Economic Distress and Farmer Suicides in Rural Punjab

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Suicides by cultivators and agricultural labourers have been reported in Punjab since the mid 1980s. This paper argues that this unprecedented phenomenon is caused by a multi-dimensional crisis of the rural economy in the post green revolution phase of agricultural development. A combination of economic factors such as, economic hardship of the pauperized peasant households, crop failure, unemployment and indebtedness has pushed the victims to end their lives. This is happening in wake of decline of community sense/support mechanism as result of the emergence of new production relations. This phenomenon can be checked through appropriate policy measures such as debt moratorium of the debt trapped households and creation of safety nets for marginalized rural households.

Rural areas of Punjab experienced a general spurt in their prosperity after the green revolution in the mid 1960s. The potentials of green of revolution technology began to be exhausted in the 1980s generating pressure of economic stress among the poor strata of peasantry and agricultural labourers. The impact of economic distress and decline of traditional social support system based on community support made the poor people helpless and unable to fend for themselves as individual families and persons. The non-existence of formal and informal social support mechanisms caused many poor peasants and agricultural labourers to break under economic and social stress and to commit suicides. The phenomenon of suicides under economic distress has been observed in rural Punjab since the mid 1980s. This phenomenon is not observed equally across all the regions of the state. There are some areas with high intensity of suicide while in other areas this phenomenon is little known. The phenomenon of suicides of poor farmers and agricultural labourers has been observed in other states of India also especially where agriculture is highly commercialized. The other states where suicides among the farmers are regularly reported include Andhra Pradesh (Reddy et. al. 1998) and Karnataka (Assadi, 1998; Deshpande, 2002; Vasavi, 1999). There are also newspaper reports of farmers' suicides from the states of Maharashtra and Haryana. But this phenomenon is much widespread in the state of Karnataka where suicides are reported from all over except for one or two districts. In the present paper an attempt has been made to examine this phenomenon in the Punjab state in relation to growing economic distress in the rural areas. The paper is divided into three sections. Section one examines the emergence of economic distress and its manifestations. Section two deals with the magnitude of this phenomenon and causes of suicides in rural Punjab. The final section raises some policy issues.

1. Emergence of Economic Distress and its Manifestations

Economic activities in the state are showing structural change over period of time. Primary sector is experiencing a decline both in its share of state domestic product (SDP) as well as the share of workforce. This sector accounted for 49.13 per cent of the share of SDP in 1980-81, which declined to 40.32 per cent in 2001-02. Correspondingly, the shares of secondary and tertiary sectors have increased respectively from 20.01 per cent and 30.86 per cent in 1980-81 to 24.03 per cent and 35.65 of the SDP (Table 3). The share of agriculture and livestock in SDP of the primary sector has been more than 98.10 per cent during 1980-81 to 2001. The share of agriculture alone (cultivators and agricultural labourers) in the total workforce of the state stood at 58.01 in 1981 but declined to 39.4 per cent in 2001. Thus, agriculture and livestock, though experiencing a decline in their importance, yet remains the single largest sector of the economy of the state.

The backbone of the rural economy continues to be agriculture and allied activities', mainly livestock. Cultivators and agricultural labourers, directly dependent on agriculture, account for 53.5 per cent of the rural workforce in terms of the 2001 census data (Table 1) and 62.7 per cent in terms of 1999-2000 NSS data (Table 2). Recently the share of other activities such as transport, communication, storage, construction and manufacturing has grown but still remain dependent on agriculture and allied sector. NSS data (Table 2) reveal that 37.3 per cent (46.5 per cent according to 2001 Census) of the workforce in the rural areas is engaged in non-agricultural activities. These include trade, hotel and restaurant (8.0 per cent), manufacturing (7.9 per cent), construction (7.4 per cent), public administration, education and communication (7.2 per cent), transport (5.3 per cent), electricity, water etc. (1.1 per cent) and financial services and business (1.1 per cent).Thus, agriculture is not only the most dominant activity but an activity around which other activities are woven. The performance of agriculture determines the scope and rate of development of other activities.

Table 1: Percentage Distribution of Rural Workforce of Punjab (1971-2001)

S. No.	Industrial Category	1971	1981	1991	2001
1.	Cultivators	53.64	46.11	44.39	31.5
2.	Agricultural Labourers	24.79	31.82	31.62	22.0
3.	Allied Activities	1.06	0.92	0.65	-
4.	Mining and Quarrying	0.02	0.01	0.01	-

5.	Manufacturing (a) Household industry	3.42	2.23	1.15	3.1
	(b) Other than household industry	3.23	4.71	5.31	43.4
6.	Construction	1.54	1.42	1.81	
7.	Trade and Commerce	3.17	3.64	3.95	
8.	Transport, storage and Communication	1.28	2.12	2.47	
9.	Other services	8.48	7.00	10.24	
		100.00	100.00	100.00	100.00

Source: Census of India, 2001.

