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## Study of socio-economic status of the farmers in the command area of west Banas irrigation project

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### Abstract

Socio-economic status of the farmers was studied through a sample survey and concluded that the maximum sample farmers (34.38 percent) were having 5 family members and minimum (3.62 percent) were having 2 family members in the command of West Banas Canal. Maximum sample farmers had (45.87 per cent) Primary education level. 4.51 percent of total family members were on service in government and private organizations in nearby cities or villages. The Sample farmers were having 1.78 cows per family and 1.36 Buffaloes per family. Based on financial study directed on complete 150 family from the order of the Right Main Canal, it could be alluded as a rule that despite the fact that the agribusiness is the principle control of the ranchers who are generally ancestral, their schooling standard and expectation for everyday comforts were exceptionally low and, in this way, the ranchers didn't know about new advancements of cultivating. Cost of development of wheat, Barley, gram, and mustard crops were found as Rs. 29,603.00, Rs. 27,827.00, Rs. 22,284.00 and Rs. 22,797.00 per hectare separately and net advantages acquired from these yields were Rs. 14,497, Rs. 14,223, Rs. 15,616 and Rs. 19,503 for every hectare. For these yields were found in the examination region. The example of responsibility for shows that the normal number of bovines in the order zone was discovered 1.78 per family. The normal bison were assessed 1.36 per family in the order territory. Cultivating as a significant occupation can be supported by the presence of an almost twofold number of draft creatures than family. The efficiency in the zone is normal or sub optimal in light of utilizing low contributions by the ranchers in the order region. Every one of these circumstances of the ranchers prompts the route that there is a requirement for broad communication between water system, agrarian and augmentation exercises with the ranchers for use of land and water assets to improve their farming returns.

**Keywords:** Socio-economic, yield, farmer, family, crops

### 1. Introduction

Irrigated agriculture represents the largest demand for water in the world. Irrigation consumes over 70 percent of the total development water supplies of the world. Increased water demands from non- agricultural sectors require efficient water resources planning and management. Efficient operation and management of an irrigation system plays an important role in the sustainability of irrigated agriculture. Considerable efforts have been made in the past to improve efficiency of the irrigation systems through physical/structural development and efficient operation and management.

The technical and socio-economic constraints that prevent farmers from achieving the output potential of their farms differ among countries and even amongst region within a country. The role of socio-economic study is to delineate economic and social problems and to identify the losses associated with technical, institutional, social and economic constraints. It is also imperative that if we are going to implement some planned technology in a region then we should be familiar with the social and economic conditions of that region to get success in the implementation.

The present study deals with determination of socio-economic status of the farmers in the command area of West Banas irrigation project with reference to age, level of education, social participation, land holding, farm & nonfarm assets. The different techniques used for measuring the socio-economic status and procedure for collection of samples and the data are given below.

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## 2. Materials and Methods

### 2.1 Selection of Farmers

A complete list of all head, middle and tail end cultivators of the minors on the RMC was obtained. A sample of 10 percent of total farmers of command area of the RMC has been selected for the study. Equal representation has been given to head, middle and tail end of each minor while selecting the sample at randomly. Likewise 150 farmers were selected from the command area for study. As there is undulating and very less land holding in the command, it is difficult to classify them as small, medium and large farm size.

### 2.2 Collection of Data

To fulfill the objectives of the study, both primary and secondary data were collected. The required information was collected personally by contacting the main system officials the other lower division official, irrigation staff (Irrigation Patwari etc.) and farmers in the selected minors. All the data and information collected for the study can be divided into two groups' viz., macro and micro level.

### 2.3 Macro level data

The primary and secondary data pertaining to selected commands were collected to achieve the specific objectives. The secondary data were collected from village (Patwari and Tehsil head quarter). For primary data, a specific questionnaire was prepared (Appendix-A) and personal interview method was used. Macro level data which include time series data on area under crops, land use, cropping intensity, schedule of water release and canal operation timings etc. were collected.

