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Impact of waterlogging on agriculture land in Haryana

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Abstract
In general usage, the incidence of waterlogging relates to a situation when the land surface gets in undated with water in the absence of proper drainage outlet. However, in agriculture science, the term waterlogging defined differently. An area is said to be waterlogged when the depth to water table is within 0-3 meters from the grounds surface. Under this situation, the groundwater moves upward and the pores of soils remain saturated with water. Upward moving water also brings salt to the land surface resulting in the process of salinisation. Therefore, the problem of waterlogging impact the agriculture land and increase salinity. Under this situation, the salinisation almost occur simultaneously in everywhere.

Keywords: Waterlogging, salinasation, agriculture etc.

Introduction
However, in canal-irrigated areas with poor drainage facilities and brackish ground water, the problem has assumed serious proportion in India. Waterlogging problem affects human occupancy of land in a variety of ways.
Ground water cell classified waterlogging into three categories:-
1. Fully waterlogged area: Where depth to water table is between 0-1 meter from the ground surface. 2. waterlogged area: Where depth to water table is between 1 to 2 meters. 3. Potential waterlogged area: Where depth to water table is between 2 to 3 meters.
It may be noted that waterlogging of the first two categories is more harmful than the third category.
The development of irrigation network in arid and semi-arid areas in India resulted in the problems of waterlogging and salinity. Waterlogging is a problem associated with practically all the irrigation project in the country.
However, in canal-irrigated areas with poor drainage facilities and brackish ground water, the problem has assumed serious proportion in India. Waterlogging problem affects human occupancy of land in a variety of ways. The foremost victim is the agricultural practices, due to waterlogging more and more land becomes unfit and goes out of cultivation. The cropping pattern undergoes a drastic change in favour of water intensive crops. The spread of paddy cultivation in non-traditional areas in India is one such example of waterlogging which adversely affects the quality and content of soils.
According to Joshi (1987) [13], in the initial stage, productivity level in the affected areas declines sharply. In the absence of any corrective measures the land ultimately turns into waste land and goes out of cultivation. The result affects one loss of natural resources, ecological imbalances, unemployment, regional disparity, and growing incidence of poverty and out migration. In the Waterlogged areas, excessive moisture in the soil inhabits the growth of plants. Further ground water starts moving upwards by capillary action and is lost through evaporation from the land surface resulting in accumulation of salts in the soil profile. This process of salt accumulation is known as salinisation. Accompanied with an incidence of waterlogging in the state is the problem of accumulation of soluble salts in the soil profile. Soil becomes saline as a result of the concentration of salts in the upper layer, ground water moving upward brings salt contents when after evaporation get accumulated at surface. Salinity also results from excessive use of chemical fertilizers in the farming operations.
Singh (1978) [18], land is said to be waterlogged when the soil pores within the root zones of crop get saturated with water, cutting the normal circulation of the air, which is very

