

The number of pump sets operating in Andhra Pradesh alone is twenty-two lakhs". However, all these are not lifting groundwater and about five lakhs of them are used to lift surface water also. The total number of pump sets used to lift groundwater is beyond comprehension but undoubtedly a staggering figure. All of them require power and are bulk consumers of power, which is available in insufficient measure. Then the quality of groundwater is again a big problem. Many times it is not potable and in industrial areas the water is thoroughly useless. As an example, the groundwater in the Waiyangal district where the tannery industry flourishes, the groundwater is useless to any sort of consumption. Considering all these limitations one should not be over anxious to talk about the extended use of groundwater. Where the water is good enough for consumption, the levels of groundwater have gone very deep hiking its exploitation costs. At best groundwater can supplement the surface water to meet the human needs. In

extreme cases no surface water is available the groundwater becomes the only source to fall back. In hard lock areas the groundwater is hard to locate.

Linking of Rivers and Development of a Water Grid is only a Boon

This country's needs of water can only be solved by a water grid, which may be developed in time to come, which may be two decades or more. To deny the linkage of rivers is not at all justified. The inputs may be great and the time involved may be high but this is an exercise that has to be undertaken cutting across regional and political considerations. Such a grid alone will quench the thirst of people and our parched fields can be made to look green.

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¹⁵ Data supplied by the Statistics Department of Andhra Pradesh through the courtesy of PJ Sastry

INTERLINKING OF RIVERS

Ever since the late Minister for Irrigation and Power, Dr. K. L. Rao made a rather casual mention of linking the Ganga with the Kaveri, the idea caught the imagination of the irrigation engineers and has turned into a bone of contention between the riparian states and other organizations involved.

In fact, the idea is not novel. In the earlier part of the 19th century the Government of Madras entered into an agreement with the Maharaja of Travancore for the diversion of the flood waters of the Periyar. A four mile long tunnel was driven through the hard rocks of the Annamalais and a dam was built at Thekadi. The waters of the Periyar were diverted through the tunnel into the Kumbam valley of Madurai, to flow into the Vaigai. What is more surprising is the building of the diversion dam, called as the Grand Anicut, built by the Cholas across the flowing Kaveri. This structure diverts the flood water of the Kaveri into the Coleroon past the Srirangam island. The special lime mortar used by the Cholas, hydraulic lime, was used by the British engineers in constructing the Dowleswaram anicut on the Godavari near Rajahmundry.

The connecting of the Krishna with the Pennar, via the Cuddapah-Kurnool canal shows the keen observation of the engineers. In fact the canal follows the valley of the Kunderu, which is the abandoned course of the Krishna. Hence, the

Kunderu, in geological terms, is called a "misfit" of the Krishna. The diversion of the Krishna was due to tectonic disturbance. The diversion of the waters of the snow fed rivers to the rain fed rivers, is a multifaceted problem requiring a long-term multi-disciplinary study, comprising geology, topography, meteorology, hydrology, etc.

Even the limited objective of linking the Ganga to the Kaveri is beset with problems. It is known that waters of the Ganga are highly polluted both chemically and biologically. Hence purification costs will make the proposal uneconomic.

The case of interlinking the rivers of the Peninsula is again to contend with imponderables, not only the topography, but rock types and the structure of the Peninsula. It may be pointed out that the rivers of the Peninsula flow along the fault planes. Koyna and Mettur dams have shown that "reservoir induced seismicity" (RIS) is a potential danger which is unavoidable where large reservoirs are constructed.

Further, it is seen that these rivers are dependent on the NE monsoon and that they are in floods at the same time and this again inhibits the proposal of interlinking the streams.

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