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Geographical Distribution of Usar Lands in Rohtak District (Haryana)

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Abstract: Usar land is defined as that land where the vaste patches of white efflorescence salt called 'Reh'. Such type of lands need special attention because they are quite different in nature from other type of lands. Land is the basic and most important resource in Haryana. All agricultural, animal and forestry production depend on the productivity of land. The land resource is limited as the total geographical area is fixed. Under these conditions, every part of the land is important for us and for the nation. Out of the several problems that limit the economic utilization of land resources in India, the problem of usar lands (saline and sodic soils) the so called salt-affected soils is of great concern.

In India alone, about 7 million ha of the cultivated land are affected by salinity and sodicity. In Haryana it is about 0.50 million ha. The intensive irrigation and the excessive use of water have created the problems of water logging, soil salinity and soil sodicity. Several other factors such as the impeded drainage, undulating topography, salt-laden parent material, unlined irrigation channels, poor quality of the underground water and blocking of drainage through the construction of roads, canals and railways have also contributed to these problems. In Haryana all districts are affected with salt concentration. In Rohtak district the area under usar lands is 1358, 523, 513, 455 and 390 ha in Rohtak, Kalanaur, Sampla, Lakhan Majra and Meham blocks, respectively. The main purpose of the research work was to identify the usar lands of study area.

Keywords: Usar Lands, Salt-affected soils, Reh.

INTRODUCTION

The prosperity of a country depends on the richness of land and soil resources. In a country like India, where the population pressure on land is high, rational utilization of the land resources assumes great importance for the optimum and sustained production with minimum hazards. India is the seventh largest and second most populous country in the world. The population of the country was1027015247 persons in 2001 and in 2011, it is 1210193422 persons. In India, 75 per cent of the population live in villages and out of this 70 per cent of the population is engaged in agriculture activities.

Land is the basic and most important resource to the mankind. All agricultural, animal and forestry productions depend on the productivity of the land. The land resource is limited as the total geographical area is fixed. Under these conditions, every part of land is important for us and for the nation. Out of the several problems that limit the economic utilization of land resources in India, the problem of usar lands (saline and sodic soils) - the so called salt-affected soils is of great concern. The problem is a world-wide phenomenon affecting most of the countries of the arid and semi-arid regions. According to one estimate, over 950 million ha of the land arc affected by this menace in North America, Mexico, Central America, South America, several parts of Asia, Australia and Europe (Bhumbla, 1980; Bresler *et al.* 1982). In India alone, about 7 million ha of the cultivated land are affected by salinity and sodicity. In Haryana, it is 0.50 million ha. The problem has been increasing gradually with the advent and expansion of canal and tube well irrigation projects because of the faulty management of water.

Usar land is defined as that land where the vaste patches of white efflorescence salt called 'Reh'. Such type of lands need special attention because they are quite different in nature from other type of lands. The scientific investigations on the nature, origin, amelioration and management of the salt-affected soils in India date back to more than a century (Agarwal and Gupta, 1968; Agarwal *et al*., 1979; Bhumbla, 1980). The main purpose of the present study was to indentify the usar lands of Rohtak district.

Data Base

For the present study, the data has been collected from numerous sources. The agricultural data has been obtained from Rohtak, Meham and Sampla tehsils of Rohtak district and District Revenue Records office. The other relevant data pertaining to study has been obtained from both the published and unpublished literature, which has been obtained from the following sources:

1. Statistical Abstract of Haryana (2011-12).
2. Census of India (2001).
3. Census of India (2011).
4. Soil Survey office, Rohtak.
5. Soil Conservation office, Rohtak.
6. Deputy Director of Agriculture office, Rohtak.

Research Methodology

The percentages have been calculated in the present study and data for various attributes has been represented in a tabular form or by statistical diagram. The whole affair has been managed manually. The data was processed in older to make it useful interpretative. This was done with a view to economising time, labour and finance. But the main purpose was accuracy and authenticity.

Map is the highest tool of the geographer. The bulk of the statistical data was therefore, used to the preparation of most of the maps. The data was converted into percentage for their use in the tables. A graphic representation of the data has also been made in order to facilitate the projection of trends.

Study Area

The present study relates to the Rohtak district of Haryana state. Haryana is one of the fast developing states of India. It lies between 27° 39' to 30° 55' North latitude and 74° 28' to 77° 36' East longitude. Haryana covers an area of about 17070 sq. miles, which is 1.44 per cent of the total geographical area of the country.

The Rohtak district lies in the south east of Haryana state between 28° 19' and 29° 18' North latitude and 76° 13' to 77° 12' East longitude and falls in the semi-tropical region of north India. It is bounded by Sonipat district in the East, Hisar and Bhiwani districts in the West, Jind district in the North and Jhajjar district in the South. The Rohtak is one of the 21districts of Haryana state and situated in West of the Union Territory of Delhi as shown in Map 1.1.

