

Indebtedness among Farmers in Punjab

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The main objective of this study is to assess the overall debt position of the farmers in Punjab and identify the factors affecting their indebtedness. The important policy recommendations that emerge are the need to improve the institutional agricultural credit system, to regularise and continuously monitor the functioning of non-institutional sources of finance, to reduce farmers' fixed costs in heavy machinery and equipment for which loans should also be based strictly on economic feasibility, to strengthen the dairy sector and create off-farm employment opportunities and to launch a mass campaign against intoxicants and extravagant expenditure on social festivities.

The model of agricultural development of India may be interpreted to include a set of measures aimed at the technological upgradation of primitive modes of production along with a set of compatible social and institutional changes. The state of Punjab was on the forefront in the adoption of this model, which resulted in a tremendous increase in the use of current as well as capital inputs that increased the productivity, production and income of the farmers, thereby increasing their consumption expenditure and ultimately, improving their standard of living. This model has made the agricultural production process capital intensive and is associated with many structural changes in agriculture. Presently there are 4.66 lakh tractors, 11.68 lakh tube wells, 3.50 lakh threshers and 8.9 thousand harvesting combines in the state. The demand for human labour in the farm sector has decreased significantly since the late 1980s; from 479 million mandays in 1983-84 to 422 million mandays in 2000-01 [Sidhu and Singh 2004]. Unlike the all-India level situation, there has been a sharp decline in the number of marginal and small holdings in the state. During 1990-91, there were 2.95 lakh marginal and 2.03 lakh small operational holdings, which declined to 2.04 lakh and 1.83 lakh in 1995-96 and further to 1.23 lakh and 1.73 lakh in 2000-01. On the other hand, the number of large farm holdings has increased during this time. However, the industrial sector in the state has provided little employment to small and marginal farmers released by the agricultural sector [Gill 1994]. Thus, a large chunk of the reserve army of the labour remains prevalent in the rural/farm economy of the state. According to official unpublished estimates, in 2006, about 35 lakh persons were unemployed in Punjab, out of which about 24 lakh belong to rural areas.

The heavy farm investment made by Punjab farmers after the introduction of high yielding varieties of wheat and paddy was facilitated, along with other factors, by advancing institutional credit through a widespread network of cooperatives and commercial banks. It is, however, still being reported that institutional lending is inadequate, costly and cumbersome and farmers have to resort to private non-institutional sources of finance, which have their own ways to exploit and squeeze the farmers' net incomes. The non-institutional sources, mainly commission agents, have once again gained ground in Punjab. Besides the increase in farm credit on account of an increase in cash costs and capital investments, the declining growth in farm productivity and increasing non-farm expenditure in rural areas for house construction, improving and maintaining living standards, social obligations being met beyond means, etc, are the main reasons for the increase in farmers' indebtedness in Punjab. Shergill (1997) estimated that the total debt of Punjab farmers was

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Rs 5,700 crore. The total debt burden was 32 per cent of Net State Domestic Product (NSDP) from the agriculture and livestock sector in 1997.

The National Bank for Agriculture and Rural Development (NABARD) chair unit at Punjab Agricultural University (PAU) conducted a study on overdue loans and indebtedness in the cotton belt of Punjab during 1998-99 [Sidhu et al 2000]. The average amount of debt in the Punjab cotton belt was Rs 1,12,636, out of which Rs 68,119 (60.5 per cent) came from non-institutional sources. The amount of debt per hectare was Rs 22,092. The study found that the debt burden was so severe that the marginal, small and semi-medium farmers were unable to pay off even the interest payments of outstanding debt, not to speak of any reduction in the debt burden. Singh and Toor (2005) conducted a study to estimate the magnitude and determinants of indebtedness in Punjab in 2002-03. The study estimated that 78 per cent of farm households were under debt. The average debt per household was Rs 92,394, which amounted to Rs 23,406 per hectare. The total debt burden in 2002-03 on Punjab farmers was Rs 9,886 crore out of which 58.1 per cent was from non-institutional sources.

The National Sample Survey Organisation (NSSO), conducted a survey in 2003 entitled 'Situation Assessment Survey: Indebtedness of Farmer Households' to assess the indebtedness of farmers. As many as 65.4 per cent of the farmers are reported to be under debt in Punjab. The magnitude of debt per household was Rs 41,576, the highest amongst all states. The share of institutional sources was found to be 46 per cent for Punjab compared to 55 per cent for all India, which amounts to Rs 19,125 per farm household from the institutions. This is far less than the actual outstandings of the institutions, which even amounted to as much as Rs 19,384 per hectare as of March 2003.

