

Changes in Agricultural Commercialisation in Punjab: 1980-81 to 2000-01

K.S. Sohal and Manjit Kaur, Patiala

Abstract

The study attempts to highlight the spatial patterns of agricultural commercialisation and changes therein from 1980-81 to 2000-01 for Punjab, for two major food grains: wheat and rice. The degree of commercialisation of wheat is 53.3 percent and 67.7 percent for the year 1980-81 and 2000-01 respectively. While for rice it was 87.1 percent in 1980-81 and 91.2 percent in 2000-01. The study highlights the patterns of overall agricultural commercialisation in Punjab for 1980-81 and 2000-01, which has risen from 64.1 percent and 81.3 percent respectively. It is also found that the degree of overall agricultural commercialisation is highly variable in the state. The third part evaluates the changes in agricultural commercialisation in Punjab during 1980-81 to 2000-01 and determines the factors responsible for these changes. The study concludes that introduction of green revolution technology, developed agricultural infrastructure, dynamic and progressive farming practices and favourable government policies are main factors responsible for the high degree of agricultural commercialisation in Punjab.

Introduction

Agricultural commercialisation is a process of transformation of agriculture and the peasants way of life. This implies a change in the traditional subsistence economy into a market oriented one. It is inferred that a small proportion of farm produce sold locally does not necessarily make farming commercial. It remains essentially subsistence until the money earned is used in modern inputs in the farming system (Singh and Dhillon, 2004). Singh Jhujjar (1979) in his study of the spatial patterns of commercialisation of agriculture in Punjab

used production out put and the agricultural procurement in monetary value for deriving the index of agricultural commercialization. With the introduction of Green Revolution Technology, agriculture in Punjab has been transformed from subsistence to highly commercialised and specialized agriculture. The degree of overall agricultural commercialization is 81.3 percent, but agricultural commercialisation is essentially restricted to two crops, namely wheat and rice which is why only two crops are considered for analyzing the changes in agricultural commercialisation, in Punjab State.

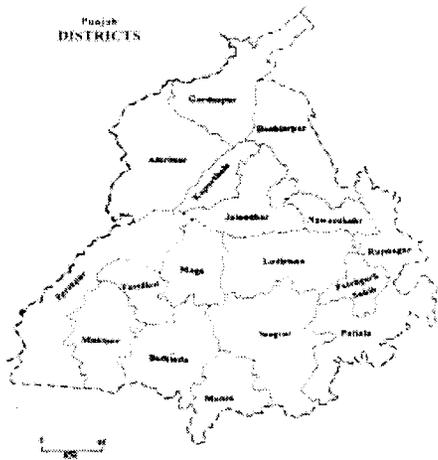


Fig. 1 State of Punjab showing districts

Methodology

Wheat and rice together occupy 86.4 percent of the total cropped area in Punjab. Though cotton covers about 6 percent of the total cropped area, data for procurement of cotton is not available, hence it is not taken into account. This is the limitation of the study. The district is taken as the unit of study. The Index of agricultural commercialization is derived using the following formula:

$$DAC = \frac{APM}{AP} \times 100$$

Where DAC stands for Degree of Agricultural Commercialization, APM for Agricultural Production Marketed; and AP for Agricultural Production.

Sources of data

Secondary sources of data are used for calculating the degree of agricultural commercialisation, which is obtained from the statistical abstracts of Punjab for the two decades: 1980-81 and 2000-01.

Degree of commercialisation in wheat: 1980-81

In 1980-81 the degree of commercialisation of wheat crop in Punjab was around 53.3 percent. It varied from 25.9 percent in Rupnagar district to 62.4 percent in Ludhiana district. A number of factors like relief, soils, density of population, size of land holdings and agricultural infrastructure have a strong bearing on the degree of commercialization. Depending upon the degree of commercialization (Table 1) the state can be divided into 3 categories: over 60 percent constitute districts with high degree of commercialization, between 40-50 percent, moderate and below 40 percent were considered the least commercialized districts.

The main reasons for low degree of commercialization, apart from hostile topography and less developed agricultural infrastructure was nearness to Chandigarh market where most farmers sold their products. This was an overriding factor in some district like Nawanshahr, Rupnagar and Hoshiarpur showing low degree of commercialization of wheat.

