

Causes of Water Logging in Jhajjar District

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Abstract – Water logging is main problem in areas where rice cultivation is increasing ground water is saline. In these areas the ground water is not being used and water from other far areas is being brought by pipelines and irrigation in mostly done by canal water. Due to sore water the pores of land are blocked and water logging starts in these types of areas. Using of excess of fertilizers also helps in increasing water logging.

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INTRODUCTION

The study area comprises of rural parts of 'Jhajjar' district of Haryana state. Jhajjar district was separated from Rohtak district on 15th July, 1997 as reported in the Census of 2001. It is situated in south east of Haryana. It has total area of 191155 hectares. The population of the district, as per 2011 census is 956907. It comprises of 264 villages with three sub- division and five blocks as under:

It is all due to unplanned spatial development activities e.g. urbanization due to rapid growth in population and encroachment on retention and natural drainage system. Before 1977 Shahabi river water of Rajasthan used to come in district almost every year from the same path but in 1978 -79 a dam on Shahabi River was constructed and water stopped coming in result. People have encroached the path of river by digging or filling the old path but when it rained heavily in September 1995 the whole Rewari district was flooded because of the encroachment of the old path. Excessive rainfall in adequate drainage system with low capacity and gravity, natural siltation, absence of inlets and outlets, indefinite drainage outlets, lack of proper maintenance of drainage system and disposal of solid wastes and plastic bags into the drainage path are accounted for the prime causes of blockage in drainage system and water logging.

1. Accumulation of Rain Water in Low Lying Areas

There are several pockets of low lying areas in the District from which natural flow of water is not possible, is further acquainted by the existence of man-made barriers like the network of roads and canals, which obstruct the natural flow of water. Notable among these obstructions are the JLN and Jhajjar sub branch canals as well as the state highway passing through the district. Major damage

to crops is caused due to water logging of such depression in the district.

2. Sheet Flows are as of Panipat and Jind District via Rohtak District

Due to its topographic configuration, rain water finds natural flow into Jhajjar district from district Panipat and Jind via Rohtak. High underground water table in the district and surrounding areas result in sheet flow water which moves from villages causing havoc and destruction. This also results in water logging.

3. Excessive Discharge in main Drain No.8 flowing into this District

Excessive discharge in drain no. 8 caused two major problems in the district. Firstly, the dewatering of areas around drain no. 8 cannot be started till the flood water from Panipat and Jind district is cleared and the drain no.8 is sufficiently depressed. These effects villages on both side of drain no. 8 from village Bakra up to Bindawas Lake and water remains stagnant in these villages. Secondly, excessive discharge no.8 can causes breach in the drain endangering not only rural areas but also Jhajjar town, as it happened during the floods in the year 1960, 1977, 1995 and 2010. This also results in water logging.

4. Congestion in Drain due to Excessive Rainfall

Floods havoc is also caused in the district due to inadequate capacity of major drainage network. In the event of excessive rain fall, congestion in the major drains effects crops in a large number of villages of the district. Apart from drain No.8, sometimes heavy congestion is caused in the catchments areas of K.C.B Kultana, Chhudani, and

Bhupania drain due to Non – cleaning of drain in the Delhi territory.

5. J.L.N Canal

JLN canal is also a cause of water logging in the district. In Jhajjar JLN flows via Rohtak to Jhajjar through Beri, Matenhail and Salhawas. Among both side of this canal there is server problem of water logging due high ground water table. Seepage of water from canal and in proper irrigation system.

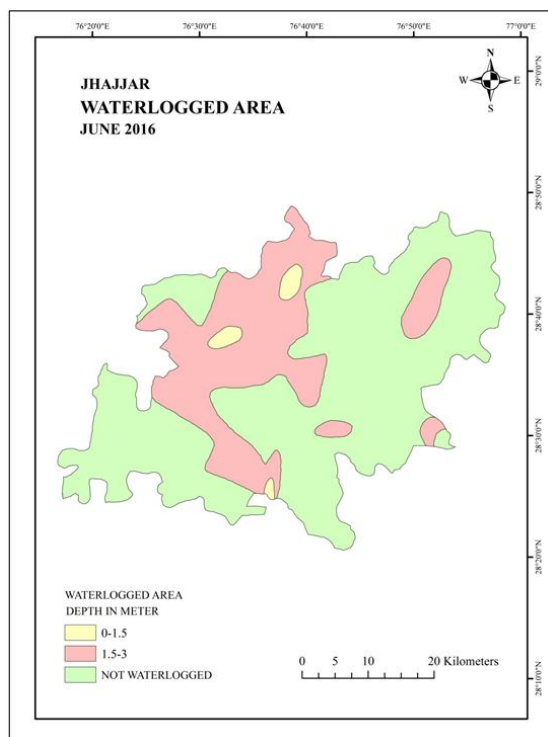
6. Bindawas Lake

Bindawas Lake is situated along the right of Bindawas link drain. This lake is connected Bindawas link drain at KM.4.075 by two way regulator. The total capacity of this lake is 13750 areas feet and area is 1100 acres. Now this lake is divided in three parts by Panchayats Department. The average NSL in the lake is 698.50 and the FSL is 711.00 and top of the bund is 715.00. This also a main cause of water logging.

