



IRRIGATION IMPACT ON FARMERS'S SOCIAL AND ECONOMIC STATUS OF SOLAN DISTRICT

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Introduction : Irrigation is the artificial application of water to the land or soil. It is used to assist in the growing of agricultural crops, maintenance of landscapes, and re-vegetation of disturbed soil in dry areas and during periods of inadequate rainfall.

Additionally, irrigation also has a few other uses in crop production, which include protecting plants against frost, suppressing weed growth in grain fields and preventing soil consolidation, in contrast, agriculture that relies only on direct rainfall is referred to as rain-fed or dryland farming. Irrigation systems are also used for dust suppression, disposal of sewage, and in mining. Irrigation is often studied together with drainage, which is the natural or artificial removal of surface and sub-surface water from a given area, irrigation has been a central feature of agriculture for over 5000 years and the result of work of many cultures, and was the basis of the economy and society of numerous societies, ranging from Asia to Arizona.



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Study area : The present study has been undertaken at micro level in six panchayats of Solan district in Himachal Pradesh. These panchayats are – Seri, Shanti, Kotho, Sanhol, Ochghat and Kalaghat. The study area belongs to rural surface. There are total 29 villages surveyed in the study areas, having 1569 households and 7668 population as per census of India 2011. The population characteristic of study area shown in table 1. The study area is located on an off shoot of the shivalik mountains ranges of the Himalayas. The mainland of study area extends between $30^{\circ}54'41.92\text{ N}$ - $77^{\circ}5'41.92\text{ E}$ to $30^{\circ}5'46.03\text{ N}$ - $77^{\circ}10'10.87\text{ E}$ geographical coordinates. It is surrounded by Shimla on the east, Rupnagar district of Punjab on west, Mandi district on the north and Panchkula district of Haryana in the south, it is about 10 km away from the district headquarter of Solan. The altitude of the study area is about 1502 meters (5249.34 feet) above mean sea level. Both Kharif and Rabi crops are produced in the areas which are irrigated as well as rain-fed. Kharif crops are widely prevalent in the area. Tomato, pea and Corn are the major crops whereas oilseeds, ginger, chillies, pulses, vegetables and turmeric are the minor crops. Cows (Jarsi and Desi) buffalo and bullock are also found over here, they also promote forestry which plays an economic primary health centre, animal hospital, water tank, senior secondary school, high and primary school. The study area is approachable to be reached by colleges and universities. The economy of the area is primarily based on agriculture and forestry, the study area belongs to rural surface but the availability of the area is primarily based on agriculture and forestry. The study area belongs to rural surface but the availability of electricity is appreciable. Every house of study area is well electrified. Villages in study area are partially connected with metalled roads and interconnected with unmetalled roads.



Statement of the problem: Irrigation is the main factor for agricultural productivity. The residents are aware about the importance of the irrigation facilities. Therefore, the present study aims to analyses the land holding characteristics and irrigation affecting the productivity of the agriculture.

Objective: The main objective of the study is to analyse irrigation and land tenure characteristics of the study area.

Hypotheses: An attempt has been made to examine to following hypotheses in present study: -

- Land holding characteristics very according to high to low social, education and land holding status of households.
- Leased in, leased out and operational holding very according to social, education and land holding status of households.
- Sources of irrigation and percentage irrigated area of the crops is high under higher social, education and land holding status of households.
- Average number of availability of watering in the crops increased with size of landholding, social and educational status.

Database and methods: The present study is based on the data collected through primary household survey that was conducted from September 24, 2014 to September 30, 2014. The sample for the study was chosen by simple random sampling. A well-structured questionnaire was designed before proceeding in the field. 368 households were surveyed among six panchayats. Data was also collected from different secondary source like Patwari of panchayats, district collector of Solan, Census 2011, etc. The primary data collected from surveyed panchayats of Solan WAS classified with different socio-economic parameters, which are -Castes, Landholding size of and Education level of family head, in order to capture their interclass differences in size of landholding, leased in, leased out, source of irrigation, percentage area of all the crops, average number of watering required in all the crops of surveyed panchayat.

