Over exploitation of ground water a threat to sustainable productivity and food security

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The precipitation (including snowfall) is the source of all water on the earth. Out of estimated 4000 billion cubic meters (BCM) available precipitation over India, partly goes towards increasing groundwater storage, partly lost to evaporation and the remaining appears as surface water. India is among the foremost countries in the world in exploiting its river water resources for the consumption of water for irrigation, generation of hydropower and domestic water supply. Rainwater is one of the water resources, which need its proper tapping. Agriculture is of fundamental importance in India’s economy, contributing about 20% of gross domestic product (GDP) and generate about two third of the employment. Over exploitation of ground water in most productive and ground water irrigated area in Indo-gangetic plains of Northwest India is a matter of concern. For sustainable food-production and food-security, India needs to expand its irrigation base, assure water supply to grey regions, and manage irrigation in precise manner. National level planning for water resource consumption must be based on demands on availability of water for irrigation, and by industry and other stake-holders, redistribution of surplus water from surplus region to deficit regions including exploring of linking of rivers, and redesigning of seasonal water demand-supply trajectory. With limitation of land resources and extreme population pressure, India needs to have a paradigm shift from agronomic yield maximization to maximization of water-productivity, diversification from cultivation of high-water consuming crops in water stressed regions to low-water consuming crops, and development of agro-technology for rain fed regions.