Economic factors like decreasing productivity, falling profits and social factors such as heavy expenditure on house construction and social ceremonies have pushed farmers into the debt trap. As a result, some farmers commit suicide as a means of escape. According to the latest government survey, 2,116 farmers have committed suicide in Punjab during the last 15 years [Nibber 2004]. However, farmers' organisations like the Bharatiya Kisan Union (BKU) claimed that 13,000 farmers in Punjab had committed suicides during the last five years [Sumbly 2005]. One may or may not believe this figure but the fact remains that the actual number of suicides is much larger than the figure provided by the state government. Major reasons behind the suicides in the state were economic hardship, indebtedness and crop failure [AFDR 2000]. The crisis became so severe that in 2002, the gram panchayats of three villages in Punjab declared their "villages for sale". They wrote a declaration asking the state government to acquire all the resources including the land of the village so that they may be rid of debt.

Keeping in mind the above state of affairs in the rural economy of Punjab the present study examines various issues of indebtedness in the state with the following specific objectives: (1) to estimate the extent and magnitude of indebtedness among

various categories of farmers in the state; (2) to assess the source-wise and purpose-wise debt position among different categories of farmers in the state; (3) to identify factors affecting farmers' indebtedness in the state; (4) to know the perception of farmers regarding their causes of debt and preference of loan funding agency; and (5) to suggest suitable policy measures to improve the agricultural credit system and economic conditions of the farmers.

1 Approach

Previous studies on the indebtedness of farmers in Punjab were conducted with small sample sizes covering a small number of districts. The sample size was 260 cultivator households in the study conducted by Shergill (1997), 176 farm holdings for a NABARD study [Sidhu et al 2000] and 250 farm holdings in a PAU study [Singh and Toor 2005]. Even the estimates of indebtedness of the NSSO study for 2003, though highest for Punjab, were far lower than the actual advances/outstandings of the institutions. Thus, it was desirable to conduct a broad based study, which covers a large number of districts, blocks, villages and farm households. Keeping this in mind, the present study was planned covering all the regions with a field survey of 600 farmers in as many as 11 districts randomly selected following a multistage random sampling technique.

Punjab is divided into three agro-climatic regions, viz, semi-hilly region (region I), central region (region II) and south western region (region III), which occupy 9, 65 and 26 per cent of the total area of the state, respectively. A list of all the blocks from these three regions was prepared. A total of 20 blocks were selected; two from the semi-hilly region, 11 from the central region and seven from the south western region. Blocks were selected randomly at the first stage of sampling. These blocks are in proportion to the net area sown in each zone. A cluster of two villages (depending upon the size of the village) was randomly selected from each selected block. The final stage was the selection of operational holdings within the selected villages.

The operational holdings were stratified as marginal holdings of size up to 1 hectare, small holdings of size 1.01 to 2 hectares, semi-medium holdings of size 2.01 hectares to 4 hectares, medium holdings of size 4.01 to 6 hectares and large holdings of size greater than 6 hectares. Then, proportionate samples from each category comprising about 30 farmers from the cluster of villages were randomly selected. In this way, 60 farm households from the semi-hilly region (region I), 340 from the central region (region II) and 200 from the south western region (region III) were selected. Thus, a total of 600 operational holdings were selected (Table 1).

Field level data from the sample households was collected along a specially structured and pre-tested schedule for the agricultural year 2005-06. The data pertained to the details of farm resource inventory; crop and livestock production; cost and returns from crops; source of income of farmers; total amount of debt on farm households from various sources; investment in machinery and equipment; irrigation structure; expenditure on

Table 1: Sampling Design by Operational Holding

Size Category	Holding Size Class (ha)	Number of Holdings			Overall
		Semi-hilly Region	Central Region	South Western Region	
Marginal	Up to 1.00	16	78	13	107
Small	1.01 to 2.00	30	74	46	150
Semi-medium	2.01 to 4.00	8	71	74	153
Medium	4.01 to 6.00	3	56	28	87
Large	Above 6.00	3	61	39	103
All categories		60	340	200	600

house construction, durable goods, social ceremonies, education, medical treatment, litigations; farmers' perception regarding institutional and non-institutional loans, etc.

Percentages and averages were used as analytical tools for achieving the objectives of the study. The information is processed by region and category and incorporated in the results and discussion according to category or region or both as found appropriate.

2 Results and Discussion

Before discussing the indebtedness among the sample households from various dimensions it is important to discuss the socio-economic profile of the farm families such as holding size, education level, asset structure, workforce, etc, which have strong bearings on the borrowing of funds, their utilisation and the income level of farmers, which together determine the vulnerability of indebtedness taking the farm family to bankruptcy.

2.1 Socio-economic Profile of Sample Households

The socio-economic profile of sample households according to different farm sizes is presented in Table 2. The average operational farm size of sample holdings was 2.01, 3.48 and 4.05 ha in the semi-hilly, central and south western region respectively, the average for the state being 3.57 ha. As many as 48 per cent holdings had a tractor; as many as 13 and 31 per cent of marginal and small farmers operated their own-tractor, which needs to be carefully assessed as these could become a major indicator of the burden of indebtedness of these farm households.

