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Agrarian Scenario in Post-reform India: A Story of Distress, Despair and Death

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Abstract

Indian agriculture today is under a large crisis. An average farmer household's returns from cultivation would be around one thousand rupees per month. The incomes are inadequate and the farmer is not in a position to address the multitude of risks: weather, credit, market and technology among others. Social responsibility of education, healthcare and marriage instead of being normal activities add to the burden. All these would even put the semi-medium farmer under a state of transient poverty. The state of the vast majority of small and marginal farmers and agricultural labourers is worse off. An extreme form of response to this crisis is the increasing incidence of farmers' suicides. In such situations, employment programmes can provide some succour to the agricultural labourers and also perhaps to the marginal and small farmers. The least that one can expect from such programmes is rent-seeking. Some recent evidences indicate that one can develop institutions to address this. It is this that gives a glimmer of hope in the larger story of distress, despair and death.

Incidentally, this paper provides some estimates from National Sample Survey (NSS) region wise information on returns to cultivation and on some aspects of farmers' indebtedness based on the 33rd schedule 59th round survey of 2003. It provides suicide mortality rate for farmers, non-farmers and age-adjusted population across states of India from 1995-2004.

Key words: Agrarian crisis, agricultural indebtedness, farmers' suicides, employment programmes, value of output in agriculture

JEL Code(s): I31, O13, O53

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1. Introduction

In recent years, the growth of the Indian economy at about eight per cent per annum is considered as a success of the reform process initiated in the 1990s. This is analogously called as the rise of the Indian elephant which, of course, is different from the Chinese dragon. Is this poetic phrase justified; or, is it a satire? The grace and beauty in the elephants stride seems to be missing – "India shines, but Bharat falters." The impressive growth in recent years is largely a story of the urban-based service sector and to a lesser extent for industry whereas agriculture is lagging behind. Today, agriculture accounts for less than one-fourth of the gross domestic produce but employs nearly three-fifths of the total work force. Within agriculture, the incremental value addition in output indicates a shift away from traditional crops to high value crops like fruits & vegetables that hardly have any presence under the gross cropped area. The growth of the cereals, propelled largely by rice and wheat through the green revolution, is also not very encouraging in the recent past.

Overall, income from cultivation is inadequate. It becomes difficult for the farmer to plan for all possible risks: vagaries of nature (primarily, inadequate or excessive water), market related uncertainties such as increasing input costs and output price shocks, unavailability of credit from institutional sources or excessive reliance on informal sources with a greater interest burden and new technology among others. With the decline in extension service he has to rely on the input dealer leading to supplier-induced-demand. This has adverse implications on the livelihoods of the cultivators, most of whom are marginal and small farmers, as well as for agricultural labourers. This is indicative of a larger agrarian crisis. Response to the crisis would be different among different sub-groups and vary across different regions. One of the extreme forms of reaction is reflected through the increasing incidence of farmers' suicides. If the state of farmers is critical then that of the agricultural labourers would be worse off.

In this paper we further elaborate about the changing agrarian scenario, increasing incidence of farmers' suicides and also on some public policy interventions with regard to employment programmes in sections 2-4 respectively. Concluding remarks are in section 5.

2. Changes in Agrarian Conditions[2]

Agriculture's contribution to the gross domestic produce in India has reduced from 56 per cent in 1950-51 to 23 per cent in 2005-06 whereas as per the 2001 census 58 per cent of the total work force and 73 per cent of the rural workers are still dependent on agriculture. This also indicates that rural non-farm employment opportunities are limited. Between 1960-61 and 2002-03, the number of agricultural operational holdings in rural India during Kharif nearly doubled from 53 million to 102 million.

[2] For some recent discussions on the agrarian crisis see Rao and Gopalappa (2004), Mohanty (2005), Reddy (2006), Reddy and Mishra (2006), Vaidyanathan (2006) and Vyas (2004) among others.

Composition across size-class after including landless indicates that large (above 10 hectares), medium (4-10 hectares) and semi-medium (2-4 hectares) categories have been declining from the 1960s, small (1-2 hectares) size-class started declining from the 1970s with absolute numbers declining in the 1990s, marginal (0.002-1 hectares) size-class declined in the 1990s with absolute numbers increasing from 45 million in 1990-91 to 48 million in 2002-03 and nil (0-0.002 hectares) category which declined from 27 per cent in 1970-71 to 22 per cent in 1990-91 has increased to 32 per cent in 2002-03 (National Sample Survey Organisation (NSSO) 2006). After excluding Jammu & Kashmir and Manipur the census figures indicate that from 1991 to 2001 the total number of cultivators remained around 125 million whereas that of agricultural labourers increased from 86 million to 106 million. In short, the dependence on agriculture is increasingly among the ranks of agricultural labourers and marginal farmers.

In the 1990s (1990-91 to 1999-2000) the index of farm income remained around 100 whereas consumer price index of agricultural labourers more than doubled from 100 to 219 and this has led to widening disparities between agricultural and non-agricultural income (Reddy 2006). The index of agricultural production increased from 100 at triennium ending 1981-82 to 170 in the triennium ending 2003-04 (Reserve Bank of India (RBI) 2005). Comparing trends in growth rate in production, area and yield in the 1980s (TE 1981-82 to TE 1992-93) and 1990s (TE 1993-94 to TE 2004-05) for major crop groups one observes that the growth rates have been significantly lower in production and this is largely because of the lower growth rates is yield for most of the crop groups (Table 1).

Table 1
Growth Rate of Production, Area and Yield (Per cent per Annum): Comparing 1980s and 1990s

Crops	Production		Area		Yield	
	1980s	1990s	1980s	1990s	1980s	1990s
Total Foodgrains	3.0 *	1.0 * #	-0.3 *	-0.3 *	3.3 *	1.3 * #
Total Cereals	3.2 *	1.2 * #	-0.3 *	-0.2 *	3.5 *	1.4 * #
Rice	3.8 *	0.9 * #	0.6 *	0.2	3.2 *	0.6 * #
Wheat	4.0 *	1.9 * #	0.7 *	0.8 *	3.2 *	1.1 * #
Coarse Cereals	0.6	0.1	-2.0 *	-1.7 *	2.6 *	1.9 *
Pulses	1.5 *	-0.5 #	-0.1	-0.6 *	1.6 *	0.1 #
Total Oilseeds	6.6 *	0.0 #	3.7 *	-0.9 * #	3.0 *	0.9 * #
Sugarcane	3.9 *	1.4 * #	2.1 *	1.6 *	1.8 *	-0.2 #
Cottn (Lint)	4.2 *	0.3 #	0.2	1.4 *	4.0 *	-1.0 #
Jute & Mesta	0.9 *	2.2 *	-1.8 *	0.8 #	2.8 *	1.4 * #

Note: Growth rate has been calculated using kinked exponential method, ln (Yt) =a+b(dt+(1-d)k)+c((1-d)(t-k)+et; t=0,…T denotes time, d is a dummy variable (d=1 for sub-period period 1 of 1980s from triennium ending (TE) 1981-2 to TE 1992-93 and d=0 for sub-period 2 of 1990s from TE 1993-94 to TE 2004-05), k=12 is the breakpoint at TE 1993-94. The years TE 1981-82 and TE 1993-94 are taken as start and breakpoints because they are considered as base periods for agricultural purposes and would help us compare between these two periods. * indicates that the growth rate for that period is significantly different from zero at 95% CI and # indicates that the growth rate between the two periods are significantly different at 95 per cent CI.
Source: Computed from data given in RBI (2005)

Using slightly different periodization, Singh (2006) observes similar differences in the annual compound growth rates for the two periods. He also indicates that in the 1980s

the growth in value of output per hectare at 2.2 per cent per annum was slightly higher than costs 1.8 per cent per annum whereas in the 1990s the growth in value of output at 0.9 per cent per annum was lower than that of costs at 1.2 per cent per annum and as a result farm business income in recent years has not increased much. Incremental value addition in agriculture (TE 2002-03 over TE 1992-93) shows a shift towards high value addition crops like fruits and vegetables (Appendix 1). A calculation for Maharashtra indicates that increase in value of output in recent years is largely for fruits and vegetables that account for less than 5 per cent of the gross cropped area. Evidence from Telengana, Andhra Pradesh indicate that between 1986-2000 real agricultural output growth is significant whereas at the same time there have been significant welfare declines not only for agricultural labourers and marginal farmers, but also for other groups; growth and distress seem to be intertwined (Vakulabharanam 2005).

In 2002-03, the average returns from cultivation per hectare in India are Rs.6756/- in Kharif and Rs.9290 in Rabi (Appendix 2). From the total farmer households, 86 per cent with an average land size of 1.2 hectares in Kharif and 62 per cent with an average land size of 0.9 hectare in Rabi had cultivated. Paid out expenses as per cent of value of output is about 44 per cent in Kharif and 42 per cent in Rabi. This is likely to be higher if one includes imputed family labour or rent on account of own land. Besides, some pattern could be hidden because the calculations are aggregated across all crops. There is wide inter-state variation. Compared to the national average, one observes relatively lower returns per hectare and greater share of expenses in the states of Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Rajasthan and Tamil Nadu during Kharif. This could be indicative of high costs or crop failure. Share of expenses to the value of output is less than 30 per cent in most of the hilly states: Himachal Pradesh, Jammu and Kashmir, Jharkhand, the Northeast states and Uttaranchal indicating that dependence on market based inputs could be much lower here.

Average returns from cultivation is Rs.11,259/- per annum (Table 2).[3] About 60 per cent and 10 per cent of farmer households obtain some returns from farm animals and non-farm business respectively and the monthly returns from these per farmer households are Rs.85/- and Rs.236/- respectively. In addition, farmer households will also get income from wages and salaries. As expected, returns per household increases with land size. Average family size also increases with land size indicating that the increase in per capita returns would not be as large. Across caste groups, scheduled castes (SCs, who generally own the marginal lands) have the least returns and above them are scheduled tribes and from both these groups the other backward castes fare better, but the returns for all these three groups is lower than the overall average. Overall, there is not much diversification and the income of an average farmer household from cultivation would hardly suffice to meet some basic day-to-day requirements.

[3] Value of output in agriculture in constant 1993-94 prices was lower in 2002-03 in comparison with the previous year by about 12 per cent. To account for this if one increases the returns from cultivation by one-third then also it would be less than Rs.15,000/- per annum. Given a family size of 5.5 the per capita per day returns from cultivation turn out to be less than Rs.8/-. Under such scenario, other sources become necessary if the farmer household has to stay above the poverty line.

Table 2
Returns to Cultivation, Farm Animals and Non-Farm Business for Farmer Households, 2003

Sub-groups	Prop of farmer HH, %	Returns from Kharif per annum, Rs	Returns from Rabi per annum, Rs	Returns from Farm Animals (30 days), Rs	Returns from Non Farm Busi-ness (30 days), Rs	Average Family Size
Land size						
Near landless	9.9	367	462	125	339	5.0
Marginal	55.6	3243	2667	88	223	5.2
Small	18.1	8098	5922	100	181	5.7
Semi-Medium	10.6	13880	10596	69	188	6.2
Medium	4.8	22841	20940	75	422	6.9
Large	0.9	33494	34600	122	507	7.5
Caste						
SC	17.4	3123	2693	23	213	5.4
ST	13.3	6256	2746	79	138	5.3
OBC	41.5	5237	5044	92	238	5.6
Others	27.6	9559	7695	140	293	5.5
Like farming as a profession						
No	40.1	4156	3337	71	263	5.5
Yes	59.5	7606	6237	103	213	5.5
Total	100.0	6200	5059	85	236	5.5

Note: HH=Household, Rs=Indian Rupees. Near landless=0-0.099 hectares (ha), Marginal=0.1-1 ha, Small=1.001-2, Semi-Medium=2.001-4 ha, Medium=4.001-10 ha, Large>10 ha. Information on caste and whether they like farming as a profession was not available for 0.1 per cent and 0.4 per cent respectively. Returns to Kharif and Rabi are calculated by subtracting paid out expenses from the value of output, which includes by-products. It does not include family labour or rent for own land. Returns from farm animals and non-farm business are calculated based on 30 day recall. The farmer households will also have other sources of income like wages and salaries.
Source: Calculated from unit level data using 33rd schedule, 59th round of National Sample Survey (NSS) on Situation Assessment Survey of Farmers.

At a time when one would require greater inputs from the state, it seems to be withdrawing. This is evident from decline in public investment, in the reduced role of formal credit institutions and poor extension service among others. We elaborate on these. Gross fixed capital formation in agriculture as a proportion of gross domestic product (GDP) declined from 3.1 per cent during 1980-85 (Sixth plan) to 1.6 per cent during 1997-2002 (Ninth plan) in 1993-94 prices (Table 3). During the same period, gross fixed capital formation in agriculture as a proportion of total gross fixed capital formation declined from 13.1 per cent to 7.4 per cent and proportion of plan expenditure towards agriculture & allied activities declined from 6.1 per cent to 4.5 per cent.

Table 3 Capital Formation and Plan Expenditure in Agriculture			
Year	GFCF in Agr as % of GDP, India	GFCF in Agr as % of total GFCF, India	Exp on Agr & Allied as % of total Plan Exp, India
1980-85, Sixth Plan (Actuals)	3.1	13.1	6.1
1985-92, Seventh Plan (Actuals)	2.3	9.6	5.9
1992-97, Eighth Plan (Actuals)	1.9	7.4	5.1
1997-2002, Ninth Plan (Actuals)	1.6	7.4	4.5
Note: GFCF indicates Gross Fixed Capital Formation, GDP indicates Gross Domestic Product at Factor Cost, Exp indicates expenditure, Agr indicates Agriculture. Source: Mishra (2006a).			

In recent years, using 1999-2000 prices one observes that gross fixed capital formation in agriculture has declined from 2.2 per cent in 1999-2000 to 1.7 per cent in a quick estimate of 2004-05. The demand and use of water in domestic consumption (particularly, in urban areas) is also on the rise. These have an adverse impact on irrigation and consequently on availability of water for agricultural purposes. In other words, it is the marginal and small farmers who bear the brunt of unavailability of water and its associated yield uncertainty.

