

Impact of Decreasing Ground Water Level upon the Farmers in District Baghpat, Uttar Pradesh

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Abstract

India is blessed with about four percent of world's total water resources to support 16.6 percent of world's human population with only 2.4 percent of its geographical area. The demand of water for agriculture, industrial and drinking purposes is estimated to increase over the year and it has led to over exploration of ground water and other water resources. It is known all that U.P. has largely ground water of world, put in the state it's continue exploit indiscriminately for various purpose. Present Study was conducted in Bagpat district of Western Uttar Pradesh. Binauli Block is over exploited condition in the district Bagpat. For the Study 200 Farmers have been purposively selected. Finds that the total number of respondents face irrigation problem and not satisfied to government work for control this problem and the largest number of respondents are not able to give good education to their children and want go out to village and do other occupation because they face decreasing ground water problem and their investment in agriculture are increasing.

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Introduction

Water important for human life safe drinking water influences the quality of health and productivity. Water is called as 'Indrajal' in mythology- the nature's gift through rainfall. It not only satisfies the thirst of human beings, but also gives food and sustains life of human beings. Plants and animals. In fact great civilization settled and flourished around water sources and societies evolved their cultures and livelihood based on it.

Water Scarcity is a Major problem of our society. Water is the Prime element in the Socio Economic development of any nation. Karl Wittfogel, (1957), went to the extent of calling early civilization as hydraulic societies illustrating the close relationship between water resource and human social organization. Wittfogel further identified Karl Marx and Max Weber as Pioneer in such a formulation of the close link between water and human social behaviour. The well-being and development of any society is depend on the availability of water. It is vital input for the development of Agriculture, industry and service sector. Water is the prime element in the Socio-economics development of any nation.

Waters covers about three-fourth of the earth's surface and nearly 97.7 percent of earth's water is in oceans and seas. Fresh water constitutes only very small fraction (2.7 percent) of this fresh water 75.2 percent lies in frozen form in the Polar Regions and 22.6 percent as ground water, that means very little portion of fresh water is effectively available for consumption. Surface run-off water and ground water the components of the hydrological cycle which are available to man. India receives average 1170 mm. rainfall annually, that too irregularly and only during limited period of two to three month, out of this more than three fourth is lost due to evaporation, deep percolation and seepage into sea. The main water resources in India includes rivers, canals, wells and tanks. Agriculture sector consumes more than 85% of total water in the country. If we are able to save 7% of it, we will be able to meet Domestic and Industrial demand. Hence it is imperative to adapt less water consuming or water saving methods of irrigations with an aim of producing more crop per drop. Such methods include micro irrigation (Drip, Sprinkler, Bubbler, Spray and Indigenous Drip Irrigation) methods. By using these methods, two to three times more

area can be brought under irrigation with some quantity of water besides improving crop quality and doubling the productivity. At the same time, increasing salinity and alkalinity problems of irrigation water in coastal area can be mitigated by using drip irrigation without any adverse effect on crop growth and productivity. In water scarce dry farming area, Peasant should be advised to shift from rice to irrigable dry crops like high value pulses and oilseeds based on agro ecological conditions and market demand. This system help to maintain overall productivity and profitability and also saves enormous quantity of water.

Ground Water Condition in India

Now a days ever increasing competition from domestic consumption, industrial use and irrigation, thus there is a tussle among the three. In another recent study, it was revealed that in 300 districts water level have declined by rapidly in twenty years. The biggest problems are in the states like Delhi, Punjab, Rajasthan, U.P. and Gujarat. Since irrigation for agriculture purposes claims major part of available water, there has to be greater efforts in economy and efficiency of water use. Nearly 51% of irrigation is ground water based. A lot has been discussed on the ever-increasing

demand for water resources for multiple uses which has led to overexploitation of ground water. It is hard to find fresh water due to pollution.