Table 2: Distribution of working Rural Persons in the Principal Status of Broad Industry (1999-2000)

Sr. No.	Industry division	Per cent Distribution
1.	Agriculture	62.7
2.	Mining and Quarrying	0.0
3.	Manufacturing	7.9
4.	Electricity, Water, etc.	1.1
5.	Construction	7.4
6.	Trade, Hotel, Restaurant	8.0
7.	Transport	5.3
8.	Financial Services and Business	0.5

9.	Public Administration, Education and Communication	7.2
	Total	100.00

Source: NSS, 55th Round, *Employment and Unemployment Situation in India,* Report No. 485, Govt. of India, New Delhi, 2001.

Table 3: Percentage Distribution of Net State Domestic Product at Factor Cost at Constant Prices

Sr. No.	Sector	1980-81	1990-91	2000-01
1.	Agriculture	33.76	31.17	27.15
2.	Livestock	14.44	15.19	12.64
3.	Forestry and Logging	0.88	0.53	0.14 .
4.	Fishing	0.03	0.08	0.39
5.	Mining and Quarrying	0.02	0.04	0.00
Sub total (Primary)		**49.13**	**47.01**	**40.32**
6.	Registered manufacturing	6.70	10.10	9.92
7.	Unregistered manufacturing	4.96	6.69	5.41
8.	Electricity, Gas and Water supply	2.64	3.79	2.65
9.	Construction	5.71	3.76	5.05
Sub Total (Secondary		**20.01**	**24.34**	**24.03**
10.	Trade, Hotels and Restaurants	13.10	10.37	12.53
11.	Transport, Storage and Communication	2.61	3.11	5.22
12.	Banking and Insurance	2.30	4.28	4.84
13.	Real Estate, Ownership of Devilling and Business Services	4.70	3.49	4.28
14.	Public Administration	2.85	3.35	4.68
15.	Other services and Sanitary	5.30	4.05	4.10

	Services			
Sub Total (Tertiary)		**30.86**	**28.65**	**35.65**
Total State Domestic Product		**100.00**	**100.00**	**100.00**

Note: Figures for 1980-81 and 1990-91 are at 1980-81 prices and for 2000-01 at 1993-94 prices.

Cropping Pattern

Punjab had a fairly diversified cropping pattern before the green revolution. The share of cereals in the total cropped area was 45.65 per cent and food grains 64.73 per cent as pulses accounted for 19.08 per cent of the area in 1960-61. Other important crops were cotton, oil seeds and sugarcane respectively grown on 9.45 per cent, 3.94 per cent and 2.81 per cent of the total cropped area. Though wheat was the most dominant crop, it was cultivated on only 29.59 per cent of the area. The share of rice in the area was only 4.80 per cent in 1960-61. Over the years, Punjab agriculture has progressively moved towards the mono crop culture. This situation was nearly obtained by 1980-81. The area under food grains had increased to 77.77 per cent and under cereals to 66.76 per cent. The area under wheat had increased to 41.57 per cent and under rice to 17.49 per cent of the cropped area. Crops like oilseeds, sugarcane and pulses were nearly decimated with their respective share being 1.39 per cent, 1.35 per cent and 1.91 per cent of the total area under cultivation. The situation had gone from bad to worse by 2000-01. The share of food grains in the total area has increased to 79.11 per cent of the total cropped area and that of cereals to 78.41 per cent, which is predominantly occupied by wheat-rice combination accounting for 75.87 per cent of the total cropped area. Along with oilseeds, sugarcane and pulses, cotton had also suffered in the decade of the nineties. The share of cotton in total area had been above 9 per cent during 1960-61 to 1999-2000 but declined to 5.96 per cent by 2000-01 (Table 4). The share of all other (that is, other than wheat-rice) crops has been reduced to 24.13 per cent in the total cropped area. In winter it is wheat everywhere and in summer, rice is cultivated in the fields of Punjab.

Table 4: Shift in Cropping Pattern in Punjab 1960-61 to 2000-01 (Percentage of Gross Cropped Area)

Year	Food-grams	Cereals	Wheat	Rice	Cotton	Oil seeds	Sugar-cane	Pulses
1960-61	64.33	45.65	29.59	4.80	9.45	3.91	2.81	19.08
1970- 71	69.18	61.89	40.49	6.87	6.99	5.20	2.25	7.29
1980-81	77.77	66.76	41.57	17.49	9.60	3.52	1.05	5.04
1990-91	75.55	73.65	43.63	26.86	9.34	1.39	1.35	1.91
1995-96	74.17	72.94	41.17	28.33	9.62	3.07	1.76	1.23
1997-98	72.87	71.63	41.34	27.62	9.16	3.15	2.23	1.24
1998-99	74.60	73.55	41.94	28.94	9.20	1.77	1.60	1.05
1999-00	78.29	77.35	42.35	32.53	7.27	2.07	1.33	0.94
2000-01	79.67	78.90	43.18	33.18	6.07	1.25	1.38	0.78
2000-01	71.11	78.41	42.95	32.92	5.96	1.08	1.52	0.69

Source: *Statistical Abstract of Punjab,* various issues.