Degree of commercialisation in wheat: 2000-01

Wheat with 43.17 percent of the total cropped area is the first ranking crop in Punjab, in 2000-01. Its total production and procurement were 56.99 lakh tons and

106.38 lakh tons respectively. As a result, its degree of commercialisation reached 67.7 percent. There is a great deal of variation among the district where it varies between 43.4 percent in Rupnagar district to 82.3 percent in Muktsar district. Table highlights the districts having high, moderate and low levels of commercialization.

Once again physical factors emerged significant in explaining variability among the districts.

Changes in wheat commercialisation: 1980-81 to 2000-01

Significant changes have occurred in extent of irrigation, area under high yielding variety of seeds, leveling of the sand dunes, increase in yield per unit area, government's incentives, agricultural and extension services of P.A.U. Ludhiana, etc. during the period under investigation. All these changes had an impact on the degree of commercialisation of wheat in Punjab which

Table No. 1 : Changes in degree of commercialisation in wheat crop: 1980-81 to 2000-01 (in per cent)

District	1980-81	2000-01	Change 1980-81 to 2000-01
B Gurdaspur	40.3	55.9	15.6
B Amritsar	47.9	69.6	21.7
A Kapurthala	61.4	71.7	10.3
B Jalandhar	50.1	61.9	11.8
C Nawanshahr	32.6	49.3	16.7
C Hoshiarpur	32.6	44.7	12.1
C Rupnagar	25.9	43.4	17.5
A Ludhiana	62.4	67.9	5.5
B Ferozpur	54.0	74.3	20.3
A Faridkot	61.9	74.3	12.4
A Muktsar	61.9	82.3	20.4
A Moga	61.9	77.1	15.2
B Bathinda	47.5	67.9	20.4
B Mansa	47.5	76.7	29.2
B Sangrur	58.0	70.7	12.7
B Patiala	57.6	65.4	7.8
B Fatehgarh Sahib	57.6	63.4	5.8
Punjab	53.3	67.7	14.4

Source: Statistical Abstracts of Punjab: 1981 and 2001.

rose from 53.3 percent in 1980-81 to 67.7 percent in 2000-01. The changes are not uniform in all parts of the state, Ludhiana with 5.5 percent was the lowest while Mansar district with 29.2 percent showed the highest degree of commercialization.

The above table shows that the districts of Amritsar, Firozpur, Bathinda, Mansa and Muktsar have all recorded a high degree of wheat commercialisation — above 20 percent, while it is 10 to 20 percent in the districts of Gurdaspur, Kapurthala, Jalandhar, Nawanshahr, Hoshiarpur, Rupnagar, Faridkot, Moga and Sangrur. The Districts of Ludhiana, Patiala and Fatehgarh Sahib have recorded less than 10 percent change. The lowest change in Ludhiana district (5.5 percent) is owing to high degree of wheat commercialisation in 1980-81, which resulted into low change during the study period.

Degree of commercialisation of paddy crop: 1980-81

Punjab had recorded 87.1 percent of commercialisation of paddy crop in 1980-81 which was highly variable in districts of the State. (Table 2). It varied between 60.6 percent in Hoshiarpur district to 93.8 percent in Sangrur district. An analysis of table 2 highlights the situation.

1. Districts of Ludhiana, Firozpur, Faridkot, Bathinda and Sangrur had over 90 per cent commercialisation of paddy crop varying between 91.0 percent in Ludhiana district to 93.8 percent in Sangrur district. All these districts were non-rice growing areas, but with the advent of green revolution technology, these districts started

growing paddy. Since the staple food was mainly wheat. Rice was consumed on special occasions. As a result, domestic consumption was negligible, which led to a high degree of commercialisation.

2. A moderate degree of commercialisation of paddy was noted moderate (70 to 90) in the districts of Gurdaspur, Amritsar, Kapurthala, Jalandhar and Patiala.
3. The two districts Rupnagar and Hoshiarpur had recorded the lowest degree of commercialization, varying between 60.6 percent to 64.8 percent. Higher degree of commercialization of paddy was found in the southern districts, while it was low along the Shiwalik foothills. In the remaining districts, it was moderate.

