Farmers' suicides in India, 1995-2012: measurement and interpretation

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Summary

Background: Farmers' suicides have become an important socio-economic concern in India that has profound implication on the quality of life of farmers and their families. There are not many epidemiological studies on this. We propose to estimate suicide rates for farmers and non-farmers across the states of India and over time. We will also contextualise our results to the discourse on agricultural technology and development in general and that of cotton farming in particular.

Methods: Suicide rates are computed per 100,000 people using suicide incidences for farmers and non-farmers reported by the National Crime Records Bureau (NCRB) from 1995 to 2012 and normalising the same with age-adjusted interpolated/extrapolated population computed from census. It also raises questions on quality of data, definitions of data reporting as they have important bearing on measurement. Equally important is the population used for normalising to have an appropriate social context.

Findings: At the aggregate all India level, one observes that the SDR for male farmers increases to a peak in 2004 and there is a second spike in 2009 but then it declines and also becomes lower than the suicide rates for male non-farmers in 2011 and 2012. However, state-specific analysis, while showing mixed pattern, indicates that the decline in recent years is largely on account of an abrupt drop in Chhattisgarh on account of changes in reporting and non-reporting of farmers' suicides for West Bengal in 2012. The states of Andhra Pradesh and Maharashtra with large cotton-growing areas and with relatively higher incidence of farmers' suicides, in contrast to the all India trend, show an increasing trend in recent years.

Interpretation: Relatively higher incidence of farmers' suicides is symptomatic of risk and raises livelihood as also public health concerns among the population dependent on agriculture. Public policy should focus on livelihood-enhancing and sustainable agricultural practices. Public health interventions should address the need for mental health care, reduce response time to lower harm and prevent deaths from poisoning and other self-inflicted harm, and restrict and regulate the access to and use of organophosphorous poisons. We also call for shifting the development discourse linked to farmers' suicides from a techno-centric yield or income focus to a people-centric livelihood and quality of life focus.

Keywords: Bt cotton, farmers' suicides, India, livelihood, people-centric, techno-centric

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Introduction

The Global Burden of Disease (GBD) estimates that from 1990 to 2010 the years of life lost (YLL) due to suicides increased by 127% in India and the rank of suicides in causes of YLL moved up from twentieth to eighth (Institute for Health Metrics and Evaluation (IHME, 2010)). GBD 2010 estimates also show that India accounts for 35.6% of the global YLL on account of suicides (IHME, 2010), which is more than double its global population share of 17.2% (Population Reference Bureau (PRB), 2010). However, the officially available reported suicides for India in 2010 at 134,599, as per the National Crime Records Bureau (NCRB) (Various Years) that compiles it from police stations, is less than half that of the GBD estimates. This poor quality of data could be because of underreporting by households to avoid police investigation linked with suicide being a criminal act in India or to avoid shame or for other reasons (Patel et al, 2012). Despite this lacuna, NCRB is the only source of disaggregated data at the state level and also provides information that can allow us to delineate suicides for farmers and non-farmers (Mishra, 2006b; Nagaraj, 2008).

Farmers' suicides in India have led to public policy and academic discourse (Government of India, 2007; Reddy and Mishra, 2009a; Deshpande and Arora, 2010; Vasavi, 2012). There have been some recent attempts at evaluating suicide incidences (Gruere and Sengupta, 2011), and estimating suicide rates for farmers by normalising it with farm population (Mayer, 2010; Establet, 2012) or operational holdings (Plewis, 2014a,b). The purpose of the current exercise is to critically examine them, suggest an appropriate alternative, and estimate suicide rates for farmers and non-farmers across the states of India and over time. It will also raise issues on quality of life linked to livelihood and public health concerns and attempts to take the debate away from an exclusive focus that links farmers' suicides either in support of or against a specific technology.

Methods

NCRB has been providing profession-wise suicides by sex across states since 1995 and one of the professions is for those self-employed in farming/agriculture, which would include those who are owner- or tenant-cultivators, but not agricultural labourers. This is to be normalised with an equivalent population category, which is obtained by combing the cultivators from both main and marginal category of workers in the census. Sub-group consistent interpolation/extrapolation gives us estimates of population for all years. These are used to compute suicide rates or suicide deaths per 100,000 people for farmers and non-farmers from 1995 to 2012. The details of the method have been elaborated in an earlier exercise (Mishra, 2006b).

This departs from two earlier approaches. In one approach, farmers' suicides are normalised with the combined population of cultivators and agricultural labourers.[0-0] This is based on the practice in Europe, North America and elsewhere where suicide rates are computed for farm population that includes farm owners and workers to address the problem of high estimates in small population groups. The Indian context should not club these, as farmers/cultivators and agricultural labourers are two distinct large population groups. Further, the incidence of suicides by those self-employed in farming collected by NCRB does not include the agricultural labourers.

The second approach normalised for population with adjusted operational holding data from the agricultural census (Plewis, 2014a,b). This is out of a concern that there could be some cultivators (particularly, females and children) who are not decision-makers, and hence, could overestimate their population. Even if one is not able to take decisions, it need not be a basis to pre-empt one from being a cultivator when individuals have been identified as such on the basis of their work. Further, operational holding refers to a plot of land and it is possible that a single cultivator could work in a number of plots because of land partitioning and absence of consolidation while under joint holdings a number of cultivators could work in a single plot. Besides, in an analysis over time, replacing a decreasing trend of cultivators with an increasing trend of operational holdings would mean that an increasing trend of suicide rates could be depicted as decreasing and thereby affecting the quality of the estimates. It is for this that we argue in favour of and use cultivators from the census as an appropriate population base to calculate suicide rate for farmers.