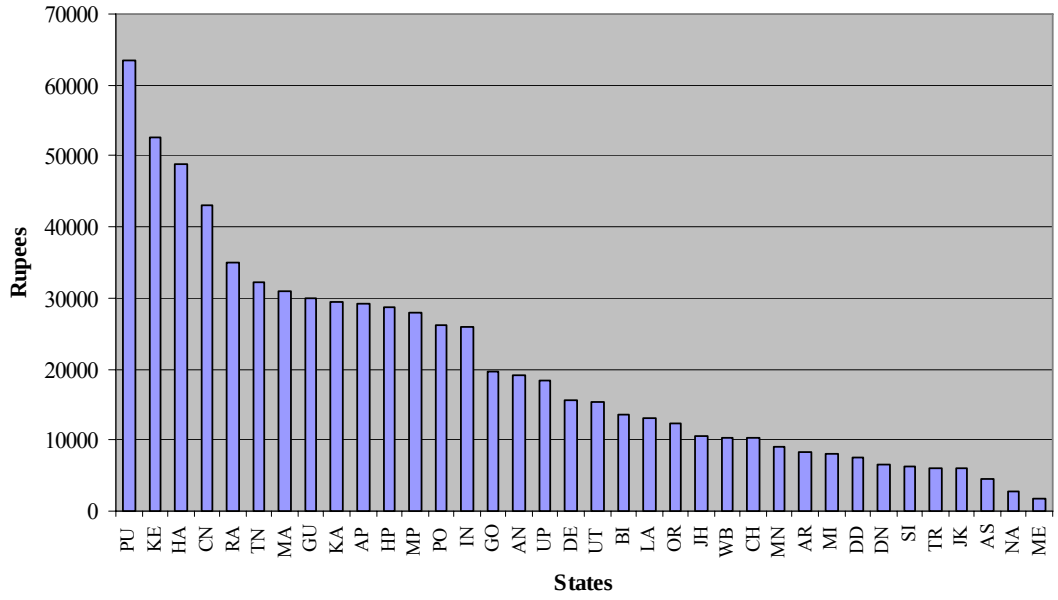
During the 1970s and 1980s the banking industry through affirmative measures led to deployment of credit in agricultural sector. As a result, the scheduled commercial banks share of credit to agriculture increased from 9 per cent in December 1972 to nearly 18 per cent by December 1987 and thereafter the share of agricultural credit declined. The increase in 1970s and 1980s was largely realized through the earmarking of credit for priority sector lending and that too through direct advances. Over time, there was some dilution as it allowed for achieving one-fourth of the target in the form of indirect advances. Despite this, both direct and indirect credit declined to 11 per cent by March 2004. Concurrently, the number of agricultural loan accounts in scheduled commercial banks that had reached a peak of 27.7 million by March 1992 declined to 20.3 million by March 2002 and is at 21.3 million by March 2004 (Shetty 2006).

The Situation Assessment Survey of Farmers of 2003 (NSS 59th round) indicates that nearly 49 per cent of farmer households are indebted with the average outstanding amount per indebted farmer household being Rs.25902/-. The states with a higher average outstanding amount of indebtedness are Andhra Pradesh, Chandigarh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Pondicherry, Punjab, Rajasthan and Tamil Nadu (Figure 1). These are also the states with a relatively higher proportion of farmer households indebted, and hence, amount outstanding per farmer household is also higher than the all India average in all these states expect for Himachal Pradesh (Appendix 3).

Purpose wise distribution indicates that nearly 58 per cent of outstanding debt is for agricultural purpose (31 per cent capital expenditure and 28 per cent current expenditure), 7 per cent for non-farm business and the remaining 35 per cent is for consumption or other purposes (NSSO 2005). The states with relatively higher proportion of outstanding debt for current expenditure are Andhra Pradesh, Chattisgarh, Gujarat, Karnataka, Maharashtra, Meghalaya and Punjab. Some of the Northeast states and other hilly states indicated that more than 10 per cent of the

outstanding debt was for non-farm business; of course the amount of outstanding debt in these states was much lower. One exception is Himachal Pradesh where amount of outstanding debt is higher and 29 per cent of the outstanding debt is for non-farm business.

Figure 1: Outstanding Amount per Indebted Farmer Household



Note: AN=Andaman & Nicobal Islands, AP=Andhra Pradesh, AR=Arunachal Pradesh, AS=Assam, BI=Bihar, CH=Chattishgarh, CN=Chandigarh, DD=Daman & Diu, DE=Delhi, DN=Dadra & Nagar Haveli, GO=Goa, GU=Gujarat, HA=Haryana, HP=Himachal Pradesh, IN=India, JH=Jharkhand, JK=Jammu & Kashmir, KA=Karnataka, KE=Kerlal, LA=Lakshadweep, MA=Maharashtra, ME=Meghalaya, MI=Mizoram, MN=Manipur, MP=Madhya Pradesh, NA=Nagalan, OR=Orissa, PO=Pondicherry, PU=Punjab, RA=Rajasthan, SI=Sikkim, TN=Tamil Nadu, TR=Tripura, UP=Uttar Pradesh, UT=Uttaranchal, WB=West Bengal.
Source: Calculated from unit level data using 33rd schedule, 59th round of National Sample Survey (NSS) on Situation Assessment Survey of Farmers.

Source wise distribution suggests that 58 per cent are from formal sources (Government 2.5 per cent, Cooperatives 19.6 per cent and Banks 35.6 per cent); more than one-fourth of the outstanding debt is from moneylenders and the rest from other informal sources. The states with relatively higher proportion from moneylenders are Andhra Pradesh, Bihar, Manipur, Punjab, Rajasthan and Tamil Nadu. The proportion from moneylenders as well as other informal sources is much lower in Maharashtra where more than half of the loan is from Cooperatives and more than one-third from Banks. Nearly 70 per cent of the outstanding amount is from loans that are more than a year old, that is, they are carried over from earlier agricultural seasons. This is nearly three-fourths is Maharashtra with 84 per cent of these being from formal sources. When we consider the small and marginal farmers then the share of outstanding amount from formal sources is less than 25 per cent. This is of concern because 84 per cent of all farmer households are from this category. These are indicative of a huge unmet demand and as a consequence, a substantial amount of current loans is likely to be from informal sources. Field survey observations in western Vidarbha of Maharashtra indicates that from the outstanding debt of loans

taken in 2004 nearly 72 per cent for suicide case households and about 38 per cent for control households are from informal sources.

The farmer is increasingly dependent on the market for inputs. Usage of seeds from own produce are being replaced by hybrid varieties and now with the costlier genetically modified varieties (particularly, in Cotton). Farmers are led into situations where they have to use greater and greater dosage of fertilizers to maintain productivity. Spraying of pesticides has increased over years as the pests develop immunity, but they also have an adverse effect by killing the friendly pests. With new inputs there is a change in technology of cultivation. The farmers existing knowledge becomes redundant; there is deskilling. In the absence of professional extension service, the farmers are dependent on advice from input dealers leading to supplier-induced-demand. There have been instances of villages opting for a second/third sowing during deficient rainfall years without any dependence on irrigation or even ground water. Besides overuse, usage of spurious varieties of inputs is also a matter of serious concern. Situations where seed sown have led to healthy growth of the plant but do not yield any produce lead to a suspicion that genetically modified terminator seeds are being sold under cover.

Case study of a farmer owning eight acres of unirrigated land in Yavatmal suggests the following. In 2004, he cultivated cotton in five acres where he had to go in for a second sowing due to delay in rain. This has led to an increase in seed expenses, but the expenses incurred in the second instance was reduced by half by going in for a different variety and using some left over seeds.[4] The total expenditure on seed was Rs.7500/-. After including expenditure on fertilizer (Rs.5000/-), pesticides (Rs.3000/-) and labour (Rs.2000/-) his total costs are Rs.17500/-. He got a produce of 15 quintals, which he sold to the Maharashtra State Cooperative Cotton Growers Marketing Federation (MSCCGMF) through the monopoly cotton procurement scheme (MCPS). At the time of survey, he had received Rs.1500/- per quintal and was expecting another Rs.500/- per quintal. After receiving this balance amount his net income will be Rs.12500/-. The remaining three acres, used for cultivating crops for consumption purposes, under a deficient rain did not give much return. A good crop (say, 4 quintals of Cotton per acre) would have taken this farmer above the poverty line, but now he is below the poverty line.[5] This depicts that the transient state of poverty of even a semi-medium farmer household. The situation would be worse for marginal/small farmers who are likely to have lower access to credit from formal sources. A tenant farmer will also have additional costs in the form of rent. Further, because of lower volumes of produce or immediate cash requirement or non-legal status of tenancy they may end up selling the produce to traders at lower then the price prevailing in market centres. A slight dip in the price of produce will also have an adverse affect on their income.

[4] It is generally the case that in an acre of land one packet of seeds (910 grams) that costs around Rs.450/- to Rs.500/- for non-Bt varieties and Rs.1600/- for legal Bt varieties would suffice (in 2006-07 agricultural season, due to a court judgement price of legal Bt varieties have come down to about Rs.1250/- per packet). However, due to a guaranteed germination rate of 65 per cent only, farmers end up sowing two instead of one seed and thereby increasing the seed requirement. Under assured water, such practices might reduce.

[5] Updating the Planning Commission poverty line for rural Maharashtra to 2004 one gets an income of Rs.4037/- per person per annum (that is, Rs.336.45 per capita per month).

Opening up of the economy has led to certain cash crops like Cotton and Pepper among others being exposed to greater price volatility. Excess international supply of Cotton at a lower price is also because of direct and indirect subsidies leading to dumping by the USA. Domestic policies in India have led to removal of quantitative restrictions and subsequently reduction of import tariff from 35 per cent in 2001-02 to 5 per cent in 2002-03 increasing our vulnerability to the volatility of international prices. It is at this critical juncture when there is a greater need of price stabilization that the monopoly cotton procurement scheme (MCPS) of Maharashtra has become non-functional. Disbanding of this scheme in 2005-06 has in fact led to a reduction of Rs.500/- per quintal advance additional price that has in recent years acted as a cushion against the higher costs in the state. The commission for agricultural costs and prices estimates the cost of production for cotton in Maharashtra at Rs.2303/- per quintal, but the all India minimum support price for the long staple variety of fair average quality is only Rs.1980/-.

The larger agrarian crisis has an adverse affect on farm households. A symptom of this crisis is reflected in the increasing incidence of farmers' suicides.

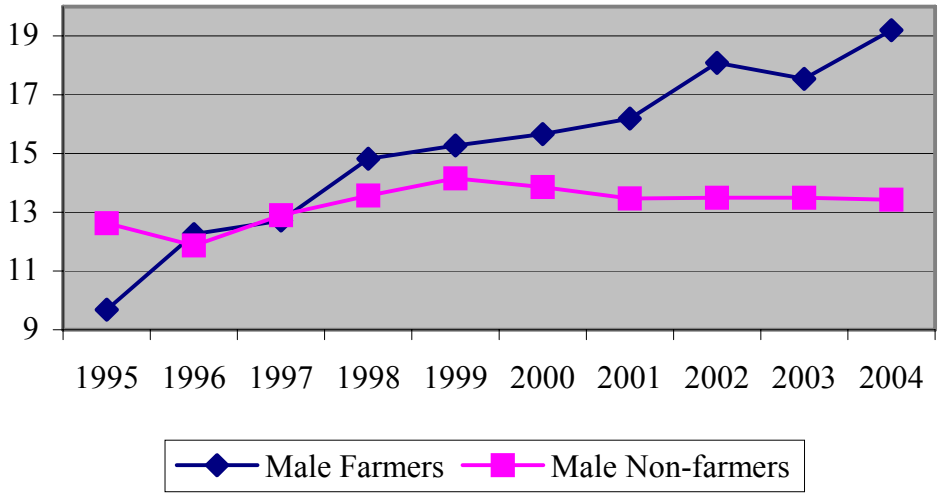
3. Farmers' Suicides in India[6]

In recent years, farmers' suicides in India have attracted wide media, public policy and scholarly attention. In India, there have been 156,562 farmer suicides during 1995-2004. From these, more than four-fifths are males. The suicide mortality rate (SMR, suicide death per 100,000 persons) for male farmers nearly doubled in ten years from 9.7 in 1995 to 19.2 in 2004. SMR for male non-farmers has veered around 13; it increased from 12.6 in 1995 to 14.2 in 1999 and then decreased to 13.4 in 2004 (Figure 2).[7] Conditions should be created such that the possibilities of committing suicide should be reduced. Suicide being a rare event, relatively higher incidence among a sub-group could be indicative of a larger socio-economic malaise. For every individual committing suicide, there could be many more in a state of despair. Inclusive development should address the larger crisis.

[6] Some related discussions are in Mishra (2006a, 2006b, 2006c, 2006d and 2006e).

[7] The SMR estimates of 2004 are based on provisional data. On the method used for calculating SMRs see Mishra (2006c). For trends in SMR for farmers, non-farmers and age-adjusted general population from 1995 to 2004 see Appendix 4.

Figure 2: SMR for Male Farmers and Male Non-farmers in India, 1995-2004



Note: SMR for farmers are based on interpolated/extrapolated population for cultivators using 1991 and 2001 census. For details, see Mishra (2006c).
Source: National Crime Records Bureau (NCRB) (Various Years).

In 2004, the states/union territories with SMR for male farmers higher than the national average are Andhra Pradesh (44.5), Goa (32.1), Karnataka (35.4), Kerala (183.0), undivided Madhya Pradesh (27.7) Maharashtra (57.2), Sikkim (40.5), Tamil Nadu (43.7), Dadra & Nagar Haveli (42.5), Delhi (49.4) and Pondicherry (1495.4).[8] Together these states account for nearly four-fifth of farmer suicides in 2004, more than half from the states of Andhra Pradesh, Karnataka, Kerala and Maharashtra, another one-fourth from undivided Madhya Pradesh and Tamil Nadu and the remaining five smaller states/union territories contributing for a little more than one per cent. As indicated earlier, higher farmers' suicide is symptomatic of a larger agrarian crisis. Some of the systemic risks (faced by a large number of households) have been discussed in the previous section.