Degree of commercialisation of paddy crop: 2000-01

Paddy covers 26,04,000 hectares and constitutes 33.1 percent of the total cropped area, making it the second important commercial cereal in Punjab. With 6.2 percent of the total space rice area and 12.2 percent of rice production of the country, it space contributes 33.5 percent to the central pool. The degree of commercialisation of paddy space in Punjab is 91.2 percent. Once again it is found lowest, about 73.4 percent in Rupnagar district and highest 98.2 percent in Bathinda district.

1. A high degree of commercialisation of paddy crop (over 90 percent) is found in the districts of Kapurthala, Ludhiana, Firozpur, Faridkot, Sangrur, Patiala, Moga, Muktsar and Fatehgarh Sahib.

Table No. 2: **Changes in degree of commercialisation in paddy crop: 1980-81 to 2000-01 (in percent)**

District	1980-81	2000-01	Change 1980-81 to 2000-01
Gurdaspur	74.5	75.9	2.4
Amritsar	82.0	84.2	2.2
Kapurthala	91.5	93.2	1.7
Jalandhar	83.4	88.4	5.0
Nawanshahr	60.6	77.2	16.6
Hoshiarpur	60.6	78.9	18.3
Rupnagar	64.8	73.4	8.6
Ludhiana	91.0	94.9	3.9
Ferozpur	91.6	96.3	4.7
Faridkot	92.4	95.0	2.6
Muktsar	92.4	93.8	1.4
Moga	92.4	94.3	1.9
Bathinda	94.3	98.2	3.9
Mansa	94.3	95.8	1.5
Sangrur	93.8	94.4	0.6
Patiala	86.7	94.4	7.7
Fatehgarh Sahib	86.7	93.3	6.6
Punjab	87.1	91.2	4.1

Source: *Statistical Abstracts of Punjab: 1981 and 2001.*

The main reason for this was the presence of flat lands, medium to heavy soil texture, favourable climatic conditions, excellent irrigational facilities, high concentration of rice mills, well developed network of infrastructural facilities like roads and railways, availability of regulated markets and better economic returns as compared to other Kharif crops.

2. Areas of moderate degree of paddy commercialisation (80 to 90 per cent) include the districts of Amritsar and Jalandhar. In these areas, it varied

between 80-90 percent. It recorded 84.2 percent in Amritsar and 88.4 percent in Jalandhar District.

3. The lowest degree (less than 80 percent) of commercialisation is found in the districts of Gurdaspur, Hoshiarpur, Rupnagar and Nawanshahr. The northern parts of Gurdaspur district, eastern parts of Nawanshahr district, and the districts of Hoshiarpur and Rupnagar have undulating and dissected topography, deep aquifers of sub-soil water, small size of land holdings, poor irrigational facilities, less developed

infrastructural facilities like roads and railways, etc. which has inhibited greater degree of commercialisation here.

Changes in the degree of commercialisation of paddy crop: 1980-81 to 2000-01

Drastic changes in agricultural infrastructure, irrigation, high yielding variety of seeds and chemical fertilizers have brought about positive changes in the degree of commercialisation of paddy crop. In 1980-81 it was 87.1 percent. This increased to 91.2 percent in 2000-01. The degree of change varies between 0.6 percent in Sangrur district to 18.3 percent in Hoshiarpur district. (Table 2)

In the overall analysis it was found that districts having low degree of commercialisation in 1980-81 have experienced higher change, while the districts with high to moderate degree of commercialisation have show relatively low change in the degree of paddy commercialisation the cultural factor is significant. Punjabis are wheat eater and traditionally use very little rice in their daily diet. This has a direct bearing on the higher rate of paddy commercialisation.