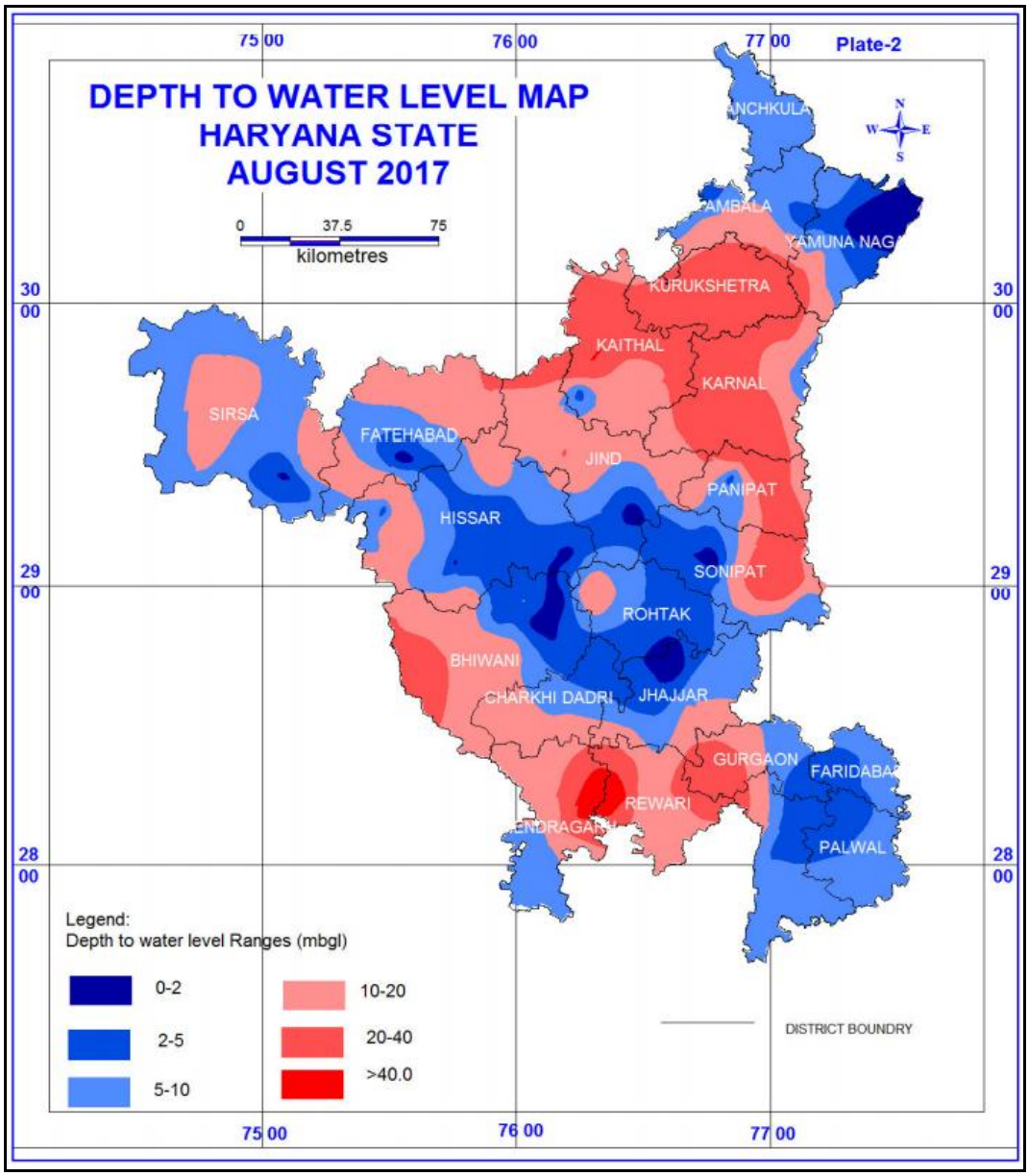
necessary for the growth of plants and reduces yields of the crops.

