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REVIEW OF RESEARCH

"SMALL FARMERS IN SANGLI DISTRICT: A STUDY OF AGRICULTURAL DEVELOPMENT"

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ABSTRACT :

Size of land holdings is very essential for both production and productivity. The development of agricultural sector is also associated with the level of agricultural advancement and farm size. The objective of the present research work is to find out the level of agricultural advancement in small land holders in the district and to analyze the cropping pattern of small land holders with their production and income. In the present study primary data collected through stratified random sampling method has been critically examined. The present research work is useful for both farmers and agencies involved in the agricultural fields.

KEYWORDS : *Agricultural advancement, small farmers, cropping pattern, productivity.*

1. INTRODUCTION

Adoption of technological advancement, cropping pattern, production, income, productivity, irrigation intensity etc. and its impact on sustainability of agriculture is associated with landholdings pattern. Small farmers due to their wider strength plays pivotal role in the overall development of farmers and in the balanced regional development. However, availability of different facilities is still unable to catch the expected rate of return in agricultural field. Farmers in the region from all farm categories like marginal, small, semi-medium, medium and large are still suffering from lot of major problems. Furthermore marginal and small farmers have shared highest proportion in the farming category. For the betterment of agriculture sector this wide portion of landholdings has to bring in the main stream of progress with full potential. Therefore assessing the present position of small farmers is necessary, because it is as much needed as their production.

2. OBJECTIVES OF THE STUDY

1. To study the level of agricultural advancement in small farmers.
2. To analyze cropping pattern of small land holders.
3. To understand the production and income of small farmers.

3.HYPOTHESIS OF THE STUDY

H_0 –There is no significant relationship between size of land holdings and agricultural income.
H_1- There is a significant relationship between size of land holdings and agricultural income.

4.METHODOLOGY

3.1. Data Collection

In the present study the researcher has collected and used primary data for analysis and interpretation. The primary data about level of agricultural advancement among small farmers and its impact particularly on agricultural yield and income was collected by using interview schedule. For the present research 100 small farmers were selected from 10 tehsils of Sangli district. Necessary cures have been taken by the researcher to avoid errors in data collection from the study region.

3.2. Sample Design

In the district there are 10 tehsils and 731 villages exist. However, small farmers are found in each tehsil of the district. The researcher has used stratified random sampling method for selecting the samples. At the first stage entire universe is divided in to different strata i.e. tehsil and then at second stage 10 farmers from each tehsil have been selected by using random sampling method. Total 100 small farmers were interviewed and data collected from them were analyzed and interpreted by using suitable statistical methods. Statistical tool like SPSS was brought in use for better results. Ten small farmers from each tehsil have been represented whole universe properly.

4.STUDY PERIOD

The primary data has been collected by using pre-structured interview schedule during the period of April 2016 to May 2016.

5.SMALL FARMERS

As per the definition made by National Bank for Agriculture and Rural Development (NABARD) small farmers are those farmers who hold agricultural land between 1 and 2 hectare.

6. DATA ANALYSIS AND INTERPRETATION

6.1. LEVEL OF AGRICULTURAL ADVANCEMENT

Following table shows the frequency distribution of level of agricultural advancement among sample small farmers.

Table 1
Level of Agricultural Advancement among Sample Farmers

Sr. No.	Type of Agriculture	Small Farmers	
		Frequency	Percentage to Total
1	Traditional Farming	18	18.0
2	Advanced Farming	66	66.0
3	Mix Farming	16	16.0
Total		**100**	**100.0**

Source: Primary data.

From the table 1 it is observed that highest 66.0 percent small farmers were agriculturally advanced, 18.0 percent small farmers were still based on traditional methods of farming and 16.0 percent small farmers were used both traditional and advanced methods of farming. It indicates that there was high level of agricultural advancement among small farmers but still huge scope for improvement.

6.2. LAND UTILIZATION PATTERN

Following table elaborates the average land utilization pattern among small land holders in the study region. For the interpretation land holdings among small farmers were divided in to irrigated, non-irrigated,

seasonal and wasteland category.

