



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2022; SP-11(12): 1211-1215  
© 2022 TPI  
[www.thepharmajournal.com](http://www.thepharmajournal.com)  
Received: 28-09-2022  
Accepted: 07-10-2022

**Harpal Singh**  
University Institute of  
Agricultural Sciences,  
Chandigarh University,  
Mohali, Punjab, India

**Himani**  
University Institute of  
Agricultural Sciences,  
Chandigarh University,  
Mohali, Punjab, India

**Aastha**  
University Institute of  
Agricultural Sciences,  
Chandigarh University,  
Mohali, Punjab, India

## Contrasting parameters on socio-economic profile and other important parameters: An outcome based study for sustainable agriculture and economic viability in Punjab

Harpal Singh, Himani and Aastha

### Abstract

Present investigation “Contrasting parameters on Socio-economic profile and other important parameters- an outcome based study for sustainable agriculture and economic viability in Punjab. The study was conducted in different villages of Punjab viz., Hasanpur, Kalewal, and Singhpura to analyse the crop production techniques adopted by farmers using an interview schedule. More than three hundred farmers were selected as respondents. The independent variables such as the quality of seeds they are using, either the seed they are using is already treated or they have given any additional treatment to the seed, method of ploughing, sowing techniques, optimum spacing, cropping pattern and rotation, area in hectares they own, method of irrigation, the implements and machinery they are using, fertilizer and nutrient management adopted, harvesting, yield is being measured. The study has explored the crop production technique used by maximum farmers and the results indicates that, majority of farmers were cultivating between 5-12 acres of land. Largest percentage among these cultivated less than seven acres. From the study it was concluded that more than 70% farmers are using good quality seeds and many of them are using seeds which are already treated to prevent any disease. It was also observed that broadcasting is the only method used by them for sowing which leads to improper spreading of seeds. The study found that yield per acre of most the farmers was 20-100 quintals per acre depending on the inputs used. Average yield per hectare of major crops like rice and wheat is 65Q/ha and 70Q/ha. It was observed that the main crops grown by them are rice, wheat, sugarcane, maize minor millets and other important fodder crops. Moreover, lot of them grows vegetables as well and uses only manure to save soil and underground water level which can be taken as a future threat. As we know that for any sustainable farming there are exactly three attributes e.g., adoption, production and sustainability. Now in current scenario of globalization and malnutrition need the hour is to think over Farm diversification. Current study reveals that there are certain factors which are hindrance for the sustainable farming. New approaches should be adoption of new technologies and producing critical thinkers for sustainable agriculture and economic viability.

**Keywords:** Investigation, sustainable agriculture, crop production AWaDH, artificial intelligence, economy

### Introduction

Agriculture plays an important role in India's economy. It accounts for 18.8% of gross value added (GVA) during 2020-2021 prices (Economic survey 2021-2022). More than 50% population is dependent on agriculture thus agriculture is the backbone of our country's economy. Socio - economic status in relation to others in society is a combined measurement of both economic and social position of an individual or a group (Roy *et al.* 2013) <sup>[1]</sup>. The main goal of socio economic study is to understand the present condition of a particular area to understand socio economic development of that area. (DD masudkar *et al.* 2017) <sup>[4]</sup>. The major causes for suicides of farmers in india are the socio economic, psychosocial, situational factors. (Kale *et al.*, 2014, Mohanty, 2016) <sup>[5, 6]</sup>. India is one of the largest producers of agricultural products in world. It's second largest producer of rice and wheat in the world which comes from mainly northern states of the country i.e. West Bengal and Uttar Pradesh respectively. Punjab is the state in northwest of India and is a state of endeavour and innovation and most of the families are engaged in primary activities for their livelihood. Punjab is called the “granary of India”. Economic motivation of farmer is strongly influenced by land holdings of the farmer. (Singh *et al.* 2009) <sup>[10]</sup>.

**Corresponding Author:**  
**Harpal Singh**  
University Institute of  
Agricultural Sciences,  
Chandigarh University,  
Mohali, Punjab, India

Centre for the study of Developing Societies (CSDS) conducted a survey on how much farmers actually like farming, the results of this study concluded that 72% farmers like farming out of them 60% of the farmers have their traditional occupation as farming and 36% farmers feel that it doesn't give them enough income and they are unable to live their livelihood with ease. (Anonymous 2016) [7]. For meeting the daily needs of the family employment is the main necessity. (Abraham 2008) [9]. The present study focuses on studying the agronomical approach of farmers as how they are cultivating their soil, what type of seeds they are using, everything from sowing to harvesting is being discussed which will provide a broad framework to work in future regarding the issues being faced by farmers. The future scope of this study can be that organizing more awareness camps for farmers regularly 3-4 months intervals to educate them regarding new schemes launched by Government of India. We can have vaccination campaign for cattles or make an interaction of farmers with veterinary doctors. The most important aspect is we can work in Indian administration through different civil services and help farmers at grassroot level and contribute to our economy. In addition to that there are various other important resources which lead to capacity building viz., AWaDH project running by IIT Ropar and KVK's for enhancing gender equality for producing critical thinkers and sustaining agriculture through artificial intelligence and all.