Now, we take up discussion on idiosyncratic factors based on field survey in western Vidarbha, Maharashtra. From the 111 suicide cases analyzed, 91 per cent were males, 55 per cent in the age group of 31-50 years, and 80 per cent were currently married, nearly 40 per cent were matriculates or with higher education, 58 per cent had more than 10 years of experience. The size-class of land shows that 53 per cent were marginal and small farmers with less than 5 acres of land.

Analysis of suicide case household indicates that on average 4.8 risk factors were identified per case. Some of the socio-economic risk factors identified are indebtedness (87 per cent), deterioration of economic status (74 per cent, conflict with other members in the family (55 per cent), crop failure (41 per cent), decline in social position (36 per cent), burden of daughter's/sister's marriage (34 per cent), suicide in a nearby village (32 per cent), addictions (28 per cent), change in behaviour of

[8] The high SMR among farmers in Pondicherry is because of their low population, less then 10000 were cultivators as per 2001 census.

deceased (26 per cent), dispute with neighbours/others (23 per cent), health problem (21 per cent), a recent death in the family (10 per cent), history of suicide in the family (6 per cent) and other family members being ill (4 per cent). These factors are not mutually exclusive. They can co-exist and are also interrelated such that they can feed into each other and aggravate each other (see case studies in Box 1).

Box 1: Cases of Suicide Death by Farmers in Vidarbha

Case A: 45 years male. The household has 6 acres of land and has an annual income of Rs.35000/-. Discussion revealed that: (i) delayed monsoon led to double/triple sowing increasing input costs for the household (ii) the deceased individual had entered into cotton trading for which he had taken loans and invested on other farmers and as a result the impact of crop failure by other farmers would also add to his burden, (iii) the individual had plans of getting at least one of his daughters married, (iv) he was also contemplating of contesting the local Sarpanch elections indicating that any economic downfall would effect his social reputation immensely. From this case one can infer that there is a complex interplay of multiple causes that are not mutually exclusive. After the demise of this individual there were three/four cases in nearby villages in about 7-10 days. This suggests a cascading effect. People from neighbouring villages who also had their own problems could relate to someone who is also a peasant like them.

Case B: A young man in his early 20s. Few years ago his father was not well and he took over the reigns of cultivation and experimented with input intensive cultivation. From the returns he could spend on father's treatment, expenses on a sister's marriage and improved the overall economic condition of the household. Other farmers also started taking advice from him. He was confident of a good crop and initiated plans for getting the other sister married. He had also told his mother that he would like to get married to a girl from a poorer household without taking any dowry. To his dismay, the crop failed …

Case C: 52 years, male. They had 52 acres of land at one time, but now they have 36 acres only – indicating a scenario where economic position is declining. The individual had outstanding loan from formal as well as informal sources and a couple of days before the fateful incident, the private moneylender had visited and insisted on being returned the money or transferring ownership of some land. There were two daughters of marriageable age. There was a burden on higher education of his children. The deceased had been talking some time ago with his children about other suicide cases and given his opinion that that is no solution; this perhaps gives a faint indication that he might have been contemplating suicide for some time.

In 79 per cent of the cases, suicide was committed by consuming pesticides. This brings into the question of easy accessibility of a lethal toxic element. A hospital that can treat emergencies like poisoning is on an average more than 20 kilometers away – this limits the access to care.

Comparing suicide cases with non-suicide controls, on an average the former have an outstanding debt that is 3.5 times higher per household (Rs.38444/- compared to Rs.10910). Even after normalizing by family size and land size the outstanding debt in suicide case households is nearly three times higher. The former have relatively

lower ownership of assets and access to basic amenities - (particularly, bullocks a productive and liquid asset is owned by 43 per cent of suicide case households compared to 64 per cent of non-suicide control households). Average family size in suicide case households at 5.53 is greater than that of non-suicide control households at 5.08. The greater family size is particularly true for the number of female members. The average value of produce per suicide case households at Rs.23 thousand is about 55 per cent of the average value of produce per non-suicide control households. The case-control analysis points to greater hardship among suicide case households.

A statistical exercise is done to compare case-control households. Households suicide status is a binary dependent variable, Y; 1=case and 0=control. The independent variables, X_i's, are outstanding debt in rupees, a yes/no binary variable on ownership of bullocks, outstanding debt per acre in rupees, family size and value of produce per acre in rupees. Using these, we estimate a step-wise logistic regression, [9]

$$\ln[p/(1-p)]=\alpha+\beta_i X_i+u;\ i=1,\ldots 5.$$

where ln is natural logarithm, p is probability of obtaining a suicide case household, ln[p/(1p)] is the log odds ratio of a suicide case household, α is a coefficient on the constant term, β_i's are the coefficients of the independent variables, X_i's, and u is error term.

While discussing results, instead of coefficients, odds ratio, $e^{\beta i}$, are given because the interpretation is more intuitive – for a unit increase in the independent variable there would be a corresponding change in the odds ratio (probability of a suicide case/probability of a non-suicide control).

The result for complete case-control analysis of the 68 pairs of observation is as follows. It gives outstanding debt and absence of bullocks as statistically significant variables that differentiate suicide case from non-suicide control households (Table 4). It suggests that if outstanding debt increases by Rs.1000 then the odds that the household is one with a suicide victim increases by 6 per cent and if the household owns bullocks then the odds that it is a household with a suicide victim decreases by 65 per cent. Under other restrictions, that is, by controlling for land size, caste or district we also observe that family size and value of produce are significant in explaining differences between suicide case and non-suicide control households.

[9] In the step-wise procedure, a variable is added if it increases chi-square significance by 0.05 and it is dropped if it increases chi-square significance by 0.1.

Table 4
Results (Odds Ratio) of Stepwise Logistic Regression Analysis

	Complete Case-Control Analysis	Similar Land Size	Same Caste	Yavatmal District
N	136	110	70	80
Debt	1.000061			1.000055
	(0.0000138)			(0.0000176)
	[0.000]			[0.002]
Own Bullocks	0.3462934		.2092665	0.3084751
	(0.1403603)		(.1139936)	(0.1685215)
	[0.009]		[0.004]	[0.031]
Debt per Acre		1.000325		
		(.0000776)		
		[0.000]		
Family Size			1.352608	
			(.2021914)	
			[0.043]	
Value per Acre				0.9997575
				(0.0001234)
				[0.049]
Log Likelihood	-74.6497	-61.682649	-42.619212	-42.176024
LR Chi2	39.24	29.13	11.80	26.55
Prob >Chi2	0.0000	0.0000	0.0027	0.0000
PseudoR2	0.2081	0.1910	0.1216	0.2394

Note: Round brackets give standard error, square brackets give prob > |z|. The variables are indicated in the order in which they were selected in the step-wise logistic regression.
Source: Mishra (2006a)

There are a couple of points on the administrative or legal dimensions. First, as per the Indian Penal Code (IPC) 309, attempt to suicide is considered a criminal act. This negates the thinking that a suicide victim requires psychosocial care. Call for a humane perspective warrants that suicide be first decriminalized. A court ruling is also of a similar view, but without appropriate legislative backing the statute remains. Second, on the eligibility of surviving members of suicide victim being compensated, the administration has to deal with two errors: first, not to exclude genuine cases; and second, not to compensate undeserving cases. Both errors ought to be minimized but they are also related in the sense that reducing one would increase the other. Conventionally, prudent accounting norms on money to be spent have attuned the administration towards reducing the latter kind of error, whereas from a welfare perspective reducing the former error is more appropriate. Third, there have been some positive legal interventions. It is at the behest of the Bombay High Court that Tata Institute of Social Science came up with a report (Dandekar et al 2005). More recently, the Supreme Court has asked the Government of India to review its agricultural policies. A petition by the Government of Andhra Pradesh has led to another recent court ruling in favour of reducing the high royalty charged for the genetically modified varieties of cotton.

The larger agrarian crisis is a matter of serious concern. At this critical juncture when there is need for greater support, the state seems to be withdrawing: public investment is declining, formal sources of credit are not adequate and research and extension is lacking. As a corollary, private investment in the form of digging more and more wells has ended up in the tragedy of commons, informal sources of credit are more costly and the farmer depends on the input dealers for advice leading to supplier-induced demand. The idiosyncratic factors point out a pattern that suicide case

households when compared with the non-suicide control households have a higher outstanding debt, lower ownership of assets (particularly, bullocks a productive and liquid asset), a higher family size (particularly, female members) and a lower value of produce. Agriculture-based income is inadequate for the small or even semi-medium farmers. This would be further accentuated because of low yield, poor prices, high input costs or additional expenses (health, wards education or daughter's marriage). If the situation of the small farmer is precarious then that of the marginal farmer or the agricultural labourer would be even worse. For these groups, alternative employment opportunities could provide some additional income.

4. Public Policy Interventions for Employment

Keeping the inclusive development perspective in mind this study will elaborate on two livelihood related aspects. They are: the pressing problem of farmers' suicides, which is symptomatic of a larger agrarian crisis; and public policy interventions for employment, which assumes importance with the recently enacted National Rural Employment Guarantee Act (NREGA), 2005.

After enactment of NREGA, the Employment Guarantee Scheme (EGS) has been in operation in more than 180 districts from 2 February 2006. As per the Act, failure to provide employment within 15 days after seeking employment will lead to an entitlement allowance: one-fourth of the prescribed wage rate for the first 30 days and one-half of it for any additional days. As these have been recently commenced, we will discuss our observations based on an evaluation of the Sampoorna Grameen Rozgar Yojana (SGRY) (Panda et al, 2005), an earlier employment programme prior to the guarantee, and also draw on some other related work.

Even before the NREGA, entitlement to employment has been in force in Maharashtra since 1979. Under the Maharashtra Employment Guarantee Scheme (MEGS) there was a provision of a monetary compensation of Rs.2/- per day if the state government failed to provide employment within two weeks. The MEGS has been cited as a major programme in the debate on wage employment generation type poverty reduction programmes. It was considered a success story in the 1980s despite its limited size compared to the need and non-implementation of the compensation clause. Doubling of wages in 1988 without adequate budgetary support led to fall in employment by one-third (Ravallion, Datt and Chaudhuri 1993). In the debate on employment programmes, the level of the 'right' wage rate - the minimum at which the very poor group might be offering work or a higher wage rate that could be considered 'decent' and lift the beneficiaries above the poverty line, has been a point of discussion. A major advantage according to advocates of such programmes is the self-selection nature in the sense that it would normally attract participation from the poor group which would otherwise not get sufficient employment opportunities in the normal economic activities. However, if such a wage rate happens to be very low, it might go against the objective of lifting the poor above the poverty line. A higher wage rate, on the other hand, could defeat the self-selection objective as it might attract people employed in normal economic activities and increase the error in targeting. Rationing available volume of employment would mean the poorest of the poor would have to compete with those around or above the poverty line and the latter having greater chances of selection.

The partial payment of the wages in kind has been justified on grounds that such payments directly help enhance food security of the participants insuring the recipients against fall in their purchasing power due to price rise or unavailability of foodgrains. The programmes are meant to protect the poor households against seasonal vulnerability in food security. In this context, timing, frequency and quantity of deliveries of foodgrains become crucial. At the same time, the poor would not prefer full payment of wages in kind as they need to buy non-food items from the market. Moreover, wages in kind increase transaction costs for the funding agency.

While creation of some durable assets in rural areas is a major objective of employment programmes, some authors have recognized a trade-off between the short run relief objective and the long run rehabilitation and development objective (Barrett, Holden and Clay 2004). While employment creation is the immediate urgent need in a relief work, creation and maintenance of productive assets like roads, school buildings, soil and water conservation structures needs more careful planning as per need of the locality. Involvement of local community in identification and maintenance is generally required for success of such programmes.

The objectives of providing employment and creating durable infrastructure under EGS or its predecessor SGRY are modelled on the lines of the MEGS and other similar programmes. Some of the main observations from a recent evaluation study by Panda et al (2005) indicate that that the food-for-work component of SGRY had a mixed success record. Most of the beneficiaries were likely to be around or below the poverty line, but there were some deviations indicating failure of targeting. Average employment available to a beneficiary under SGRY was about 30 days in a year, but some beneficiaries did not get work for more than a week. There was lack of peoples' involvement in identifying beneficiaries and undertaking works useful for the village. Most respondents reported that foodgrains received were of good or average quality. But the beneficiaries did not receive foodgrains or wages on time.

Poor maintenance of records is a larger issue. Given the objective of supplementing the earning opportunity for the poor during the lean season and natural calamities, the size of SGRY needs to be flexible. This requires coordination between government officials, Panchayati Raj Institutions and local non-governmental organisations. Timing is crucial for the success of SGRY. Demand for regular public works is high during February to June (a time interspersed between two financial years). So, unless sufficient food and funds are available during these months, out-migration creating *footloose* labour with less bargaining power becomes a regular feature.[10] Other studies on similar programmes have pointed out irregularities in the form of fudging muster rolls, prevalence of corruption, non-availability of work in the lean season, involvement of contractors and absence of provision for maintenance of infrastructure created.[11]

A study by Panda and Mishra (2005) largely involving below poverty line households in two districts of Maharashtra (one in the National Sample Survey (NSS) Coastal region and the other in the NSS Inland Eastern region), indicates that nearly half the below poverty line households were in a situation where all family members did not

[10] For an elaborate discussion on footloose labour see Breman (1996).
[11] See, for example, Planning Commission (2000), Policy and Development Initiatives (2000), and Sen (2003) among others.

get two square meals a day at some time or the other during the year (Table 5).[12] This survey was designed to choose 80 per cent poor households in the sample in areas that might be characterized as less than average developed. Adjusting for this, one gets roughly 6-8 per cent rural households facing food shortages at some time or the other during the year. This figure is in sharp contrast to hunger incidence of 3 per 1,000 rural households or 5 per farmer household in the state reported by National Sample Survey Organisation (NSSO) data for 2003 (59th round).[13]

Table 5
Food Deficit Below Poverty Line Households across Seasons (%)

Season	Jawhar, Thane	Yavatmal	Toal
N	88	81	169
Winter	14	11	12
Summer	25	19	22
Monsoon	51	31	41
Any one season	48	17	33
Any Two seasons	6	9	7
All three seasons	10	9	9
At some time	64	35	50

Note: N indicates number of below poverty line households surveyed.
Source: Panda and Mishra (2005)

Across seasons, vulnerability was higher during the monsoon months. Many of the food insecure households resorted to migration to make both ends meet. This also affected their utilization of benefits from public facilities like Anganwadi and schools that existed in their villages. Their vulnerability can be understood from the case of a child death discussed in Box 2. One also observed non-payment of wages under public works and denial of food subsidies by not providing appropriate ration cards. There were also instances of some success stories - The "Wadi Project" (horticulture development) linked with MEGS and other programmes lead to improved livelihood opportunities (see Box 3).