As per the estimates of Central Ground Board, 15 states in India may face severe shortage of shortage of ground water if we continue to exploit it indiscriminately? Now a day it is hard to find fresh water due to pollution and ever increasing competition from domestic consumption, Industrial use and irrigation, thus there is a tussle among the three. India's water consumption with a per capita consumption is around 20.1 percent of the world consumption with a per capita consumption of 297.7 cubic meters, which is more than the world average of 287.3 cubic meters.

According to State Ground Water Board Officials, water tables are dropping by 6 meters of more each year. It was learnt that farmers in the country, a generation ago, used bullocks to lift water from 300 meters below ground using electric pumps. The pumps powered by heavily subsidized electricity are working day and night to irrigate fields of more water consuming crops like rice, sugarcane and banana. This massive unregulated expansion of pumps and wells are falling water table. Hence, managing water resources should attract due attention.

Table 3: Trend in the status of blocks/mandals/taluks according to groundwater development, 1995-2013 (%).

Category	Definition	1995	2004	2009	2013
Safe (0-70%)	Areas which have groundwater potential for development	92	73	72	69
Semi-critical (70-90%)	Areas where cautious groundwater development is recommended	4	9	10	10
Critical (90-100%)	Areas which need intensive monitoring and evaluation for groundwater development	1	4	4	4
Over exploited(>100%)	Areas where future groundwater development is linked with water conservation	3	14	14	16

Source: Central Groundwater Board report, 2014

The over-exploited districts increased from 3% in 1995 to 16% in 2013, and semi-critical and critical areas together from 5% to 14%.

Ground Water Condition in Uttar Pradesh

It is known all, that Uttar Pradesh has largely ground water of world, but in the state. Its continue exploit with indiscriminately for agriculture, industrial and drinking purposes. So availability are effecting of its natural resources. Groundwater in Uttar Pradesh is facing a critical depletion crisis, with nearly half the districts over-extracting water, primarily for agriculture, leading to declining water tables and potential long-term water scarcity. While groundwater is vital for the state's food security, unsustainable practices have resulted in overexploitation, with numerous blocks classified as critical or over exploited.

Present condition of ground water resources in state that 456 block are facing deficit of ground water at 1 to 90 cm annual rate. In urban areas average deficit of water level at 20 to 76 annual rate. According to new data of ground water availability 37 blocks are over exploited and 13 blocks are in the critical category many district are facing ground water pollution.

Table 2: 820 blocks have been classified on the base of ground water situation.

S. No.	Category Blocks	No. of Classified Blocks
1	Over Exploited	37
2	Critical	13
3	Semi Critical	88
4	Safe	682
Total	04	820

Ground Water Department, U.P. (Report)

456 blocks have done comparative study for the data of ground water level of pre-monsoon time year 2005 relative of year 1991. According to its district Behraich has not deficiency of ground water level. According to its more deficiency have recorded of water level in block Baroli of Agra district and block Binoli of Baghpat in Uttar Pradesh.

Area of Study and Methodology

Present study focuses on some specific issues social-economic background of farmers, irrigation problem and government policy the research area and impact decreasing ground water level on social and economic condition of farmers in district Baghpat. All the above question and their aspect have been studied in four gram panchayat of Binouli Block district Baghpat 200 farmers were selected through purposive sampling. The information was collected by observation, interview schedule and case study method. Block Binouli is over exploited on the base of ground water situation and there ground water level decreasing rapidly.

Result and Discussion

The main crops of farmers are sugarcane and wheat, and the total number of respondents face irrigation problem and not satisfied to government work for control this problem. The largest number of respondents are doing small shop/partial labor with agriculture. In summer season about every year they face water problem and their crops are partially damaged. The largest number of respondent are not able to give good education to their children and are debtor, they reducing their presence in social activity and want go out village and pursue other occupation. Because crop production is lower and their income is decreasing due to water shortage.

Conclusion

In Uttar Pradesh, a large part of irrigation needs to meet by groundwater, due to which huge amount of water is exploited. The choice of water intensive crops exacerbates the problem, many areas of western U.P. are facing serious water crisis due to excessive drainage. Due to which serious effects have been seen on crop production, income of farmers and their socio-economic status in the study area.

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