Stagnating Productivity

The green revolution technology raised the productivity of both wheat and rice significantly. Per hectare yield of wheat increased from 2,095 Kg. during 1967-68 to 1969-70 to 4,530 Kg. during 1998-99 to 2000-01 and rice from 1,392 Kg. to 3,335 Kg. during this period. But recently productivity rise is either very slow or stagnating showing exhausting potential of green revolution technology. The rice yield per hectare has stagnated around 3335-3341 Kg. during the last one decade (1990-91 to 2000-01). The case of wheat, however, is different. The wheat productivity (yield per hectare) is continuously growing but its rate of growth is declining. In case of cotton the productivity level has declined in absolute terms giving a negative growth rate (Table 5). The farmers have achieved 75 per cent of the realizable potential yields of rice and wheat (PAU, 1998). The irrigation potentials are fully exhausted and irrigated area as percentage of net sown area has stagnated at 95 per cent (Table 5). There is no scope of increasing the area under cultivation. At the same time Punjab has become nearly a double crop area with

cropping intensity also stagnating around 186 (Table 6).

Table 5: Average Yield of Wheat, Rice and Cotton in Punjab (Kg/ha)

Period	Wheat	Rice	Cotton American (in lint)
1967 -68 to 1969-70	2095	1392	374
1971-72 to 1973-74	2279	2113	415
1974-75 to 1976-77	2400	2410	400
1977-78 to 1979-80	2683	2818	368
1981-2 to 1983-84	2985	3055	280
1985-86 to 1987-88	3346	3230	505
1990-91 to 1992-93	3762	3292	569
1993-94 to 1995-96	3995	3341	481
1996-97 to 1998-99	4134	3337	280
1998-99 to 2000-01	4530	3335	318

Source: *Statistical Abstract of Punjab* (various issues).

Table 6: Net Sown Area and Cropping Intensity

Year	Net Sown Area (000 hectare)	Cropping Intensity
1960-61	3757	126
1970-71	4053 ‘	140
1980-81	4191	161
1990-91	‘4218	178
1996-97	4234	185
2000-01	4264	186

Source: *Statistical Abstract of Punjab* (various issues).

Declining Returns and Viability of Farming

The initial years of the green revolution brought a sharp increase in productivity in the major crops leading to reduction in cost of production of output. The increase in use of fertilizers and such other chemical inputs, machinery, fuel, etc. was at the slower rate than increase in productivity. From 1971-74 to 1985-88, the total cost of production per unit of output in case of wheat, rice and cotton declined at constant prices of 1971-72. But after 1985-88 to 1993-96 the total cost of production per unit of output experienced a marginal increase (Rs. 39.13 to 40.64 per quintal) in case of wheat, at a slightly higher rate in case of rice (Rs. 31.74 to Rs. 35.35) and sharp rise in case of cotton (from Rs. 90.39 to Rs. 166.67). The main reason for this has been a rise in fixed cost (due to over capitalization) both in the case of wheat and rice. But in the case of cotton both variable as well as fixed costs have increased during this period. With rising costs of production, the rise in minimum support price (MSP) at which market clearance takes place in Punjab, have not compensated the agricultural sector. Leaving aside the case of wheat - which continues to give a rising rate of return per hectare - return on rice declined from Rs. 684 to Rs. 298 in 1995-96 at constant prices and cotton declined from Rs. 1418 in 1991-92 to Rs. 217 in 1995-96 (Sidhu and Johl, 2002).

Similar findings are also reported by another study (Ghuman 2002). It is estimated that a 5 acre (2 hectare) farm in 1995-96 with existing level of technology generates a gross income of Rs. 72,370. After meeting paid out costs, a farmer is left with income of Rs. 40,740 from wheat-rice rotation. However, returns over cash costs for this farm with wheat-rice-dairy farming system increased to Rs. 42,180. This works out to be less than the salary of an unskilled worker in the service (public) sector which stood at Rs. 45,134 and for skilled worker at Rs. 73,224 per annum at minimum of their pay scales. Even by raising productivity by 10-15 per cent from the present 75 per cent of the realizable potential, these farmers can not be taken out of the poverty cycle (PAU, 1998). The present patterns of agricultural practices have put a question mark on the viability of small and marginal farmers who constitute 45 per cent of the total cultivators (1990-91). These cultivators remain trapped in agriculture for want of jobs, though many of them want to leave agriculture.

The rising cost of production and commercialization has made Punjab agriculture high cost and risk sensitive to crop failure. The falling income, along production period with occasional crop failure, accompanied by high consumption standards (determined by peak income levels) and inflated aspirations demonstrated by ostentatious expenditure on celebrations has brought various sections of the peasantry under mounting debt.