Map 1.1

According to 2011 Census, the total geographical area of the Rohtak district is 1668 sq. kms or 167311 ha. The district includes three tehsils namely Rohtak, Meham and Sampla containing 5 CD blocks viz. Rohtak, Sampla, Kalanaur, Lakhan Majra, and Meham (Map 1.2). Rohtak is the largest tehsil in the district with an area 1200 sq. Kms. There are 147 villages and 3 towns namely Rohtak, Meham and Kalanaur (Table 1.1). The total population of the district is 1058683 persons (2011 Census). Out of which the rural population is 613864 persons and urban population is 444819 persons.

Map 1.2

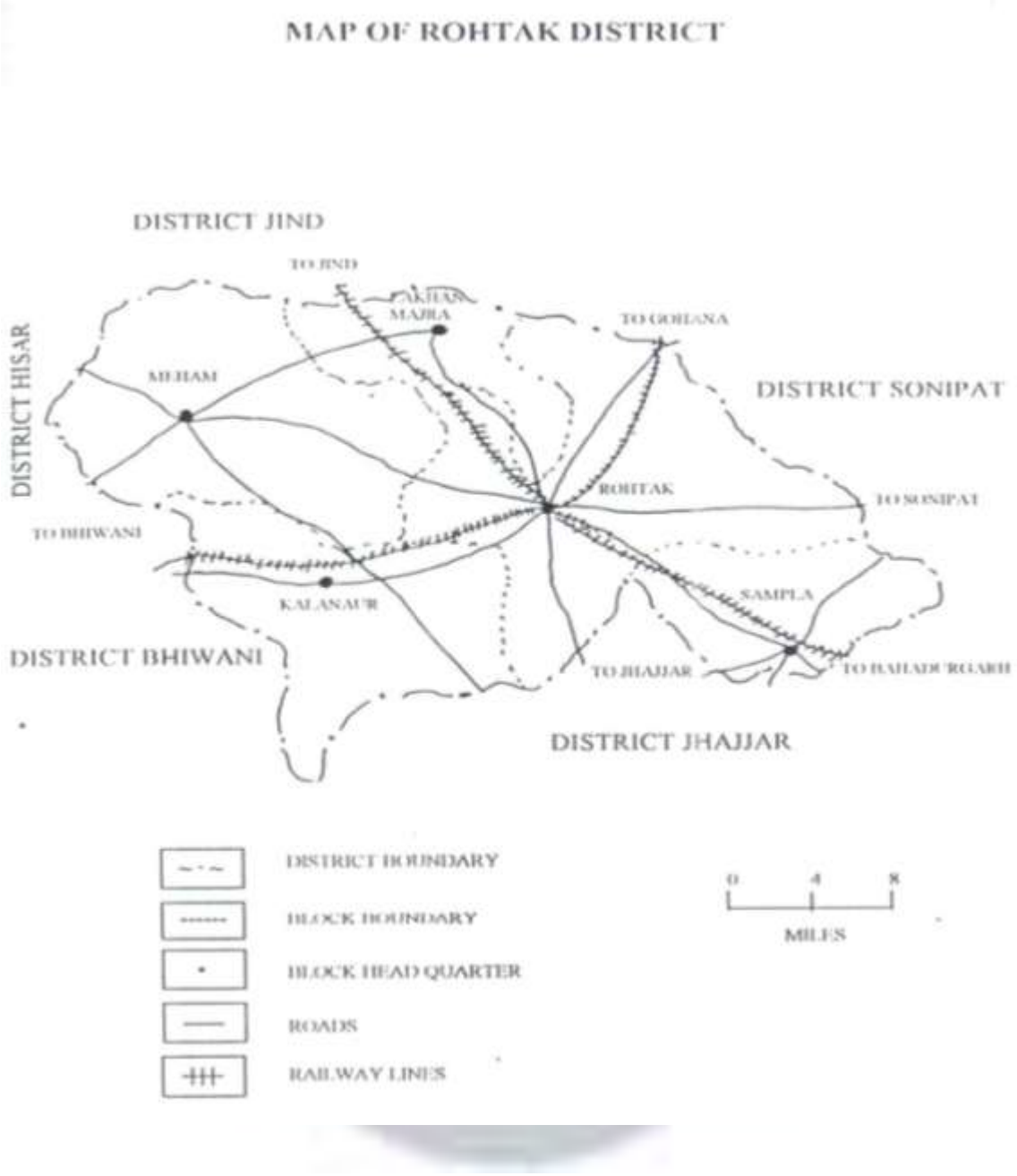


Table 1.1

Tehsils, Blocks and Villages of Rohtak District

S. No.	Blocks	Tehsils	Villages	Area (ha)
1.	Rohtak	Rohtak	57	56813
2.	Sampla	Sampla	24	22658
3.	Kalanaur	Rohtak	27	29842
4.	Lakhan Majra	Rohtak	14	17026
5.	Meham	Meham	25	40972
Total	5	3	147	167311

Source: Deputy Director of Agriculture office, Rohtak

Distribution

In Haryana about 0.50 million ha of land is affected by salinity and sodicity problems. All districts of Haryana are affected with salt concentration. Based on the natural and geographical distribution, these lands can be broadly grouped into two categories (Table 1.2). Nearly 65 per cent (0.33 million ha) of these lands are sodic, occurring in the Indo-Gangetic plains with mean annual rainfall of 550-1000 mm and the rest 35 per cent (0.18 million ha) are saline, occurring in this region with mean annual rainfall < 550 mm (Table 1.2).