The average family size was 5.6 members. Only 5.5 per cent of farmers (head of the family) had an education of 12 years or more, it was the highest (7 per cent) in the central region. The income of sample households from different sources has been compiled and given for different farm sizes in Table 3. The average gross income for the state as a whole was Rs 2,80,694 per sample farm household. The relative share of livestock to gross family income was 20.6 per cent. It was 40.8 per cent on marginal holdings and declined consistently to 16.4 per cent on large holdings. Non-farm income was an important source of relative income for marginal and small holdings, where it had a contribution of 28.5 per cent and 22 per cent respectively to the total family income. For all the holdings in the state, it was 7.5 per cent.

2.2 Indebtedness among Sample Households

The indebtedness was measured as loans outstanding as of March 31, 2006. The important indicators of indebtedness developed from the sample data are: extent of debt – farm size and region-wise for all holdings; magnitude of debt – farm size and region-wise for all holdings; magnitude of debt of indebted holdings – farm size and region-wise; magnitude of per hectare debt – farm size and region-wise; source of debt – institutional and non-institutional sources – farm size-wise; purpose of debt – productive and consumption purposes – component-wise and region-wise and farmers' perceptions – causes of debt – category-wise.

The extent of indebtedness has been examined by different regions and different farm sizes in Table 4 (p 133). The proportion of indebted farm households was found to be 88.83 per cent in Punjab. It was distinctively the lowest in the semi-hilly region (68 per cent) which has a large proportion of small holdings and the income from other sources was distinctly higher (26.6 per cent).

There were also variations through the different categories of farm households. The percentage of indebted households was the highest (92.23 per cent) in case of large farmers and this percentage was the lowest (80.37 per cent) in the case of marginal farmers. Further, these proportions were 88.67, 90.85 and 91.95 in the case of small, semi-medium and medium farmers. This shows that there was a direct relationship between the proportion of indebted farmers and the size of the farm. However,

there are inter-regional variations in the relationship between farm size with the extent of indebtedness in the state. The indebted farm households ranged between 33-33 per cent of large farms in the semi-hilly region and 100 per cent of large farms in the south western region. The large farms in the semi-hilly region were distinctively least indebted than all other categories. Likewise, in the central region, the marginal farmers were least indebted. Although all the large farms in the south western region were indebted, the proportion of indebted farms in other size categories was also very high. The per farm magnitude of debt among different categories of Punjab farmers is also presented in Table 4. In Punjab, the average amount of debt per sample household as of end March 2006 was Rs 1,78,934. The average amount of debt per sample

Table 2: Socio-economic Profile of Farmers

Particulars	Farm Size Categories					Overall
	Marginal	Small	Semi-Medium	Medium	Large	
Age of the head of the family (years)	47.0	48.4	47.2	50.4	49.2	48.2
Education of the head of the family						
(i) No of years in school	5.9	5.5	5.5	6.1	7.1	5.9
(ii) % families with education of 12 years and more	4.7	4.0	3.2	8.0	9.7	5.5
Family size						
(i) Number	4.6	5.1	5.6	6.4	6.9	5.6
(ii) % families with six or more members	25.2	31.3	47.1	56.3	69.9	44.5
Members working on the farm (no)	1.4	1.8	1.9	2.1	2.1	1.9
Permanent servant						
(i) No	0	0	0.3	0.6	1.0	0.3
(ii) Average salary	0	0	6,650	14,639	24,564	8,366
Size of operational holdings (ha)	0.71	1.62	3.06	5.02	8.66	3.57
Owned holding (%)	107.7	92.9	95.6	83.1	82.5	87.6
% holdings with tractors	13	31	56	70	81	48

Table 3: Income from Different Sources by Farm Size (Rs/farm)

Particulars	Farm Size Categories					Overall
	Marginal	Small	Semi-Medium	Medium	Large	
Gross family income	80,703	1,25,638	2,44,162	4,28,972	6,28,716	2,80,694
A Gross farm income						
(i) Crops	33,972	82,700	1,83,337	3,13,185	5,19,454	2,08,069
(ii) Livestock	32,967	34,202	52,332	85,505	1,03,037	57,861
Sub-total A	66,939	1,16,902	2,35,669	3,98,690	6,22,491	2,65,930
B Current expenditure on crops and livestock	32,336	50,450	84,795	1,00,515	1,55,038	82,575
C Gross margin	34,603	66,452	1,50,874	2,98,175	4,67,453	1,83,355
D Non-farm income	13,764	18,736	8,493	30,282	6,225	14,764
Total family income	48,367	85,188	1,59,367	3,28,457	4,73,678	1,98,114
% share of livestock in gross family income	40.8	25.2	21.4	20.0	16.4	20.6
% share of non-farm income in total family income	28.5	22.0	5.3	9.2	1.3	7.5

farm household was the highest (Rs 2,66,636) in region III, followed by region II (Rs 1,52,266) and region I (Rs 37,717).