In addition the second approach also corrects for underestimation of suicides using a correction factor from a nationally representative mortality survey (Patel et al, 2012). But, a common correction factor for all years and for both farmers and non-farmers is neither appropriate nor relevant in a trend analysis. In any case, if one were to agree with the view that the cultivator population provided by the census is an overestimate and NCRB suicides data are underestimates then it implies that our suicide rates for farmers would be underestimates.

The non-farmers in the second approach are restricted to the 15 and above age group and this goes with an implicit assumption that none of the suicides below 15 years are among farmers. We avoid this because profession-wise and age-wise classifications of NCRB data on suicides are not mutually exclusive, and hence, our suicide estimates for non-farmers are for the 5+ age group, as suicides are not medically defined for the 0-4 age group.

Another concern is the underreporting of suicides because of social stigma or for the fact that the act is a criminal offence or for other reasons (Gajalakshmi and Peto, 2007; Patel et al, 2012; Mene, 2013). This is important, but we keep that aside in an analysis of trends. Moreover, we do not know the differences across professions. However, with regard to farmers there could be politico-administrative reasons to not report or report it under some other category. This, if true, will further underestimate the suicide rate for farmers.

Results

Between 1995 and 2012, the NCRB reported 284,673 farmers' suicides, which is 13.9% of all reported suicide deaths (Table 1). From all reported farmers' suicides, 84.6% are males.

The suicide rates for India from 1995 to 2012 in Table 2 indicate the following. For females, the suicide rate for farmers has always been relatively lower than that of non-

farmers and the difference remained in the range of -4.6 to -2.6 (Figure 1). With regard to males, the suicide rate for farmers was relatively lower than non-farmers in the initial years of 1995 and 1997 and then it became relatively greater with the difference increasing till it peaked in 2004; this was followed by a secular decline, but for a spike in 2009 – a drought year, and it has again become relatively lower in 2011 and 2012.

Three-year average suicide rates for male farmers and male non-farmers across the states of India from 1995 to 2012 shown for six sub-periods in Table 3 indicate the following. At the all India level, suicide rate for male farmers is lower than that of the male non-farmers in the first (1995-97) and the last (2010-12) sub-periods. This turnaround in the last sub-period is largely on account of a sudden decline in the reporting of farmers' suicides in Chhattisgarh and non-reporting in West Bengal, which we will elaborate later.

The suicide rate for male farmers has been lower than that of male non-farmers in all the six sub-periods in 15 states (Arunachal Pradesh, Assam, Haryana, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Tripura and also for the recently created Jharkhand and Uttarakhand with data for four sub-periods only), in five sub-periods in another three states (Sikkim, Tamil Nadu and West Bengal), in four sub-periods for Andaman and Nicobar Islands, in three sub-periods for Gujarat and Chandigarh, and in two of the four sub-periods for the present day Bihar. The union territory of Lakshadweep has no farmers.

It is a matter of concern when suicide rate for farmers will be relatively higher than that for non-farmers. This happens to be so for all the six sub-periods in the states of Andhra Pradesh, Karnataka, Kerala and Maharashtra, the national capital region of Delhi and the union territory of Dadra and Nagar Haveli. It is also relatively higher in four sub-periods for Goa, Daman and Diu, and Puducherry, and in three of the four sub-periods for the states of Chhattisgarh, Madhya Pradesh, and Uttar Pradesh.

For these states with relatively higher farmers' suicides we would like to do some further analysis. However, as suicides are rare, the calculation of suicide rate could return higher estimates for lower population and also show high year-to-year fluctuations. Hence, in our subsequent analysis we exclude the smaller entities that include all the union territories, the state of Goa and the national capital region of Delhi because they have less than 30,000 male cultivators as per 2011 census.

In other words, we show the trends in the suicide rate for male farmers and the suicide rate for male non-farmers (Figures 2 to 8) and discuss the difference between the suicide rate for male farmers over the suicide rate for male non-farmers (hereafter, the difference) for the seven states of Andhra Pradesh, Chhattisgarh, Karnataka, Kerala, Madhya Pradesh, Maharashtra and Uttar Pradesh. More than 70% of the male farmers' suicides of India for the entire period under analysis are from these seven states.

Andhra Pradesh: the difference has been positive for all the years from 1995 to 2012. The difference, while fluctuating, seems to be increasing and is the highest in 2012 (Figure 2). After 2004, the suicide rate for male farmers decreased till 2007 and then it has been

increasing, but for 2011. Without making any causal claims, an associational observation during the post-2007 period is a decline in cotton yield (Kranthi, 2012).

Chhattisgarh: a state carved out of undivided Madhya Pradesh in 2000 and for which data are available from 2001. The difference peaked in 2008 and then started declining and in the last two years there are no reported farmers' suicides in 2011 and only four in 2012 (Figure 3). At the same time during 2010-12 the share of male non-farmer suicides from 'self-employed (others)' seems to have increased substantially (Table 4). This raises a concern on reporting. Independent of that, suicides in the state should also be a concern in its urban/industrial centres (Parry, 2012).

Karnataka: the difference has been fluctuating and has largely remained positive except for 2006 and 2008 (Figure 4). The trend line of this difference is bimodal with the first and the relatively bigger peak in 2003 and the next one in 2010. It is difficult to compare the fluctuating trend in suicide rate for male farmers (Figure 4) with the three-year state-specific shares from male non-farmer suicides for 'self-employed (others)' or 'others' (Table 4). But, one does observe an increase in the share of 'others' during 2004-06 and 2007-09; in fact, its share for 2006 and 2008 were among the two highest at 34% and 30% respectively. In 2012, the share of 'self-employed (others)' was at 37%.

