

Evaluation of socio-economic status of the skilled and unskilled workers of an organic farm of Himachal Pradesh, India- A case study

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Abstract

In this study, an attempt was made to study the socio-economic status of the workers engaged in organic farming. The various healthy practices under organic farming like compost production, use of bio-pesticides, crop rotations, etc. increases soil health and quality of the food. The organic practices including Homa bhasm, Agnihotra and Biodynamic farming besides promoting healthy agriculture are expected to have seeming effects on behavioral aspects of the farm workers. However, apparently systemic information on social attributes of organic farm is still limited. The socio-economic aspects of an organic farm CSKHPKV, Palampur were documented through structured questionnaires. The data was analyzed by the use of indices, ratios and percentages. The various aspects as family structure and size, age distribution, caste structure, literacy level, occupational pattern, economic status behavioral aspects were evaluated. The skilled workers had nuclear family while unskilled workers had joint families, larger portion of workers in the organic farm belonged to younger age group (31 years), literacy index was high (4.32) in case of skilled workers while low (3.23) for unskilled workers. It was observed that in case of skilled workers majority of individuals were positively affected through increased farming knowledge, better wage rate, improved ethical and spiritual thinking while in case of unskilled workers no obvious positive reaction was observed for farming knowledge and wage rate though there was perceptible change in punctuality and spiritual thinking.

Keywords: Behavioral aspects, Economic status, Livelihood security, Literacy level, Occupational pattern

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INTRODUCTION

The system of organic agriculture is as old as human civilization itself and in a country like India, farming is a culture rather than a profession. The ancient literature lends sufficient support to prove that our ancestors were fully aware of the use of organics to maintain fertility of soil. Our ancient veda's are a testimony to prove this point (Sofia *et al.*, 2006). However, the formal organic movement began in 1930's and 1940's as a reaction to growing reliance of agriculture on synthetic fertilizers and chemicals. The farmers of ancient India adhered to the natural laws and this helped in maintaining the soil fertility over a relatively longer period of time (Chandra and Chauhan, 2005). Increasing consciousness about conservation of environment as well as health hazards free food are the major factors that led to the growing interest in alternate forms of agriculture in the world (Ramesh *et al.*, 2005).

India is an agrarian country and agriculture plays a major role in providing food for more than 1 billion people and yields raw materials for agro-based in-

dustries. Agricultural exports earn foreign exchange. Modernization of Indian agriculture began during the mid-sixties that resulted in the green revolution making the country a food grain surplus nation from a deficit one. The modern agriculture is based on the use of high yielding varieties of seeds, chemical fertilizers, irrigation water, pesticides and adoption of multiple cropping systems. It is felt that modern agriculture cannot be sustainable in future because of the adverse changes caused to the environment, ecosystem and the human health (Narayanan, 2005). The major portion of farming in hill state like Himachal Pradesh constitutes of small and marginal farmers which has gone upto 87.03 % in 2011-12 holding an average of 1.04 hectare of land per family whereby, 81.5 % of total cultivated area is rainfed (Anonymous, 2011). The report of Task Force on Organic Farming appointed by the Government of India also observed that in vast areas of the country, where limited amount of chemicals is used and have low productivity, could be exploited as potential areas for organic agriculture (Report, 2001). A study of

100 farmers in Himachal Pradesh during a period of 3 years found that the total cost of production of maize and wheat was lower under organic farming and the net income was 2 to 3 times higher (Narayanan, 2005).

Organic agriculture is one among the broad spectrum of production methods that are supportive of healthy environment on this earth. It is estimated that 18 million hectare of such land is available in the North East, which can be exploited for organic production (Veeresh, 1999). With this, India has tremendous potential to grow crops organically and emerge as a major supplier of organic products in the world's market. Thus, organic farming is an important perspective from the viewpoint of mountainous regions as Organic agriculture practices rely to the maximum extent on crop residues, animal manures, crop rotations, green leaf manures, off-farm organic wastes and bio-fertilizers to supply plant nutrient. Organic farming and food production is the way out for the ecological and livelihood security of millions of small farmers in this country (Satheesh, 2008). Several indirect benefits from organic farming are available to both the farmers and consumers. While the consumers get healthy foods with better palatability and taste and nutritive values, the farmers are indirectly benefited from healthy soils and farm production environment (Narayanan, 2005).

Organic agriculture is one among the broad spectrum of production methods that are supportive of healthy environment on this earth. More specifically, organic agriculture is a holistic food production system, which promotes and enhances agro ecosystem health, including biodiversity, biological cycles and healthy production system. One of the main reasons organic farming is good for human health is because organic growers do not apply toxic synthetic pesticides, fungicides, or herbicides to their crops. It is a sustainable production system in which various eco-friendly and healing activities of Homa-farming, Agnihotra, Biodynamic farming are involved. These activities are known to show positive effect on the environment and do have healing effects. This also attributes to have a positive effect on the workers working in such an environment. Thus, a socio-economic survey was undertaken at organic farm of CSK Himachal Pradesh Agricultural University, Palampur to study certain perspectives in case of workers working in the organic farm.