The average amount of debt on per hectare basis was Rs 50,140. Despite the fact that the average farm size in region III is the largest the per hectare amount of debt was also the highest. It was Rs 64,999 in region III followed by region II (Rs 43,275) and region I (Rs 18,177) per sample household. This mainly happened due to the cotton crop failure from 1997 to 2002 in this region (region III). The amount of debt per sample household was directly related to farm size. It was the highest in the case of large farms and lowest in the case of marginal farmers. However, in relation to land (per ha), the association was negative. The relative indebtedness of the marginal farmers, i.e., on per ha basis was three times than that for larger farmers for Punjab as a whole. It was Rs 1,02,881 and Rs 35,363 per ha per sample household for marginal and large farmers, respectively.

The significance of indebtedness leading towards bankruptcy is more sharply visible from an analysis of region-wise indebtedness in relation to farm size, particularly in the more heavily indebted central and south western regions. In the central region, marginal farmers were almost three times more indebted on per ha basis than the large farmers; being Rs 88,843 and Rs 31,778 per ha per marginal and large farmers respectively. It was even higher in the south western region where indebtedness was more than five times more for marginal farmers (Rs 2,41,980 per ha) than large farmers (Rs 43,534 per ha).

2.2.1 Source of Credit

The role of various credit agencies in the study area is analysed and the information is presented in Table 5 and Table 6 (p 134).

Table 5 shows that an average farm household in the state has Rs 1,10,828 (61.94 per cent) of debt from institutional credit agencies while that from non-institutional sources was Rs 68,106 (38.06 per cent). Farm size category-wise, small and large farmers obtained 65 per cent of their loans from institutional sources compared to semi-medium and medium farmers who obtained less than 60 per cent of their loans from institutional sources (Table 6).

Amongst institutional sources, commercial banks provided 72 per cent of the loans and cooperatives about 28 per cent. All the farm size categories were almost equally served. Amongst non-institutional sources, the commission agent was the major source of credit, and provided about 32 per cent of total farm credit, i.e., 84 per cent of the total credit from non-institutional

sources. The National Statistical Organisation which conduct the National Sample Survey on a large scale gave the share of formal sources at 81.9 per cent in 1991-92 for Punjab and 66.3 per cent for India. In 1997, a government of Punjab-sponsored study of indebtedness gave the share of institutional sources as 46.6 per cent.

The NSSO report for its survey in 2003 also reports the share of formal sources at 47.8 per cent for Punjab. The proportion of credit from non-institutional sources has decreased from above 50 per cent in 2003 [NSSO 2005] to 38 per cent in 2005-06 (this field study) due to more attention to the credit policies in the wake of recent agrarian crisis in the state. Thus, it may be concluded that the proportion of institutional credit in Punjab was at its peak in early 1990s, declined during the 1990s and has picked up again recently.

2.2.2 Purpose of Loans

The purpose for which a loan is taken is an important indication of its potential to be repaid. The various purposes for which the farmers of different regions of the state were taking loans are presented in Table 7 (p 134).

An average farm household in the state incurred Rs 1,33,858 (74.8 per cent) and Rs 45,076 (25.2 per cent) on productive and unproductive purposes, respectively. Amongst the productive purposes, the highest debt was reported for the purchase of agricultural inputs like seed, diesel/mobile oil and agro-chemicals (59 per cent of the productive loan, i.e., 44.1 per cent of the total loan). Similarly, more than 12 per cent of the total debt amount was spent on the purchase of tractors, harvest combines and farm machinery. About 10 per cent of the funds were borrowed for developing non-farm productive activities, especially seed shops, spare parts shops, mini buses and truck operators and other activities. However, there were some variations in

different regions of the state. The farmers of the south western region were incurring the highest proportion (78.5 per cent) of their debt for productive purposes, followed by the farmers of the central region (71.8 per cent) and the semi-hilly region (55.3 per cent) of the state.

House construction including farm building and repairs was a major cost on which the farmers of the state, especially those of the central and the south western Punjab, spent significant amounts (10.3 per cent of total debt). This was followed by the celebration of marriages of their children for domestic expenditure. The amount borrowed for other components like education, healthcare, purchase of car/scooter, payments of old debts, litigation and sending family members abroad was negligible. Farmers of the semi-hilly region did not take any loan for house construction,