[12] The situation was more severe in Jawhar, a tribal *taluka* in Thane (NSS Coastal Region), which is about three/four hours drive from Mumbai.

[13] At the all India level, 59th round estimates indicate that 16 per 1000 rural households and 12 per 1000 farmer households were food deficit households. Across states, the maximum number of food deficit households is in Orissa: 71 per 1000 rural households and 54 per 1000 farmer households. The estimates for rural households and farmer households are based on different sample frames.

Box 2: Case of Child Death in Jawhar

The anganwadi centre of Nagarmoda village reported 3 deaths and 1 stillbirth in the last two years. One case is from a below poverty line household which also faced food shortage at times. The family loses a son who is a little more than three years of age in November 2003. The boy who suffered from respiratory ailment was taken to the Rural Hospital at Jawhar. After initial treatment the doctor recommended that he be taken to JJ Hospital in Mumbai. Medical expenses would have been taken care of at the public health facility, but other opportunity costs made the family decide to return. Back in the village, neighbours, the anganwadi worker and gram sevak coaxed the family members to take the child to JJ Hospital. A few days later, after trying their luck with local healers, they returned to the public health facility at Jawhar, but it was too late. For this case, the family had sought treatment from local healers, public and private facilities and spent Rs.5000 on medical expenses and Rs.1000 on travel. The family now has three surviving children; one is the deceased boy's twin sister.

Box 3: Successful Utilization of Various Schemes by BAIF in Jawhar

Bharat Agro Industries Foundation (BAIF), a non-governmental organization (NGO), operates in tribal regions of 8-9 states of India. They have some presence in Jawhar taluka of Thane distrtict. Interventions by BAIF in some villages are very recent. We happened to visit a successful experiment in the village of Kelichapada where BAIF has been present for 6-7 years. One of their major interventions is through development of Wadi's, which when literally translated means orchard. To begin with, self-help groups are formed with 6-8 beneficiaries, each having 2-3 acres of land adjacent to each other. In the initial years the beneficiaries in Kelichapada worked on (a) their own plots leading to land development and planting of horticultural crops like cashew, guava and lemon and (b) construction of a water harvesting structure on a nearby stream. The inputs/help provided by BAIF came from different schemes. The formation of self-help groups under Swarnjayanthi Gram Swarozgar Yojana (SGSY), wages for their labour from Sampoorna Grameen Rozgar Yojana (SGRY)/Maharashtra Employment Guarantee Scheme (MEGS) for three years – the time required for trees to bear fruit, non-wage expenses for land development, water harvesting structure and sapling of fruit bearing trees from MEGS or other government schemes. BAIF has also helped them organize and sell their produce in the market. Today the households no more migrate. The enrolment, retention and attendance of school going children has improved, their consumption and nutritional intake has increased and annual household incomes have more than doubled. BAIF's intervention has also helped landless households take up livestock rearing or other activities.

In Maharashtra, MEGS has been largely successful in providing relief, but not as a poverty eradication measure. The recent introduction of horticulture schemes (mostly in Coastal region) in individual household farms under MEGS has been successful from the productivity point of view (Vatsa, 2005). The share of the poor in the NSS regions of Eastern, Inland Eastern, Inland Central and Inland Northern is higher than their share of the population, but expenditure under MEGS is higher than the share of poor only in Inland Central, a drought prone region. Between 2000-01 and 2003-04, expenditure under MEGS was not higher than the share of rural poor in Eastern, Inland Eastern and Inland Northern regions. In fact, the share of the two latter regions has been declining. Item-wise expenditure under MEGS (Table 6), aggregated for four years (2000-01 to 2003-04), shows that in comparison to its share of the poor

relatively greater proportion of expenditure is for roads, forestry and horticulture in the Coastal region. In the Inland Western region it has been for agriculture, irrigation, Jawahar wells and horticulture and for roads, agriculture, irrigation, forestry, and Jawahar wells in the Inland Central region; for irrigation and establishment in the Eastern region and for miscellaneous in the Inland Northern region. Notable region-specific expenditure under MEGS are horticulture in the Coastal region (41 per cent), agriculture in the Inland Western region (36 per cent) and irrigation in the Inland Central region (53 per cent). These expenditure patterns under MEGS show that the Eastern, Inland Eastern and Inland Northern regions have not benefited much from this scheme. This indicates poor intervention in agriculture either directly or indirectly through interventions in irrigation and horticulture. It assumes greater importance because these recent years also coincided with a spate of farmer suicides which was particularly high in the Inland Eastern (western Vidarbha) region of Maharashtra.

Table 6
Item-wise Share of MEGS Expenditure Across NSS Regions of Maharashtra, 2000-01 to 2003-04 (%)

Year/Item	Coastal	Inland Western	Inland North-ern	Inland Central	Inland Eastern	Eastern	Maharashtra*	
Rural population, 2001	11.1	28.3	14.4	21.1	17.3	7.8	100.0	(5.6)
Rural poor, 1999-2000	8.8	13.7	18.8	21.3	23.2	14.2	100.0	(1.3)
Item								
Roads#	11.5	12.8	14.4	38.0	13.0	10.3	100.0	(954.8)
Agriculture#	8.4	36.3	6.1	36.7	4.2	8.3	100.0	(929.9)
Irrigation#	0.3	17.2	7.7	53.4	6.5	15.0	100.0	(528.6)
Forestry#	10.7	10.6	13.7	33.2	17.9	14.0	100.0	(331.1)
Jawahar Wells#	7.0	20.5	14.4	25.7	21.6	10.7	100.0	(218.1)
Horticulture#	40.9	19.8	7.4	16.1	13.0	2.8	100.0	(211.9)
Establishment#	2.6	19.2	12.2	36.5	13.5	16.0	100.0	(86.7)
Miscellaneous#	5.3	20.4	19.1	43.1	5.9	6.3	100.0	(76.9)
Total#	10.0	21.1	10.6	37.5	10.4	10.5	100.0	(3338.0)
Total, 10 years$	10.4	21.5	9.8	35.8	11.4	11.1	100.0	(5523.4)

Note: * Figures in parentheses indicate total (in crore: number of population/poor and expenditure in rupees). For expenditure under MEGS it excludes certain miscellaneous expenditure at the aggregate level for the state. # Item-wise as well as total expenditure has been combined for four years: 2000-01 to 2003-04. $ Total 10 years data are average for 1994-95 to 2003-04.
Source: Mishra and Panda (2006).

The problems of national rural EGS in a recent survey in Jharkhand point out the following difficulties: selling of application form for job cards, issuing of job cards to only below poverty line households and providing only one card for joint (not nuclear) households, providing defective job cards with no space to record wage payments, not maintaining muster rolls at worksites, fudging muster rolls, flawed work measurement, non payment of minimum wages, delayed wage payment. People are not aware that they have to apply for work and get a dated receipt for the same, unavailability of worksite facilities like shade for rest, drinking water and crèche, creation of productive assets is not up to the mark, fictitious gram sabhas, absence of elected representatives at local levels as elections to local bodies have not been held, involvement of middlemen, and excessive work load on local level government functionaries are some more of the problems. A public meeting held at the end of the

survey was attended by 2000 poor labourers from neighbouring villages where pointed questions to the Block Development Officer (BDO) and gram sevaks and the local elected member of the legislative assembly who initially wanted to scuttle the meeting but having failed to do so he had to turn up. This passed on the message that local officials and elected representative are ultimately accountable to the people (Bhatia and Dreze 2006).[14]

One of the major limitations of the current employment guarantee is to restrict employment guarantee to only 100 days per household. This restriction is with the understanding that these households get some employment from other avenues, particularly agriculture. If agriculture is under strain then this assumption will not hold. Thus, in years of agrarian distress or in relatively poorer regions or for some other reason if households demand employment beyond 100 days then the administrative mechanism should try to address it. A failure in this regard will not come under the legal scanner of entitlement under a guarantee, but it would certainly be a failure in the domain of welfare. The success of the programme will also require that the provision is widely disseminated and people are made to be involved in at various stages. A mass social audit undertaken in Dungarpur,[15] a relatively poorer tribal district of Rajasthan from where seasonal migration is widespread, suggests that with a supportive administration and people willing to monitor the ongoing scheme can contain the corruption to a large extent and create assets that not only reflect people's demand (in this drought-prone region first priority was given to building/repairing water-harvesting structures) but would also help in enhancing livelihood opportunities (Sivakumar 2006).

5. Concluding Remarks

The situation is very complex. As per the 2003 situation assessment survey of farmers, 40 per cent of the farmers do not want to continue in the profession. They foresee a life of poverty and they would like to get out of this. The surge in farmers' suicides, which is symptomatic of a larger agrarian crisis, seems to be spreading. Relief measures should address all possible risks, the most important being the inadequate income that agriculture provides for the large mass of farmers. The income shortfall is further accentuated because of crop loss, market uncertainties (increasing input costs and decline in output prices) and additional expenditure requirements (health needs, wards education and daughter's marriage among others). Without adequate safeguards, the farmer will require more and more credit that will lead him to a quagmire of indebtedness. Interventions in the credit market are required (particularly, to reduce the high cost of borrowing from informal sources), but on their own they are not likely to achieve much. Policy interventions should independently address all possible risks: income shortfalls, crop loss (weather, pests, theft, fire or spurious quality of seeds and other inputs), price shocks, increasing input costs and other uncertainties. Social safety measures should look into health, education and other relevant expenses. If farmers need a strong state support to enhance their livelihoods then the mass of agricultural labourers who depend on farmers would require even greater support.

[14] Another positive aspect indicating how different perspectives can come together is that the survey has been conducted by students from Delhi School of Economics and Jawaharlal Nehru University.

[15] This social audit involved activists and researchers from across the country and also a few from outside India.

Additional employment opportunities might provide some succour. Public interventions in employment have tried to focus on an appropriate wage rate (a balance between providing decent income and also one that would lead to targeting through self-selection by the poor), the nature of wage payment (some payments in kind to ensure food security and some in cash to meet non-food requirements) and in generating productive assets for the rural community. Some criticisms of these programmes is that the number of days of employment available was low, wage payments were delayed, kind payments were of poor quality, unavailability of work site facilities, creation of productive assets is not up to the mark and most important is siphoning of funds through corruption among others. A major channel of leakage was through fudging of muster roles. The provisions of transparency and public monitoring at each and every stage of EGS work (planning, implementation and stock-taking) under NREGA allows for evaluation of on-going work through social audit. This would check corruption much more than the annual checks which can only unearth book-keeping anomalies. Despite the limitation of restricting employment guarantee to only 100 days per household, "NREGA has created a sense of hope amongst the rural poor. This sense of hope can be further strengthened if people understand that the act gives them employment as a matter of right, and that claiming this right is within the realm of possibility" (Bhatia and Dreze 2006).

To sum up, the post-reform agrarian scenario has been a story of distress, despair and death. This, however, is not the end of the tunnel. For every death there are thousands in distress who continue to struggle and hope for a better tomorrow. In tackling agrarian crisis or ensuring employment guarantee one has to build on this hope.

Appendix 1
Incremental Value of Output in Agriculture (TE 2002-03 over TE 1992-93) and its Share over Crop Groups Across States