Result and discussion

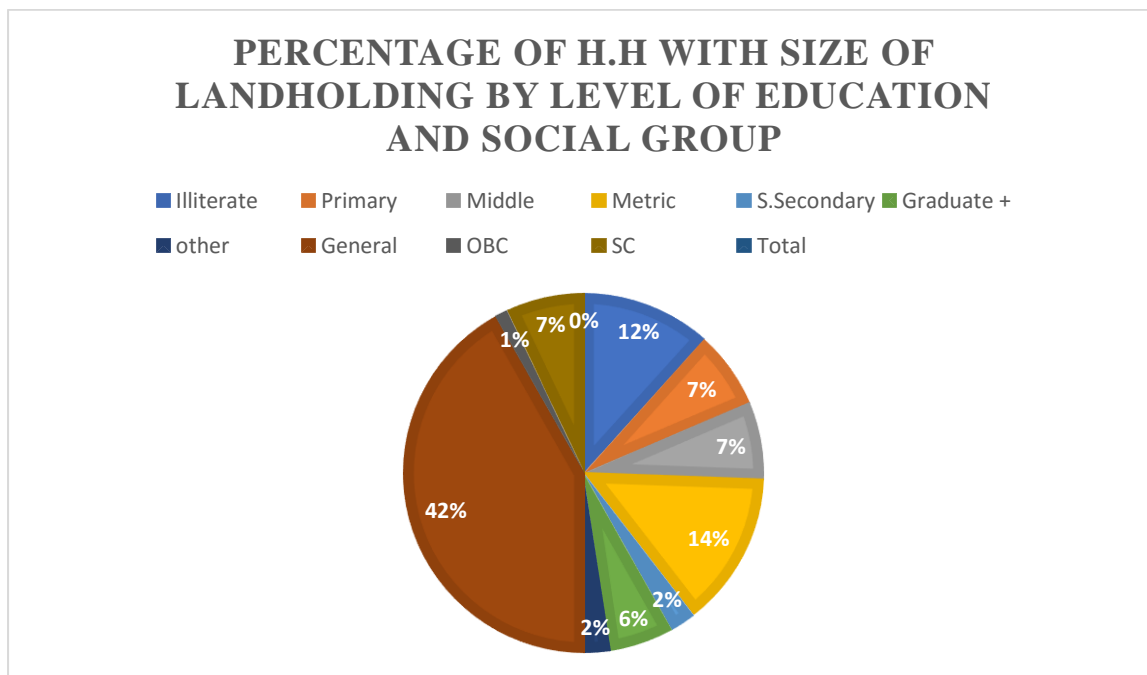
Table 01: Size of landholding

| Percent of H.H with area under wasteland stony waste by size of landholding | | | | | | |
|---|---------------|-----------|----------|--------------|-------|--|
| Size of landholding | Less than 2.5 | 2.5-5 | 5-10 | More than 10 | Total | |
| Illiterate | 8(80.00) | 1(10.00) | 1(10.00) | 0(0.00) | 10 | |
| Primary | 5(83.33) | 19(16.67) | 0(0.00) | 0(0.00) | 6 | |
| Middle | 5(83.33) | 0(0.00) | 1(16.67) | 0(0.00) | 6 | |
| Metric | 9(75.00) | 1(8.33) | 1(8.33) | 1(8.33) | 12 | |
| S.Secondary | 2(100.00) | 0(0.00) | 0(0.00) | 0(0.00) | 2 | |
| Graduate+ | 5(100.00) | 0(0.00) | 0(0.00) | 0(0.00) | 5 | |
| Other | 2(100.00) | 0(0.00) | 0(0.00) | 0(0.00) | 2 | |
| Percent of H.H with size of by social group | | | | | | |



| | | | | | |
|--------------|------------------|----------------|----------------|----------------|-----------|
| General | 31(86.11) | 3(8.33) | 1(2.77) | 1(2.77) | 36 |
| OBC | 1(100.00) | 0(0.00) | 0(0.00) | 0(0.00) | 1 |
| SC | 4(66.66) | 0(0.00) | 2(33.33) | 0(0.00) | 6 |
| Total | 36(83.72) | 3(6.97) | 3(6.97) | 1(2.32) | 43 |