Table 4: Extent and Magnitude of Indebtedness

Farm Category	Percentage of Indebtedness	Amount of Debt per Sample Household	
		Rs per Farm	Rs per ha
Semi-hilly region:			
Marginal	68.75	27,375	42,820
Small	73.33	17,833	11,199
Semi-medium	62.50	1,28,750	44,633
Medium	66.67	56,667	11,912
Large	33.33	30,000	3,087
All categories	68.33	37,717	18,177
Central region:			
Marginal	80.77	64,417	88,843
Small	94.59	1,08,827	65,167
Semi-medium	92.96	1,75,814	56,395
Medium	91.07	1,82,350	35,834
Large	90.16	2,62,270	31,778
All categories	89.71	1,52,266	43,275
South western region:			
Marginal	92.31	1,72,574	2,41,980
Small	89.13	1,79,956	1,10,822
Semi-medium	91.89	2,51,632	81,146
Medium	96.43	1,98,167	58,293
Large	100.00	4,06,059	43,534
All categories	93.50	2,66,636	64,999
Overall			
Marginal	80.37	72,017	1,02,881
Small	88.67	1,12,441	68,549
Semi-medium	90.85	2,10,023	67,807
Medium	91.95	2,15,290	42,332
Large	92.23	3,09,949	35,363
All categories	88.83	1,78,934	50,140

Table 5: Structure of Indebtedness by Region
(Rs per farm household)

Region	Institutional Sources	Non-Institutional Sources	Total Debt
Semi-hilly	23,850 (63.23)	13,867 (36.77)	37,717 (100.00)
Central	1,05,545 (69.32)	46,721 (30.68)	1,52,266 (100.00)
South western	1,45,902 (54.72)	1,20,735 (45.28)	2,66,637 (100.00)
Overall/state	1,10,828 (61.94)	68,106 (38.06)	1,78,934 (100.00)

education, healthcare and purchasing car/scooter. However, they borrowed for sending a family member abroad. They also stated that the member who went abroad did not send any money to them, which was why they could not repay the borrowed amount.

Table 6: Structure of Indebtedness by Farm Size (Rs per farm household)

Source/Category	Marginal	Small	Semi-Medium	Medium	Large	All
Institutional						
1 Commercial banks	32,103	52,747	92,349	84,115	1,47,085	79,907
2 Cooperative banks	11,770	20,267	33,392	48,236	55,636	30,921
Sub-total	43,873 (60.9)	73,014 (64.9)	1,25,741 (59.9)	1,23,351 (57.3)	2,02,721 (65.4)	1,10,828 (61.9)
Non-Institutional						
1 Commission agents	21,710	35,570	72,025	71,526	91,573	57,220
2 Landlords	2,757	667	183	2,437	2,427	1,475
3 Relatives, friends	561	697	6,667	5,276	3,963	3,523
4 Village, shopkeepers and others	3,118	2,493	5,408	12,701	8,665	5,888
Sub-total	28,146 (39.1)	39,427 (35.1)	84,283 (40.1)	91,940 (42.7)	1,07,228 (34.6)	68,106 (38.1)
Total	72,019	1,12,441	2,10,024	2,15,291	3,09,949	1,78,934

Thus, it can be seen that the major proportion of productive debt is incurred for purchasing farm inputs, developing farm machinery, some small non-farm productive activity, etc, and not for consumerism. This shows that Punjab agriculture is capital intensive and the farmers have invested their own and borrowed amounts for purchasing farm inputs and developing the farm infrastructure. This is the average figure and therefore does not exclude the individual cases of over-indulgence in spending loans for consumerism or socio-religious ceremonies.

2.2.3 Determinants of Indebtedness

In addition to the regional variations and differences amongst various farm size groups with respect to indebtedness, there are other important determinants of indebtedness like ownership of tractors, share of dairying in farm income, share of non-farm income in total income, farmers' education and expenditure on social festivities. These are captured in Table 8 (p 135).

The tractor farmers were more heavily indebted than other farmers (Rs 2,64,320 vs Rs 99,589) but the tractor farmers had a higher share of the institutional loans (66 vs 53 per cent). As many as 59 out of 289 tractor holdings belonged to the marginal and small farmers category and their average indebtedness was also more than Rs 2,00,000. They had a lower share of institutional loans than the other (larger) tractor farmers (61 vs 66.5 per cent) whereas the marginal and small farmers without a tractor

had an average indebtedness of Rs 61,303 only. The total family income of the small and marginal farmers with a tractor, other (larger) farmers with tractor and all farmers without a tractor was Rs 97,867, Rs 3,87,489 and Rs 1,61,132, respectively. Hence, caution is needed in assessing the bankability of tractors on marginal and small holdings.

The income from dairy is an important form of relief from indebtedness. The farmers with more than 10 per cent income from dairying were indebted to the tune of less than Rs 80,000 per sample household compared to more than Rs 2,00,000 for farmers with income from dairying at less than 10 per cent. Similarly, with non-farm income contributing more than 10 per cent of family income, the indebtedness per sample household was Rs 1,33,655 and if the contribution was more than 20 per cent, the indebtedness was lower at Rs 1,04,972 compared to Rs 1,97,881 when it had lower contribution.