### 2.4 Micro level data

Micro level data which pertain to individual families of irrigated minor was collected. A specific interview method was used for collection of data. To achieve the objectives of the present study, farm level data on following aspects are needed.

1. The size and composition of the family member with respect to sex, occupation and literacy.
2. Cropping pattern, cropping intensity and input use of the sample farms.
3. iii. Farm assets like farm machinery, implements, different farm structures, power and other type of livestock including cow, buffalo, bullock, goat and sheep.
4. iv. Non-farm assets like radio, television, bicycles, motor cycle, jeep, truck,
5. Tractors, fan, watch, permanent furniture.
6. v. Data on crops, post-harvest prices of the products and input prices actually
7. Paid by the farmers and
8. Vi. Use of inputs on different crops including irrigation, output obtained and Prices of input and output etc.

### 2.5 Concepts and Definitions of Terms and Variables

In this section, concepts and definitions of variables and terms have been explained in terms of land used, cropping pattern, cropping intensity, farm income and family assets which are the main variables used in this study. The data on expenditure related to household, the farm enterprises are required to know the net income. The definitions of different variables and terms used in this study are as follows:

### Cost Concepts

#### 2.5.1 Crop production cost per hectare

Harvest creation cost = Value of employed human work (easygoing and yearly worker)  
 + Value of possessed and recruited bullock work  
 + Value of claimed and employed machine work  
 + Value of seed (ranch created and bought)  
 + Value of fertilizer (possessed and bought)  
 + Value of manures and bug sprays  
 + Irrigation charges.  
 + Land income and expenses  
 + Interest (on working capital and fixed capital)  
 + Miscellaneous costs

### 2.6 Crop Incomes

#### 2.6.1 Gross income (GI) per hectare

The entire gross produce (main and by-products) evaluated at harvest prices, prevailed in the village or nearest market is termed as Gross income (GI) and is represented as:

$$GI = \sum_{i=1}^n (qm_i \times Pm_i + qb_i \times Pb_i) \dots \quad (3.1)$$

Where;

qm and qb are the quantity of main and by-product respectively,a

Pm and Pb are their prices and

n = Number of crops grown during the year by the farmer.

#### 2.6.2 Net income per hectare

Net income = Gross Income per ha. - Production cost per ha

## 3. Results and Discussion

Improvement of horticulture in zone achieves changes in the economy of ranchers, trailed by changes in monetary and social mentality of the individuals. These progressions are reflected in degree of training, example of rural creation and the word related appropriation and so on In the region with the initiation of water system, there have been slight changes in financial status of the ranchers of this specific order zone however the cycle of change has been relatively moderate. Because of ignorance and absence of information the ranchers were delayed to receive the proper methodology with respect to trim creation and other agronomic practices suggested by the concerned divisions.

This segment manages the financial status of the example ranchers in the order zone. Results introduced in this segment are result of meetings led with the example ranchers and the investigation of the survey. Family organization, word related example, responsibility for, ranch resources circulation, cost of development and cost of profits are the significant segments of the investigation. In the order region, there were 150 families overviewed, which is estimated 10% of absolute cultivator. The overview covered 647 people.

### 3.1 Family organization of the example ranchers

The data of every relative was gathered through overview questionnaires, for example, number of relatives, relocation, age, sex, instruction level and control of relatives and so forth Normal family size in the order region is 5 individuals for every family. The investigation of size of family, unique age gathering, sex and schooling level and occupation example of test ranchers was summed up in Table 4.1, 4.2, 4.3, 4.4 and appeared in Figure 4.6, 4.7, 4.8, 4.9 individually.