#### Need for the study

It helps us primarily to understand rural situations, status of agriculture in our economy, grassroot level problems of farmers and how can we as youngsters can solve the issues of main economy of India. This village attachment programme to Hasanpur, Kalewal and Singhpura provides a practical oriented opportunity and hands on experience in acquiring knowledge and skill. The real socio - economic situation of village and problems at field level known to us.

#### Objective of the study

- To study agronomical approach of the respondents
- To study communication behavior of farmers
- To understand role of farmers and agriculture at grassroot level.

#### Scope of the study

The study conducted in three villages will give us the broad aspects of how these farmers are practicing agriculture and what quality of seeds they are using from sowing to yield we will cover every aspect and gain knowledge and enhance our knowledge at grassroot level.

#### Research methodology

##### Locale of the study

The study was conducted in Sahibzada Azit Singh Nagar district of Punjab state in India in 2021-2022. Punjab is a northwest state in India, is a state of endeavour and innovation. Punjab is known as the growing state of India. There are 22 district in Punjab. The state of Punjab has 5 divisions – Faridkot, Ferozepur, Jalandhar, Patiala, Roopnagar. Since independence Punjab is predominantly an agrarian society. Punjab is located between 29°30'N TO 32°32'N latitude and 73°55'E to 76°50'E longitude. The climate of the region is determined by the extreme hot and extreme cold conditions in summer and winter season

respectively.

#### Sampling plan

There are three villages in sahibzada azit singh nagar district hasanpur, kalewal, singhpura selected for the survey. A total of 200 farmers were selected randomly for the survey.

#### Selection of variables

Thirteen variables viz. quality of seeds, seed treatment, method of ploughing method of sowing, spacing, crops grown, area in hectares, irrigation, implements and machinery used by farmers, manures and fertilizers, weed control, harvesting and yield were selected purposively to assess the crop production techniques of farmers.

#### Tools and techniques of data collection

An interview schedule was prepared to collect data from farmers through proper communication.

#### Statistical tools used

Simple statistical tools like mean, median, percentage has been used for interpretation and analysis of data collected.

#### Result and Discussion

##### Crop production approach of farmers

In crop production, we were exposed to various crops and different agronomical practices in farmer's field. We were involve in production technology and management of various crops. On interaction with the respondent farmers, we get to know about the different crops and practices followed in the Hasanpur, Kalewal and Singhpura villages of Punjab state. It was found that during kharif season, majority of them cultivated rice. While in rabi season, wheat was cultivated mostly. Few of them cultivated sorghum and pearl millet for fodder use. A lot of them grow vegetables and use only manures in their field for the best output. (3)

##### Farmers using quality seeds

The study found that 29% of farmers in these villages use non quality seeds while 70% of them use quality seeds and 1% use others from known shops in kharar they were aware of these seeds because of the HYV seeds using during 1960's for improving their productivity and thus yield and to increase their income level. It can be illustrated as:

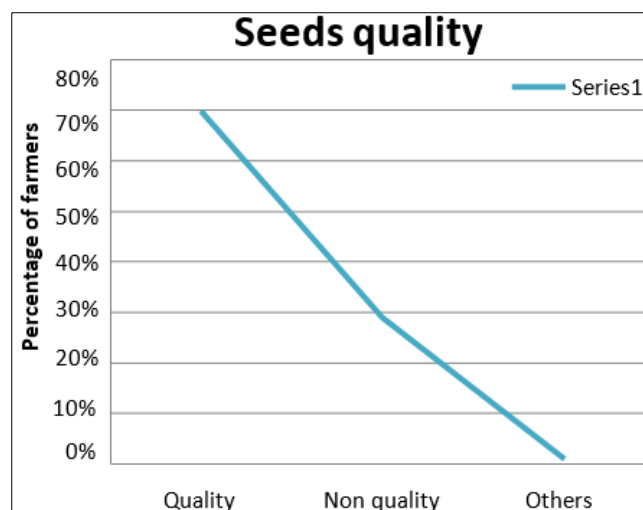


Fig 1: Seeds quality

### Seed treatment given to seeds

The study found that More than 35% of farmers give their seeds hot water boiling treatment or seed soaking treatment to prevent diseases and almost 65% of farmers buy already treated seeds as they say that it does not cause any disease and pest and give good yield and easily available at very low cost at any private shop so its very easily accessible too for them. It can be further categorise as:

**Table 1:** Table shows Seed treatment and Percentage of farmers using these treatments

S.no.	Seed treatment	Percentage of farmers using these treatments
1.	Seed soaking before sowing /water boiling treatment	35%
2.	Already treated seeds	65%

### Method of ploughing

The study found that The method of ploughing used by the farmers is using tractor and it takes around 25000 per year for the management of tractor and they plough their land 3-4 times and for only family purpose growing they do it by mechanical method.

### Methods of sowing

The study found that More than 98.9% of farmers use broadcasting method as the method of sowing.

### Spacing

The study found that More than 70% of farmers sow seeds randomly no spacing requirements are fulfilled by them. But a few of them 15-20% of them see all the layout of their field and give proper spacing and have the best output.

### Crops grown

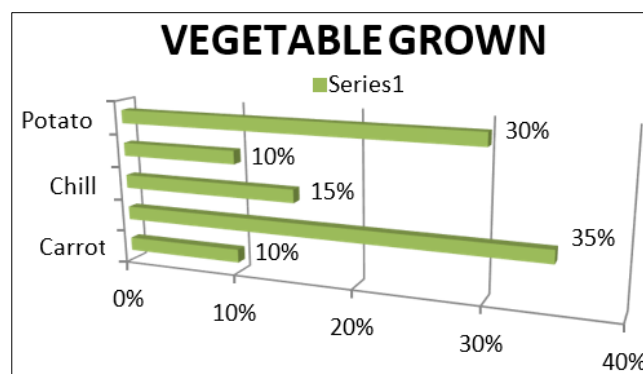
The study found that the farmers of these villages primarily grow rice and wheat in kharif and rabi seasons respectively because of the fact that they get MSP surely on these and under the influence of Green Revolution although punajb's climate is not suitable for rice as underground water is already very depleted but some farmers are still doing the same cropping continued more than 70%. (Raj kumar and Sangeet 2019) [12] in their study concluded that Punjab state produces about three percent of rice, two percent of wheat and one percent of cotton in the world. A few farmers are now well educated and they are cultivating vegetable and fruits according to Punjab's climate. the crops grown in these villages are mention below:

**Table 2:** Status of Agriculture crops grown in the study areas

S. no.	Crops grown	Percentage of farmers growing those crops
1.	Rice (Kharif)	70%
2.	Wheat (Rabi)	70%
3.	Bajra	10%
4.	Jowar	5%
5.	Barseem	5%

Promoting diversification among food and vegetable crops can improve the nutritional outcomes of farmers showing underperformance (Anuja 2022) [11] grown by farmers. Present study reveals that the vegetables crops grown are carrot, cauliflower, chili, cabbage, potato, and certain other underutilized fruit trees. (Kiranjot Sidhu *et al.* 2010) [15] concluded in their study that vegetable cultivation has been

strongly recommended as source of crop diversification.



**Fig 2:** Vegetable grown

### Crops Grown area in hecatres

The study found that 35% of farmers own land between 7-12 killa (2.828 hec – 4.848 hec) It can be classified as

**Table 3:** Crops Grown area in hecatres

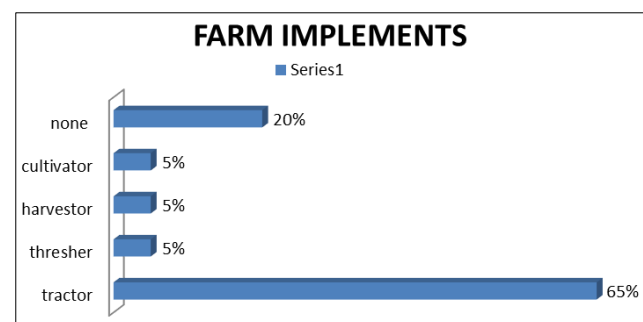
S. No.	Area in hectares	Percentage of farmers
1.	0.80 hec -2.828hec	65%
2.	3.232 hec- 4.848 hec	35%

### Irrigation

The study found that the farmers of these villages were using flood irrigation method in their crops and irrigate field according to the crop sown. For e.g. for rice they give regular irrigation, for wheat irrigation is 3-4 and vegetable crops are monsoon dependent they don't use any other source of water for that.: The method of irrigation use by them is through canals or underground water (submersible)