States/Union Territories	Incremental Value, (1993-94 prices, Rs Lakh)	Share of Incremental Value											
		Cereals	Pulses	Oilseeds	Fibres	Sugar	Fruits and Vegetables	Condiments and Spices	Drugs and Narcotics	By Products	Other Crops	Kitchen Garden	Percent
A & N Islands	2146	-1.3	-1.4	9.4	0.0	0.5	55.1	39.7	0.0	-0.6	-1.1	-0.2	100.0
Andhra Pradesh	227354	24.7	16.8	-26.6	13.1	5.8	47.9	21.3	-5.0	2.5	-1.1	0.6	100.0
Arunachal Pradesh	-14859	-3.1	-1.5	-4.3	0.0	-0.3	124.7	-14.4	-0.7	-0.3	-0.1	-0.1	100.0
Assam	144021	25.4	2.9	3.4	-1.2	-2.4	37.5	13.6	19.4	-0.3	0.5	1.3	100.0
Bihar	636876	24.3	-2.0	0.2	0.0	-2.5	75.8	-0.2	0.8	0.0	2.3	1.2	100.0
Chandigarh	558	32.0	0.4	0.5	0.0	0.0	48.1	0.0	0.0	3.0	14.9	1.1	100.0
Dadra & Nagar Haveli	972	-8.7	6.4	-0.3	0.0	0.0	99.2	0.0	0.0	0.4	4.7	-1.7	100.0
Daman & Diu	-278	26.6	-10.9	0.0	0.0	0.0	83.6	0.0	0.0	2.2	-1.3	-0.1	100.0
Delhi	15067	-2.4	-0.4	2.0	0.0	0.0	105.4	0.1	0.0	-0.8	-3.6	-0.3	100.0
Goa	12796	-2.0	2.1	4.5	0.0	-0.7	93.3	3.0	0.0	-0.4	0.0	0.2	100.0
Gujarat	62512	-44.2	-43.0	10.9	6.1	30.7	137.0	14.8	-7.9	-17.7	6.8	6.6	100.0
Haryana	178409	73.4	-16.2	0.6	-8.7	8.6	33.4	0.8	0.2	4.7	3.1	0.3	100.0
Himachal Pradesh	41058	-8.6	0.8	0.6	0.9	0.6	101.9	2.3	0.2	-0.8	1.3	0.7	100.0
Jammu & Kashmir	11342	-63.5	-10.3	-11.0	0.2	-0.6	172.9	9.3	-10.5	1.2	3.8	8.5	100.0
Karnataka	420719	8.4	5.1	-6.9	-2.7	22.8	38.4	23.4	7.7	2.5	0.0	1.2	100.0
Kerala	103244	-20.3	-0.3	28.1	-1.0	0.0	-28.8	28.5	54.9	-5.0	43.2	0.6	100.0
Lakshadweep	151	0.0	0.0	207.5	0.0	0.0	-107.5	0.0	0.0	0.0	0.0	0.0	100.0
Madhya Pradesh	94201	-56.6	11.5	62.8	0.7	2.5	106.3	0.9	1.1	-20.6	-8.0	-0.6	100.0
Maharashtra	594686	-6.5	7.4	8.2	9.7	22.1	56.9	0.1	0.0	-1.4	5.3	-1.8	100.0
Manipur	10020	39.9	3.3	-0.3	0.0	-2.6	50.5	8.1	0.0	0.1	0.5	0.5	100.0
Meghalaya	14125	35.3	0.2	0.5	0.4	-0.1	50.2	8.5	1.0	0.0	3.6	0.4	100.0
Mizoram	7307	32.6	-5.2	-2.1	-1.1	1.6	60.6	24.0	-6.9	-0.7	-3.5	0.7	100.0
Nagaland	52155	12.0	2.6	7.3	0.1	-0.9	60.8	16.4	0.2	0.9	0.1	0.4	100.0
Orissa	-67335	70.6	65.9	71.1	1.8	10.3	-131.5	4.6	3.3	6.6	-0.2	-2.5	100.0
Pondicherry	645	-5.9	-19.9	-67.8	-7.3	-36.6	227.8	-9.3	14.0	-3.7	7.0	1.5	100.0
Punjab	169019	121.0	-2.8	-6.8	-41.2	8.6	19.6	1.1	0.1	1.5	-0.9	-0.1	100.0
Rajasthan	-8338	-436.4	291.8	282.8	417.0	70.3	-262.9	-468.1	-45.2	100.7	147.6	2.3	100.0
Sikkim	621	3.0	-56.8	-76.9	0.0	0.0	206.4	41.1	0.0	-15.7	0.0	-1.2	100.0
Tamil Nadu	151842	-28.0	-4.8	-12.7	-9.7	35.6	97.4	13.9	5.2	0.2	1.4	1.6	100.0
Tripura	37769	14.3	-0.1	-1.8	-0.5	-0.6	68.4	7.3	5.5	-0.4	7.5	0.4	100.0
Uttar Pradesh	689337	46.4	-5.1	-3.9	-0.1	12.6	44.8	0.2	2.3	2.3	-0.2	0.7	100.0
West Bengal	536327	28.8	-0.1	2.0	4.6	1.0	51.0	1.6	9.9	0.9	-0.1	0.4	100.0
India	4124466	22.1	-1.6	-1.3	-0.8	9.8	57.8	7.2	4.5	-0.2	2.0	0.5	100.0

Note and Source: Author's calculation based on raw data provided by EPWRF, original source of data is Ministry of Statistics and Programme Implementation, Government of India.

Appendix 2a
Returns to Cultivation Across States, 2002-03

States	Kharif				Rabi				Returns per Farmer HH, Rs	Average Family Size
	Farmer HHs Cultivating, %	GCA per Cultivating HH, Ha	Gross returns per Ha, Rs	Expenses by value of output, %	Farmer HHs Cultivating, %	GCA per Cultivating HH, Ha	Gross returns per Ha, Rs	Expenses by value of output, %		
Andaman & Nicobar Is	98.0	0.9	17928	14.8	70.6	0.6	15952	5.9	21889	5.0
Andhra Pradesh	81.7	1.2	5243	62.3	39.1	0.9	7815	52.8	8105	4.7
Arunachal Pradesh	74.8	1.3	13909	13.5	68.4	0.8	8433	22.1	17950	5.0
Assam	95.9	0.8	16257	12.7	84.7	0.4	16089	19.0	19145	5.7
Bihar	87.0	0.7	8065	39.6	95.2	0.6	10180	37.8	10635	6.1
Chandigarh	59.6	0.9	15120	40.6	68.8	0.5	20782	34.5	15715	6.3
Chattisgarh	98.6	1.3	5355	39.2	26.9	0.8	4296	39.4	7732	5.4
Dadra&Nagar	99.3	0.6	5424	37.5	30.0	0.7	5052	44.2	4455	5.5
Daman&Diu	89.3	0.2	8007	43.7	39.0	0.2	5375	54.7	1677	5.6
Delhi	82.9	0.5	25848	43.5	75.9	0.5	30814	32.6	23834	5.1
Goa	78.0	0.6	11911	27.1	47.0	0.7	15992	27.9	10304	4.5
Gujarat	85.2	1.6	6005	46.8	39.3	1.2	8621	49.3	12527	5.5
Haryana	64.1	1.6	5832	56.9	64.0	1.6	14537	40.7	21055	6.0
Himachal Pradesh	97.1	0.5	16432	28.2	94.6	0.4	5377	50.8	9536	5.2
Jammu & Kashmir	94.7	0.7	28446	17.7	84.9	0.6	10833	26.8	24759	5.8
Jharkand	96.9	0.7	10420	21.1	41.8	0.3	14117	28.1	8577	5.4
Karnataka	95.1	1.5	6522	46.0	47.1	1.3	6536	36.6	13395	5.3
Kerala	93.6	0.4	17724	38.8	94.5	0.4	18220	34.1	13521	4.7
Lakshadweep	80.8	0.1	82751	7.8	100.0	0.1	42229	9.2	14530	6.8
Madhya Pradesh	77.3	1.6	3882	45.3	67.3	1.7	7305	35.8	13146	5.8
Maharashtra	94.4	1.6	6609	45.0	45.2	1.1	5505	47.9	12721	5.1
Manipur	84.3	0.6	16697	28.2	51.3	0.2	6682	41.9	9093	5.5
Meghalaya	99.5	1.0	22860	18.1	96.1	1.3	11082	17.9	36415	5.4
Mizoram	90.9	1.0	18905	3.8	89.3	1.1	14823	3.5	32793	5.7
Nagaland	91.2	0.5	29592	7.2	96.3	0.3	17578	17.1	20105	5.1
Orissa	98.1	0.8	3633	48.1	25.2	0.4	5284	50.9	3307	5.0
Pondicherry	47.4	1.3	11883	50.0	38.9	0.7	9421	57.7	9783	4.7
Punjab	36.9	2.5	19974	38.4	27.6	2.6	20929	37.5	32866	5.9
Rajasthan	91.3	1.9	271	89.0	37.0	1.4	10954	40.5	5972	5.9
Sikkim	98.9	0.7	11807	22.3	97.6	0.4	7275	33.8	10900	5.3
Tamil Nadu	79.1	0.8	6682	57.9	44.1	0.8	8562	45.1	7511	4.4
Tripura	91.3	0.5	15333	30.5	62.7	0.3	17500	31.0	9231	5.0
Uttar Pradesh	81.8	0.7	7025	44.1	87.8	0.9	8490	46.0	10824	6.1
Uttaranchal	93.1	0.5	36647	11.9	93.0	0.4	8914	28.0	19315	5.1
West Bengal	89.7	0.5	10942	44.6	71.0	0.4	10976	57.2	8174	5.3
India	86.2	1.1	6756	43.9	62.3	0.9	9290	42.2	11258	5.5

Note:. GCA=Gross Cropped Area, Ha=Hectares, HH=Household, Rs=Indian Rupees, Gross returns equal value of output minus expenses. Expenses are those paid out only, and hence, it does not include family labour or rent for own land. Value of output is total produce times price, it includes by-products also.

Source: Calculated from unit level data using 33rd Schedule, 59th round of National Sample Survey (NSS) on Situation Assessment Survey of Farmers.

Appendix 2b (1)
Returns to Cultivation Across NSS Regions, 2002-03

NSS Regions	Kharif				Rabi				Returns to Cultivation per Farmer HH, Rs	Average Family Size
	Farmer HHs Cultivating, %	GCA per Cultivating HH, Ha	Gross returns per Ha, Rs	Expenses by value of output, %	Farmer HHs Cultivating, %	GCA per Cultivating HH, Ha	Gross returns per Ha, Rs	Expenses by value of output, %		
AN1	98.0	0.9	17928	14.8	70.6	0.6	15952	5.9	21889	5.0
AP1	68.6	0.9	6813	66.1	44.8	0.8	5890	62.8	6662	4.4
AP2	94.7	1.3	5087	57.9	34.2	0.9	9331	43.4	9072	4.8
AP3	84.5	2.0	5448	54.0	35.4	1.3	9018	39.6	13366	5.3
AP4	76.7	0.9	-855	108.6	41.1	0.9	8651	62.5	2604	4.5
AR1	74.8	1.3	13909	13.5	68.4	0.8	8433	22.1	17950	5.0
AS1	97.7	0.9	17573	9.8	86.6	0.4	14900	17.8	19469	5.6
AS2	94.1	0.8	14858	16.0	84.1	0.5	16920	19.7	19149	5.7
AS3	100.0	0.7	20211	7.0	74.4	0.2	11922	19.0	16136	5.4
BI1	88.9	0.6	6699	42.0	96.2	0.6	10022	38.2	8996	5.9
BI2	83.9	0.8	9909	37.1	93.5	0.7	10393	37.3	13347	6.4
CN1	59.6	0.9	15120	40.6	68.8	0.5	20782	34.5	15715	6.3
CT1	98.6	1.3	5355	39.2	26.9	0.8	4296	39.4	7732	5.4
DD1	89.3	0.2	8007	43.7	39.0	0.2	5375	54.7	1677	5.6
DE1	82.9	0.5	25848	43.5	75.9	0.5	30814	32.6	23834	5.1
DN1	99.3	0.6	5424	37.5	30.0	0.7	5052	44.2	4455	5.5
GO1	78.0	0.6	11911	27.1	47.0	0.7	15992	27.9	10304	4.5
GU1	93.8	1.0	6454	29.1	30.6	0.7	13474	34.4	9102	5.9
GU2	75.9	1.1	3639	58.4	52.0	1.1	9088	47.0	8363	5.2
GU3	85.4	1.2	9488	41.5	37.0	1.2	7179	57.6	12651	5.9
GU4	84.6	2.4	2793	62.3	41.3	1.8	10229	48.2	13377	5.7
GU5	89.5	2.9	7507	45.7	30.6	1.4	4504	62.3	21564	5.3
HA1	65.7	1.3	8854	55.6	69.1	1.4	16504	41.8	23095	6.0
HA2	62.2	1.9	3075	59.9	57.6	2.0	12601	39.2	18515	5.9
HP1	97.1	0.5	16432	28.2	94.6	0.4	5377	50.8	9536	5.2
JH1	96.9	0.7	10420	21.1	41.8	0.3	14117	28.1	8577	5.4
JK1	87.5	0.8	16234	19.0	80.9	0.8	9918	26.8	17523	5.5
JK2	100.0	0.9	8029	20.1	93.1	0.9	11068	18.2	16989	5.2
JK3	94.4	0.5	67803	17.0	80.7	0.3	11360	41.5	34119	6.3
KA1	95.6	0.8	12171	43.7	80.6	0.5	14538	29.3	14874	6.0
KA2	98.7	1.3	8472	47.4	42.0	1.0	6893	39.8	13696	4.8
KA3	95.3	0.9	6827	51.3	40.2	0.9	6322	43.4	8114	4.9
KA4	93.2	2.2	5538	43.3	49.2	1.9	5945	34.8	16956	5.7
KE1	91.3	0.5	14788	39.3	94.0	0.5	15048	31.5	14345	5.4
KE2	95.0	0.3	20438	38.5	94.8	0.3	21278	35.8	13015	4.3
LA1	80.8	0.1	82751	7.8	100.0	0.1	42228	9.2	14530	6.8
MA1	97.1	0.5	7030	45.6	10.4	0.6	8365	37.9	3747	4.9
MA2	88.7	1.1	10070	41.6	54.6	1.0	5448	53.0	12475	5.1
MA3	94.3	1.9	6776	45.7	34.4	1.4	10460	37.6	17318	5.8
MA4	95.9	2.2	7252	37.7	57.7	1.3	4046	43.5	18339	5.5
MA5	98.6	2.3	4494	53.3	48.0	1.1	5773	51.0	13278	4.7
MA6	98.8	1.5	2968	63.6	33.9	0.6	1843	64.1	4812	4.8
ME1	99.5	1.0	22860	18.1	96.1	1.3	11082	17.9	36415	5.4
MI1	90.9	1.0	18905	3.8	89.3	1.1	14823	3.5	32793	5.7
MN1	76.7	0.6	13673	47.9	55.3	0.1	664	91.5	6199	5.7
MN2	90.8	0.6	18736	11.7	47.9	0.2	11621	20.0	11539	5.3
MP1	80.3	1.2	3799	29.8	81.8	1.5	6750	30.3	11828	5.9
MP2	44.4	1.7	1736	68.7	93.7	2.1	5447	43.3	11860	5.5
MP3	97.1	1.9	4190	43.7	35.7	1.2	11788	32.2	12765	6.1
MP4	93.0	1.5	4607	37.2	71.0	1.4	7176	33.3	13281	5.2
MP5	94.5	2.5	5237	53.1	69.5	2.0	9503	36.2	25565	5.6
MP6	57.2	1.4	1865	45.8	51.3	1.9	8619	34.5	9799	6.1

