

## Lecture on 'Integrated Management of Water Resources in Canal Command'

A technical lecture meeting was organized at The Institution of Engineers (India), UP State Centre, Lucknow on 26.03.2018 on the topic 'Integrated Management of Water Resources in Canal Command'. The Speaker was Dr P.K. Srivastava, Retd. Chief Engineer of UP Irrigation Department. Dr. Bharat Raj Singh, Chairman, UP State Centre while welcoming the guests and Keynote Speaker, emphasized on the need of integrated management of water resources as ground water recharge is hardly 25% of the total rainfall occurring during a year. Ground water recharge from rainfall is hardly able to meet out irrigation, drinking and Industrial requirement of water. Dr P.K. Srivastava stressed that



*Speaker addressing the gathering*

these canals were largely constructed to provide protection to crops from famines and droughts. The concepts in irrigated agriculture have changed since then to meet the food/fiber production needs of the ever-increasing population and from sustenance to intensive agriculture. This heavy dependence on groundwater resource for intensive cultivation, together with increased use of chemical fertilizers and pesticides has led to its overexploitation and consequent water table decline at an alarming rate. Response of high yielding varieties is better with chemical fertilizers requiring more and frequent water application.

Moreover, water use for agriculture cannot be considered in isolation of other uses. This requires an integrated approach for sustainable water resources planning, management and operation under a river basin framework. Due to competition from increasing demands for agriculture, domestic, power, industrial, environmental and other uses, allocation of water to different stakeholders in appropriate quantity and quality has become increasingly difficult. Freely spatial availability of ground water has increased its use very rapidly. In alluvium plains

of Uttar Pradesh average annual rainfall is 900-1000mm and the expected average ground water recharge is about 25%, that comes out to be only 225-250mm. The rates of recharge and evapotranspiration are the most difficult and uncertain components to estimate in groundwater budget, and they often vary spatially and temporally. Alone annually replenishable ground water from rainfall can never meet out irrigation requirements for all the three seasons and other drinking and industrial requirements. It will always reach in overexploited category and ground water will start depleting and energy cost in lifting ground water will go on increasing and this will create extra overburden on small land holding farmers, thereby decreasing their gross margin for livelihood. Spatial sustainability of annually replenishable ground water resources is manageable only at field level by considering the actual land cover and using canal water in conjunction with ground water reservoir. An integrated approach considering surface water and ground water is imperative at field level incorporating modelling output. The seminar concluded with a vote of thanks by Shri R K Trivedi, Hony. Secretary.