MATERIALS AND METHODS

The farm is located at CSK Himachal Pradesh Agricultural University, Palampur, India at 32°6'N latitude and 76°3'E longitude at an elevation of 1224 meters above mean sea level in the North Western Himalayas. Its various components include- Vedic Krishi, Biodynamic and Homa Farming. Both primary and secondary data were used in this study. The primary data was generated through questionnaire from the records maintained on the organic farm, while sec-

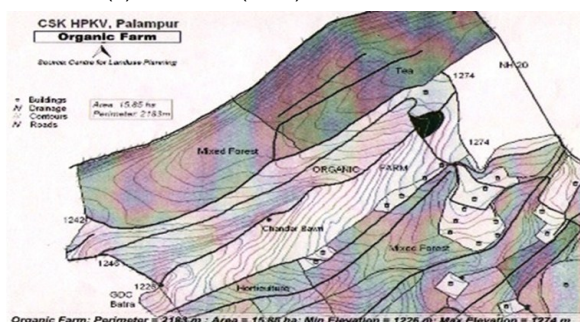


Fig. 1. Location map of the study site.

ondary data was taken from published/unpublished reports of different agencies. Both tabular and statistical tools were employed for analysis and interpretation of data. The primary data collected on organic farm was tabulated to work out averages, ratios, percentages and indices. Tabular technique was employed to study the socio-economic status of field staff. The existing level of income, literacy rate, livelihood security of workers on the farm were analyzed. To meet out the objectives of the present study, both tabular and statistical tools were employed for analysis and interpretation of data. The primary data was collected through the structured questionnaires on various parameters and then it was tabulated in excel sheet to work out averages, ratios, percentages and indices. Tabular technique was employed to study the socio-economic status of field staff. The existing level of income, literacy rate, livelihood security of workers on the farm were also analyzed. The following types of indices and ratios were worked out for the present study:

Sex-ratio = Total population of females / (per 1000 males) Total population of males x 1000 (1)

Literacy rate (%) = Total number of literate persons / Total population x 100 (2)

Literacy index = Cumulative total literacy score of workers / Total number of workers (3)

Where, Literacy score (as per score used): 0 for illiterate; 1 for primary; 2 for high school; 3 for matriculation; 4 for senior secondary; 5 for graduate and 6 for post graduate

Income equivalent = Value of output of ith system / Value of output of cereal based system (4)

Livelihood security = Actual working days - 183 / Maximum no. of working days - 183 (5)

RESULTS AND DISCUSSION

Family structure and size: The family size of the farm workers is shown in Table 1 and 2. The average size of family of the farm workers was found to be 4.86. The average size of family was more for unskilled workers whereas it was low for skilled workers. It was observed that proportion of children was higher in male category. The sex ratio was found alarmingly low i.e. 762 females per thousand males. Further, it was seen that large percentage of unskilled workers had joint family structure whereas

Table 1. Family size of farm workers on different categories (Percent).

Particular	Skilled	Unskilled	Total
Family size (No.)			
Male			
a) Adult	39.02	40.95	39.86
b) Children	19.51	14.28	15.75
Subtotal	58.53(2.67)	55.23(2.77)	55.61(2.73)
Female			
a) Adult	34.14	34.28	33.78
b) Children	7.31	10.47	9.58
Subtotal	41.45(1.89)	44.75(2.23)	43.36(2.13)
Overall			
a) Adult	73.17	75.24	73.65
b) Children	26.83	24.76	25.00
Average Family size (No.)	4.56	5.00	4.86
Sex -ratio (Females/1000 males)	708	810	762

Figures in parentheses show number of persons in each category

Table 2. Family structure of farm workers on different categories (No. of persons).

Particular	Skilled	Unskilled	Total
Family structure			
Nuclear	4(44.44)	3(14.29)	7(23.33)
Joint	5(55.56)	18(85.71)	23(76.67)
Total	9(100)	21(100)	30(100)
Average Size			
Nuclear	3.8	5.0	4.3
Joint	5.2	4.9	5.0

Figures in parentheses show percentages to total in each column

Table 3. Age-wise distribution of farm workers on different categories (No. of persons).