Kerala: the suicide rates have remained higher than the other major states (in particular, one excludes the states/union territories with less than 30,000 cultivators in the 2011 census in this comparison). The relatively higher suicides could be because of lower underreporting. What is intriguing it that the difference between farmers and non-farmers suicide rates in Kerala is among the highest across states and the suicide rate for male farmers is 3.1 to 6.5 times greater than the suicide rate for male non-farmers. This difference has been fluctuating, but like Karnataka, the maximum difference is observed in 2003 (Figure 5).

Madhya Pradesh: like Chhattisgarh, the state in its present geographical entity has data from 2001. The difference was the maximum in 2004 and has been showing a declining trend since then and the suicide rate for farmers was lower than that of the suicide rate for non-farmers in 2010 and 2012 (Figure 6). This decline is on account of an increase in suicide rate for non-farmers. Further, from male non-farmer suicides, one also observes an increase in the proportion of suicides among the profession 'others' during the recent two sub-periods: 2007-09 and 2010-12 (Table 4).

Maharashtra: one observes that the difference increased in the initial years to reach its peak in 2006 and then it declined till 2009 and has started increasing again after that (Figure 7). With not much fluctuation in the suicide rate for non-farmers, it implies that the suicide rate for farmers has increased till 2006 and then again from 2010. Unlike the all India trend, 2009 is a trough. This result is important for two reasons. First, from among the seven states discussed here, Maharashtra is the only state where the population for cultivators has increased from 2001 to 2011. Second, this is the state with the largest cotton growing areas that have also been reporting high incidence of farmers' suicides.

Uttar Pradesh: like Chhattisgarh and Madhya Pradesh this state in its present geographical entity was also formed in 2000 and has data from 2001. The male suicide rates (for farmers and non-farmers) are relatively lower when compared with the other states. The difference was negative from 2002 to 2004 but has remained positive after that and one observes peaks in 2008 and 2012 where the suicide rates for male farmers was greater than the suicide rate for male non-farmers by 40%.

The seven state-specific estimates discussed above show mixed outcomes with regard to convergence between suicide rate for farmers and non-farmers in recent years (2010-12). There is no convergence in the states of Andhra Pradesh, Kerala, Maharashtra and Uttar Pradesh while there is convergence in Karnataka (as suicide rate for farmers have been fluctuating) and Madhya Pradesh (as suicide rate for non-farmers have increased), but Chhattisgarh needs some elaboration.

The case of Chhattisgarh is intriguing and raises questions on the quality of reported data. There seems to be an implicit change in defining professions after 2009. The reported data indicate a near absence of farmers' suicides (zero in 2011 and four in 2012) while at the same time there has been an increase in the suicide of the professions 'self-employed (others)' and 'others' (Table 4). We also observe an increase in the shares of these two categories for Karnataka and Madhya Pradesh for those sub-periods/years when the difference with regard to suicide rate for male farmers over male non-farmers shows a decline. At the all India level, these two categories constitute more than 50% of the reported profession-wise male non-farmer suicides for 2010-12 and their combined shares have always remained greater than 40% and that also seems to be increasing over the years. It raises a question of who are they, particularly in a predominantly rural and agrarian economy like Chhattisgarh. These two open-ended categories need clarity.

Farmers' suicides data for West Bengal in 2012 is missing from the reported annual publication by NCRB. This is reflected in Table 5 with a fall in the share for male farmer suicides from 5.7% in 2006-09 to 3.9% in 2010-12 (Table 5). In other words, West Bengal constituted nearly 6% of male farmers' suicides in India in the years prior to 2012. This is a concern because the aggregate suicides for the state have been reported. Such selective reporting and changes in reporting, as in Chhattisgarh, could explain a part of the convergence in the difference between suicide rates for male farmers and male non-farmers at the all India level in recent years (Figure 1).

Discussion

Suicide is a multifaceted and complex phenomenon (Leenaares, 1995). More than 90% of suicides are likely to be associated with neurobiological disorders (Hawton and van Heeringen, 2009), but these are predisposing in nature (Mann, 2002). The relatively higher incidence of suicides among a particular sub-group of population, 100 years after Durkheim (Lester, 1994), are to be identified with socio-economic risk factors that are precipitating in nature (Durkheim, 2002/1897). This, however, does not imply the absence of socio-economic ills when suicide incidences are lower or absent.

Relatively higher suicide rates for farmers are to be identified as a symptom of a larger socio-economic malaise – the crisis in Indian agriculture that also has a human rights dimension (Government of India, 2007; Reddy and Mishra, 2009a; Deshpande and Arora, 2010; Mishra and Reddy, 2011; Centre for Human Rights and Global Justice, 2011; Vasavi, 2012). This crisis has two analytically independent, but pragmatically interdependent, dimensions – agricultural development and livelihood concerns. The former is about the farm whereas the latter is about the people dependent on it which includes both cultivators and agricultural labourers. The former is about the quantum of produce while the latter is about sharing the produce. This means that the problem and the solution should be linked to both production and distribution, as they together have profound implications on the quality of life of the farmers and their families (Reddy and Mishra, 2009a; Deshpande and Arora, 2010; Vasavi, 2012).

The absence of profession-wise suicides data prior to 1995 does limit our understanding. Nevertheless, the increasing incidence of farmers' suicides rate from 1995 to 2004 can be contextualised with substantive structural, institutional and policy changes from early 1990s (Reddy and Mishra, 2009b), which was associated with declining public investments in agriculture (Chand, 2009), reducing farmers' access to formal sources of credit (Shetty, 2009), and waning of agricultural research and extension services (Pal, 2009), among others.