Table 2
Small Farmers Land Utilization Pattern

Average land in Acre				
Owned land	**Irrigated**	**Non Irrigated**	**Seasonal**	**Wasteland**
3.65	2.53	0.59	0.40	0.11

Source: Primary data.

From the table 2 it is seen that out of total owned land by the small holders average 2.53 acres of land was irrigated. However still 0.59 acres of agricultural land was non-irrigated, average 0.40 acres of land was seasonal and average 0.11 acres of land was wasteland. It showed high irrigation intensity among samples.

6.3. SOURCES OF IRRIGATION

Following table shows the frequency distribution of irrigation sources used by the sample farmers. Small sample farmers in the district were used wells, tube wells, canals, farm ponds and rivers for irrigation.

Table 3
Irrigation Sources among Sample Small Farmers

Sr. No.	Name of the Source	Frequency	Percentage to Total
1	Wells	78	78.0
2	Farm ponds	16	16.0
3	Canals	4	4.0
4	Tube wells	39	39.0
5	Rivers	6	6.0
Total		**100**	**100.0**

Source: Primary data.

From the table 3 it is observed that majority (78.0) percent farmers used wells for irrigation, followed by 39.0 percent tube well irrigation users, 16.0 percent farm ponds users, 6.0 percent river irrigation users and only 4.0 percent canal irrigation users. It indicates that well irrigation was the dominant source of irrigation among sample respondents. However tube wells also capture the major portion in sources of irrigation.

6.4. MAJOR CROPS AMONG SAMPLES

Small farmers in the district have cultivated foodgrain crops like jowar, bajara, maize, and wheat and cash crops like grapes, sugarcane, pomegranate and vegetables majorly. Following table shows the crop wise frequency distribution of sample farmers in the district.

Table 4
Major Crops among Sample Small Farmers

Sr. No.	Name of the Crop	Number of Small Farmers	Percentage to Total
1	Jowar	33	33.00
2	Bajara	12	12.00
3	Maize	22	22.00
4	Wheat	31	31.00
5	Grapes	15	15.00
6	Sugarcane	38	38.00
7	Pomegranate	18	18.00
8	Vegetables	13	13.00
Total		**100**	**100.00**

Source: Primary data.

Table 4 indicates the major crops cultivated by the small farmers. It is seen that highest 38.0 percent farmers were cultivated sugarcane crop, followed by 33.0 percent jowar cultivators, 31.0 percent wheat cultivators, 22.0 percent maize cultivators, 18.0 percent pomegranate cultivators, 15.0 percent grapes cultivators, 13.0 percent vegetables cultivators and 12.0 percent bajara cultivators. Researcher observed that sugarcane, jowar and wheat were the major crops among sample farmers in the district.

6.5. PRODUCTION OF MAJOR CROPS

Among the major crops cultivated by the small farmers distribution of average per acre income from different crops is showed by the following table. For the interpretation average per acre production all major crops has been considered.

Table 5
Average per Acre Production of Major Crops

Sr. No.	Name of the Crop	Average/Acre Production (In Kg)
1	Jowar	1031
2	Bajara	309
3	Maize	393
4	Wheat	1256
5	Grapes	8650
6	Sugarcane	51590
7	Pomegranate	16365
8	Vegetables	5390

Source: Primary data.

Table 5 elaborates the per acre production of major crops cultivated by the small farmers. From the data it is found that small farmers were received highest average per acre yield of 51590 Kg from sugarcane crop, whereas bajara crop was at least with only 309 Kg average per acre production. In the foodgrains small farmers were received highest average per acre yield from wheat crop i.e. 1256 Kg., followed by jowar with 1031 Kg per acre production and maize with 393 Kg per acre production. In the production of other cash crops apart from sugarcane, pomegranate crop was at highest with 15365 Kg per acre production followed by vegetables with 5390 Kg per acre production.

6.6. INCOME OF MAJOR CROPS

Following table elaborates the average per acre income of major crops cultivated by the small farmers.

Table 6
Average per Acre Income of Major Crops

Sr. No.	Name of the Crop	Average/Acre Income (In Rupees)
1	Jowar	13060
2	Bajara	8310
3	Maize	4090
4	Wheat	10620
5	Grapes	74150
6	Sugarcane	107700
7	Pomegranate	190850
8	Vegetables	15500

Source: Primary data.