Source: Field survey, 2014



The above table shows that out of 374 sample households only 43 households have agriculture land in the study area. An overwhelming majority of such sample households owned landholding of less than 2.5 acres. Proportion of farmers with small and medium size of landholding is very low whereas large landholdings size is in significant. Similar trends are observed in the size of landholding by level of education, and social groups. However proportion of landholding in marginal category is increasing with level of education. Likewise, general and backward class farmers have higher proportion of marginal landholding as compare to schedule castes. Low educated and schedule castes farmers have higher proportion in small and medium size of landholding. Over all mostly farmers in selected panchayats in Solan district have their landholding size of less than 2.5 acres. This may be due to hilly terrain of the study are. Further small size of landholding of educated may be due to the availability of other avenues of job.

Table 02 : Operational holding

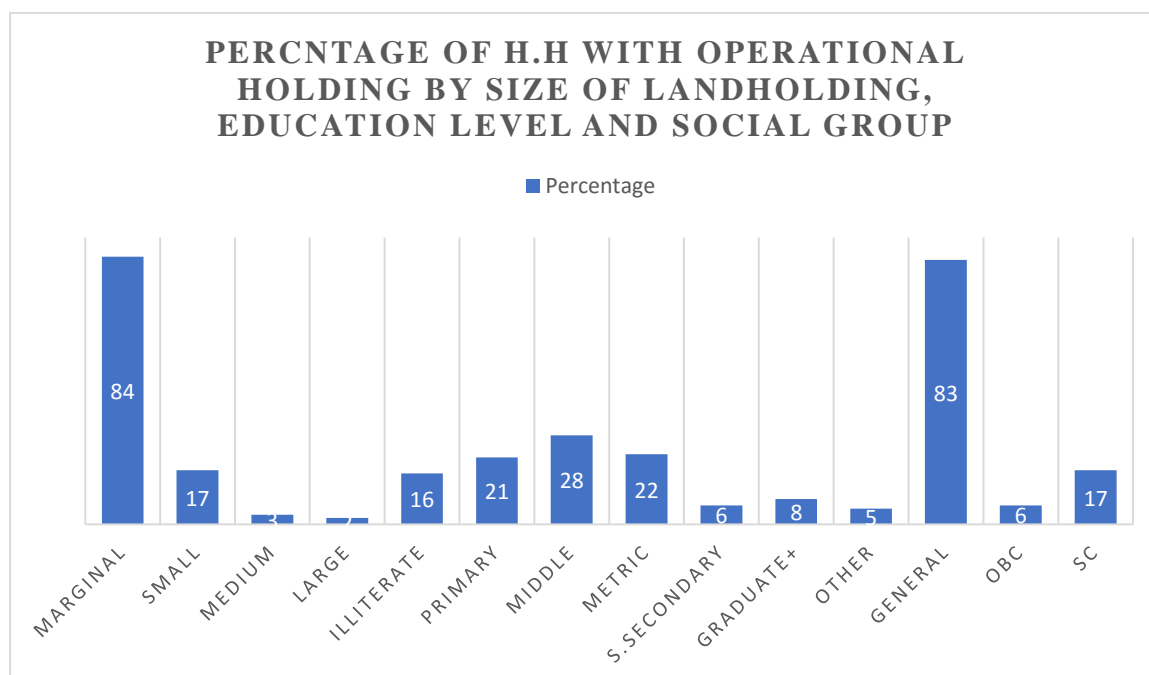
| Percent of H.H with operational holding by size of landholding | | | | | |
|--|------|-------|------|-----------|-------|
| Land | Less | 2.5-5 | 5-10 | More than | Total |