**Table 1:** Summarized size of sample family

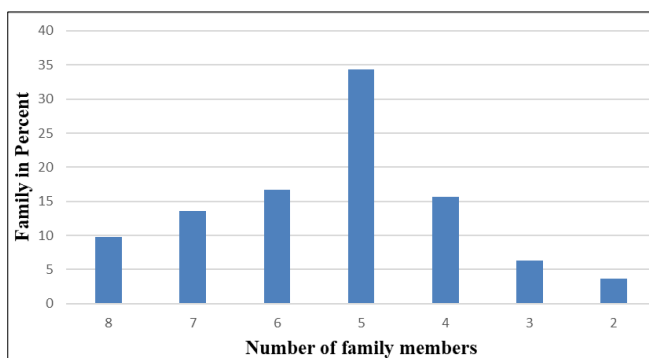
S. No.	Number of family members	Family in Percent
1	8	9.79
2	7	13.54
3	6	16.66
4	5	34.38
5	4	15.65
6	3	6.36
7	2	3.62

**Table 2:** Details of different age group

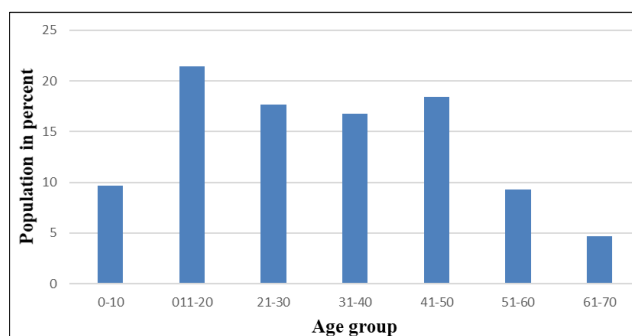
S. No.	Age Group	Population in percent
1	0-10	9.67
2	11-20	21.42
3	21-30	17.68
4	31-40	16.74
5	41-50	18.44
6	51-60	9.27
7	61-70	4.69
8	71-90	2.09

**Table 3:** Details of male and female surveyed in command area

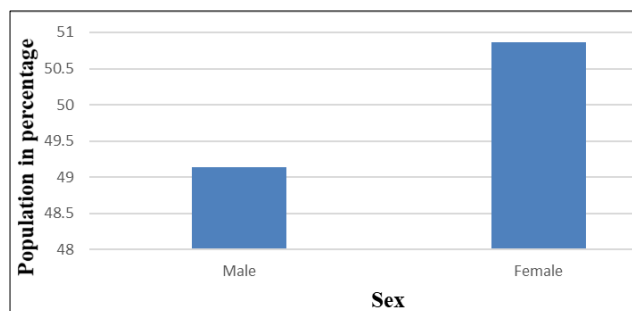
S. No.	Sex	No. of persons	Population in percent
1	Male	318	49.14
2	Female	329	50.86



**Fig 1:** Size of sample family in command area



**Fig 2:** Different age group in the command area



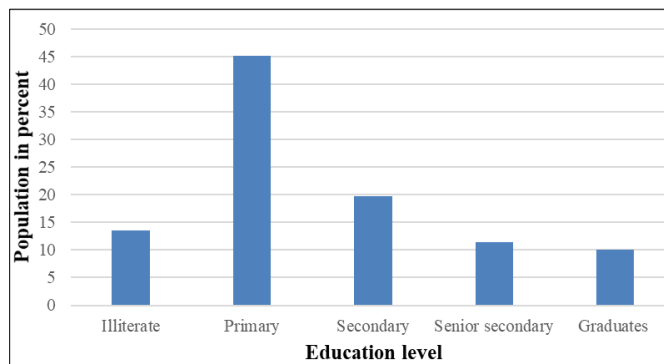
**Fig 3:** Male and female in command area

### 3.4 Education level

As per survey only 45.2 percent farmers have primary education and only 10.1 percent farmers in command area was graduates.

**Table 4:** Education level in command area

S. No.	Education level	Population in percent
1	Illiterate	13.5
2	Primary	45.2
3	Secondary	19.8
4	Senior secondary	11.4
5	Graduates	10.1



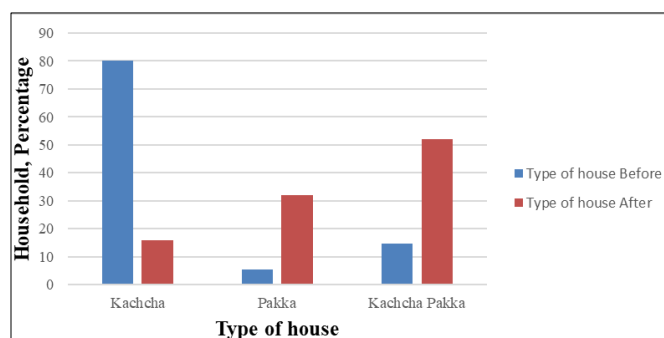
**Fig 4:** Education level in command area