There are state-specific aspects. For instance, in Andhra Pradesh (particularly, in the current day Telengana) the increasing reliance on groundwater through private investments led to a tragedy of the commons that resulted in the depletion of this natural resource making farming as also debt-servicing non-viable (Galab, Revahi and Reddy, 2009). The imposition of the water-intensive green revolution technology in the dry land regions of Karnataka has been counterproductive (Deshpande, 2009). In Kerala, the plantation economy bore the brunt of the vagaries of weather, pests and international price fluctuations (Nair and Menon, 2009). The Vidarbha region of Maharashtra, considered as the epicentre of farmers' suicides, brings forth the problem of concurrent risks in multiple dimensions – weather, credit, and prices (both input and output) among others that would adversely affect both yield and income simultaneously (Mishra, 2006a, 2009).

In Chhattisgarh, another rainfed region bordering Vidarbha where academic inquiry has been largely missing, the story of erratic monsoon, increasing input costs, poor price support and indebtedness repeats (Mohan, 2009). The Bundelkhand region situated in central India straddling across Madhya Pradesh and Uttar Pradesh suffers from ecological degradation, agricultural neglect and rural indebtedness (Verma, 2011).

Outside the above-mentioned seven states and not reflected in the NCRB data, is the discussions and academic inquiry on farmers' suicides in the Punjab (Singh, 2009), which is considered as the citadel of agricultural growth in India. Here, the after-effects of the years of green revolution had degraded the land leading to plateauing of yield and poisoned the groundwater resulting in adverse health consequences (Thakur et al, 2008; Singh, 2009; Government of Punjab, 2013). Further, consumerism aggravated the

problem of decreasing returns, increasing costs and the surmounting debt-burden (Singh, 2009).

Despite state-specific differences, a common thread running across the story of suicides is the adverse implications on the livelihoods and the quality of life of farmers and their families. It so happened that many of the affected farmers in Andhra Pradesh, Karnataka, Maharashtra and Punjab were cotton growers who faced a pest menace from *Helicoverpa armigera* or the American bollworm. In many instances, the pesticides meant to control the bollworm menace has also been the means that the farmers used to end their lives. In such a situation, the introduction of *Bacillus thuringiensis* (Bt) toxin through genetic coding to cotton seeds came as an alternative to ward-off the bollworm pest. This seems to have shifted the debate on farmers' suicides in India to this techno-centric fix.

The scientific claim is that this Bt technology is supposed to prevent a loss in production from bollworm attacks and it has succeeded in doing that (Kranthi, 2012). Statistical claims convert this into a story of yield gain (Lalitha, Ramaswami and Viswanathan, 2009; Stone 2011; Gruere and Sun, 2012; Krishna and Qaim, 2012; Kathage and Qaim, 2012), while applied discourse extend the claims to reduced pesticide usage and associated health gains (Stone 2011; Krishna and Qaim, 2012), and income improvements (Rao and Dev, 2009; Subramanian and Qaim, 2010; Stone 2011; Krishna and Qaim, 2012; ; Kathage and Qaim, 2012). The failure of these successes is that they reinforce the advantage of the resource-rich (Shah, 2008), largely rely on multinational companies and are not necessarily pro-poor (Rao and Dev, 2009; Shah, 2008; Qayum and Sakkhari, 2005; Glover, 2010) ignore variability and its associated risk (Glover, 2010; Gaurav, 2014; Gaurav and Mishra, 2015a), add to agricultural deskilling (Stone, 2011), could lead to resistance of Bt by the bollworm pest (Tabashink, 2008), or emergence of secondary pests ((Lalitha, Ramaswami and Viswanathan, 2009; Stone 2011; Krishna and Qaim, 2012;), and may have some health risks (Mezzomo et al, 2013; Jayasumana, Gunatilake, and Senanayake, 2014; Seralinia et al 2014; Cassault-Meyera et al, 2014).

There also exist civil society groups that use alternative evidence and narratives to raise their apprehensions about Bt that some consider as science scepticism (Herring, 2013), but others point out that such evidence do provide a basis to question the over-emphasis of the advantages by genetically engineered crops and their usage by governments for public policy (Glover, 2010; Stone and Glover, 2012; Stone, 2012). Further, the near universal coverage of Bt cotton makes it difficult to separate the impact of Bt gene and improvements in other seed traits because of an absence in counterfactuals (Stone, 2012). This debate has restricted the arguments to be either pro- or anti-Bt. As a result, there is not much articulation on alternative forms of knowledge that have a basis in science and technology such as non-pesticidal management that could reduce costs and risks (Ramanjaneyulu, 2009; Quartz, 2010; Reddy, 2013) and could also be associated with a reduction in suicides (Vijayakumar and Satheesh-Babu, 2009).

Our suicide rate estimates for farmers and non-farmers show that the difference between the two groups among males peaked in 2004 and thereafter there has been decline, but for a spike in the drought year of 2009, which is also observed in the drought year of 2002.

The decline from 2010 to 2012 is contentious because a substantial amount of this is on account of changes in reporting in Chhattisgarh and non-reporting for West Bengal in 2012. There is a case for improving the quality of reporting suicides data by NCRB. They should also move to providing access to unit level data on a real time basis that can be traced down to lower level administrative units that is feasible under appropriate anonymity restrictions.

Even if one were to agree on the broad decline in suicide rates for farmers after 2004 the reasons would be attributed to reasonably good monsoon for four consecutive years from 2005 to 2008, and other policy initiatives that facilitated agriculture (Deokar and Shetty, 2014), and the overall economy (Ghatak, Ghosh and Kotwal, 2014). In the four states of Andhra Pradesh, Karnataka, Kerala and Maharashtra the relief programmes in selected districts with high incidence of suicides initiated by the governments also had positive impact in the initial years, but the weak capacity of households to deal with drought and other shocks limits their efficacy (Bhende and Thippaiah, 2009; Kalamkar and Shroff, 2011).