| size/operational holding | than 2.5 | | | 10 | |
|---|-----------|-----------|---------|----------|-----|
| Marginal | 65(77.3) | 16(19.04) | 3(3.57) | 0(0.00) | 84 |
| Small | 16(94.11) | 1(5.88) | 0(0.00) | 0(0.00) | 17 |
| Medium | 3(100) | 0(0.00) | 0(0.00) | 0(0.00) | 3 |
| Large | 1(50) | 0(0.00) | 0(0.00) | 1(50) | 2 |
| Percent of H.H with operational holding by level of education | | | | | |
| Marginal | 14(87.50) | 2(12.50) | 0(0.00) | 0(0.00) | 16 |
| Primary | 18(85.71) | 3(14.20) | 0(0.00) | 0(0.00) | 21 |
| Middle | 21(75) | 6(21.40) | 1(3.57) | 0(0.00) | 28 |
| Metric | 17(77.27) | 3(13.63) | 2(9.09) | 0(0.00) | 22 |
| S.Secondary | 6(100) | 0(0.00) | 0(0.00) | 0(0.00) | 6 |
| Graduate+ | 5(62.50) | 2(25) | 0(0.00) | 1(12.50) | 8 |
| Other | 4(80) | 1(20) | 0(0.00) | 0(0.00) | 5 |
| Percent of H.H with operational holding by level of Social Group | | | | | |
| General | 65(76.40) | 15(18.07) | 2(2.40) | 1(1.20) | 83 |
| OBC | 5(83.3) | 1(16.66) | 0(0.00) | 0(0.00) | 6 |
| SC | 15(88.20) | 1(5.88) | 1(5.88) | 0(0.00) | 17 |
| Total | 85(80.18) | 17(16.03) | 3(2.83) | 1(0.94) | 106 |

Source : Field survey, 2014

Table demonstrates operational holding by size of land holding owned, level of education and social groups in selected panchayat in Solan district. It is observed that great majority of the farmers are either marginal or small. Medium and small size operational holdings are exceptions. Same scenario has been observed across the classes.



Among the marginal farmers about only fourth of them have small and medium size operational holding indication that they have leased in agriculture land whereas half of the



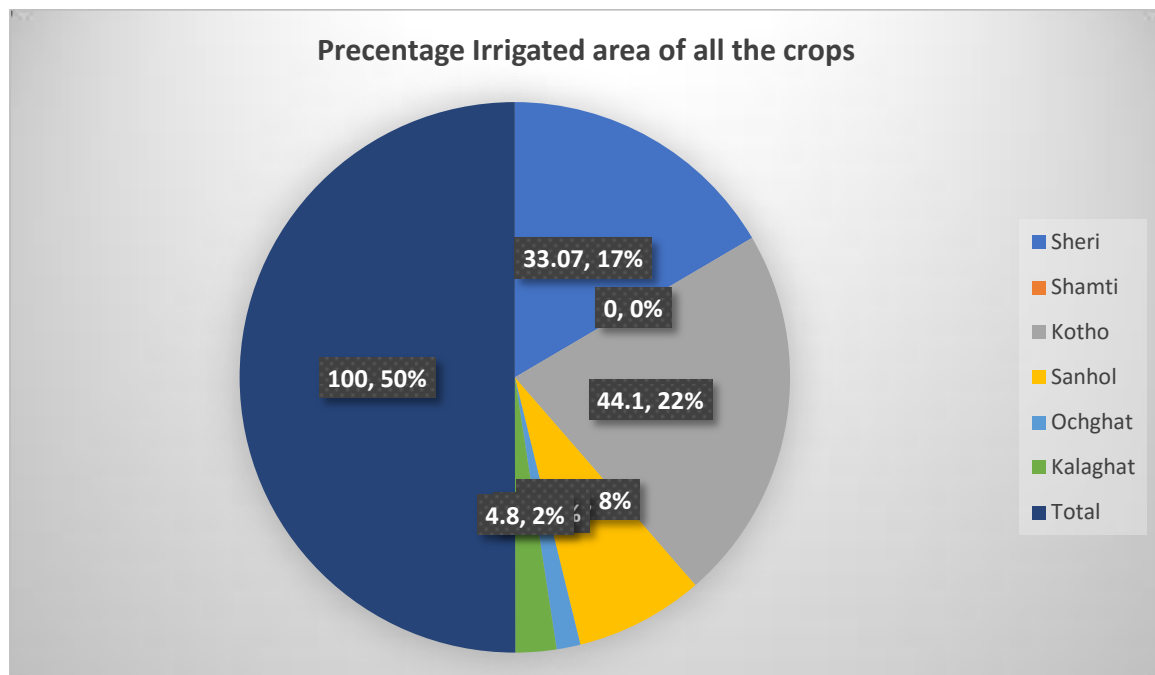
large farmers have marginal size of operational holding which means they have leased out part of their agriculture land. Proportion of marginal size of operational holding is higher among the low educated and schedule caste households as compare to high educated and general category of sample households