### 3.5 Buildings

As per survey only 8 families lived in Pakka house, 22 families lived in Partial Pakka house and rest were lived in Kachcha house before irrigation project, whereas at present 48 families lives in Pakka house, 78 families lives in Partial Pakka house and 24 families lives in Kachcha house after irrigation project. The present status of residential building of surveyed family is shown in Table

**Table 5:** Details of buildings of sample family

S. No.	Type of house	Before Project		After Project	
		No. of households	Percentage	No. of households	Percentage
1	Kachcha	120	80.00	24	16.00
2	Pakka	8	05.33	48	32.00
3	Kachcha Pakka	22	14.67	78	52.00



**Fig 5:** Buildings of sample family

### 3.6 Land value

Before water system project, normal estimation of inundated land was Rs. 28000 for every bigha and unirrigated land was Rs. 21000 for each bigha, on the grounds that in that time interval, a large portion of region is unirrigated. After water system project, there are radically changes in land an incentive because of expansion in water system office and

creation, due to practically all territory is flooded through channel organizations and reasonable for all sort of harvests. As of now, the estimation of flooded land is surmised Rs. 95000 for each bigha and unirrigated land Rs. 75000 for every bigha.

### 3.7 Age and social support of ranchers

The investigation expresses that the vast majority of the ranchers had a place with youthful age bunch for example (under 30 years) which was trailed by middle age gathering (for example 31 to 49 years) and old (over 50 years) ranchers. In the age gathering of youthful, center and old ranchers there were 48.77, 35.18 and 16.05 percent ranchers separately. Just 8.14 percent ranchers were found in dynamic cooperation in social association in the examination territory. It implies that the majority of the ranchers have no interest in social exercises.

### 3.8 Ownership of Live Stocks of the Sample Farmers

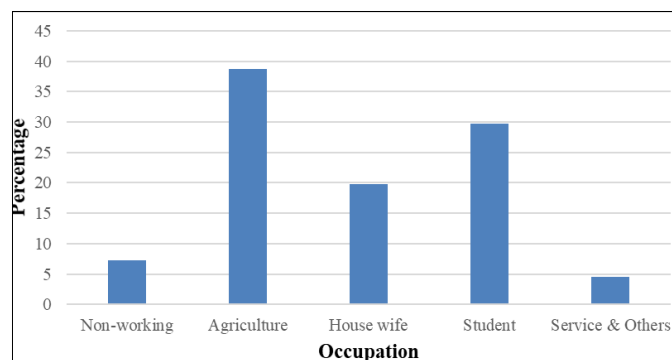
The example of responsibility for in the chose ranchers is introduced in informative supplement. The normal number of dairy animals in the order territory was discovered 1.78 per family. The normal wild oxen were assessed 1.36 per family in the order zone.

#### 3.8.1 Occupational Pattern of the Sample ranchers

The greater part of the ranchers work on cultivating as a significant wellspring of living in their own homestead. The majority of the grown-up ladies performed cultivating rehearses alongside homegrown work. Just 4.51 percent of all out relatives were on help in government and private associations in almost urban areas or towns. Figure 4.9 shows normal conveyance example of the control of the ranchers in the family in the order territory.

**Table 6:** Occupation of sample farmers

S. No.	Occupation	Percentage
1	Labours	7.24
2	Farmer	38.72
3	Dairy farming	19.73
4	Horticulture production	29.80
5	Service & Others	4.51



**Fig 6:** Occupation pattern of sample

### 3.9 Prevailing Cropping Practices and Productivity

From the conversation with the respondent ranchers the predominant trimming rehearses for major Kharif and Rabi crops in the zone are appeared in index.