In 1997 it has been estimated that the debt burden on farmers of Punjab stood at Rs. 5,700.91 crore. The share of formal credit agencies (commercial banks and co-operative institutions) stood at 46.56 per cent while the share of non-formal credit agencies (commission agents 46.32 per cent and agricultural mortgages 7.12 per cent) was 53.34 per cent (Table 7). The average debt on per acre of cultivated land stood at Rs. 5,721 but it was the highest among small (and marginal) farmers i.e. 10,105 compared to 4228 (lowest) among the medium category of farmers (Table

8). The small and marginal farmers have a greater debt burden in relation to their resource base.

Moreover, it is this category of farmers who have a high mortgage debt. The mortgage debt makes their dependence on informal sources much greater than other categories of farmers (Shergill, 1998). It is a well-known fact that interest rate on informal debt is much higher than the formal debt. Some of the farmers from this category have resorted to suicide when pressed to pay debt or face auction of their land. The unbearable debt burden becomes deadly when there is crop failure due to floods, pest attack etc. Many of these farmers are facing crisis of viability and their existence as farmers is threatened.

Table 7: Estimates of Indebtedness of Punjab Farmers (Rs. crore) in 1997

Sr. No.	Nature of Debt	Credit Agency				Total
		Commercial Banks	Cooperative Institutions	Commission Agents	Agricultural Mortgages	
1.	Short Term Productive Credit (Annual Flow)	146.89	1059.86	1912.58	-	3119.33 (54.72)
2.	Long Term Productive Outstanding Loans	960.06	487.56	-	-	1447.62 (25.39)
3.	Long term Non-Productive Outstanding Loans	-	-	727.94	-	727.94 (12.77)
4.	Long term Mortgage Debt	-	-	-	406.02	406.02 (7.12)

	Total Debt	1106.95 (19.42)	1547.42 (27.14)	2640.52 (46.32)	406.02 (7.12)	5700.91 (100.00)

Note: Figures in parentheses are percentages.
Source: H.S. Shergill (1998), *Rural Credit and Indebtedness in Punjab,* IDC, Chandigarh.

Table 8: Size Classes and Indebtedness of Punjab Farmers

Sr. No.	Size Class	Total Debt (Rs. Crore)	Debt Per Operated Acre (Rupees)
1.	Small (up to 5 Acres)	1229.58 (21.57)	10,105
2.	Semi-medium (5-10 Acres)	1651.31 (28.97)	7,941
3.	Medium (10-15 Acres)	1694.49 (29.72)	4,228
4.	Large (Above 15 Acres)	1125.53 (19.74)	4,230
	All holdings	5700.91	5,721

Note: Figures in parentheses are percentages.
Source: H.S. Shergill (1998), *Rural Credit and Indebtedness in Punjab,* IDC, Chandigarh.

Market Clearance Problems

With the introduction of the Targeted Public Distribution System (TPDS) in 1997, the off take of food grains (wheat-rice) has fallen considerably compared to the allocation. This has led to building up of huge stocks of food grains with the government. Against the minimum norm of 24.3 million tonnes, the actual stocks of wheat and rice had increased to 33.1 million tonnes in July 1999, 42.2 million tonnes in July 2000, 61.7 million tonnes in July 2001 and 63.0 million tonnes in July 2002 (Government of India, 2002-03). This has put a heavy financial burden on the exchequer along with cost of management and logistic efforts for purchasing, handling, transportation and storage of these stocks. Under the new policy regime,

the government agencies have been entering late in procurement of food grains at the MSP, causing procurement and market crisis in Punjab. Punjab being the largest contributor (46.72 per cent in 2001-02) to central stock faces immediate crisis as and when procurement agencies show slackness in the market. This is reflected in the flooding of market yards with food grains at the time of harvest and loud protests by farmers against the procurement agencies. Farmers of the state have faced this situation every year for the last many years. This has led, many times, to a situation when farmers sell their produce at a price below the MSP. This has caused harm to farmers and lowered their income and added uncertainty to future procurement. A message has spread that procurement of wheat and rice is under threat.

