National Project on Aquifer Management (NAQUIM) – R.C. Jain, Formerly Chairman, Central Ground Water Board & Central Ground Water Authority. *E-mail: ratan.jain@gmail.com*

Ground water has steadily emerged as the backbone of India's agriculture and drinking water security. Contribution of ground water is 61% in irrigation, 85% in rural water supply and 45% in urban water supply. The indiscriminate withdrawal of ground water beyond sustainable limits has resulted in a situation with water levels declining even up to four meters annually in some parts of the country. The overall stage of ground water development has risen to 62% (as in 2011). Out of 6607 assessment units (blocks/mandals/taluks) in the country, 1071 have been categorized as over-exploited, i.e. more ground water is being extracted than being recharged. Ground water quality issues especially those related to salinity, arsenic, fluoride, nitrate, Iron etc. pose additional challenges for ground water management.

There has been a paradigm shift from' ground water development' to ground water management'. The complex nature of ground water and the diversity in ground water conditions caused by hydrogeology, sociology, economy and ecology compel strategic thinking, design, planning and implementation of ground water management, the first step being aquifer mapping. Aquifer mapping could lead the way towards improved systems of ground water management and governance.

An accurate and comprehensive micro-level picture of ground water in India through aquifer mapping in different hydrogeological settings will enable preparation and implementation of robust ground water management plans at the appropriate scale to be devised and implemented for this common pool resource. This, in turn, will help in achieving drinking water security, improved irrigation facility and sustainability in water resources development in large parts of rural India and many parts of urban India. It will also result in better management of ground water in vulnerable areas.

Keeping in view the existing and future challenges in ground water sector in the country, National Project on Aquifer Management (NAQUIM) is being implemented by the Central Ground Water Board, Ministry of Water Resources, River Development and Ganga Rejuvenation, under scheme on 'Ground Water Management and Regulation' during XII plan period. The major objectives are:

- Delineation of aquifer disposition in 3-Dimension along with their characterization on 1:50,000 scale in identified priority areas.
- Quantification of ground water availability and assessment of its quality to formulate Aquifer Management Plans.
- Facilitating sustainable management of ground water resources at appropriate scales through participatory approach with active involvement of stake holders.

NAQUIM will lead to a toolkit for ground water management, based on the principles of participatory management of groundwater. The management plans will also provide an important input for planning suitable adaptation strategies to meet climate change.

(Gist of the lecture delivered at the monthly scientific meeting of the Geological Society of India on 30 November 2016)