The role of Bt seeds in ameliorating farmers' suicides is a bit difficult to evaluate for the fact that suicide rate for male farmers seems to have increased in the predominantly cotton growing states of Andhra Pradesh and Maharashtra during 2010-12. Gujarat has less cotton growing area than Maharashtra, but is the state with the highest production; it is also the state where Bt cotton has been in use much before its formal approval (Lalitha, Ramaswami and Viswanathan, 2009; Ramaswami, Pray and Lalita, 2012), but the incidences of farmers' suicides, as evident from NCRB, have always been relatively lower there. Nevertheless, the spike in male farmer suicide rate at the all India level in a drought year suggests an increase in risk and vulnerability that got manifested through an increase in farmers' suicides (Mishra, 2008; Vasavi, 2012), particularly among the enterprising upwardly mobile farmers who would have invested in such technologies (Rao, 2009).

This calls for public health interventions, which has to go beyond reduction of suicides. There is a case to address the need for mental health care, reduce response time to prevent deaths from poisoning and other self-inflicted harm, ensure that a patient is treated with appropriate protocols when they reach a health facility, seek the help of specialist by appropriate use of information and communication technology, involve farmers' groups in villages to identify individuals under stress or depression and initiate appropriate preventive measures, and restrict and regulate the access to and use of organophosphorous poisons (Mishra 2006a; Gajalakshmi and Peto, 2007; Eddleston and Konradsen, 2007; Patel et al, 2012). While these are important, an understanding of farmers' suicides has to go beyond this and focus on socio-economic concerns and quality of life (Mishra, 2006a).

Sociological perspectives on suicides in India, *a la* Durkheim (Durkheim, 2002/1897; Lester, 1994), have emphasized on loss of dignity and honour (Nilotpal, 2011), or because of socio-economic estrangement on account of individualisation (Mohanty, 2005). It is important to contextualise these with the weakening of the rural lobby and

agrarian interest (Posani, 2009; Vasavi, 2012), and the dependence of the cash-crop producing marginal famer on the vagaries of the market and non-serviceability of debt (Kennedy and King, 2014; Singh and Bhogal, 2014). Or, the fact that while the marginal and small farmers are not necessarily inefficient their livelihood sustenance is at bay (Gaurav and Mishra, 2015b). There is a general 'decay' in rural India and farmers' suicides is a call for help. This means that development discourse and public policy have to move out from piecemeal approaches that get reduced to income or yield; it has to have a livelihood and quality of life focus. It calls for an emphasis on sustainable agricultural practices that combines local knowledge with science and technology to understand the inter-connectedness of the system and requires involvement of people (Vasavi, 2012; Silici 2014; Mishra, 2014).

A sensitive issue like suicides will raise many unanswered question that range from the philosophical perspective of "to be, or not to be," but also about pragmatic considerations of how to improve the quality of life of people that results in the reduction of such incidences. This requires the coming together of research and action from multiple disciplines.

Conclusion

Suicides data for India based on police records by NCRB are underreported. Despite this lacuna, one could use it to analyse broad trends and patterns for suicides among farmers and non-farmers across the states of India. However, one should guard against changes in reporting (Chhattisgarh from 2010 to 2012) or non-reporting (West Bengal in 2012) of profession-wise suicides. Underreporting of suicides ought to be addressed and greater clarity under profession-wise classification to reduce reporting under open-ended categories like 'self-employed (others)' and 'others' is required. In other words, it calls for improvement in the quality of data reporting. It needs to be mentioned that in 2014, an year not covered in the current paper, NCRB has changed the classification in reporting profession-wise suicides that makes comparison impossible, but it also seems that this has been done without appropriate consultation because they have a category 'self-employed in farming (agricultural labourers)' that raises a number of questions because a self-employed person cannot be a labourer (Mishra, 2015).

While using the available suicides data, suicide rates need to be normalised with appropriate population. The NCRB category of 'self-employed in farming' is similar to the worker-wise classification of 'cultivators' in the census. There are some observations that the latter could be overestimations, but this means that the suicide rate for farmers would be underestimates indicating that our estimates would err on the lower side. Again, given the Indian context, farmers' suicides would be different from the nomenclature used in some other countries that compute suicide rate for farm suicides. The latter requires an inclusion of farm workers while the former warrants excluding agricultural labourers from the population used for normalising. These are not comparable categories, but the purpose here is to improve the quality of estimation with regard to farmers' suicides.

Some policy initiatives around 2004-05 could have contributed to growth in Indian agriculture and this might have also contributed to a decline in farmers' suicides after 2004. However, the drought of 2009 (as observed in this paper) and 2015 (as observed from content analysis of newspaper reports, see Kuruganti (2015) for Karnataka, Limaye (2015) for Marathwada in Maharashtra, and Malik and Rath (2015 for Odisha) saw a worsening of the situation. State-specific analysis shows that suicide rate for farmers have increased in recent years for Andhra Pradesh and Maharashtra, the predominantly cotton growing states. This has profound implications on the quality of life of the farmers' and their families.

Introduction of Bt has coincided with an increase in yields and also perhaps income in certain situations, but it has not lead to a complete elimination of the use of pesticides or been able to ward off farmers' suicides; in fact, during a period of crisis, it could add to the farmer's risk and vulnerability. Further, the development discourse that started with farmers' suicides, have, unfortunately, turned to a pro- or anti-Bt debate. This has been an unnecessary diversion from real issues. There is a strong case for policy initiatives to address public health as also livelihood concerns. It also urges development discourse linked to farmers' suicides to move away from a techno-centric yield or income focus to a people-centric livelihood and quality of life focus that is sustainable.