The recommendation of the Sen Committee (July 2002) for the withdrawal of central agencies from procurement and replacement of state agencies in North-Western states, along with statements by Punjab Government spokespersons suggesting shifting crops away from wheat-rice rotation (following submission of report by Chief Minister's Advisory Committee on Agriculture Policy and Restructuring in 2002), contributed to the impression that wheat-rice crops are not needed in the state and future procurements, procurement price and market clearance are in doubt. The uncertainty about procurement at the MSP for wheat and rice and absence of any other viable cropping pattern, which would be equally remunerative, is a source of resentment and unrest among the farmers. The farmers have tried sunflower (oilseeds) vegetable and fruit cultivation in the past but failed due to problems of market clearance. Livestock, the second major source of income for rural people, is facing problems with stagnating prices of milk in face of rising cost of production. Further, degradation of the environment has put a question mark on the sustainability of agriculture. The present cropping pattern has put heavy pressure on the physical resources of the state. A resource that has been strained the most is water for irrigation. Irrigation is the lifeline of agriculture of the state. But the wheat-rice production system has created serious imbalance in the use of water resources. The total demand for irrigation water in a year in the state is estimated at 4.377 million hectare meters with existing technology and cropping pattern, against a total supply of 3.130 million hectare meters both from surface and annual recharge of groundwater sources. This is leading to an annual deficit of 1.247 million (39.84 per cent) hectare meters (Sondhi and Khepar, 1995). The over-exploitation of ground water resources through tube-wells has led to falling of the water table at an alarming rate. The proportion of area with more than 10 meters depth of water table increased from 12.7 per cent in 1973 to 29.8 per cent in 1996 and of 5-10 meters from 50.6 per cent to 56.1 per cent. There are only six blocks in Punjab which are 'white' as well as technically exploitable (Sidhu and Johl, 2002*)*. Most the area in the state falls either in the 'dark' or 'grey' blocks. This is likely to cause major drinking water problems both in rural as well as urban areas. With rivers getting polluted, canal water is increasingly becoming unfit for drinking. On the other hand, South-West Punjab is facing water logging due to greater supply of canal water, as ground water is saline.

The increased cropping intensity has over exploited the soil and lowered its fertility. Chemical fertilizers are excessively used leading to greater use of basic

elements of soil than what is added. The low application of organic manure has reduced the organic carbon to a very low level. Consequently, the soil has become poor in nitrogen (N). The same is the case with phosphorous (P). The soil has also become deficit in such micro-nutrients as iron and manganese. The area under forest cover is becoming alarmingly low (5.6 per cent). Thus, declining water resources, depleting quality of soil and degrading environment has put a question mark on the present cropping pattern and system of farming. Apart from the rising cost of production and falling incomes, the rural areas are likely to face new problems like drinking water scarcity and attack of old and new disease patterns, the signs of which are already visible in the state.

Agrarian Relations

The remarkable change, which Punjab agriculture witnessed as a result of the green revolution in production and productivity, has made the state agriculturally the most advanced amongst all states in the country. This change has also been observed at the level of technology and intensive use of modem inputs. These include mechanical implement/machines, chemical fertilizers, weedicides, insecticide and pesticides etc. and seeds of hybrid varieties and recently genetically modified. These changes have increased cropping intensity, per acre yield and production by several folds. The changes in the field of technology and inputs have made agriculture of the state a highly commercialized economic activity. Agriculture of the state is very sensitive to market conditions and signals. As mentioned in the earlier section, the increased risk and uncertainty influences a farmer's decision because agriculture is high cost and capital intensive. The changes in farm practices and orientation of agriculture towards the discipline of the market have significantly influenced agrarian relations.

Agriculture in the state is no longer a way of life. It has become a commercial activity where various decisions are governed by profitability/rate of return. Though some sections of farmers are trapped in agriculture, yet they are also substantially affected by market forces and take decisions accordingly. Agriculture of the state can be characterized by dominance of capitalism. On one side there are big farm households with operational holdings of above 10 hectares (25 acres) who cultivate 26.70 per cent of the area and constitute 6.01 per cent (in 199091) of the cultivators (Table 9). They include most enterprising farmers like potato growers of Jalandhar and Hoshiarpur region (Brar and Gill 2001), horse breeders and orchard owners of Muktsar and Bathinda region and like. Most of the politicians having rural origins belong to this category. They also have interests in urban property and business, particularly in transport, cinema, hotel, commission agent work etc. On the other extreme are agricultural labourers who constituted 31.62 per cent of work force in 1991 (and 22.0 per cent in 2001). They earn their living by selling their labour to cultivators, don't own any land and they also generally belong to the the scheduled caste (SC) and backward caste (BC) population. Above the agricultural labourer but quite near to them in economic status come marginal farmers each cultivating less than one hectare of land. They constituted 26.47 per cent of the farm households and cultivated 4.07 per cent of the total area in 1990-91. Above this category are small

farmers cultivating land holdings of 1-2 hectare. They account for 18.24 per cent of the farmers and cultivate 8.13 per cent of the cultivated area. The marginal and small farmers together account for 44.71 per cent of the farmers in the state and cultivate only 12.20 per cent of the land (Table 9). These categories of farmers are in serious crisis. They are fighting for their existence which is under threat. Caste-wise they belong to other categories of farmers (Jat Sikhs). They are in a debt trap with quite low income levels. There is a large chunk of farmers who cultivate area between 2-4 hectares and 4-10 hectares. These farmers constitute 25.85 per cent of the total and cultivate 20.87 per cent of the area while latter constitute 23.41 per cent the farmers and cultivate 40.46 per cent of the area. Both of these categories are called (lower and upper) medium farmers. They are considered to be very active and the backbone of farming in the state. They are moderately under debt and falling rates of return from cultivation is also affecting them.