Farmers' education makes a significant dent in the structure of indebtedness. The farmers with education of 10+ could avail a better share of institutional loans than others although the overall indebtedness was about the same. However, the marginal and small farmers with higher education had higher indebtedness but loans taken from institutional sources were also much higher. It was symptomatic of the education of marginal and small farmers having been able to approach the institutions for loans more appropriately and the latter showing a confidence in their better entrepreneurship.

Table 7: Purpose of Loan by Region (Rs/farm)

Purpose/Region	Semi-hilly	Central	South West	Overall State
Production purpose				
1 Tractor/combine/ implements	-	17,405 (11.40)	38,323 (14.40)	22,637 (12.70)
2 Agricultural inputs	17,350 (46.0)	64,624 (42.5)	1,21,955 (45.7)	79,007 (44.1)
3 Irrigation structure	1,000 (2.7)	4,694 (3.1)	4,775 (1.8)	4,352 (2.4)
4 Dairy/poultry	2,500 (6.6)	5,120 (3.4)	5,805 (2.2)	5,086 (2.8)
5 Purchase of land	-	3,265 (2.1)	9,825 (3.7)	5,125 (2.9)
6 Small business	-	14,245 (9.4)	28,736 (10.8)	17,651 (9.9)
Sub-total	20,850 (55.3)	1,09,353 (71.8)	2,09,419 (78.5)	1,33,858 (74.8)
Consumption/other purpose				
1 Marriage	3,500 (9.3)	10,589 (7.0)	22,175 (8.3)	13,742 (7.7)
2 House construction/repair	-	24,375 (16.0)	14,120 (5.3)	18,519 (10.3)
3 Domestic expenditure	33 (0.1)	4,044 (2.7)	12,129 (4.5)	6,335 (3.5)
4 Education	-	1,176 (0.8)	500 (0.2)	833 (0.5)
5 Medicine and healthcare	-	-	4,118 (1.5)	1,373 (0.8)
6 Scooter/car	-	470 (0.3)	3,935 (1.5)	1,578 (0.9)
7 Repayment of old debts, litigation and others	13,334 (35.4)	2,259 (1.5)	250 (0.1)	4,059 (1.5)
Sub-total	16,867 (44.7)	42,913 (28.2)	57,218 (21.5)	45,076 (25.2)
Grand Total	37,717 (100.0)	1,52,266 (100.0)	2,66,636 (100.0)	1,78,934 (100.0)

Others reasons include foreign migration, commission to dealers for loan and small bribes.

The expenditure on social festivities, particularly when it exceeds Rs 50,000 is a burden. These farmers had indebtedness of Rs 2,26,647 compared to Rs 1,77,295 for farmers who did not have to spend any amount on social festivities during the year. Also, the non-institutional loan of the farmers with social expenditure of Rs 50,000 or more was as high as 52.7 per cent compared to other farmers who had as much as 64.2 per cent of their loans from institutional sources, i e, their borrowing from non-institutional sources was only 35.8 per cent of the total loan.

The stress level of indebtedness can be gauged from the magnitude of indebtedness in relation to the total family income (Table 9, p 135). The farm households who could return the entire loan in one season, i e, their indebtedness was less than 50 per cent of their income, were about 52 per cent. Those whose indebtedness could be called manageable (up to 100 per cent of their annual income) included another 20 per cent of farmers. The remaining 28 per cent farmers whose indebtedness was more than their annual income could be said to be under

stress. The indebtedness leading to bankruptcy, i.e., when the loan amount is more than two years' family income, which is close to acute/extreme stress is 12.8 per cent of the farm households. This was inversely associated with farm size. About 19 per cent of the marginal and small farmers were under an acute burden of indebtedness compared to less than 6 per cent of medium and large farmers.

Table 8: Determinants of Indebtedness

Variable	N	Total loan			Share of Non-Institutional Loan (%)	
		With	With	Without	With	Without
Tractor:						
All	289	2,64,320	99,589	34.4	47.0	
With small and marginal farmers*	59	2,10,742	2,78,064*	39.0	33.5	61,303@
Income from dairy as % of farm income:						
25% or more	74	55,088	1,96,358	33.9	38.2	
10% or more	158	79,150	2,14,604	35.3	38.4	
Other income:						
20% or more of total income	129	1,04,972	1,99,192	28.8	39.4	
10% or more of total income	177	1,33,655	1,97,881	31.4	40.0	
Farmers' education:						
10 +	207	1,86,061	1,75,181	34.6	40.0	
12 +	33	1,62,880	1,79,869	34.9	38.2	
Marginal	10 +	36	1,07,544	54,005	32.3	45.9
Small	10 +	49	1,43,768	97,243	32.9	36.6
Semi-medium	10 +	46	1,92,641	2,17,496	34.8	42.2
Medium	10 +	29	1,88,159	2,28,167	40.0	43.8
Large	10 +	47	2,86,395	3,29,718	33.9	35.1
Social festivities expenditure:						
Any amount	159	1,83,482	1,77,295	44.2	35.8	
Rs 50,000 or more#	64	2,26,647	1,54,402#	52.7	35.2	

The number of holdings for "without" are total (=600) minus "with" except where specified as below.
* refers to 230 tractor holdings of more than 2 ha.