Patterns of overall Agricultural Commercialisation in Punjab: 1980-81

For calculating the overall degree of agricultural commercialisation, wheat and rice are taken into account, as they constitute the major Rabi and Kharif crops of the state and occupy 66 percent of the total cropped area. The total production of wheat and rice was around 125 lakhs metric tons, out of

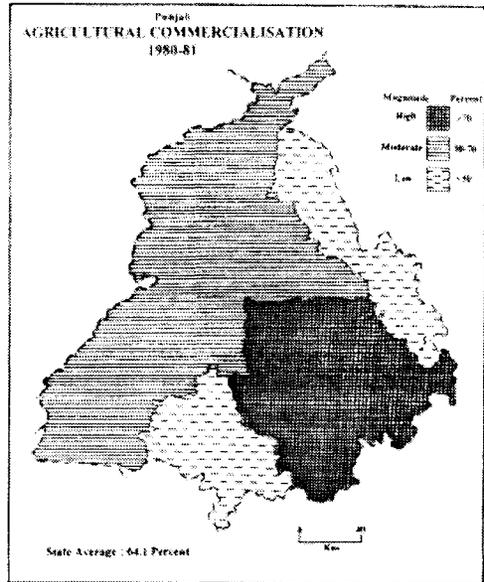


Fig. 2 Agricultural Commercialisation in Punjab 1980-81

which about 80 lakhs metric tons was marketed yielding 64.1 percent, index-value of agricultural commercialisation. Great deal of inter-district variation ranging from 38.7 percent in Rupnagar district to 71.9 percent in Patiala district was observed. This uneven spatial distribution of agricultural commercialisation was the combined result of the physical environment cultural and environmental factors (Fig. 2)

Patterns of overall Agricultural Commercialisation in Punjab: 2000-01

The degree of agricultural Commercialisation in Punjab was 81.3 percent during 2000-2001. It recorded the lowest percent 51.6 in Hoshiarpur district and highest of 88.1 percent in Ludhaina district. This high variation in the index value of agricultural commercialisation is owing to the variations

in nature of topography, soils, water resources, farm mechanization, accessibility, adoption of agricultural innovations, etc. The derived results are mapped in fig.3, which yields the following three categories.

Changes in overall Agricultural Commercialization in Punjab: 1980-81 to 2000-01

Significant changes in extent of irrigation, intensity of cropping, use of chemical fertilizers, number of tractors, number of

markets, etc. have taken place in Punjab during the period under present investigation. These changes in the above mentioned variables have led to increase in agricultural production and agricultural produce, which is being marketed. Because of large production of wheat and rice the farmers have surplus in these commodities which they marketed, which have led to high degree of agricultural commercialisation. As a result, the index value of agricultural commercialisation for Punjab increased from 64.1 in 1980-81 to 81.3 per cent in 2000-01.

Table No. 3 : Changes in Agricultural Commercialisation in Punjab: 1980-81 to 2000-01 (in percent)

District	1980-81	2000-01	Change 1980-81 to 2000-01
Gurdaspur	53.8	72.4	18.6
Amritsar	65.1	77.9	12.8
Kapurthala	68.1	79.6	11.5
Jalandhar	65.8	76.5	10.7
Hoshiarpur	39.8	51.6	11.8
Rupnagar	38.7	55.0	16.3
Ludhiana	71.7	88.1	16.4
Ferozpur	65.9	89.0	23.1
Faridkot	62.2	83.5	21.3
Muktsar	62.2	78.4	16.2
Moga	62.2	84.6	22.4
Bathinda	44.5	70.6	26.1
Mansa	44.5	73.9	29.4
Sangrur	70.4	83.6	13.2
Patiala	71.9	83.4	11.5
Fatehgarh Sahib	71.9	12.2	--
Nawanshahr	52.5	67.1	14.6
Punjab	64.1	81.3	17.2

Source: Statistical Abstracts of Punjab: 1980-81 and 2001

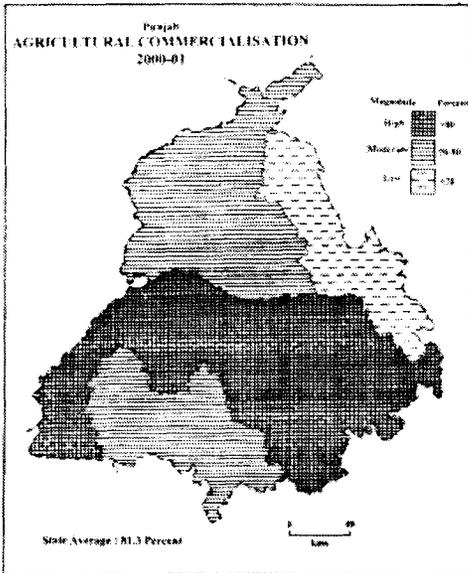


Fig. 3 Agricultural Commercialisation in Punjab 2000-01

In this way an increase of 17.2 percent was recorded in the state, which is shown in Table No.3.