Table 9: Size Class of Operational Holdings in Punjab (1990-91)

Sr. No.	Size Class	Number of holdings	Percentage
1.	Marginal (Below 1 Hectare)	295668	26.48
2.	Small (1-2 Hectare)	203842	18.25
3.	Semi-Medium (2-4 Hectares)	288788	25.85
4.	Medium (4-10 Hectares)	261481	23.41
5.	Large (Above 10 Hectares)	67172	6.01
	Total	1116951	100.00

Source: Agricultural Census of Punjab 1990-91.
Total operated Area = 4033000 hectares; Average size of holdings in Punjab = 3.651 hectares

Farm cultivation is highly mechanized and market-oriented both for input acquisition and output disposal. In terms of use of machinery, chemical inputs, hybrid varieties of seeds, irrigation, Punjab is ranked number one in the country (Bhalla and Singh, 2001). The cultivation in the state is organized on the basis of individually owned family farms.

The organization of agriculture is based predominantly on hired labour (Sidhu and Johl, 2002; Gill and Ghuman, 2001). All categories of farmers hire labour but medium and large farmers heavily depend on hired labour. Similarly all categories of farmers are producing a marketable surplus but medium and large farmers' share is much larger. There is differentiation among the farmers in terms of economic

status but unity in terms of caste composition, participation in labour hiring-in and selling of marketable surplus/output. The differentiation is also found in terms of educational levels of the farmers and the type of schooling their children are getting. The medium and big farmers are more educated and are increasingly sending their children to city based private English medium schools which are coming up in the rural areas also. On the other hand, the children of small and marginal farmers and those of agricultural labourers join government schools with miserable teaching standards. Punjab agriculture is at the threshold where the differentiation among the farmers will further result in marginalization of the small and marginal cultivators.

This process is already taking place via three routes. One root is via tenancy. In the earlier period (1950s), it was the small owners who leased in land to supplement their operational holdings and large owners unable to cultivate their land indulged in leasing out. But today it is the medium owners who lease in land and small owners lease out their land. Many marginal and small farmers with low income level are in search of jobs outside agriculture. As and when they find alterative source of employment they move out of agriculture, leasing out their land. Although large-scale empirical studies on this phenomenon are still lacking, a major shift of rural workforce away from agriculture during the last decade is partly explained by this factor. Consequently, a dominant form of tenancy, generally unrecorded, is the leasing in land by middle and big cultivators from small and marginal owners, often referred to as reverse tenancy (Gill, 1989; Singh, 1989; Singh and Grewal, 2001; Brar and Gill, 2001).

The second way of shifting land away from small and marginal owners is via mortgage. Faced with acute financial needs when other sources of credit, both formal and informal are closed, these poor farmers resort to mortgage of land, generally to medium and large cultivators (and sometimes to commission agents also). Of the total estimated mortgage loan (of Rs. 406.02 crore) the share of small (and marginal) farmers was 60.05 per cent in 1997. This is much larger (five times) than their combined share of (12.20 per cent) of the total area cultivated by them. The share of middle farmers was 10.03 while the share of large farmers was 29.92 per cent (Shergill, 1998). This indicates that some land via mortgages is getting transferred from small and marginal farmers to middle farmers.

Thirdly, some land is also getting transferred from small (and marginal) farmers to large cultivators through sale-purchase of land (Baldev Singh, 1982). Although recent studies on this aspect are not available yet this phenomenon is continuing in the rural areas. The scale of land transfers is low through mortgages and sale-purchase process. But transfers via tenancy are relatively high. These processes are leading to concentration of land with medium and large cultivators while small and marginal farmers are losing the battle and leaving cultivation.

The changing agrarian relations have replaced the traditional *Jajmani System* by employer-employee system in farm cultivation. Commercial relations have replaced the traditional support system for the weaker and the poor and they are losing their productive assets to the rich. The rich would like to purchase land and other resources of the weaker in crisis instead of helping him. This is the crux of agrarian relations in Punjab today, which also partly explains the phenomenon of suicides among farmers in some regions of the state.