continued

Appendix 2b (2)
Returns to Cultivation Across NSS Regions, 2002-03

NSS Regions	Kharif				Rabi				Returns to Cultivation per Farmer HH, Rs	Average Family Size
	Farmer HHs Cultivating, %	GCA per Cultivating HH, Ha	Gross returns per Ha, Rs	Expenses by value of output, %	Farmer HHs Cultivating, %	GCA per Cultivating HH, Ha	Gross returns per Ha, Rs	Expenses by value of output, %		
NA1	91.2	0.5	29592	7.2	96.3	0.3	17578	17.1	20105	5.1
OR1	98.1	0.7	4387	52.2	44.5	0.4	4917	49.5	3904	5.3
OR2	97.0	0.9	2482	48.6	10.0	0.8	4142	46.6	2590	4.5
OR3	98.7	0.8	3755	42.2	14.3	0.3	8503	56.3	3115	4.9
PO1	47.4	1.3	11883	50.0	38.9	0.7	9421	57.7	9783	4.7
PU1	35.8	2.3	18584	40.4	20.0	2.2	16684	42.2	22600	5.7
PU2	38.2	2.6	21312	36.7	36.5	2.8	23038	35.6	44813	6.0
RA1	88.4	4.2	-304	121.3	27.6	2.8	9817	38.4	6433	6.0
RA2	87.8	1.2	-327	111.3	49.4	1.2	11003	44.2	6153	6.4
RA3	98.6	0.7	3520	30.6	28.8	0.4	12500	27.6	3593	5.0
RA4	98.0	1.2	3182	50.4	32.7	0.7	18383	33.9	7921	5.5
SI1	98.9	0.7	11807	22.3	97.6	0.4	7275	33.8	10900	5.3
TN1	74.4	0.7	7300	61.4	34.3	0.7	8952	48.5	6198	4.8
TN2	74.6	0.6	2402	80.5	40.4	0.9	5822	59.8	3225	4.5
TN3	80.3	0.8	3998	65.1	35.2	0.7	6925	45.7	4242	4.0
TN4	88.1	1.1	10865	44.1	69.1	1.0	10748	35.5	17615	4.2
TR1	91.3	0.5	15333	30.5	62.7	0.3	17500	31.0	9231	5.0
UP1	82.4	0.8	9903	43.1	85.3	0.8	14110	46.3	16784	6.1
UP2	72.0	0.6	8574	36.9	80.3	1.5	4910	45.5	9784	5.6
UP3	87.4	0.7	5055	48.9	92.9	0.6	7202	47.0	6869	6.3
UP4	67.9	1.2	1248	46.8	88.5	1.7	7385	42.1	12135	5.7
UT1	93.1	0.5	36646	11.9	93.0	0.4	8914	28.0	19315	5.1
WB1	92.7	0.6	15583	23.6	95.9	0.4	17775	41.3	15082	5.4
WB2	85.4	0.6	11185	44.5	81.5	0.5	10237	51.4	9934	5.2
WB3	86.1	0.5	9528	54.2	70.6	0.4	7612	72.4	5850	5.2
WB4	97.0	0.5	10316	42.8	52.6	0.3	14255	52.5	6827	5.4
India	86.2	1.1	6756	43.9	62.3	0.9	9290	42.2	11258	5.5

Note and source: As in Appendix 2a. The region codes indicate the following: AN1=Andaman & Nicobar Is, AP=Andhra Pradesh, AP1=Coastal, AP2=Inland Northern, AP3=South Western, AP4=Inland Southern, AR1=Arunachal Pradesh, AS=Assam, AS1=Plains Eastern, AS2=Plains Western and AS3=Hills, BI=Bihar, BI1=Northern, BI2=Central, CN1=Chandigarh, CT1=Chattisgarh, DD1=Daman & Diu, DE1=Delhi, DN1=Dadra & Nagar Haveli, GO1=Goa, GU=Gujarat, GU1=Eastern, GU2=Plains Northern, GU3=Plains Southern, GU4=Dry Areas, GU5=Saurashtra, HA=Haryana, HA1=Eastern, HA2=Western, HP1=Himachal Pradesh, JK=Jammu & Kashmir, JK1=Mountainous, JK2=Outer Hills, JK3=Jhelam Valley, JH1=Jharkhand, KA=Karnataka, KA1=Coastal & Ghats, KA2=Inland Eastern, KA3=Inland Southern, KA4=Inland Northern, KE=Kerala, KE1=Northern, KE2=Southern, LA1=Lakshadweep, MA=Maharashtra, MA1=Coastal, MA2=Inland Western, MA3=Inland Northern, MA4=Inland Central, MA5=Inland Eastern, MA6=Eastern, ME1=Meghalaya, MI1=Mizoran, MN=Manipur, MN1=Plains, MN2=Hills, MP=Madhya Pradesh, MP1=Vindhya, MP2=Central, MP3=Malwa, MP4=South, MP5=South Western, MP6=Northern, NA1=Nagaland, OR=Orissa, OR1=Coastal, OR2=Southern, OR3=Northern, PO1=Pondicherry, PU=Punjab, PU1=Northern, PU2=Southern, RA=Rajasthan, RA1=Western, RA2=North Eastern, RA3=Southern, RA4=South Eastern, SI1=Sikkim, TN=Tamil Nadu, TN1=Coastal Northern, TN2=Coastal, TN3=Southern, TN4=Inland, TR1=Tripura, UT1=Uttaranchal, UP=Uttar Pradesh, UP1=Western, UP2=Central, UP3=Eastern, UP4=Southern, WB=West Bengal, WB1=Himalayan, WB2=Eastern Plains, WB3=Central Plains and WB4=Western Plains.

Appendix 3a
Some Aspects of Indebtedness in Farmer Households, 2003

States	Far HH in Lakhs	Out Amt of Far HH in Rs Crore	Prop of Far HH Indeb-ted, %	Avg Out Amt per Far HH in Rs	Prop of Out Amt for Prod purpo-ses, %	Prop of Out Amt from Formal sour-ces, %	Prop of Out Amt >1 Yr, %	Prop of SM Far HH to all Far HH, %	Prop of SM Far HH Indeb-ted, %	Out Amt of SM Far HH to Out Amt of all Far HH, %	Out Amt of SM Far HH from Formal sour-ces, %
Andaman & Nicobar Is	0.1	5.7	26.6	5079	56.6	74.0	94.2	77.3	21.2	83.5	14.1
Andhra Pradesh	60.3	14460.0	82.1	23965	64.7	30.6	67.6	78.1	81.5	66.4	19.9
Arunachal	1.2	6.1	5.9	493	10.6	26.9	30.2	69.4	6.1	71.8	1.9
Assam	25.0	203.5	18.1	813	39.4	37.4	51.0	90.0	18.4	83.1	6.9
Bihar	70.8	3168.9	33.0	4476	47.1	41.7	76.3	93.4	33.9	87.0	11.9
Chandigarh	0.0	4.0	46.4	19917	39.8	36.7	59.3	95.1	45.7	45.9	1.6
Chattisgarh	27.6	1137.6	40.2	4122	78.4	71.3	63.6	77.3	39.1	48.0	25.9
Dadra&Nagar	0.2	4.0	26.4	1736	49.0	51.4	84.4	93.1	24.5	87.1	15.2
Daman&Diu	0.0	1.5	41.4	3117	68.4	61.4	61.7	99.0	41.5	99.1	23.1
Delhi	0.1	7.6	42.9	6702	33.4	89.3	65.8	98.8	43.4	100.0	46.1
Goa	0.6	7.8	6.6	1292	39.8	64.3	100.0	94.7	3.8	94.0	3.9
Gujarat	37.8	5875.9	51.9	15526	74.5	68.8	65.4	75.9	46.1	39.5	23.0
Haryana	19.4	5056.9	53.1	26007	69.0	67.2	60.8	76.1	49.2	51.9	31.3
Himachal Pradesh	9.1	871.4	33.4	9618	48.5	63.5	61.2	93.1	33.0	82.7	20.7
Jammu & Kashmir	9.4	179.5	31.8	1903	53.2	67.5	50.9	91.6	30.1	77.4	19.5
Jharkand	28.2	622.5	20.9	2205	57.3	64.1	82.4	94.7	21.0	87.5	12.9
Karnataka	40.4	7328.9	61.6	18135	78.0	68.8	67.9	74.2	60.7	51.8	34.8
Kerala	21.9	7441.4	64.4	33907	44.2	81.4	73.8	96.7	64.4	90.3	52.8
Lakshadweep	0.0	1.1	47.3	6183	2.7	34.4	56.5	99.1	46.8	99.7	14.9
Madhya Pradesh	63.2	8986.7	50.8	14218	69.7	56.3	77.6	66.7	45.2	40.0	22.4
Maharashtra	65.8	11171.3	54.8	16973	80.2	83.0	74.3	68.6	48.8	44.9	39.9
Manipur	2.1	48.7	24.8	2269	15.7	18.2	87.6	98.6	24.8	97.1	4.8
Meghalaya	2.5	1.8	4.0	72	78.5	6.0	33.2	81.6	4.4	95.6	0.2
Mizoram	0.8	14.6	23.6	1876	66.5	63.6	78.2	83.7	25.1	96.8	15.8
Nagaland	0.8	8.3	36.5	1030	36.4	68.8	11.3	95.1	37.7	85.8	24.5
Orissa	42.3	2485.7	47.8	5871	64.7	74.3	72.3	92.3	47.1	86.5	34.5
Pondicherry	0.3	63.7	80.1	20927	27.6	59.6	52.6	85.6	82.0	85.6	46.0
Punjab	18.4	7667.4	65.4	41576	66.7	47.5	55.8	75.7	59.8	29.1	26.3
Rajasthan	53.1	9752.1	52.4	18372	59.4	33.7	79.8	66.0	50.5	41.6	12.9
Sikkim	0.5	10.9	32.8	2053	39.2	57.8	50.5	95.1	33.3	88.7	19.6
Tamil Nadu	38.9	9316.8	74.5	23963	54.9	51.4	71.2	87.5	74.9	72.9	34.4
Tripura	2.3	69.5	49.2	2977	59.1	79.7	89.8	99.5	49.4	100.0	39.4
Uttar Pradesh	171.6	12738.9	40.3	7425	67.9	59.8	67.0	90.7	39.2	68.9	19.6
Uttaranchal	9.0	99.3	7.2	1108	51.5	76.1	60.1	96.2	7.0	98.5	9.5
West Bengal	69.2	3625.5	50.0	5237	55.9	57.7	64.5	96.9	50.1	92.6	28.0
India	893.5	112445.4	48.6	12585	65.1	57.0	69.7	83.6	46.3	58.9	23.8

Note: Far=Farmer, HH=Household, Out Amt=Outstanding Amount, Avg=Average, Rs=Indian Rupees, Prop=Proportion, Yr=Year, SM=Small and Marginal.

Source: Calculated from unit level data using 33rd Schedule, 59th round of National Sample Survey (NSS) on Situation Assessment Survey of Farmers.

Appendix 3b (1)
Some Aspects of Indebtedness in Farmer Households, 2003 (NSS Regions)

NSS Regions	Far HH in Lakhs	Out Amt of Far HH in Rs Crore	Prop of Far HH Indeb-ted, %	Avg Out Amt per Far HH in Rs	Prop of Out Amt for Prod purpo-ses, %	Prop of Out Amt from Formal sour-ces, %	Prop of Out Amt >1 Yr, %	Prop of SM Far HH to all Far HH, %	Prop of SM Far HH Indeb-ted, %	Out Amt of SM Far HH to Out Amt of all Far HH, %	Out Amt of SM Far HH from Formal sources, %
AN1	0.1	5.7	26.6	5078.5	56.6	74.0	94.2	77.3	21.2	83.5	14.1
AP1	23.5	5285.9	84.7	22522.6	61.4	30.0	62.2	86.8	83.9	69.6	20.3
AP2	23.8	5173.7	79.7	21735.1	69.1	31.5	68.3	74.8	78.2	67.1	17.9
AP3	7.7	1660.2	81.7	21586.2	64.3	32.2	64.0	58.7	80.3	41.0	21.4
AP4	5.4	2340.3	82.2	43534.1	62.5	28.7	80.7	82.8	84.6	75.9	22.4
AR1	1.2	6.1	5.9	493.4	10.6	26.9	30.2	69.4	6.1	71.8	1.9
AS1	10.6	69.7	15.6	659.5	54.5	30.8	43.0	87.9	16.5	86.2	6.4
AS2	13.3	131.8	20.3	989.6	31.8	41.5	55.4	91.0	20.0	81.2	8.0
AS3	1.2	2.0	15.8	171.9	19.9	0.0	43.0	97.8	16.1	100.0	0.0
BI1	44.1	1630.4	35.0	3694.4	47.6	42.6	78.4	94.3	36.2	92.9	13.4
BI2	26.7	1538.5	29.7	5768.1	46.5	40.7	74.1	92.0	30.0	80.7	9.5
CN1	0.0	4.0	46.4	19917.1	39.8	36.7	59.3	95.1	45.7	45.9	1.6
CT1	27.6	1137.6	40.2	4121.9	78.4	71.3	63.6	77.3	39.1	48.0	25.9
DD1	0.0	1.5	41.4	3116.5	68.4	61.4	61.7	99.0	41.5	99.1	23.1
DE1	0.1	7.6	42.9	6702.3	33.4	89.3	65.8	98.8	43.4	100.0	46.1
DN1	0.2	4.0	26.4	1735.6	49.0	51.4	84.4	93.1	24.5	87.1	15.2
GO1	0.6	7.8	6.6	1292.0	39.8	64.3	100.0	94.7	3.8	94.0	3.9
GU1	8.4	788.3	39.8	9404.2	72.7	68.9	82.6	89.3	38.0	52.1	18.9
GU2	11.2	1383.4	48.6	12348.3	67.8	58.3	73.6	87.5	46.6	60.9	18.7
GU3	5.6	928.2	50.4	16492.0	59.4	54.8	81.2	83.1	48.8	42.6	18.1
GU4	4.8	417.1	43.4	8650.3	70.9	63.3	57.7	64.2	39.4	42.5	22.8
GU5	7.8	2358.9	75.9	30206.4	85.6	81.3	49.9	47.1	63.3	21.0	45.0
HA1	10.8	2645.1	50.6	24534.2	73.4	70.1	62.9	80.9	47.6	54.2	29.3
HA2	8.7	2411.7	56.2	27839.1	64.1	64.1	58.4	70.2	51.5	49.5	34.0
HP1	9.1	871.4	33.4	9617.6	48.5	63.5	61.2	93.1	33.0	82.7	20.7
JH1	28.2	622.5	20.9	2204.6	57.3	64.1	82.4	94.7	21.0	87.5	12.9
JK1	2.1	121.7	12.4	5801.1	65.7	87.7	57.1	90.1	12.2	72.5	10.4
JK2	3.1	28.5	80.6	914.1	37.1	26.1	25.6	84.7	81.2	85.3	21.7
JK3	4.2	29.3	5.4	694.8	17.2	23.4	50.2	97.4	5.5	90.1	0.9
KA1	2.8	997.0	56.1	35708.7	78.8	91.9	90.7	88.0	54.5	87.0	51.6
KA2	7.8	1758.2	79.5	22442.5	79.1	61.3	64.1	79.3	77.5	33.6	23.2
KA3	12.7	1808.0	63.1	14201.9	65.8	41.9	67.9	87.5	64.6	72.8	23.8
KA4	17.1	2765.6	53.2	16215.5	85.1	82.8	62.2	59.8	47.7	37.1	33.5
KE1	8.3	2513.9	62.7	30130.5	48.1	88.8	71.9	95.1	62.2	88.5	55.8
KE2	13.6	4927.4	65.4	36223.7	42.3	77.7	74.8	97.7	65.7	91.3	51.5
LA1	0.0	1.1	47.3	6182.9	2.7	34.4	56.5	99.1	46.8	99.7	14.9
MA1	7.2	186.6	30.5	2587.6	69.0	69.9	72.9	92.3	29.3	74.9	20.3
MA2	20.2	4615.9	64.1	22840.7	73.4	79.4	80.1	79.1	62.1	60.3	49.0
MA3	7.1	1775.7	52.1	24961.4	80.7	85.6	64.8	68.2	45.9	43.2	41.8
MA4	13.8	2346.7	52.6	16956.0	88.8	86.4	79.4	56.5	42.6	27.5	34.4
MA5	11.5	1663.4	59.9	14482.7	85.2	83.9	59.3	49.7	48.7	29.5	43.4
MA6	6.0	583.1	51.8	9786.2	87.3	92.0	79.5	69.7	44.1	33.0	42.4
ME1	2.5	1.8	4.0	72.1	78.5	6.0	33.2	81.6	4.4	95.6	0.2
MI1	0.8	14.6	23.6	1875.7	66.5	63.6	78.2	83.7	25.1	96.8	15.8
MN1	1.0	43.4	41.1	4415.2	16.5	19.9	89.7	97.6	41.4	96.8	8.7
MN2	1.2	5.3	11.1	454.4	9.8	3.9	70.5	99.6	11.1	100.0	0.6