From the table 6 it is found that from cash crops small farmers were earned highest per acre income from pomegranate crop (Rs.190850) followed by sugarcane crop with Rs.107700 per acre income and vegetables with Rs.15500 income per acre. In the foodgrains, jowar crop is on top in the context of per acre income with Rs.13060 however maize crop is at bottommost with Rs.4090 income per acre. Wheat and bajara crop holds second and third position in per acre income with Rs.10620 and Rs.8310 income per acre respectively.

6.7. CORRELATION BETWEEN LAND HOLDINGS AND AVERAGE ANNUAL INCOME FROM FARMING

Table 7
Correlation between Average Annual Income and Land Holdings

Sr. No.	Type of Holdings	Average Annual Income (In Rupees)	Sum (In Rupees)
1	Marginal	209574	22634000
2	Small	417140	41714000
3	Semi-medium	652853	75731000
4	Medium	914179	61250000
5	Large	1369231	17800000
Total		**542399**	**219129000**

Source: Primary data.

From the table 7 it is observed that large farmers were earned highest average annual income from farming (Rs.1369231), followed by medium farmers (Rs.417140), semi-medium farmers (Rs.652853), small farmers (Rs.417140) and micro farmers (Rs.209574) correspondingly.

7. HYPOTHESIS TESTING

For testing the stated hypothesis proportionate data collected from other farming practices related to annual farming income has been correlated with annual farming income of small farmers.

Hypothesis 1

H_0 –There is no significant relationship between size of land holdings and agricultural income.

H_1 - There is a significant relationship between size of land holdings and agricultural income.

Both chi-square test and Fishers Exact test were used for testing the hypothesis. Data analyzed by using both tests is presented in the following table.

Hypothesis Testing

Chi-square Test for Association between Size of Land Holdings and Income from Agricultural

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)
Pearson Chi-Square	4.073E2[a]	220	.000	.000[b]
Likelihood Ratio	395.295	220	.000	.000[b]
Fisher's Exact Test	374.891			.000[b]
N of Valid Cases	404			

a. 254 cells (90.7%) have expected count less than 5. The minimum expected count is .03.

b. Based on 10000 sampled tables with starting seed 2000000.

As a result of both Chi-square Test and Fishers Exact Test conducted to find out association between size of land holdings and faming income it is observed that p-value (0.000) is less than (0.05) level of significance. Hence, the researcher rejects H0 and accepts H1. Furthermore it is concluded that size of land holdings and farming income is significantly correlated with each other.

8. MAJOR FINDINGS OF THE STUDY

1. Majority of the small farmers (66.0 percent) used advanced farming practices in agricultural operations.
2. Small farmers showed high irrigation intensity but still averagely per farmers 0.59 acres of area is not irrigated.
3. Well irrigation (78.0 percent) is a dominant source of irrigation as far as small farmers are concern.
4. Sugarcane crop (38.0 percent) is on top in the cultivation of cash crops whereas jowar crop (33.0 percent) is in foodgrains.
5. Small farmers received highest average per acre production from sugarcane i.e. 51.59 MT.
6. In the average per acre income pomegranate crop surprisingly is on highest with Rs.190850 average income per acre.
7. Small farmers have earned about double average annual income as compare to marginal farmers in the district.
8. Size of land holdings and farming income is significantly correlated with each other.

9. SUGGESTIONS

1. Government should establish separate department for the development of small farmers, because overall about more than 50.0 percent farmers are small in nature.
2. Small farmers should reform water management practices to bring more agricultural land under irrigation.
3. Establishment of more farm ponds is needed to save the small farmers from water crises.
4. Strong efforts are needed from concern department related to adoption of advanced mechanism in farming.

10. CONCLUSION

From the study it is observed that there is large gap between achievements of both production and income of small farmers in developed countries and in the particular study region. However agricultural office and government of Maharashtra made remarkable progress in the agricultural development of the district. But still they have to overcome from some lacunas in the development and implementation of agricultural schemes. Small farmers have to adopt modern agricultural equipment's and have to march towards new progressive areas of the farming revolution.

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