Table 1.2

Geographical Distribution of Usar Lands in Haryana

Broad group	Dominated type of salty land	District in which the lands occur	Approximate area	
			(Million ha)	(%)
1. Salt-affected soils of Indo-Gangetic plains with mean annual rainfall of 550-1000 mm	Sodic	Karnal, Kurukshetra, Ambala, Kaithal, Panipat, Panchkula, Yamuna Nagar, Gurgaon, Mewat, Faridabad, Palwal, Jind, Sonipat and Rohtak	0.33	64.7
2. Salt-affected soils of Indo-Gangetic plains with mean annual rainfall < 550 mm	Saline	Rohtak, Jind, Sonipat, Hisar, Bhiwani, Jhajjar, Fatehabad, Sirsa, Faridabad, Palwal, Gurgaon and Mewat	0.18	35.3

The saline lands exist in the irrigated tract of Rohtak, Jind, Sonipat, Hisar, Bhiwani, Jhajjar, Fatehabad, Sirsa, Faridabad, Palwal, Gurgaon and Mewat districts. The problem of sodicity is mostly confined to the districts of Karnal, Kurukshetra, Ambala, Kaithal, Panipat, Panchkula, Yamuna Nagar, Gurgaon, Mewat, Faridabad, Palwal, Jind, Sonipat and Rohtak (Table 1.2). Broadly speaking based on their amelioration needs, the usar lands (salt-affected soils) have been classified into two main categories: Saline soils and Sodic soils.

Salt-affected soils are of high fertility but the presence of the soluble salts make it uncultivable. In due course of time these salts are accumulated so much, so that it prevents the farm crops to grow or yield high production. Block-wise distribution of usar lands in Rohtak district is given in Table 1.3 (Figure 1.1).

Table1.3

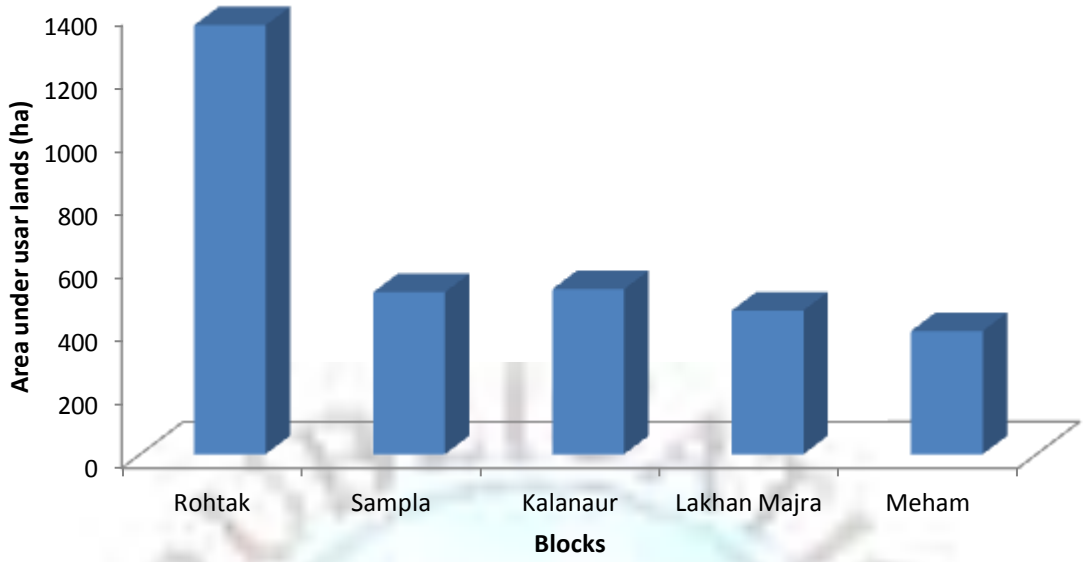
Block-wise Distribution of Usar Lands in Rohtak District

S. No.	Blocks	Cultivable Area (ha)	Area under usar lands (ha)	Per centage
1.	Rohtak	46502	1358	2.92
2.	Sampla	19494	513	2.63
3.	Kalanaur	25273	523	2.07
4.	Lakhan Majra	14402	455	3.16
5.	Meham	34178	390	1.14

Source: Soil Conservation office, Rohtak

Figure 1.1

Block-wise Distribution of Usar Lands in Rohtak District



It is clear from the Table 1.4 and Figure 1.1 that the Rohtak Block covered the highest usar lands area (1358 ha) whereas, Meham Block covered the lowest usar lands area (390 ha).

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