continued

Appendix 3b (2)
Some Aspects of Indebtedness in Farmer Households, 2003 (NSS Regions)

NSS Regions	Far HH in Lakhs	Out Amt of Far HH in Rs Crore	Prop of Far HH Indeb-ted, %	Avg Out Amt per Far HH in Rs	Prop of Out Amt for Prod purpo-ses, %	Prop of Out Amt from Formal sour-ces, %	Prop of Out Amt >1 Yr, %	Prop of SM Far HH to all Far HH, %	Prop of SM Far HH Indeb-ted, %	Out Amt of SM Far HH to Out Amt of all Far HH, %	Out Amt of SM Far HH from Formal sources, %
MP1	13.8	614.1	31.5	4442.6	61.9	56.1	83.8	70.1	27.8	45.9	13.8
MP2	11.8	1739.1	56.9	14756.5	70.6	65.3	79.9	67.6	46.1	39.5	25.9
MP3	13.5	3698.4	78.9	27385.1	62.5	42.1	78.7	66.1	76.6	40.2	27.9
MP4	10.3	659.3	32.0	6372.8	85.7	86.4	79.2	70.5	28.5	27.4	28.6
MP5	5.2	453.8	45.9	8719.9	90.8	71.4	62.2	53.7	32.6	12.4	18.3
MP6	8.5	1821.9	54.8	21330.3	75.1	61.8	74.3	64.5	51.7	49.3	28.1
NA1	0.8	8.3	36.5	1030.4	36.4	68.8	11.3	95.1	37.7	85.8	24.5
OR1	16.7	1369.7	63.0	8202.4	58.4	61.6	64.9	95.3	62.6	90.8	37.5
OR2	9.7	328.2	36.1	3399.3	90.4	90.2	86.4	86.6	33.3	63.6	31.5
OR3	16.0	787.8	39.0	4927.7	65.1	89.8	79.4	92.5	38.3	88.8	34.7
PO1	0.3	63.7	80.1	20927.5	27.6	59.6	52.6	85.6	82.0	85.6	46.0
PU1	9.9	2922.9	61.8	29451.3	64.5	50.2	35.8	83.2	58.6	33.0	25.1
PU2	8.5	4744.4	69.7	55704.8	68.1	45.9	68.1	66.9	61.5	26.7	28.2
RA1	15.3	3607.4	53.6	23523.2	62.1	33.1	80.1	28.3	54.3	14.2	9.4
RA2	20.8	4334.1	54.5	20884.0	55.2	29.9	78.3	77.2	53.7	58.6	10.9
RA3	10.2	406.3	37.6	3998.9	32.7	29.0	67.9	94.2	36.9	83.7	11.4
RA4	6.8	1404.2	65.3	20560.1	73.0	48.3	86.7	74.6	62.6	47.2	29.8
SI1	0.5	10.9	32.8	2052.5	39.2	57.8	50.5	95.1	33.3	88.7	19.6
TN1	9.7	2680.3	72.9	27738.8	51.4	54.3	71.3	90.7	70.9	74.5	38.5
TN2	10.5	2562.9	80.3	24454.5	50.3	49.2	66.3	92.3	81.0	78.1	35.1
TN3	9.8	1577.1	74.4	16012.0	45.5	36.2	65.8	87.2	76.6	87.4	26.3
TN4	8.9	2496.4	69.3	28090.5	69.1	60.3	79.4	78.9	69.7	56.8	35.6
TR1	2.3	69.5	49.2	2977.2	59.1	79.7	89.8	99.5	49.4	100.0	39.4
UP1	53.4	6858.9	53.5	12834.6	72.1	61.9	63.8	89.7	52.9	69.7	27.0
UP2	33.8	1630.1	32.6	4820.0	66.5	62.3	71.6	91.2	32.0	75.7	18.9
UP3	75.1	3120.8	33.1	4154.2	55.8	52.8	70.5	93.7	32.6	75.9	13.6
UP4	9.2	1129.1	50.6	12284.4	77.5	63.4	69.7	69.4	44.0	35.2	19.7
UT1	9.0	99.3	7.2	1108.0	51.5	76.1	60.1	96.2	7.0	98.5	9.5
WB1	6.6	168.5	29.9	2566.5	74.7	94.6	77.6	97.0	30.5	98.9	28.8
WB2	19.8	790.1	40.3	3983.9	64.9	70.3	61.5	96.4	40.6	92.6	26.9
WB3	23.1	1664.1	63.2	7213.0	53.1	48.7	60.8	97.5	63.0	89.4	29.3
WB4	19.8	1002.8	50.9	5075.1	50.5	56.7	70.9	96.6	51.0	96.8	28.7
India	893.5	112445.3	48.6	12584.8	65.1	57.0	69.7	83.6	46.3	58.9	23.8

Note and source: As in appendix 3a. Region codes as in Appendix 2b.

Appendix 4a
Trends in Suicide Mortality Rates Across States, 1995-2004 (Farmer and Non-farmer Males)

States	Farmers										Non-Farmers									
States	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Andaman & Nicobar Is	0.0	54.1	80.9	74.0	60.4	107.2	20.1	46.8	6.7	20.1	54.4	54.3	50.1	46.1	54.7	39.9	46.9	50.5	40.4	44.4
Andhra Pradesh	13.6	24.4	17.5	28.8	30.1	22.8	25.6	31.7	28.5	44.5	10.9	11.1	14.3	14.3	15.9	16.4	16.9	19.5	19.5	21.6
Arunachal Pradesh	0.0	0.0	8.5	0.0	2.3	5.2	8.8	15.2	7.2	11.3	11.0	11.7	9.9	10.2	12.2	17.6	17.1	13.0	11.1	8.1
Assam	4.5	2.7	7.5	5.6	2.5	4.2	5.5	9.6	6.1	12.6	14.0	19.3	21.9	20.4	18.3	19.7	17.6	14.7	15.0	15.6
Bihar*	1.0	0.7	0.9	1.1	1.1	0.3	0.9	1.0	0.8	0.5	1.3	1.2	1.8	2.3	2.2	0.5	0.9	1.2	1.0	0.9
Chandigarh	90.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	130.1	0.0	9.4	4.4	4.8	11.4	8.4	10.3	8.4	11.1	13.3	10.1
Dadra & Nagar Haveli	24.2	59.1	105.5	82.1	42.0	113.1	105.1	119.6	135.1	42.5	25.2	26.5	12.2	8.5	19.6	20.6	18.0	11.5	6.8	11.8
Daman & Diu	38.4	0.0	0.0	0.0	0.0	47.6	0.0	104.3	0.0	114.6	8.9	15.0	7.8	19.1	8.2	9.0	12.1	14.7	19.2	3.0
Delhi	37.1	70.1	32.9	125.4	66.4	61.3	59.6	115.5	31.8	49.4	10.7	9.6	10.0	8.3	9.0	9.1	10.4	8.6	9.9	10.2
Goa	39.8	77.8	22.1	16.6	17.5	55.3	70.0	37.0	73.8	32.1	23.1	58.4	22.6	29.2	28.6	28.5	24.5	35.1	31.1	32.0
Gujarat	9.6	11.3	11.0	14.0	10.3	14.9	13.2	12.4	12.1	11.7	10.2	10.3	8.8	10.4	12.1	11.9	10.8	11.0	10.5	11.2
Haryana	10.1	4.9	2.5	9.2	9.4	12.0	7.2	8.9	10.1	7.5	16.1	9.8	14.1	11.7	17.4	17.2	14.9	16.5	16.2	14.5
Himachal Pradesh	1.9	3.6	2.4	2.1	4.8	4.2	2.6	2.8	3.4	5.0	7.3	5.8	10.3	6.7	8.7	10.7	7.9	9.2	10.3	9.2
Jammu & Kashmir	0.0	0.0	0.3	0.2	0.1	3.0	1.2	1.5	0.5	0.1	0.8	0.5	1.1	1.3	1.4	1.2	2.0	2.0	1.4	1.2
Karnataka	33.7	30.9	31.3	30.1	41.4	43.5	44.5	41.6	48.2	35.4	31.3	23.2	27.3	30.0	31.3	30.5	29.3	30.4	29.6	30.2
Kerala	127.6	109.4	138.9	172.9	182.5	184.7	161.8	258.3	297.6	183.0	35.3	35.2	39.7	40.0	42.4	40.7	43.2	42.1	39.3	41.1
Lakshadweep	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	3.5	0.0
Maharashtra	14.7	23.5	23.9	29.0	30.6	37.3	44.1	47.3	50.8	57.2	18.0	14.6	16.5	17.0	16.3	16.5	16.5	15.8	15.7	14.5
Manipur	0.4	0.0	0.0	0.0	0.0	0.4	0.0	1.3	1.8	0.9	2.7	2.3	1.0	3.1	1.9	1.6	2.9	3.2	1.9	3.3
Meghalaya	3.7	3.7	0.4	2.0	1.2	0.8	0.8	3.1	1.5	4.2	5.2	7.9	8.7	7.3	4.8	4.0	8.9	5.2	3.5	3.3
Mizoram	0.0	0.0	4.1	0.0	0.0	2.3	0.0	2.3	0.0	1.5	11.7	13.1	8.6	26.9	8.8	15.2	16.6	18.5	13.9	16.7
Madhya Pradesh*	10.5	14.4	17.9	18.4	21.8	22.1	24.3	22.5	21.2	27.7	12.1	9.6	10.6	14.4	13.3	15.6	14.2	14.5	14.3	13.5
Nagaland	1.9	1.8	3.5	0.0	0.4	0.0	0.0	0.0	0.0	0.0	3.1	4.3	7.1	1.0	1.1	4.2	3.7	2.6	2.2	3.1
Orissa	7.9	6.4	6.0	9.7	7.3	5.2	6.2	9.5	10.3	9.8	10.9	10.6	12.9	11.5	13.3	15.4	14.0	16.7	17.0	15.3
Pondicherry	0.0	0.0	291.8	1068.2	1145.1	2066.3	861.3	917.5	247.4	1495.4	108.6	81.5	75.1	53.2	67.2	36.9	55.2	73.8	81.1	47.4
Punjab	5.2	7.3	6.1	6.0	4.8	4.1	2.4	2.3	1.4	4.3	4.2	3.4	3.6	5.2	7.0	5.8	3.5	3.5	4.5	4.1
Rajasthan	0.0	6.0	8.3	8.9	8.4	7.6	6.0	6.9	7.9	9.4	13.1	7.6	7.7	8.6	9.6	8.1	8.3	8.3	9.2	8.9
Sikkim	0.0	11.0	24.7	21.2	22.2	11.6	22.8	7.0	27.5	40.5	25.3	29.4	10.9	29.7	32.0	21.1	24.0	24.7	23.3	12.2
Tamil Nadu	NA	15.5	20.2	26.4	18.3	20.9	25.3	39.7	27.1	43.7	NA	19.9	19.2	22.4	24.4	24.2	24.7	22.1	24.0	24.8
Tripura	45.0	48.2	7.5	50.8	42.2	6.2	18.6	12.5	0.0	7.2	20.4	16.2	29.8	21.2	35.4	44.7	33.2	35.8	36.6	30.6
Uttar Pradesh*	1.9	2.6	2.4	3.2	3.9	3.2	3.3	2.8	2.1	2.4	3.6	3.5	3.6	3.2	3.6	3.2	2.2	3.1	2.8	2.4
West Bengal	18.5	26.4	25.3	20.8	18.8	21.2	20.1	25.1	20.7	18.4	20.8	21.1	20.8	21.4	21.0	19.5	19.9	17.7	18.9	19.5
India	9.3	12.3	12.7	14.8	15.3	15.7	16.2	18.1	17.5	19.2	11.7	11.9	12.9	13.6	14.2	13.9	13.5	13.5	13.5	13.4

Note: Estimates for 1995 is not given for Tamil Nadu as appropriate profession wise classification is not available. * Undivided states.
Source: Estimated using interpolated/extrapolated population using census 1991 and 2001 and suicide data from NCRB (Various Years).

