

Study of ground water in Anjar taluka

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A study of ground water was made and comparison of ground water status 400 years back, in year 1950-1955 and present situation was made.

The study was confined to Anjar-Taluka of Kachchh district. The district being large the study area is restricted.

A precious report of G.C.Taylor , US Geological Survey along with B.D.Pathak Geology Survey of India states as under

The report is of Anjar-Khedoi region which covers 184 square miles.

The report was based on field investigation for the period of 2 years from 1950-1952.

The water table crop up in land surface in VIRI and KHEDOII area hence there were artesian well in VIRI area.

In year 1951 there were about 660 wells/ bore in Anjar-Khedoi area and number which had increased to 2610 tube wells in same area.

In 1954 the rate of with drawl of water for irrigation and water supply in this region was 13645 acres feet against the recharge of 10000 to 12000 acres feet. It was also mentioned that any further exploration shall use the ground water storage and water level shall deplete. Now in year 2011 there are 2610 tube wells 1015 mld, i.e 374535 ml per year i.e 303704 acre feet per year. Which is 30.37 times in the year 1952.

Yield of Viri tube well of Kandla w.s.scheme in year in 1951 was 417 to 683 imperial gallons per minute i.e 1900 to 3100 liters per minute. The same has reduced to 500 lpm roughly one seventh of original yield.

Current scenario of ground water situation is as under:

At present there are 2610 agriculture tube wells in Anjar taluka which were only 660 numbers in 1952.

The ground water of Viri is now 90 mts as compared to "0" in year 1952, similarly ground water in Ratnal area is depleted from 25mts in 1989 to 105 mts, in Nagalpur area ground water depleted from 10 mts in 1973 to 150 mts, in Dudhai 5 mts in 1970 to 90 mts & in Chopadva area 30 mts in 1985 to 90 mts.

Yield of Viri tube wells are depleted from 1900-3100 lpm in 1952 to 500 lpm, in Ratnal from 800 lpm in 1989 to 400 lpm, in Nagalpar area from 850 lpm in 1973 to 400 lpm, in Dudhai 2000 lpm in 1970 to 500 lpm & in Chopadva from 850 lpm in 1985 to 400 lpm.

The over drawl of ground water is mainly due to two reasons:

Number of tube wells are increased as agriculture holding is increased from 1971 to 1991 to the extend of 48%. After 1991 also new tube wells were drilled till the area was declared as dark zone.

In previous year ground water was drawn by ancient traditional methods which had limited capacity of drawl. There after engines based on crude oil there after diesel based were introduced due to which more drawl was possible. Then came the era of centrifugal pumps, then turbines and submersible pumps which have better capacity of drawing water.

In geological report of 1952 it was mentioned that the drawl and recharge is just balanced and no more tube wells are suggested.

Even though many water recharging structures were constructed after independence up till now the drawl is still much more than recharging, which had resulted in tremendous ground water and yield depletion.

Suggestions:

- All farmers shall switch over to drip irrigation and flood irrigation shall be totally stopped.
- Recharging through rain water streams near or with in agriculture land shall be made compulsory.
- A crop patter which consumes minimum water shall be promoted.
- Government had already declared area as dark zone which shall be prevailed till proper measures are taken.
- Canal based scheme of SSNNL shall be expedited.
- New areas of surface water storages shall be explored and surplus 1 MAF water of Sardar Sarovar reservoir shall be stored during monsoon.
- Roof top harvesting shall be made compulsory by all development agencies.
- Water based industries without re-cycling shall not be encouraged.
- Urban waste water shall be treated and used for industrial or other purpose