2. Magnitude of the Problems and Causes of Suicides

The number of farmers and agricultural labourers committing suicide has been growing in the recent past especially between 1994 and 1997 (Bhalla *et. aI.,* 1998). But it is very difficult to arrive at the exact estimate of suicides in the rural areas especially by the poor cultivators and agricultural labourers. The obvious reason for lack of such statistics is the negative fall out of suicide cases for the family members left behind. If the suicide case is reported to the police (the necessary condition for recording it), then the case has to be registered by the police for investigation to establish the cause of the death and fix the responsibility to specific individual(s) responsible for the suicide. This involves a lot of harassment of the family members at the hands of the police officials. At the same time, the dead body of the victim has to be taken to the hospital for post mortem before cremation. This leads to delay in cremation and also removal of some organs from the body in addition to its disfigurement. The rural people do not appreciate this. Thus, most of the suicide cases are not reported to the police and are recorded as normal deaths caused by factors not related to suicides such as illness of various types. The estimates prepared by various individuals and organizations are mostly guesstimates. The data collected and presented by Hardev Singh Arshi, a Communist Party of India MLA in 1998 and by Sardar IndeIjit Singh Jaijee Ex. MLA (Akali Dal) are rough estimates. Both of these estimates are based on incidence of suicides in Sangrur, Mansa and Bathinda districts. These districts show a high tendency among farmers to commit suicide compared to other districts of the state. Any estimate based on the average of one or two or more blocks in the high intensity districts, is likely to generate over estimate of the number of suicide cases of farmers and agricultural labourers. There is no systematic study as yet conducted in Punjab to cover all districts of the state to arrive at accurate estimates of such suicide cases.

A study sponsored by the Government of Punjab (Bhalla *et. al.* 1998) to examine this phenomenon at the aggregate Punjab level based itself on police records which are very inaccurate on this issue for the above stated reasons. The studies based on sampled cases by individuals and organizations are extremely useful and contribute to our understanding of the emerging phenomenon of suicides among the distressed sections of rural population in the state. Reports from leading newspapers in the region (*The Tribune, Indian Express, The Hindu, Business Standards, Hindustan Times*) focused on this issue and made the public aware of this problem in the most agriculturally advanced state in the country. The farmer organizations attempted to mobilize the peasantry on this issue and linked it to the problem of indebtedness and especially to debt trap among the farmers. The issue became a subject of debate in political circles of the state with outstanding contribution by two politicians (Mr. Hardev Singh Arshi and Indeljit Singh Jaijee) and farmer and peasant organizations. The focusing of this issue in political circles was accompanied by three studies by academics based on areas and districts highly prone to farmers' suicides. The study by Bhalla *et. al.* examined the 53 confirmed cases of suicides spread over 14 villages (11 in Sangrur district and one each in Amritsar, Nawanshahar and Ludhiana district). The report brought out that 45.20 per cent of the victims were landless labourers, 24.50 per cent small and marginal

farmers (0-5 acre land holding), 18.80 per cent lower medium farmers (5-10 acre land holding), 5.60 per cent upper medium farmers and 5.60 per cent large farmers (15 and above acres of land holdings). This study showed that agricultural labourers and poor peasants or farmers accounted for 70 per cent of the suicides from the confirmed cases in the villages. It further brought out that the majority of the victims, 60.30 per cent belonged to young persons in the age group of 15-29 years and another 30.20 per cent belonged to the age group of 30-44 years. The relatively aged victims, of 45 years and above, constituted the remaining 9.50 per cent of the cases. In terms of educational attainment, 58.50 per cent of the cases belonged to illiterates, 11.30 per cent to primary level, 11.30 per cent to middle level of schooling and matriculation and above constituted 18.90 per cent of the total cases. The study reported that the largest cause of suicides was family discord accounting for 35.79 per cent of the suicides whilst alcohol and illicit drug use caused 17.89 per cent of the suicides. The economic causes, such as indebtedness (17.89 per cent), loss of status (16.84 per cent), lack of resources (6.32 per cent) and crop failure (1.05 per cent) accounted for 42.10 per cent of the suicides. The rest of the suicides were caused by death in the family (3.16 per cent), quarrel with in laws (1.05 per cent) and impotency (1.05 per cent). Compared to this, the study by Iyer and Manick (2000) based on 80 suicide cases from 7 villages of three blocks of Sangrur district (Lehragaga, Andana and Bama1a) has confirmed the findings of Bhalla *et. al.* in the matter of age group, educational level and socio-economic background but differed widely in the matter of causes of suicides. It has been brought out that economic factors such as distress have been primarily responsible for (78.75 per cent) suicides among the confirmed 80 cases. It is reported that pauperization and marginalization led to 32.50 per cent of the suicides. This was followed by crop failure and social factors (26.25 per cent), and poverty and unemployment (20.00 per cent). Alcoholism and drug addiction caused another 10 per cent of the suicides and marital tension was responsible for the remaining 11.25 per cent of the suicides. Another study, (Gill, *et. Al.,* 2000) based on 79 cases of confirmed suicides in 29 villages in the districts of Patiala, Sangrur, Mansa and Bathinda brought out similar findings to the previous two in terms of age group, educational background, socio-economic background including class and caste of the victims. The victims were generally from families of agricultura11abourers and poor cultivators, lacked education or had low level of schooling, were young in age and poor in terms of resource endowment. This study brought out not only primacy of economic distress among the weaker sections (poor peasants and agricultural labourers) but also explained the multiplicity of economic causes (more than one cause combining with another) leading to suicide. At the same time, it linked economic and non-economic factors with each working to the disadvantage of the victim. According to this study 83.6 per cent of the suicides were caused by purely economic factors, namely economic hardship (19.0 per cent) crop failure (5.1 per cent), indebtedness (15.2 per cent), economic hardship and indebtedness (15.2 per cent), economic hardship and crop failure (2.5 per cent), economic hardship, indebtedness and crop failure (16.5 per cent) and indebtedness and crop failure (10.1 per cent). Addiction to drugs caused only one suicide (1.3 per cent) and individual reasons or family tension led to 5 suicides (6.3 per cent). The remaining suicides were caused by economic