Age class (years)	Skilled	Unskilled	Total
20-25	3(33.34)	4(19.05)	7(23.34)
25-30	1(11.11)	8(38.10)	9(30.00)
30-35	2(22.22)	4(19.05)	6(20.00)
35-40	2(22.22)	2(9.52)	4(13.33)
40-45	0	0	0
Above 45	1(11.11)	3(14.28)	4(13.33)
Total	9(100)	21(100)	30(100)
Mean Age (years)	31.66	30.33	30.73

Figures in parentheses show percentages to total in each column

large percentage compared to unskilled workers had nuclear family structure in case of skilled workers. This was attributed to the tendency of the married couple to lead an independent life. However, this tendency may not be compatible with development of agriculture as it was resulting into fragmentation and subdivision of holdings into marginal farms. Sharma *et al.* (1999) also confirmed the regressive fragmentation and subdivision of holdings caused by inheritance laws and tenancy reforms leading to marginalization of holdings in Himachal Pradesh. Average family size was found to be 4–5 in a study conducted by Panneerselvam *et al.* (2011) in various organic farms of Tamil Nadu, Madhya Pradesh and

Table 4. Caste-wise distribution of farm workers (No. of persons).

Caste	Skilled	Unskilled	Total
General	6(66.67)	3(14.29)	9(30.00)
Scheduled caste	1(11.11)	11(52.38)	12(40.00)
Other backward classes	2(22.22)	7(33.33)	9(30.00)
Total	9(100)	21(100)	30(100)

Figures in parentheses show percentages to total in each column

Table 5. Literacy status of farm workers on organic farm (No. of persons).

Educational level	Skilled	Unskilled	Total
Illiterate	0	1(4.76)	1(3.33)
Primary	0	2(9.52)	2(6.67)
Middle	1(11.11)	3(14.29)	4(13.33)
Matriculation	2(22.22)	10(47.62)	12(40.00)
10+2	1(11.11)	5(23.81)	6(20.00)
Graduate	3(33.34)	0	3(10.00)
Postgraduate	2(22.22)	0	2(6.67)
Total	9(100)	21(100)	30(100)
Literacy Index	4.32	2.76	3.23

Figures in parentheses show percentages to total in each column

Uttarakhand states.

Age distribution: Age distribution of farm workers employed on the organic farm has been shown in Table 3. About 30 percent of the workers belonged to the young age category of 25-30 years and 23 percent in the age group of 20-25 years. There were just 13 percent of the workers in the higher age group above 45 years of age. The mean age was estimated 31.66 years for skilled and 30.33 for unskilled workers on the farm. This clearly shows that majority of the farm workers employed on the organic farm belonged to younger generation. Similar results were shown by Fernandez *et al.* (1998) who considered organic farming to be fundamentally different from conventional farming in that their control focuses on ecologically based pest and nutrient management

Table 6. Occupational pattern of families of farm workers (No. of persons).

Occupation	Skilled	Unskilled	Total
Agriculture/ Dairy	3(15.79)	34(64.16)	37(51.39)
Business*	2(10.52)	5(9.43)	7(9.72)
Service**	11(57.90)	5(9.43)	16(22.22)
Others***	3(15.79)	9(16.98)	12(16.67)
Total	19(100)	53(100)	72(100)

*Business including cottage industries, ** Service including DPL (daily paid labour) and pensioners, ***Others including rural handicrafts and artisans, Figures in parentheses show percentages to total in each column

practices. According to him, organic farmers also tend to have a different socio- economic profile. The empirical studies showed that organic vegetable growers tend to be younger and more educated than the conventional farmers. In a study conducted by Panneerselvam *et al.* (2011), the average age of farmers ranged from 41 to 45 years.

Caste structure: The caste-wise distribution of workers showed that maximum workers belonged to scheduled caste category (Table 4). Accordingly, large percentage in case of unskilled workers belonged to this category. The workers from general category were low in percentage in case of unskilled workers. However, majority of the skilled workers belonged to general category. This clearly showed the low socio-economic status of scheduled caste forming the low paid labour class in the society.

Literacy level: Literacy level plays catalytic role in enhancing human capital. The educated worker can easily comprehend the scientific recommended technologies besides improving his work efficiency. It can be visualized from Table 5 that large proportions in case of skilled workers were graduates or post graduates. In case of unskilled workers large proportion of workers was matriculates. Literacy index was high in case of skilled workers and low for unskilled workers.

Occupational pattern: The occupational pattern of

working persons is presented in Table 6. It was seen that about large percentage of the total working persons were engaged in agriculture and animal husbandry of which unskilled worker family members dominated. Thus, agriculture was found to be the main source of livelihood for majority of the unskilled workers. However, services formed the major avocation for families of skilled workers. According to Rajendran *et al.* (2000), the economics of organic cotton cultivation over a period of six years indicated a reduction in cost of cultivation and increased gross and net returns compared to conventional cotton cultivation in India. Studies have shown that the common organic agricultural combination of lower input costs and favourable price premiums can offset reduced yields and make organic farms equally and often more profitable than conventional farms (Hanson *et al.*, 1997; Petersen *et al.*, 1999; Reganold *et al.*, 2001).

