pool

were built and offered for public works. We can see the record of this in the place of such ponds even today.

The pond has been used since ancient times for many reasons such as water supply to the village, decoration of the temple, religious activities, fire fighting, beautification of the temple, facilities for the travellers. If the ponds are of natural spring or artificially stored water, their sweetness varies accordingly. It is noticed that in the past, water was stored in dams or dug in the ground to make the ponds last longer. The construction of the pond can be made with stones to prolong the drainage process.

In historical times, it was customary to build cold storages, baradari, gardens as well as ornate decorations and arches along the embankment of check dam lakes. The Rajsamand of Udaipur (d. 1662–76) and the Anasagar of Ajmer (12th century) are good examples. In Varanasi, it is said that the three rivers Varuna, Assi and Ganga were connected by a network of lakes in the past. Lakes are planned in the town planning at Mandavgarh near Indore. The Jahajamahal (Mandu) area is also famous for its lakes. The 'Golden Lotus Lake' at the Meenakshi Temple in Madura is famous. Legend has it, that Indra bathed in this lake to get rid of the sin of Brahmahatya. There are large halls and overpasses around the lake. Bandiyur or Mariyaman Teppakulam (1645), built by Tirumal Nayak, is considered to be the largest stone lake in South India. Its length is 304 x 80 m. width is 289 x 56 m. As the water is taken from the Vaigai river basin, the reservoir does not dry. In the center there is a small island with a small dome and a temple in the center.

Lakes have also played an important role in modern urban planning. Gardens by the lake, baths, ghats etc. are planned. In the eighteenth-nineteenth centuries, many large lakes were built in Mumbai. Mahalakshmi, Gavdevi, Laxminarayan etc. The temples of the place had large built ponds. Some lakes were extinguished due to the growth of the city and government facilities for drinking and drinking water supply. The lakes at Mumbadevi and Mahalakshmi have recently been extinguished.

Farm ponds/Puddle/Lake :

Farm ponds are constructed on the upper side of the farm to store rainwater. Ponds dug for the availability of water to the crop when there is a shortage of water, are called farm ponds. The farm pond is constructed in the barren land, on the sloppy banks of the stream. Land with low water permeability is selected. Black soils with high clay content are suitable for construction. However, land with loamy, sandy, porous rocks or saline soils is unsuitable for farming. Farm ponds can be set up to store runoff water where it is not possible to dig wells easily.

There are two types of ponds constructed in such a way that the water enters the farm pond considering the natural furrows or streams. Ponds with water source in natural furrows and farms in plain lands.

Groundwater in the catchment area is recharged. Water can be made available to the crop when there is a shortage of water. Farm ponds are well used for fish farming, improvement of salty lands and wetlands.

2.1.11 Farm pond

Bodi repair:

In the districts of Vidarbha, small reservoirs are constructed and water is stored in the upper part of the paddy field by earthen check dams. The stored water is fed to the paddy in the lower part of the reservoir as required. This small lake is called Bodi in Vidarbha. Due to the breakage of the pre-built Bodis and the accumulation of silt in it, it is necessary to deepen and renew the old Bodis . In Bhandara, Gondia, Chandrapur and Gadchiroli districts of East Vidarbha, the old Bodis are renewed as an effective measure of water conservation.

The objectives of Bodis renewal are to recharge them by interrupting the running water. To provide protective irrigation to the rice crops in case of emergency.

2.1.12 Bodi

Exercise

1. What is a well? What are the different types of wells?
2. What is a Bodi?
3. Where should a farm pond be built ?
4. What are the uses of the pond / lake?