Table 1: Jhajjar District: Depth of Water Table from June 2013 to June 2016

Sr. No.	Block	June 2013	June 2014	June 2015	June 2016
1	Jhajjar	6.50	6.23	5.73	7.39
2	Bahadurgarh	4.40	3.68	3.99	4.45
3	Beri	2.39	2.36	2.76	2.72
4	Matenhail	6.09	6.44	6.25	6.85
5	Salhawas	3.48	3.00	3.85	4.07
Average		4.57	4.34	4.52	5.09

Source: Hydrology Department of Rohtak



This map shows that the area shown by yellow color is badly affected by water logging Beri and Salhawas. The areas which are shown by pink color are also suffering from water logging problem like Salhawas, Beri and Jhajjar.

7. Continuous Rainfall

The district Jhajjar lies almost in the central parts of the state, one side Rohtak and other side Guru Gram and Rewari. Heavy rainfall in the period of the monsoon season is also responsible for water logging. A significant part of district i.e. Dhigal, Dujana, Beri, Salhawas, Khudan, Chappar, Sarola, Jaitpur, Kablana, Dulhera, etc. are dominated by rice-wheat cultivation. The district has peculiar geohydrological condition. The underground water flow direction is towards in the part which additional accelerated by nature rainfall and canal irrigation. Therefore rainwater creates the flood problem for the period of monsoon season after heavy rainfall, rainwater percolates down in the pores of the soil particulars which the rainfall season.

8. Excessive Irrigation

In the districts where rice has major share land is heavily irrigated by canal water and after that when rain falls the water comes on the land surface the seepage of water become faster in the soil and water table and surface water joins. As the ground water storage is augmented the water table rises.

9. Floods

After heavy rainfall the flood water spreads all over the surface in the plains. Due to lack of proper drainage system this water prorogates in the soil and rises the water table which ultimately result in water logging. In the Rainey season water also come from other area like –Haily Mandy Lohari, Patuda and kheri sultan in the district and augment. The water logged in the district.

10. Nature of Soil

Water logging depends on the nature of soil. The underground hydrology is governed by the parent materials of soil. The soil which has hard pan beneath the surface obstructs free movement of water but the sandy soil allows the water to move freely deep into the surface without any obstruction. The same is the case in most parts of Jhajjar districts. Water from other state like Rajasthan and other district like Rewari and Gurugram also flows towards the district. At the time of irrigation mainly in rice fields in rainy season the layer of soil becomes saturated with water. In sandy layers water can freely move from one layer to another. Because the soil in the district is sandy it creates the problem of water logging. The same is the case in the JNU canal areas which flows among the areas like Beri, Akehri Madanpur,

Salhawas, etc. The soils in these areas have low permeability so it creates the situation of water logging.

CONCLUSION

Water logging is a dynamic phenomenon but water logging in Jhajjar district is the consequence and unplanned development. Due to rapid and unplanned construction of roads, canals and mainly school building in the district which all are constructed often 5 to 6 feet land filling the natural drainage of rain water in affected seriously. The old paths are encroached or filled up and on a result water started logging instead of flowing towards the drains of canals. In rainy season mainly due to heavy rainfall seepage of water from canal both downwards and from side due to excessive irrigation, nature of soil floods and poor water management, adequacy in surface drainage, defecting methods of cultivation, defecting irrigation particle, poor natural internal drainage of the soil, compact or plugged soil, low line position in the landscape are the main causes for that the Jhajjar district is facing the problem of water logging and salinity.

In the district the ground water is classified in four categories on the basis of EC condition –

1. Fresh ground water EC less than 2000micromho/cm.
2. Marginal ground water with EC 2000-4000micromho/cm.
3. Saline ground water with EC 4000-6000micromho/cm.
4. Highly ground water with EC more than 6000micromho/cm.

It is noticed that quality of fresh ground water is generally is sandy areas dominated by canal irrigation. The area nearly JLN i.e. Akehri, Dhakla, Bithla, Khudan, Chappar, sarola, dhigal, Beri, etc are observed as saline quality of water.

The areas like lohari, koka, kulana, machhroli, bhatara and gatuli, jahideur, shows highly saline water that cannot be used in irrigation purpose in the district.

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