### Implements and machinery

The study found that the farmers were owning the following implements and machinery related to agriculture



**Fig 3:** Farm implements

### Manures and fertilizers

**Organic manure:** Everyone in the village uses cowdung as organic manure in their field.

**Inorganic manure:** UREA is widely used inorganic chemical in field and least can be NPK.

### Weed control

The study found that farmers of these villages mostly use herbicides (glyphosate) or some farmers hire labour (5-10 labour for 15-20) days for weed control. The farmers are doing weeding once or twice in their respective fields. It can

be categorise as follows:

**Table 4:** Weed control method

S.no.	Weed control method	Percentage of farmers
1.	Labour hiring	25%
2.	Glyphosate	75%

### Harvesting

The study conducted concluded that 90% of farmers hire labour for harvesting and they employ them for 15-20 days which cost the farmer around 25000 per crop. Some of them less than 10% use harvester for harvesting their crop.

### Yield

The study found that yield per acre of most the farmers was 20-100quintals per acre depending on the inputs used Average yield per hectare of major crops like rice and wheat is 65Q/ha and 70Q/ha. The average yield for vegetable crops is 25-30q/hect

### Conclusion

One of the major goals of agriculture development in Punjab is through proper awaring farmers regarding the schemes launched for their welfare by Government of India and implementation of Government scheme in appropriate manner so that farmers can get maximum benefits and suicide rate of a small farmer due to bad monsoon or any other financial, socio economical or psychological factor can be reduce. The study has explored the crop production technique used by 200 farmers and the results indicates that, majority of farmers were cultivating between 5-12 acres of land. Largest percentage among these cultivated less than 7 acres. The study found that 29% of farmers in these villages use non quality seeds while 70% of them use quality seeds and 1% use others from known shops in kharar. The study found that the farmers of these villages primarily grow rice and wheat in Kharif and Rabi seasons respectively because of the fact that they get MSP surely on these and under the influence of Green Revolution although Punjab's climate is not suitable for rice as underground water is already very depleted but some farmers are still doing the same cropping continued more than 70%. A few farmers are now well educated and they are cultivating vegetable and fruits according to Punjab's climate. The study found that the farmers of these villages were using flood irrigation method in their crops and irrigate field according to the crop sown. The study conducted concluded that 90% of farmers hire labour for harvesting and they employ them for 15-20 days which cost the farmer around 25000 per crop. Some of them less than 10% use harvester for harvesting their crop. The study found that yield per acre of most the farmers was 20-100quintals per acre depending on the inputs used Average yield per hectare of major crops like rice and wheat is 65Q/ha and 70Q/ha. The average yield for vegetable crops is 25-30q/hect. Today farmers are cultivating more of rice and wheat mainly in these villages motivating them to leave this and adopting more vegetables and fruits suitable for Punjab's climate and asking Govt. of India to provide MSP on these production too and increasing the livelihood of farmers and preserving the soil and underground water table as well can be taken as a future research. Keeping in view all the above study facts we came to conclude that Contrasting parameters on Socio-economic profile and other important parameters- An Outcome based Study for sustainable agriculture and economic viability in

Punjab will be an idea and focus for researchers to think over the situation and suggest for more truths and facts.

### Acknowledgement

Sincere thanks and with great privilege we the, students of University Institute of Agricultural Sciences Chandigarh University are grateful for this opportunity to learn student Ready program under RAWE. We prepare this Research article with help of farmers, community stakeholder's progressive and cooperative societies. The authors acknowledge Chandigarh University for providing us great every possible effort and all the facilities throughout this research programme. Faculty members from Agriculture Department and supervisors for their personal guidance for making this project successful. We would like to thank Department of Agriculture Govt of Punjab, KVK Kurali, IIT Ropar for utilization of resources guiding us and encouraging our research and allowing us to grow as agriculturists and have interaction with the best people of our economy. Various Govt. and NGO's.