To sum up, we raise quality related issues on three aspects. First, there is a need to improve the quality of data associated with reporting of suicides in India. Second, a careful consideration of the definitions in the reported data has implications in the quality of measuring of suicide rates. Third, it questions the debate where the interpretation is limited to the pros and cons of a particular seed technology and calls for a development discourse focusing on livelihoods where the quality of life of the farmer and their families matter.

Table 1
Farmers' Suicides and All Suicides by Sex in India, 1995-2012

Year	Farmers' Suicides				All Suicides			Farmers' suicides as % of all suicides, Persons
	Males	Females	Persons	Males as % of Persons	Males	Females	Persons	
1995	8295	2425	10720	77.4	52357	36821	89178	12.0
1996	10897	2832	13729	79.4	51206	37035	88241	15.6
1997	11229	2393	13622	82.4	56281	39548	95829	14.2
1998	12986	3029	16015	81.1	61686	43027	104713	15.3
1999	13278	2804	16082	82.6	65488	45099	110587	14.5
2000	13501	3102	16603	81.3	66032	42561	108593	15.3
2001	13829	2586	16415	84.2	66314	42192	108506	15.1
2002	15308	2663	17971	85.2	69332	41085	110417	16.3
2003	14680	2463	17143	85.6	70068	40511	110579	15.5
2004	15929	2312	18241	87.3	72651	41046	113697	16.0
2005	14973	2158	17131	87.4	72916	40998	113914	15.0
2006	14664	2396	17060	86.0	75702	42410	118112	14.4
2007	14509	2123	16632	87.2	79295	43342	122637	13.6
2008	14145	2051	16196	87.3	80544	44473	125017	13.0
2009	14951	2417	17368	86.1	81471	45680	127151	13.7
2010	13592	2372	15964	85.1	87180	47419	134599	11.9
2011	12071	1956	14027	86.1	87839	47746	135585	10.3
2012	11951	1803	13754	86.9	88453	46992	135445	10.2
All years	240788	43885	284673	84.6	1284815	767985	2052800	13.9

Note: There is no farmers' suicides data for Tamil Nadu in 1995 and West Bengal in 2012 because profession-wise data was not provided. There is no suicides data for Jharkhand in 2003, as the published data are a repeat of 2002.
Source: National Crime Records Bureau (NCRB) (Various Years).

Table 2
Suicide Rates for Farmers and Non-Farmers by Sex in India, 1995-2012
(per '00,000 people)

Year	Males			Females		
	Farmers	Non-Farmers	Persons	Farmers	Non-Farmers	Persons
1995	9.7	12.6	12.5	5.9	9.6	9.5
1996	12.2	11.9	11.9	6.6	9.6	9.3
1997	12.7	12.9	12.9	5.6	10.2	9.7
1998	14.8	13.6	13.8	7.2	10.7	10.4
1999	15.3	14.2	14.4	6.7	11.1	10.6
2000	15.7	13.9	14.2	7.4	10.1	9.8
2001	16.2	13.5	14.0	6.2	9.9	9.5
2002	18.0	13.6	14.3	6.5	9.4	9.1
2003	17.8	14.0	14.6	6.3	9.3	9.0
2004	18.8	13.6	14.5	5.8	9.0	8.8
2005	17.7	13.6	14.3	5.5	8.9	8.6
2006	17.4	14.1	14.6	6.2	8.9	8.7
2007	17.3	14.6	15.0	5.5	9.0	8.7
2008	16.9	14.7	15.0	5.4	9.1	8.8
2009	17.9	14.4	14.9	6.5	9.1	8.9
2010	16.4	15.6	15.7	6.5	9.2	9.1
2011	14.6	15.7	15.6	5.4	9.2	9.0
2012	15.3	16.9	15.4	5.2	9.7	8.6

Note: Suicide rates (suicide deaths per 100,000 people) are age-adjusted for 5 and above years. Suicide rates for farmers and non-farmers exclude Tamil Nadu in 1995 and West Bengal in 2012, as profession-wise suicide incidences for these states was not provided. All suicide rates in 2003 exclude Jharkhand as suicide incidences provided were a repeat of 2002. Non-farmers include housewife (females only), government service, private service, public sector undertaking, student, unemployed, self-employed in business activity, self-employed in professional activity, self-employed in farming or agriculture, self-employed (others), retired person, and others.
Source: Author's calculation based on relevant data from NCRB and Census of India.

Table 3

Three-Year Average Suicide Rates for Male Farmers and Male Non-farmers across the States of India, 1995-2012

(per ’00,000 people)