Appendix 4b
Trends in Suicide Mortality Rates Across States, 1995-2004 (Farmer and Non-farmer Females)

States	Farmers										Non-Farmers									
States	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Andaman & Nicobar Is	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.8	53.0	42.5	42.8	29.4	35.8	35.4	36.3	28.6	26.4
Andhra Pradesh	13.6	11.5	4.6	8.7	13.0	11.8	6.7	10.4	14.4	18.7	9.6	10.0	11.9	12.1	12.6	11.4	12.5	11.9	10.7	11.9
Arunachal Pradesh	0.0	0.0	0.7	0.0	2.1	1.4	3.5	4.2	0.7	2.7	9.0	5.1	9.5	5.8	8.8	13.9	9.8	11.6	7.9	7.6
Assam	0.5	0.0	1.0	0.6	1.2	1.1	2.1	2.2	3.1	1.6	7.2	9.1	10.0	9.1	8.2	8.4	7.7	7.4	8.2	7.9
Bihar*	0.6	0.4	0.4	0.8	0.8	0.0	0.2	0.4	0.0	0.0	1.2	1.1	1.5	2.1	2.0	0.6	0.9	0.9	0.8	1.7
Chandigarh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	3.7	9.4	12.2	10.2	8.4	8.7	9.2	9.1	5.8
Dadra & Nagar Haveli	0.0	23.9	28.7	8.4	0.0	0.0	0.0	0.0	0.0	0.0	14.6	11.3	31.4	23.4	16.4	27.2	23.9	26.9	30.9	25.1
Daman & Diu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	8.5	8.1	11.8	7.6	7.3	7.1	3.4	10.0	12.9
Delhi	10.3	50.8	0.0	0.0	0.0	0.0	18.9	28.0	0.0	9.1	7.9	8.7	8.6	9.0	8.6	7.7	9.1	7.0	6.8	7.2
Goa	5.8	0.0	0.0	0.0	0.0	0.0	0.0	8.6	4.6	4.8	19.8	37.2	15.2	15.0	14.7	15.1	15.2	13.6	14.2	16.4
Gujarat	5.7	3.9	5.5	4.5	4.5	3.8	4.1	4.9	6.7	4.5	10.9	11.0	10.4	10.9	11.9	11.0	10.4	9.0	8.6	8.6
Haryana	0.0	0.0	0.0	2.1	3.4	1.7	1.0	1.9	1.1	1.1	9.1	5.5	7.6	7.6	10.2	8.3	8.3	7.8	7.6	7.6
Himachal Pradesh	0.0	0.2	0.4	0.9	0.0	0.0	0.0	0.1	0.4	0.7	6.8	5.3	7.2	6.2	7.9	7.4	8.1	7.7	8.6	7.6
Jammu & Kashmir	0.0	0.0	0.0	0.0	0.4	1.4	0.5	0.2	0.5	0.0	0.6	0.7	1.7	1.7	1.3	1.6	1.6	2.3	1.8	1.5
Karnataka	35.3	21.7	13.9	19.0	17.2	24.8	17.2	16.7	18.3	13.9	18.6	14.5	18.0	17.8	20.8	18.6	17.0	17.5	16.1	15.9
Kerala	21.2	17.1	23.4	97.9	84.1	62.4	50.0	95.7	70.5	56.3	16.9	18.8	19.0	18.2	19.2	17.7	18.3	16.9	16.0	15.6
Lakshadweep	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0
Maharashtra	1.8	7.1	5.6	8.5	6.9	10.1	11.5	10.8	9.4	7.4	15.9	13.6	15.3	15.4	15.0	13.3	12.7	12.0	11.5	11.2
Manipur	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.3	0.8	0.9	1.1	1.6	2.0	1.0	0.5	0.9
Meghalaya	0.0	1.9	0.0	0.5	0.9	0.0	0.9	0.0	0.0	0.0	2.6	1.4	2.3	2.3	2.4	2.4	2.1	2.2	1.1	1.9
Mizoram	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.4	1.8	8.9	2.1	2.9	3.2	3.8	4.0	2.5
Madhya Pradesh*	3.7	7.0	11.0	8.6	9.7	9.6	9.1	8.2	9.5	8.3	12.0	11.1	10.3	13.6	13.5	14.7	14.6	14.2	13.2	34.7
Nagaland	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.7	2.0	0.8	1.4	0.9	2.6	1.3	0.8	0.9
Orissa	4.0	1.4	2.4	5.8	0.6	2.0	5.4	4.3	5.3	11.2	11.0	10.6	10.0	11.4	11.4	11.3	12.4	10.9	10.1	9.6
Pondicherry	0.0	0.0	427.7	199.4	465.1	1220.9	633.4	462.4	216.1	3285.5	48.0	50.2	44.7	44.4	51.9	41.8	44.6	33.5	41.4	36.9
Punjab	1.4	0.4	0.0	0.0	0.0	0.0	1.0	0.0	0.3	0.3	1.9	1.7	1.8	2.3	2.4	1.9	2.5	1.1	1.2	1.2
Rajasthan	0.0	0.8	1.6	1.6	2.4	3.4	1.3	1.5	1.2	1.1	8.2	6.4	8.1	7.0	8.1	6.4	6.6	5.9	6.4	6.1
Sikkim	0.0	2.0	11.3	1.8	3.5	3.4	3.3	4.7	16.8	28.1	15.9	13.3	15.0	13.9	21.8	21.8	18.1	12.3	14.8	12.7
Tamil Nadu	NA	9.5	8.8	7.0	8.4	9.3	8.6	11.2	12.9	18.6	NA	14.6	14.8	17.6	18.0	15.4	15.0	15.0	16.3	16.4
Tripura	131.8	123.4	0.0	128.5	0.0	0.0	0.0	15.3	4.4	0.0	11.4	11.5	27.3	14.8	32.5	28.3	29.6	20.2	25.6	24.1
Uttar Pradesh*	0.4	4.0	2.8	2.7	2.5	2.7	2.0	0.9	0.7	1.4	3.1	3.3	3.0	3.9	4.0	3.2	2.6	3.0	2.5	5.3
West Bengal	24.9	30.0	21.7	37.3	29.7	35.3	31.1	39.2	12.7	2.9	18.7	20.3	20.2	19.5	18.6	18.6	17.3	15.9	16.2	15.9
India	5.6	6.6	5.6	7.2	6.7	7.4	6.2	6.4	5.9	5.5	8.9	9.6	10.2	10.7	11.1	10.1	9.9	9.3	9.1	9.0

Note: Estimates for 1995 is not given for Tamil Nadu as appropriate profession wise classification is not available. * Undivided states
Source: Estimated using interpolated/extrapolated population using census 1991 and 2001 and suicide data from NCRB (Various Years).

Appendix 4c
Trends in Suicide Mortality Rates Across States, 1995-2004 (Age-Adjusted Population for Males and Females)

States	Males										Females									
States	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Andaman & Nicobar Is	49.1	54.3	53.0	48.7	55.2	45.7	44.6	50.2	37.7	42.5	40.2	50.0	40.2	40.5	27.9	34.1	33.8	34.8	27.5	25.4
Andhra Pradesh	11.4	13.3	14.8	16.6	18.1	17.4	18.2	21.2	20.7	24.7	10.0	10.1	11.2	11.8	12.7	11.5	12.0	11.8	11.0	12.3
Arunachal Pradesh	7.9	8.4	9.5	7.4	9.5	14.3	14.9	13.6	10.1	8.9	5.8	3.3	6.5	3.9	6.6	9.8	7.8	9.3	5.7	6.1
Assam	11.5	15.1	18.4	16.9	14.6	16.2	15.0	13.7	13.2	15.0	6.3	7.9	8.9	8.1	7.4	7.7	7.1	7.0	7.8	7.4
Bihar*	1.2	1.1	1.6	2.1	2.0	0.5	0.9	1.1	1.0	0.8	1.1	1.1	1.4	2.0	1.9	0.6	0.9	0.9	0.8	1.6
Chandigarh	9.9	4.4	4.7	11.3	8.3	10.3	8.4	11.0	13.6	10.1	4.8	3.7	9.3	12.1	10.2	8.4	8.7	9.2	9.1	5.8
Dadra & Nagar Haveli	24.9	34.7	34.0	24.4	24.1	37.6	32.8	28.3	25.1	15.8	9.0	15.8	30.5	18.7	11.5	19.7	17.8	20.6	24.2	20.1
Daman & Diu	10.2	14.4	7.5	18.4	8.0	10.0	11.8	16.7	18.8	4.9	12.1	7.9	7.6	11.1	7.2	7.0	6.8	3.3	9.7	12.6
Delhi	10.9	9.9	10.1	8.9	9.3	9.3	10.6	9.0	9.9	10.3	7.9	8.8	8.6	8.9	8.6	7.7	9.1	7.0	6.8	7.2
Goa	24.2	59.5	22.6	28.5	28.1	29.6	26.4	35.1	32.6	32.0	18.9	35.0	14.4	14.2	14.0	14.5	14.6	13.4	13.9	16.0
Gujarat	10.1	10.5	9.2	11.1	11.8	12.4	11.2	11.2	10.7	11.3	10.2	10.1	9.8	10.2	11.2	10.3	9.8	8.7	8.4	8.3
Haryana	14.8	8.8	11.8	11.2	15.9	16.3	13.5	15.1	15.1	13.3	8.1	4.9	6.7	7.0	9.4	7.4	7.3	7.0	6.6	6.6
Himachal Pradesh	5.7	5.1	7.8	5.3	7.5	8.7	6.3	7.3	8.3	8.0	4.2	3.3	4.5	4.1	4.7	4.4	4.8	4.5	5.2	4.7
Jammu & Kashmir	0.6	0.4	0.9	1.1	1.1	1.6	1.9	1.9	1.2	1.0	0.5	0.6	1.5	1.5	1.1	1.6	1.4	2.0	1.6	1.3
Karnataka	31.8	24.8	28.1	30.0	33.4	33.2	32.3	32.6	33.2	31.2	20.5	15.3	17.6	18.0	20.4	19.2	17.0	17.5	16.3	15.7
Kerala	42.0	40.2	45.7	47.4	49.6	47.4	48.3	50.5	48.5	45.8	17.0	18.8	19.1	19.3	19.9	18.1	18.5	17.4	16.3	15.8
Lakshadweep	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0
Maharashtra	17.4	16.0	17.7	18.9	18.5	19.6	20.6	20.3	20.6	20.3	13.6	12.6	13.8	14.4	13.9	12.9	12.6	11.9	11.3	10.8
Manipur	2.1	1.7	0.7	2.3	1.5	1.4	2.3	2.8	1.9	2.8	0.6	0.2	0.6	0.7	0.9	1.3	1.7	0.9	0.5	0.8
Meghalaya	4.8	6.7	6.4	5.9	3.9	3.1	6.8	4.7	3.0	3.5	1.9	1.5	1.7	1.9	2.1	1.9	1.8	1.8	0.9	1.5
Mizoram	7.8	8.7	7.1	18.0	5.9	11.1	11.3	13.4	9.5	12.0	1.2	0.9	1.2	5.7	1.4	1.9	2.1	2.6	2.7	1.7
Madhya Pradesh*	11.6	10.9	12.6	15.5	15.6	17.3	16.7	16.5	15.9	16.8	10.2	10.2	10.4	12.6	12.8	13.7	13.7	13.2	12.6	30.6
Nagaland	2.7	3.5	6.1	0.7	0.9	3.0	2.6	1.9	1.6	2.3	0.5	1.2	1.3	0.6	0.9	0.6	1.8	0.9	0.5	0.6
Orissa	10.1	9.6	11.3	11.1	12.0	13.3	12.4	15.4	15.7	14.4	10.3	9.8	9.4	11.0	10.7	10.8	12.0	10.5	9.9	9.7
Pondicherry	104.	78.9	81.6	81.2	94.7	84.7	72.7	90.6	84.2	72.0	47.6	49.8	46.9	45.2	53.6	45.8	46.2	34.5	41.7	42.3
Punjab	4.4	4.1	4.0	5.3	6.6	5.5	3.4	3.3	4.1	4.1	1.9	1.7	1.8	2.2	2.4	1.9	2.4	1.0	1.1	1.2
Rajasthan	9.1	7.1	7.9	8.7	9.3	8.0	7.6	8.0	8.9	9.0	6.0	4.9	6.4	5.6	6.6	5.6	5.2	4.8	5.1	4.8
Sikkim	18.0	24.2	14.7	27.3	29.3	18.5	23.7	20.0	24.4	19.5	11.7	10.3	14.0	10.7	16.9	16.8	14.1	10.3	15.3	16.8
Tamil Nadu	19.6	19.3	19.3	22.9	23.6	23.8	24.8	24.0	24.3	26.7	13.2	14.1	14.4	16.8	17.3	14.9	14.6	14.7	16.1	16.5
Tripura	24.9	21.9	26.0	26.1	36.5	38.8	31.0	32.5	31.6	27.5	20.6	19.9	25.3	22.9	30.2	26.4	27.7	19.9	24.3	22.6
Uttar Pradesh*	3.1	3.3	3.3	3.2	3.6	3.2	2.5	3.1	2.7	2.4	2.9	3.3	3.0	3.8	3.9	3.1	2.5	2.8	2.4	5.0
West Bengal	20.4	21.9	21.5	21.3	20.7	19.7	19.9	18.6	19.1	19.3	19.0	20.6	20.3	20.1	18.9	19.1	17.7	16.5	16.1	15.5
India	12.5	11.9	12.9	13.8	14.4	14.2	14.0	14.3	14.2	14.4	9.5.	9.3	9.7	10.4	10.6	9.8	9.5	9.1	8.8	8.7

Note: Age-adjusted population refers to 5+ years as suicide is not medically defined for 0-4 age-group. * Undivided states.
Source: Estimated using interpolated/extrapolated population using census 1991 and 2001 and suicide data from NCRB (Various Years).

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