Economic status and contribution of organic farm in livelihood: The income status of the workers is presented in Table 7. It was observed that service was the main source of income for the family income of skilled workers whereas agriculture and dairy contributed mainly for the unskilled workers. Contribution of wage income from organic farm in case of skilled workers was comparatively low as the family members of skilled workers had other sources of income that predominated organic farm income. Whereas in case of unskilled workers organic farm income was the main source as many of the members of unskilled workers did not had service as occupation.

Impact of organic farming on behavioral aspects of farm workers: Organic farming not only paves the way for healthy agricultural practices but also affects the overall personality of the individual through participation in various activities of homa-farming, use of bio-pesticides, chanting of mantras, etc. Table 8 depicts the perceived changes in the

Table 7. Economic status and contribution of organic farming towards livelihood of workers (Rs/ household).

Occupation	Skilled	Unskilled	Total
Agriculture/Dairy	6,111(4.29)	20,666(28.95)	16,300(17.59)
Service	78333(55.06)	10,571(14.81)	30,900(33.35)
Others	7222(5.08)	9380(13.14)	8,733(9.42)
Earnings from organic farm	50,600(35.57)	30,780(43.10)	36,726(39.64)
Total family income	1,42,266(100)	71,397(100)	92,659(100)
Contribution of wage income from organic farm in total family income (%)	35.57	43.11	39.63

Figures in parentheses show percentages to total in each column

Table 8. Impact of organic farming on behavioral aspects of farm workers (No. of workers).

Particulars	Skilled	Unskilled	Total
Improved lifestyle	7(77.78)	12(57.14)	19(63.33)
Farming knowledge	8(88.89)	8(38.10)	16(53.33)
Better wage rate	9(100)	9(42.86)	18(60.00)
Improved ethical and spiritual thinking	8(88.89)	11(52.38)	19(63.33)
Work punctuality	8(88.89)	12(57.14)	20(66.66)
Improved social cohesion and interaction	6(66.67)	10(47.62)	16(53.33)

Figures in parentheses show percentages to total in each column

Table 9.1. Extent of livelihood security of skilled farm

Actual working days	No. of skilled workers	Livelihood security
1. Working days less than 183	0	—
2. 183-200	0	—
3. 200-225	0	—
4. 225-250	0	—
5. 250-275	0	—
6. More than 275	9	7.99
Average	313.89	0.89

behaviour of workers after joining organic farming. It was observed that in case of skilled workers majority of individuals were positively affected through increased farming knowledge, better wage rate, improved ethical and spiritual thinking. In case of unskilled workers no obvious positive reaction was observed for farming knowledge and wage rate though there was perceptible change in punctuality and spiritual thinking. The indirect benefits available to both farmers and consumers have been highlighted by (Narayanan, 2005).

Livelihood security of farm worker: The livelihood security of farm workers was evaluated and it was found that the average livelihood security of skilled was high whereas for the unskilled workers it was low. Many of the unskilled workers had no livelihood security because of lesser working days and uncertainty of getting work in the farm (Table 9.1 and 9.2). While in a study conducted by Narayanan, (2005) it was found that the organic farming requires more labour input than the conventional farming system and the problem of periodical unemployment will also get mitigated because of the diversification of the crops with their different planting and harvesting schedules resulting in the requirement of a relatively high labour input.

Conclusion

The organic farming practices are bound to have pronounced effect on overall personality of an individual. In a hill state like Himachal Pradesh, the organic farming systems can be profitable to farmers whereby, it does not require use of pesticides, increasing soil health, higher outputs and economic values over the period. The promising organic agriculture promotes healthy foods and healthy state of mind of the farmer by the use of traditional farming practices. In a country like India, large-scale conversion of land to organic agriculture would result in food shortage, as the yield reductions of organic systems initially are low though, it offers a larger scope for hilly regions. The organic farming systems promise agronomic and environmental benefits that are relevant both to developed nations as environmental protection, biodiversity enhancement, reduced energy use and CO₂ emission and to developing countries like India as sustainable resource use, increased crop yields without over-reliance on

Table 9.2. Extent of livelihood security of unskilled farm workers (No. of days).

Actual working days	No. of unskilled workers	Livelihood security
1. Working days less than 183	7	—
2. 183-200	2	0.204
3. 200-225	1	0.25
4. 225-250	4	1.576
5. 250-275	6	3.454
6. More than 275	1	0.65
Average	221	0.29

costly external inputs, environment and biodiversity protection.

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