### Reference

- Roy ML, Chandra N, Kharbilkar HL, Joshi P, Jethi R. Socio-Economic Status Of Hill Farmers: An Exploration From Almora District In Uttarakhand. *International Journal of Agriculture and Food Science Technology* V4. 2013;(4):353-358.
- Singh TP, Kumbhar V, Kumari S. Study of Socio Economic Status Of Farmers In Drought Prone Regions Of Maharastra India – a case study. *International Journal of Current Research*. 2016;8:33304-33306.
- Singh DK, Singh AK, Yadav VP, Singh RB, Baghel RS, Singh M. Association of Socio Economic Status with Economic Motivation of Farmers. *Indian Research Journal of Extension Education*. 2009;9(2):53-56.
- Masudkar DD, Kamble VB, Anarase MS. Socio Economic Status of Farmers In Adopted Village. *Journal of Pharmacognosy and Phytochemistry*; c2017. p. 1117-1119.
- Kale N, Konde S, Mankar D. Socio-economic, psychological and situational causes of suicides of farmers in Vidarbha region of Maharashtra, Karnataka *Journal of Agriculture Sciences*; c2014. p. 40-46.
- Mohanty B. *Social Roots of Farmers Suicides in Maharashtra*; c2016.
- Anonymous. *State of Indian Farmers: A Report*, Centre for the Study of Developing Societies (CSDS), Delhi; c2016.
- Anonymous. *The Economic Survey, 2014–15*, Agricultural and Processed Food Products Export Development Authority (APEDA), Department of Commerce and Industry 2014–15, Union Budget 2015–16, Press Information Bureau, Ministry of Statistics and Programme Implementation, Press Releases, Media Reports; c2016.
- Abraham V. Employment Growth in rural India: Distress-Driven? *Economic and Political Weekly*, *Economic and Political Review*; c2009. p. 97-104.
- Singh D, Singh A, Yadav V, Singh R, Baghel R, Singh M. Association of Socio-economic Status with Economic Motivation of the Farmers, *Indian Research Journal of Extension Education*, ISSN 0972-2181; c2009. p. 0976-1071.
- Anuja RA, Shivaswamy PG, Ray M, Singh NK. Pattern

- of crop diversification and its implications on under nutrition in India. *Current Science*. 2022;122(10):1154-1160.
12. Kumar Raj, Sangeet. Economic viability of crop diversification in Punjab. *J krisivigyan*. 2019;8(1):55-62.
  13. Rathod GR, Ningshen A. Measuring the Socio-Economic Status of Urban below Poverty Line Families in Imphal City, Manipur: A Livelihoods Study, *International Journal of Marketing, Financial Services & Management Research*. 2012;1(12):62-69.
  14. Mustaquim M, Islam M. Demographic and Socio-Economic Characteristics of Inhabitants of Udaypur Village, Malda District, West Bengal. *Indian Streams Research Journal*. 2014;4(1):1-13.
  15. Sidhu RS, Vatta Kamal, Dhaliwal HS. Conservation agriculture in Punjab: economic implications of technologies and practices, *Indian Journal of Agricultural Economics*. 2010;53(3):1413-27.
  16. Xue C, Zhou H. The choice of agricultural technology under the difference of labour endowment and production conditions: A case study on popularization of rice transplanting technology in China. *Journal of Chongqing University (Social Science Edition)*. 2019;25(6):36-49.
  17. Adjimoti GO, Kwadzo GT. Crop diversification and household food security status: evidence from rural Benin. *Agric. Food Secur*. 2018;7:82.  
<https://doi.org/10.1186/s40066-018-0233-x>
  18. Kumar R, Sangeet. Economic viability of crop diversification in Punjab. *Journal of Krishi Vigyan*. 2019;8(1):55-62.
  19. Gill S. Water crisis in Punjab and Haryana. *Econ. Polit. Wkly*. 2016;51(50):37-41.  
<https://www.epw.in/journal/2016/50/insight/water-crisis-punjab-and-haryana.html>
  20. GoI, State of Indian agriculture. Ministry of Agriculture and Farmer's Welfare, Government of India; c2016. <http://agricoop.nic.in/otherreports/state-indian-agriculture-2017>
  21. Mango N, Makate C, Mapemba L, Sopo M. The role of crop diversification in improving household food security in central Malawi. *Agric. Food Policy*. 2018;7(7).  
<https://doi.org/10.1186/s40066-018-0160-x>
  22. Masutkar DD, Kamble BB, Anarase MS. Socioeconomic status of the farmers in the adopted village. *Journal of Pharmacognosy and phytochemistry*. 2017;6(1).
  23. Dhillon H. Socio-economic status of farmers of Patiala and Sangrur district; c2013.
  24. Singh T, Kumbhar V, Kumari S. Study of socio-economic status of farmers in drought prone regions of Maharashtra, India - A case study. *International Journal of current research*. 2016;8(6):33304-33306.
  25. Reddy G, Gangisetty N, Reddy T. A Study on Socio Economic Conditions of Farmers in Kurnool District. *MERC Global's International Journal of Social Science & Management*. 2015;2(4):281-288
  26. Sidhu K, Kumar V, Dhillon TN. An analysis of vegetable cultivation in Punjab. *Journal of life sciences*. 2010;2(1):37-42.