#### 3.9.1 Field arrangement rehearses

Field arrangement rehearses as furrowing and nerve racking are completed multiple times and one planking is finished

with the assistance of farm vehicle or bullock prior to planting. Planting is done in columns with the assistance of bullock drawn desi furrow, iron furrow and work vehicle drawn seed drill.

#### 3.9.2 Fertilizers

Other than the accessible compost, ranchers use to apply substance manures like Urea, and DAP. 50% portion of urea and full portion of DAP are applied as basal portion and staying 50% urea is applied as top dressing.

#### 3.9.3 Seed

Seed is basic and fundamental contribution for achieving farming creation in various agro-climatic districts. Choice of treated seeds is seldom observed. By and large the seeds are left over result of the last season. The ranchers were utilizing nearby assortment of seeds in the order region.

#### 3.9.4 Crop the executives

Difficult work is utilized for expulsion of spices and weeds from the field. They utilize likewise any sort of pesticide to save their harvests from irritations and creepy crawly assault. Gathering is done physically, work vehicle mounted collector folio and by consolidate reapers, which is employing from Punjab. Sifting of wheat is finished by farm truck harvester and electric harvester.

#### 3.9.5 Productivity

The profitability in the territory is normal or sub optimal because of medium topsoil soil in the order, and low contributions by the ranchers.

### 3.10 Cropping Pattern of the Project Area

Trimming example of a region is dictated by an assortment of components including climatic elements, nature of land, own utilization necessities of the individuals, the dampness accessibility, and relative benefit, administrative aptitudes of the ranchers and a large group of other related elements. Legitimate observing of trimming design in the task zone is unavoidable. The editing design in the undertaking territory needs logical and occasional examination and it should be reoriented so that the interest of the ranchers are protected monitored and issues because of additional interest of water are maintained a strategic distance from. Existing trimming design in the examination zone is appeared in appendix. Field information with respect to the current trimming design were gathered from pindwara Tehsil office. The trimming example of a district by and large alludes to the overall region under various yields developed. The most overwhelming yield is Maize in Kharif season, while in Rabi season, Wheat is the predominant crop. It turns out to be certain that the prevailing harvest wheat covers around 72 percent and remain crops (Gram, mustard, and grain and so on in Rabi season) are filled in just 27 percent of absolute edited region.

### 3.11 Cost of Cultivation and Net Benefit of Rabi Crops in Command Area

There are fluctuating charges for water system of various yields and harvest insightful water system charges for various yields are given in Appendix-B. Utilizing these water system charges, the expense of development of wheat, grain, gram, and mustard, were Rs. 29,603.00, Rs. 27,827.00, Rs. 22,284.00 and Rs. 22,797.00 per hectare separately and net advantages acquired from these yields were Rs. 14,497, Rs. 14,223, Rs. 15,616 and Rs. 19,503 for each hectare.

#### 4. Conclusions

Based on financial study directed on complete 150 family from the order of the Right Main Canal, it could be alluded as a rule that despite the fact that the agribusiness is the principle control of the ranchers who are generally ancestral, their schooling standard and expectation for everyday comforts were exceptionally low and, in this way, the ranchers didn't know about new advancements of cultivating. Cost of development of wheat, Barley, gram, and mustard crops were found as Rs. 29,603.00, Rs. 27,827.00, Rs. 22,284.00 and Rs. 22,797.00 per hectare separately and net advantages acquired from these yields were Rs. 14,497, Rs. 14,223, Rs. 15,616 and Rs. 19,503 for every hectare. For these yields were found in the examination region. The example of responsibility for shows that the normal number of bovines in the order zone was discovered 1.78 per family. The normal bison were assessed 1.36 per family in the order territory. Cultivating as a significant occupation can be supported by the presence of an almost twofold number of draft creatures than family. The efficiency in the zone is normal or sub optimal in light of utilizing low contributions by the ranchers in the order region. Every one of these circumstances of the ranchers prompts the route that there is a requirement for broad communication between water system, agrarian and augmentation exercises with the ranchers for use of land and water assets to improve their farming returns.

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