States	Male Farmers						Male Non-farmers					
	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012
AP	18.5	27.2	28.7	42.8	38.1	46.3	12.1	15.6	18.7	21.5	24.3	23.5
AR	2.9	2.5	10.4	8.9	8.6	8.9	10.9	13.4	13.7	12.5	15.8	17.0
AS	4.9	4.1	6.8	10.3	8.9	10.7	18.5	19.5	15.9	16.8	16.1	15.6
BI†	0.9	0.9	0.7	1.3	2.2	2.3	1.4	1.7	0.7	1.3	2.2	2.1
BI	‡	‡	0.9	0.5	1.3	1.3	‡	‡	0.9	0.7	1.2	1.1
CT	‡	‡	42.1	49.2	56.9	10.8	‡	‡	22.7	25.0	25.1	45.0
GO	46.8	29.1	58.8	32.2	16.1	30.1	34.7	28.8	30.5	30.1	27.4	30.4
GU	10.7	13.1	12.4	11.4	9.9	11.0	9.7	11.5	10.8	11.5	13.9	14.6
HA	5.8	10.2	8.9	8.2	10.2	16.4	13.3	15.5	16.0	15.6	17.4	18.6
HP	2.6	3.7	3.0	3.3	7.1	4.7	7.8	8.7	9.2	10.6	13.0	12.3
JK	0.1	1.1	1.1	1.2	1.7	1.6	0.8	1.3	1.8	2.8	3.2	2.7
JN	‡	‡	1.0	3.5	4.6	4.8	‡	‡	1.1	3.1	5.4	5.5
KA	31.9	38.3	44.8	33.4	35.7	37.4	27.2	30.6	29.9	30.0	29.4	28.4
KE	124.9	179.6	219.4	170.1	162.4	153.0	36.8	41.0	41.8	41.3	38.8	38.5
MP†	14.2	20.7	22.6	26.0	27.5	14.5	10.7	14.4	14.3	13.1	15.8	23.2
MP	‡	‡	15.7	17.6	16.7	15.9	‡	‡	11.6	9.2	12.7	15.9
MR	20.7	32.3	46.7	54.7	46.6	41.8	16.3	16.6	16.2	14.9	15.2	17.2
MU	0.1	0.1	1.0	0.5	0.3	0.0	2.0	2.2	2.7	2.8	2.3	2.1
MY	2.6	1.3	1.8	2.3	4.8	4.8	7.3	5.3	5.8	5.5	5.2	8.0
MZ	1.4	0.8	0.8	0.8	8.5	7.0	11.1	16.9	16.4	16.9	8.5	25.1
NA	2.4	0.1	0.0	0.1	0.3	1.3	4.9	2.2	3.0	3.2	3.6	2.5
OD	6.8	7.5	8.4	7.4	5.5	4.0	11.5	13.4	16.1	15.5	16.8	16.7
PN	6.2	5.0	2.0	3.9	4.6	4.7	3.7	6.0	3.9	4.4	5.0	5.7
RA	4.8	8.3	6.9	6.7	9.3	3.6	9.4	8.8	8.7	10.9	12.2	12.1
SI	12.1	18.3	19.7	44.9	39.7	19.0	21.7	27.5	24.3	19.9	51.3	56.3
TN	14.5	21.9	30.3	28.9	19.1	16.3	19.5	23.7	23.5	24.6	28.7	32.9
TR	33.8	33.3	10.2	7.6	13.2	12.2	22.2	34.0	35.5	29.9	29.2	30.7
UP†	2.3	3.5	2.7	2.4	3.2	3.4	3.5	3.3	2.7	2.3	2.3	2.4
UP	‡	‡	2.7	2.3	3.2	3.4	‡	‡	2.6	2.2	2.3	2.3
UT	‡	‡	4.3	3.1	3.0	3.0	‡	‡	5.8	4.2	3.4	4.6
WB	23.3	20.3	21.5	18.9	18.1	16.2	20.9	20.6	19.0	21.6	20.7	19.6
AN	45.1	80.5	24.9	38.1	145.1	21.1	52.9	46.9	46.7	49.2	43.9	52.8
CN	31.5	0.0	38.6	18.0	0.0	0.0	6.2	10.0	11.2	11.6	10.5	10.2
DA	62.4	78.7	115.8	58.4	80.1	52.8	21.0	16.6	12.0	15.5	15.6	19.1
DD	13.3	15.2	34.2	37.3	0.0	0.0	10.6	11.9	15.7	13.7	9.8	14.9
DE	46.7	85.0	66.9	27.0	52.5	48.6	10.1	8.8	9.8	11.4	11.3	13.5
LA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.1	1.1
PD	91.4	1405.1	643.9	1468.5	1145.5	13.3	88.2	52.3	69.9	41.4	41.2	65.9
IN	11.6	15.2	17.1	18.0	17.4	15.4	12.5	13.9	13.5	13.8	14.6	16.1

Note: AP is Andhra Pradesh, AR is Arunachal Pradesh, AS is Assam, BI is Bihar, CT is Chhattisgarh, GO is Goa, GU is Gujarat, HA is Haryana, HP is Himachal Pradesh, JK is Jammu and Kashmir, JN is Jharkhand, KA is Karnataka, KE is Kerala, MP is Madhya Pradesh, MR is Maharashtra, MU is Manipur, MY is Meghalaya, MZ is Mizoram, NA is Nagaland, OD is Odisha, PN is Punjab, RA is Rajasthan, SI is Sikkim, TN is Tamil Nadu, TR is Tripura, UP is Uttar Pradesh, UT is Uttaranchal, WB is West Bengal, AN is Andaman & Nicobar Islands, CN is Chandigarh, DA is Dadra & Nagar Haveli, DD is Daman & Diu, DE is Delhi, LA is Lakshadweep and has no farmer population, PD is Puducherry and IN is India. Suicide rates (suicide deaths per 100,000 people). The averages do not include Tamil Nadu in 1995, Jharkhand in 2003 and West Bengal in 2012. † refers to the undivided states with the same name prior to 2001 where BI included JN, MP included CT, and UP included UT. ‡ denotes not applicable.

Source: Author’s calculation based on relevant data from NCRB and Census of India.