hardship, indebtedness and drug/alcohol addiction (3.8 per cent), economic hardship and drug/alcohol addiction (3.8 per cent), indebtedness and drug/alcohol addiction (1.3 per cent). Out of the 12 causes of suicide listed by the relatives of the victims 7 causes related to economic factors individually or in combination. There were only 2 causes that were purely non-economic. In the remaining three causes, economic and non-economic (mainly addiction) factors reinforced each other to cause suicides accounting for 8.9 per cent of the suicides cases. In most of the cases economic hardship and indebtedness independently or in combination with other factors led to suicide of the victims.

Thus, this study establishes a close linkage between economic hardship, indebtedness and suicide. This study further brought out that economic hardship/poor economic condition led to indebtedness and indebtedness (high interest rate) led to economic distress causing suicide. The study examined the immediate incidents that prompted the victim to take the extreme step. In 59.5 per cent of the cases it was a quarrel between family members, primarily caused by indebtedness and economic hardship.

The pressure of commission agents or banks for return of loan and fear of being arrested and consequently loss of social status led to 21.6 per cent of the suicides. The threat of land auction/notice caused 1.3 per cent of the suicides in the study area. The largest source of credit has been from non-institutional sources such as commission agents and landlords separately or in combination with commercial banks and co-operatives. The high interest rate charged on loans and diversion of loans for non-productive purposes or crop failure had placed them into a debt trap, creating pressure for suicides through a variety factors mentioned earlier.

These above studies bring out that the suicide cases among poor peasants and agricultural labourers are spread over all the three regions of Punjab i.e. Majha, Malwa and Doaba but there is high concentration of such cases in three the districts of Malwa. These districts are Sangrur, Mansa and Bathinda. These suicides are predominantly caused by economic distress and indebtedness. The highly commercialized form of agriculture accompanied by spirit of individualism and decline of traditional social support mechanism and non-existence of a formal safety system have pushed several rural poor into suicides when faced with acute economic hardship and indebtedness, along with social and family pressures associated with them.

3. Conclusion and Policy Implications

There is a need to organize a comprehensive survey in the state to arrive at accurate estimates of economic stress related suicides among the farmers and agricultural labourers. This task cannot be performed by an individual or a research institution on its own. This would require support and sponsorship of the Punjab government. The government can appoint an expert group to make estimates and analyze causes and suggest remedial measures to prevent this unfortunate phenomenon.

At the same time immediate steps are required for rehabilitation of families of poor peasants and agricultural labourers who have lost their earning members and are facing a destitute situation. This would require immediate compensation to the

family (Rs. 2.00 lakh) as support to the family, on the pattern of Andhra Pradesh. In a case where no earning member is left in the family, widow/old age pension scheme can be extended to such families. Since debt has been one of the prominent causes of suicide, a moratorium on debt originating from all sources, including debt from commission agents, landlords, banks, etc. should be declared immediately for such families. Ultimately the victim families must be freed from the pressure of debt burden by writing off all debts as a part of their rehabilitation.

The areas with high incidence of farmers and agricultural labourer suicides, especially Sangrur (particularly Andana and Lehragaga blocks), Mansa and Bathinda (Rampura, Phul) districts need special attention. It is a well-known fact that areas around the Ghaggar river have shown high proneness towards suicides. This is because of regular flooding of the areas causing regular crop failure, leading to economic hardship and high indebtedness. At the same time, this belt is also a cotton growing area. This crop has been facing devastating pest attacks, largely uncontrolled by pesticides. An end to this would require control over the sale of spurious pesticides on one hand and bio pest management on the other.

The whole of this regional belt is educationally the most backward in the state. As a long term measure, educational infrastructure need to be strengthened and rural schools especially must be made functional. It is not only literacy which matters but mean years of schooling which is crucial. Higher educational attainments empower individuals to understand their surroundings and change the environment favourably. The area is not only educationally backward but lacks urban linkages especially employment opportunities compared to the area around Amritsar-Delhi National Highway. Overall development of the region would require an area development approach. The requirement is not merely for economic development, it must be participatory in nature so as to distribute its benefits to the disadvantaged sections of society. Without this type of development, suicides among the poor peasants and agricultural labourers cannot be controlled in the long run. In this task, social movements have a major role to play. It is social movements and their pressure that can make governments attend to the problem. The concerned scholar can only raise this issue in the media, analyze the causes and suggest alternative policy measures. Ultimately it is for civil society and the government to respond positively and take preventive and curative measures.

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