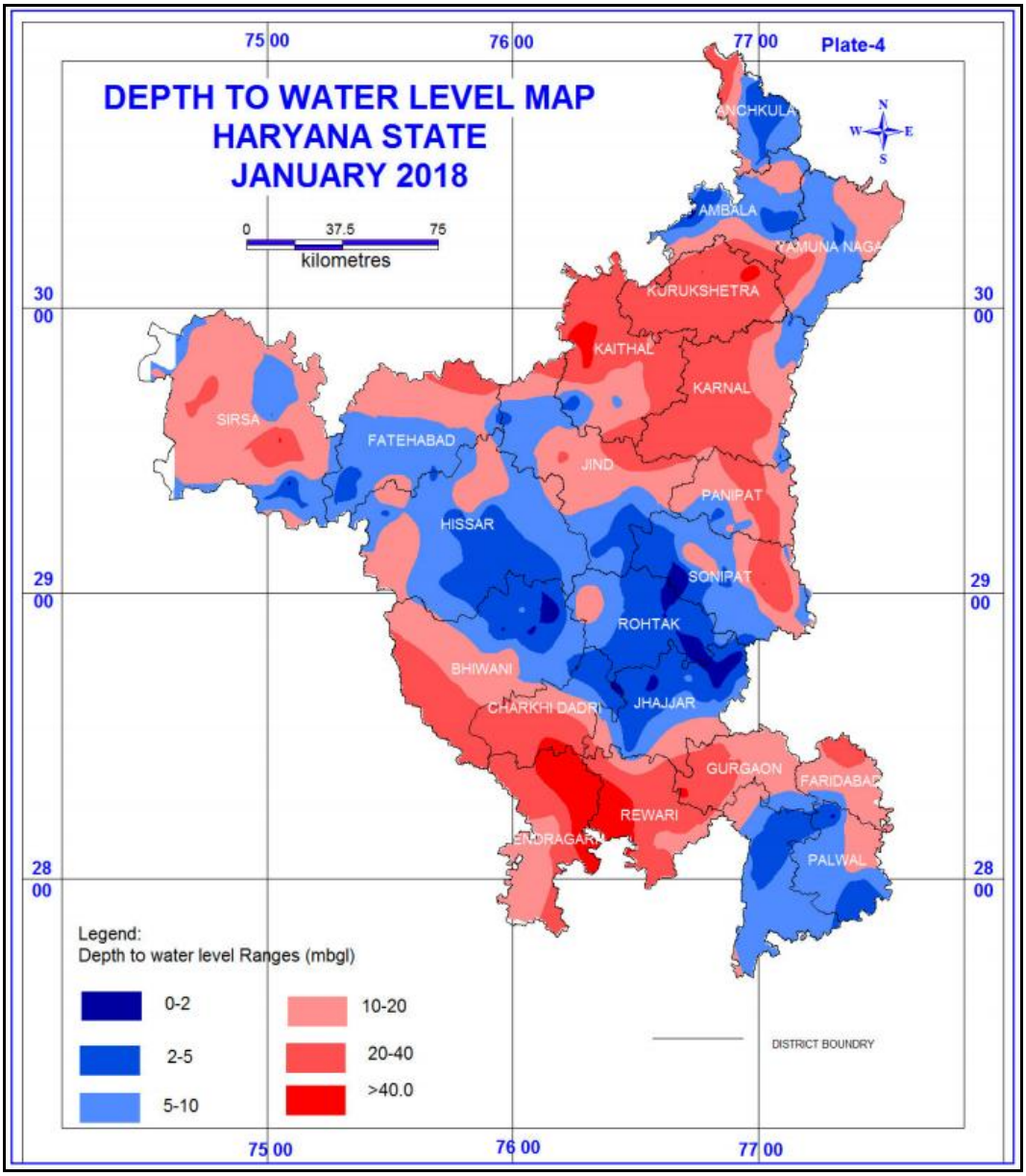
Waterlogging is a problem associated with practically all the irrigation project in the country ground water, the problem has assumed serious proportion in India. Waterlogging problem affects human occupancies of land in a variety of ways.

The foremost victim is the agricultural practices, due to waterlogging more and more land becomes unfit and goes out of cultivation. The cropping pattern undergoes a drastic change in favour of water intensive crops. The spread of paddy cultivation in non-traditional areas in India is one such example of waterlogging areas.

Areas where precipitation is usually less than evaporation, in association with element of topography leading to impeded drainage or with ground water hydrology characterised by high water table enriched in soluble salts, are more marked with the problem of salt accumulation.

The prolonged use of saline irrigation water under such conditions also brings results in soil salinity. The effects of canal irrigation vary according to local condition of the soil, topography, climate and water use. It has been observed that though the quality of water is generally good, the canal irrigation leads to soil salinity in many parts of the country. The canal water gets salt content during its course and affects the irrigated land. This problem is mainly due to over irrigation, mismanagement of irrigation water, seepage from canals and rise in water table





The available information shows that many areas, which are fertile and productive before the introduction canal irrigation networks, are now affected by waterlogging and salinity.

The saline soils are found to be distributed throughout India. These are interzonal soils, which are charcterised by high salinity or sodiumization or both simultaneously. It has been estimated that an approximate area of about 7 million hectares is covered by such soils all over the country (Report of wasteland survey committee, Planning commission, New Delhi 1992). According to an estimate in Haryana an area an area of nearly 440000 hectares is having water. The problem of user is found in Haryana. In Haryana more severely affected district are Karnal, Kurukshetra, Jind, Hisar, Sonipat, Jhajjar, Rohtak district. Salinity also affects the cropping pattern. It is estimated that due to high level of salinity, the crop like Gram and Oilseed are negligible in these areas.

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