

What is water logging?

So what?

Excessive irrigation in **areas** with poor drainage causes **waterlogging** and salinization of the soil. When water does not penetrate deeply, it raises the water table. Air spaces in the soil are filled with water, and plant roots suffocate. Consequently, **waterlogged** conditions adversely affect crop yields.

- ESP (Exchangeable Sodium Percentage) >15
- SAR (Sodium Adsorption Ratio) >4
- $\text{pH} < 8.4$
- Problem – excess soluble salts, reduce water/nutrient availability, plasmolysis, and osmotic forces
- Problem is high pH due to excess sodium, soluble salts are low, dispersion, reduced air and water movement and reduced nutrient availability

- 'Rabba Rabba Meeh Barsa, Saadi Kothi Daane Paa' (Make it rain God, so our homes remain filled with grains)",
- In Southwest Punjab, farmers are praying for the monsoon to fail!
- Waterlogging affects around 2 lakh hectares in Southwestern Punjab, comprising Muktsar, Ferozepur, Fazillka , Faridkot and Abohar districts. The region has geographical features akin to the neighbouring desert state of Rajasthan with sporadic sand dunes, desert soils and brackish groundwater.
- Shajrana was a prosperous village harvesting cotton, wheat and millets until the flood of 1976, when the water laid waste to around 1000 acres. People also blame seepage from the Gang canal, which runs near the village, for the rise in groundwater levels.



Map data ©2019



Waterlogging in Punjab ★



- Rajasthan feeder canal, the Gang Canal and the Sirhind feeder pass through this area taking waters from the Harike barrage in Sultanpur to areas of Punjab and Rajasthan
- Farmers started shifting from cotton to water-intensive paddy cultivation during the kharif season and reaped higher monetary benefits
- Punjab's Irrigation Department, 25% of the 84,800 hectares of fertile land critically affected by water logging in Faridkot, Muktsar, Malout, Lambi, Abohar and Gidderbaha tracts of Punjab adjoins the Rajasthan and Sirhind feeder canals
- Indian Council of Agriculture Research (ICAR) found that the water table in Southwestern Punjab rose by 15-20% per annum after the introduction of canal irrigation.



- **Natural drainage worsens the situation**
- The topography of this area is such that it is a bowl-shaped tract, which collects water coming from all the sides.
- buried ridge running from Delhi to Lahore which crosses the southern end of this area. This ridge also blocks further movement of groundwater from the area
- The groundwater level, which was around 150 feet in 1950-60, has now risen to 5 feet.
- **Drains stand still**













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