But this increase is not uniform in its spatial distribution. Some districts have experienced high change like Mansa (29.4 per cent) and some others like Jalandhar have noted low change that is 10.7 percent.

1. Areas of High Change (over 20 per cent)

This category comprises the districts of Firozpur, Moga, Bathinda, Faridkot and Mansa. The change recorded is 21.3 percent in Faridkot and 29.4 percent in Mansa district. The major reasons for high change in these districts are the development in agricultural infrastructure; levelling of sand dunes, increase in agricultural production, etc.

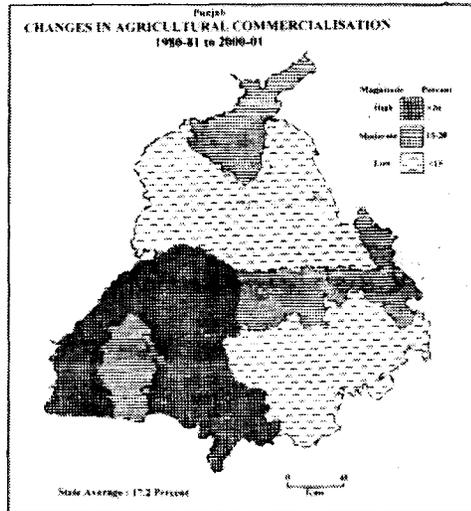


Fig. 4 Changes in Agricultural Commercialisation in Punjab 1980-81 to 2000-01

Moreover, low degree of agricultural commercialisation in 1980-81 is also responsible for high change in these area.

2. Areas of Moderate Change (15-20 percent)

This category is well scattered in the state. It comprises the districts of Gurdaspur, Rupnagar, Ludhiana. These areas have experienced moderate increase in agricultural commercialisation due to high degree of commercialisation in 1980-81. While in Gurdaspur, Muktsar and Rupnagar districts, it was owing to moderate increase in the index value of agricultural commercialisation during the study period. All these reasons have led to moderate changes in agricultural commercialisation in this group.

1. Areas of Low Change (less than 15 per cent)

50 per cent of the total occurrences fall in this category. It is found in two belts. First belt comprises the districts of Hoshiarpur, Nawanshahr, Jalandhar and Kapurthala. While the second belt contains the districts of Sangrur, Patiala and Fatehgarh Sahib. In all these areas though agricultural production has increased, yet the change recorded is low.

From the preceding discussion, it is observed that areas with low degree of agricultural commercialisation in 1980-81 have experienced higher degree of change in agricultural commercialisation. But areas with moderate to high degree of agricultural commercialisation in 1980-81 have generally recorded low to moderate degree of agricultural commercialisation.

Conclusion and Suggestions

It is concluded that areas with favorable physical environment and well-developed agricultural infrastructure are having high degree of agricultural commercialisation. While areas with unfriendly physical environment and less developed agricultural infrastructure have experienced low to moderate magnitude of agricultural commercialisation. It is also found that areas

having low degree of agricultural commercialisation in 1980-81 have recorded high to moderate magnitude of agricultural commercialisation. But areas with moderate to high degree of commercialisation in 1980-81 have generally registered low to moderate degree of agricultural commercialisation. It is suggested that special attention by planners and government should be given to areas with low commercialisation of agriculture so that the gap between areas of high and low agricultural commercialisation can be minimised. For achieving it, infrastructure should be developed in areas, which are lagging behind in overall agricultural commercialisation.

References

- Singh, J. and Dhillon, S.k.** (2004): Agricultural Geography. Tata McGraw Hill Publishing Co. Ltd. New Delhi, pp. 286=87.
- Singh, Jhujjar,** (1979): Commercialization of Agriculture in Punjab: A Spatial Analysis. Geographical Review of India, Vol. 41, p.1.

Dr. K.S. Sohal
Head,
Department of Geography,
Punjabi University,
Patiala.

Ms. Manjit Kaur
Research Scholar,
Department of
Geography,
Punjabi University,
Patiala.