@ refers to the marginal and small farmers without a tractor.

refers to 95 observations with expenditure on social festivity below Rs 50,000.

Total family income of small and marginal farmers with tractor, other farmers with tractor and farmers without tractor was Rs 97,867, Rs 3,87,489 and Rs 1,61,132 respectively.

Table 9: Degree of Indebtedness in Relation to Income

Stress Level	Total Loan in Relation to Total Income	% of Holdings					
		Marginal	Small	Semi-medium	Medium	Large	All Holdings
No stress	less than 50%	58.9	57.3	39.9	49.5	55.3	51.7
Manageable	51 to 100 %	13.1	12.7	23.5	26.4	27.2	20.0
Under stress	more than 100%	28.0	30.0	36.6	24.1	17.5	28.3
Bankruptcy	more than 200%	18.7	19.3	12.4	3.5	5.8	12.8
Total no of holdings		107	150	153	87	103	600
Loan as % of income		89.2	82.9	86.0	50.1	49.3	63.7

Overall, the marginal, small and semi-medium farmers with up to 4 ha landholdings were indebted up to about 90 per cent of their income and the medium and large farmers up to about 50 per cent of their annual income. The indebtedness was also at 91 per cent in the cotton region (as compared with 50 per cent in the central region and 35 per cent in the semi-hilly region) at end March 2006 following the second normal 2005-06 year.

The analysis was further extended to work out the estimates of the total indebtedness of the farmer households in Punjab during 2005-06 (Table 10). It was estimated that the sample farm households had outstanding debts of Rs 50,140 per hectare, which gives the total indebtedness of the farming community in Punjab at Rs 21,064 crore as of March 31, 2006. The total amount of institutional indebtedness of the Punjab farmers from our field survey came to be Rs 13,047 crore (62 per cent of the total debt), which is very close to the actual outstanding amount of Rs 12,411 crore reported by the various institutions [Government of Punjab 2006]. In addition,

the total indebtedness of the Punjab farmers to non-institutional sources as estimated from our field survey was Rs 8,017 crore. Most of the indebtedness (75 per cent) was for productive purposes, though 25 per cent consumption loans is no mean share either. The central and south western regions were more heavily indebted.

2.2.4 Preferences for Moneylenders

The advances from institutional sources increased more than three times in real terms since the 1990s but until now, it could not completely eliminate the borrowing from non-institutional sources by farmers because credit from institutional sources is fraught with many inadequacies such as amount, easiness, timeliness and with other strings of formalities/procedures attached to it. The farmers have to make many trips to complete formalities required for obtaining institutional loans and spend extra money other than the interest charged by these agencies, which is approximately negligible in the case of non-institutional sources. The formal institutions offer poor quality service through inadequately manned branches under a mandatory rural branch posting policy with a short-term stay, which gives little time to the staff to develop knowledge about the area and the people. Where the loan approval takes an average of 33 weeks to come through, the farmers cannot rely on this source of financing [Patil 2008]. The transaction costs for obtaining credit from institutional sources, which are over and above the interest costs were estimated on the basis of loans per sample farmer from institutional sources (Table 11). In the case of commercial banks, the total transaction costs were found to be much higher; these were estimated at Rs 4,016 per sample farmer for the state as a whole. The transaction costs were worked out as Rs 368 for a cooperative society, when these cooperative societies are located in the village itself. The burden of transaction costs, which is estimated at 1.2 per cent for cooperative loans and 5 per cent for commercial bank loans per sample farmer is certainly a deterrent in addition to the other hassles that the farmer has to undergo. In addition, these costs are over and above the interest cost that the farmer has to pay even before the loan is obtained.

Thus, it may be concluded from the above discussion that in spite of the significant increase in institutional lending, the malpractices prevailing in the system make this lending more cumbersome and costly. Therefore, the farmers have also to resort to obtain loans from non-institutional sources.

2.2.5 Farmers' Perception

Farm households in Punjab in their zest to make high capital investments to sustain the high output growth rate and incomes for maintaining their improved living and social standards have fallen

Table 10: Estimate of Total Debt

Description	Debt (Rs Crore)	%
Total debt	21,064	100.00
A Total debt in semi-hilly region	445	2.11
Total debt in central region	10,157	48.22
Total debt in south western region	10,462	49.67
B Total institutional debt	13,047	61.94
Total non-institutional debt	8,017	38.06
C Total productive debt	15,756	74.80
Total consumption debt	5,308	25.20

Table 11: Transaction Costs of Farmers for Institutional Loans

Particulars	Commercial Banks	Cooperatives
Average loan per farmer (Rs)	79,907	30,921
Average transaction costs (Rs)	4,016	368
% burden of transaction costs	5	1.2

into a trap of high indebtedness. They have their own perceptions about high indebtedness. The analysis is mainly based on the responses from 510 farmers in the central and south western regions where the penetration of loans and problem of indebtedness are more severe and given for different farm sizes and presented in Table 12.