Table 03: Percentage irrigated area of all the crops

| Watering/size landholding | Rabi | | | Kharif | | | Total |
|---------------------------|-------|-------|-------------|--------|-------|---------|--------|
| | Wheat | Peas | Cauliflower | Tomato | Corn | Capcium | Total |
| Sheri | 8.52 | 24.03 | 2.32 | 54.26 | 9.30 | 1.55 | 33.07 |
| Shamti | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Kotho | 6.97 | 31.97 | 16.27 | 24.48 | 10.46 | 5.81 | 44.10 |
| Sanhol | .5.08 | 38.98 | 0.00 | 44.06 | 5.08 | 6.77 | 15.12 |
| Ochghat | 0.00 | 0.00 | 0.00 | 99.00 | 1.00 | 0.00 | 2.8 |
| Kalaghat | 5.26 | 31.57 | 5.26 | 5.26 | 42.10 | 10.52 | 4.8 |
| Total | 6.92 | 29.48 | 8.20 | 40.00 | 10.76 | 4.61 | 100.00 |

Source: Field Survey, 2014

Table 03 reveals that in rabi season irrigation availability is less as compared to kharif season. It was observed that maximum irrigated area comes under crops like tomato and peas as compare to corn, cauliflower, wheat and capcium. It is because crops like tomato and peas require more water as compared to rain-fed crops like corn. Therefore, irrigational facility fulfils demand of water.





Source: Field Survey, 2014

The availability of water is less in Ochghat as compared to other panchayats. Number of samples are very less (4 sample household) in Shamti. Which do not provide a true picture of Shamti panchayat irrigated area.

Conclusion

The study of quantitative and qualitative aspects of irrigation plays an important role in development and socio-economic enhancements of an area. The study of vital events like landholding and irrigational characteristics in the study area show the developing of agriculture of the region. Agriculture is the primary occupation of people in surveyed panchayats and irrigation is the main source for increasing agricultural productivity. Leased in land pertain to agriculture households. Among various socio-economic groups upper/general caste have maximum area owned (36 household), leased in land (households) and leased out land (19 households)

Solan district has good facilities of irrigation in the form of tanks and bodi/khul/spring. About 45 percent of the cultivated area is tank irrigated followed by spring/bodi/khul. About 75 percent people field distance is less than 100 m from the source. In Solan two crops are mainly grown which require irrigation above 80 percent. Two main crops grown are Tomato and peas. Sheri, Kotho, Ochghat have good facility of irrigation, Mustard is grown less in the selected panchayat of Solan district because in the surveyed area expenditure is made only on the pipe. Problem of water loggings and dryness is almost absent in the surveyed area.

Reference:-

Dhillon and Singh, Jasbir Agriculture Geography, 'Tata Mc Graw Hill

Husain Majid, Systematic Agriculture Geography, Rawat Publication

Shafi Mohammad Agricultural Geography (Kindle Edition) 'Pearson Publication'