Table 12: Farmers' Perceptions Regarding Reasons for Indebtedness
(Percentage of farmers reporting)

Perceptions about Indebtedness	Marginal	Small	Semi-Medium	Medium	Large	Overall
Low price of farm produce	19.5	35.6	40.4	35.5	32.3	33.5
High price of farm inputs	11.5	25.2	43.4	32.9	20.8	28.1
High rate of interest by banks and commission agents	11.5	8.7	6.4	11.8	10.4	9.4
Excessive expenditure on deepening of wells	4.6	7.8	6.6	4.0	18.7	8.4
Mental stress due to family obligatins	11.5	7.0	7.4	3.9	8.3	7.6
Low profit margins due to stagnant crop yield	10.3	6.9	5.9	6.6	7.3	7.3
Crop failure and fluctuation in yield	4.6	8.7	11.0	5.3	4.2	7.3
Exploitation by commission agents	3.5	5.2	2.9	3.9	3.1	5.1
Emphasis on allied agricultural occupations	4.6	2.6	9.6	3.9	3.1	5.1
High expenditure on house construction and social ceremonies	2.3	6.1	7.3	1.3	5.2	4.9
Laziness and lack of hard work	4.6	0.9	2.9	2.6	2.1	2.6
Unjustified purchase of tractor	1.2	2.6	1.5	0.0	1.0	1.4
High expenditure on healthcare and education	0.0	0.0	0.7	0.0	0.0	0.2

Farmers' perceptions about reasons of indebtedness revolve around low prices of their produce and high prices of farm inputs. As many as 34 per cent and 28 per cent farmers voiced these reasons; the semi-medium farmers (2-4 ha) were the most vocal, more than 40 per cent reporting these reasons. Marginal farmers with very little marketed surplus were the least reporting. As many as 9.4 per cent farmers reported a high rate of interest by the commercial banks as well as by the commission agents and 8.4 per cent farmers reported the excessive expenditure on the deepening of tube wells; the large farmers were the most reporting (18.7 per cent) obviously being the ones in the lead.

The stagnant crop yields and crop failures causing low profit margins were each reported by 7.3 per cent farmers. The exploitation by the commission agents was reported by 5 per cent farmers and all the farm size categories reported this reason in almost equal measure. The unjustified purchase of tractors as the reason of indebtedness was reported by 1.4 per cent farmers and even 1 per cent of large farmers were in this category, though the maximum of 2.6 per cent belonged to the small farmers group.

Although more than 10 per cent farmers incurred more than Rs 50,000 on social festivities during the year, only about 5 per

cent reported it to be as the reason of indebtedness and small farmers were no exception either. In fact, the mental stress leading farmers to indebtedness was reported by about 8 per cent farmers and in equal measure by all the farm size groups.

3 Conclusions and Policy Implications

It is concluded from the above analysis that 89 per cent of farm households in Punjab are indebted and all farm size categories are equally indebted in percentage terms. The amount of indebtedness was the highest in the south western region. The smaller farm households on a per ha basis were more heavily indebted than other farm size categories. The institutional sources accounted for 62 per cent of total loans to farmers. The share of productive loans was 75 per cent. The tractor farmers were more heavily indebted but had a higher share of institutional loans. The marginal and small farmers with tractors were also heavily indebted and they had a lower share of the institutional loans than the other larger tractor farmers. Dairy income, off-farm income and education had an inverse relationship with the magnitude of debt, whereas expenditure on social festivities is directly associated with the amount of debt.

The overarching conclusion is that Punjab's farmers are severely trapped in the clutches of indebtedness. The present situation of high indebtedness among Punjab farmers is a cause for concern for policymakers, politicians and academicians. It warrants multi-pronged strategies and measures for reducing indebtedness in the short run and increasing the income of farmers in the long run by generating employment and increasing productivity in the state.

To improve the economic condition of farmers the following measures are suggested to tackle the situation: (i) regularise and continuously monitor the functioning of non-institutional sources of finance; (ii) improve the functioning and lending procedure of the commercial banks; (iii) strengthen the functioning of cooperatives; (iv) reduce the farmers' fixed costs, the individual farmers' investments in heavy machinery and equipment for which agricultural service centres with village cooperative societies/entrepreneurs should be encouraged from where the farmers can hire in the machinery on payment basis; (v) provide loans to farmers for heavy machinery strictly on economic feasibility; (vi) generate off-farm employment opportunities; (vii) strengthen the dairy sector in Punjab; (viii) implement the crop insurance scheme; and (ix) organise mass campaign against intoxicants and extravagant expenditure on social festivities.

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