Table 4

Male Non-farmer suicides that are Self-employed (others) or Others across the States of India, 1995-2012

(per cent)

States	Self-employed (Others)						Others					
	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012
AP	22.7	24.9	19.8	22.1	26.2	34.5	14.2	12.8	31.0	33.8	22.6	19.0
AR	21.7	2.1	0.0	14.7	26.2	17.7	0.0	0.7	0.0	4.5	4.7	15.7
AS	24.9	23.5	31.5	37.5	41.7	39.3	39.0	14.9	16.3	13.1	12.0	11.8
BI†	20.0	21.0	24.4	11.7	15.4	18.8	35.2	31.2	51.4	37.7	39.8	38.4
BI	‡	‡	15.2	8.9	18.1	25.9	‡	‡	39.1	39.9	43.6	45.4
CT	‡	‡	28.2	27.9	29.5	38.7	‡	‡	29.6	36.3	22.8	25.5
GO	11.1	13.4	8.0	6.3	5.8	7.2	34.9	10.1	18.3	26.0	15.1	24.9
GU	20.1	20.0	15.9	18.1	18.1	18.6	10.8	7.9	6.9	11.1	10.9	15.2
HA	16.1	9.8	12.6	14.0	8.0	24.4	38.4	38.6	33.8	35.8	43.6	33.4
HP	26.0	27.6	13.3	14.3	19.7	12.9	18.2	17.0	29.3	26.7	23.6	27.2
JK	25.3	28.2	17.0	15.8	13.2	10.2	21.5	17.6	42.2	32.4	15.8	29.7
JN	‡	‡	28.5	13.8	13.4	14.2	‡	‡	33.3	36.2	37.0	33.8
KA	39.4	40.6	36.3	29.2	30.5	32.5	0.2	8.7	14.7	29.9	28.4	18.6
KE	26.3	27.7	29.7	42.7	33.4	35.7	16.9	14.7	17.1	18.8	29.3	28.8
MP†	38.5	38.5	27.8	29.1	26.7	35.6	8.4	4.4	19.8	24.3	20.7	22.7
MP	‡	‡	27.6	30.1	24.9	32.7	‡	‡	13.5	13.6	19.3	20.1
MR	12.9	24.8	35.4	29.2	32.8	32.0	43.3	25.8	2.6	2.3	2.6	6.9
MU	12.2	13.7	11.8	10.7	14.9	1.5	46.3	5.9	8.8	6.7	6.0	24.6
MY	6.5	12.4	35.3	17.1	18.6	12.0	23.0	8.0	6.6	5.7	21.4	10.0
MZ	0.0	10.6	30.7	14.6	15.1	6.6	8.9	0.0	11.4	42.7	65.1	13.1
NA	14.5	42.5	6.6	31.3	36.1	12.0	0.0	7.5	6.6	0.0	37.5	0.0
OD	25.8	36.4	30.7	37.7	32.0	29.5	20.4	22.0	16.4	17.3	17.9	15.2
PN	16.8	19.0	21.3	30.0	28.2	31.2	25.7	33.5	37.7	26.5	25.3	18.4
RA	10.2	21.5	28.7	25.3	32.1	26.8	47.7	23.5	22.3	42.4	27.2	38.2
SI	10.6	10.9	28.0	20.0	28.5	6.5	23.1	25.2	7.7	6.4	20.9	7.0
TN	8.7	23.0	22.1	26.7	30.2	21.0	12.5	18.5	15.2	17.7	15.3	33.7
TR	22.3	12.6	13.3	11.0	34.5	21.0	21.4	41.4	26.2	28.1	15.8	33.9
UP†	22.0	18.6	23.3	23.0	27.1	20.2	33.3	22.3	13.1	16.0	12.7	23.3
UP	‡	‡	22.9	24.0	28.7	20.6	‡	‡	14.0	15.2	12.9	23.1
UT	‡	‡	27.1	12.9	5.7	15.6	‡	‡	5.2	23.2	10.5	25.7
WB	17.2	15.6	16.5	20.4	22.4	24.4	12.1	26.2	22.9	15.3	22.2	27.8
AN	8.0	1.9	7.0	2.4	7.5	3.2	0.9	8.8	0.0	7.3	7.5	3.2
CN	14.1	13.2	3.8	12.4	3.7	24.5	7.0	33.3	36.1	2.9	3.1	0.0
DA	10.5	5.3	20.6	9.6	1.6	4.4	34.2	2.6	5.9	42.3	11.3	18.9
DD	21.1	3.8	14.6	23.8	2.9	3.2	26.3	3.8	24.4	14.3	20.0	32.3
DE	16.5	12.8	19.9	19.1	15.2	14.6	15.4	4.5	9.1	11.6	18.8	16.9
LA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
PD	62.4	6.0	27.6	2.4	34.0	15.7	0.0	0.2	0.4	10.6	2.0	0.2
IN	21.8	25.4	25.7	26.8	27.6	28.6	19.7	17.8	17.5	20.7	20.1	22.6

Note: AP is Andhra Pradesh, AR is Arunachal Pradesh, AS is Assam, BI is Bihar, CT is Chhattisgarh, GO is Goa, GU is Gujarat, HA is Haryana, HP is Himachal Pradesh, JK is Jammu and Kashmir, JN is Jharkhand, KA is Karnataka, KE is Kerala, MP is Madhya Pradesh, MR is Maharashtra, MU is Manipur, MY is Meghalaya, MZ is Mizoram, NA is Nagaland, OD is Odisha, PN is Punjab, RA is Rajasthan, SI is Sikkim, TN is Tamil Nadu, TR is Tripura, UP is Uttar Pradesh, UT is Uttaranchal, WB is West Bengal, AN is Andaman and Nicobar Islands, CN is Chandigarh, DA is Dadra and Nagar Haveli, DD is Daman and Diu, DE is Delhi, LA is Lakshadweep and has no farmer population, PD is Puducherry and IN is India. The averages do not include Tamil Nadu in 1995, Jharkhand in 2003 and West Bengal in 2012. † refers to the undivided states with the same name prior to 2001 where BI included JN, MP included CT, and UP included UT. ‡ denotes not applicable.

Source: Author's calculation based on relevant data from NCRB.

Table 5

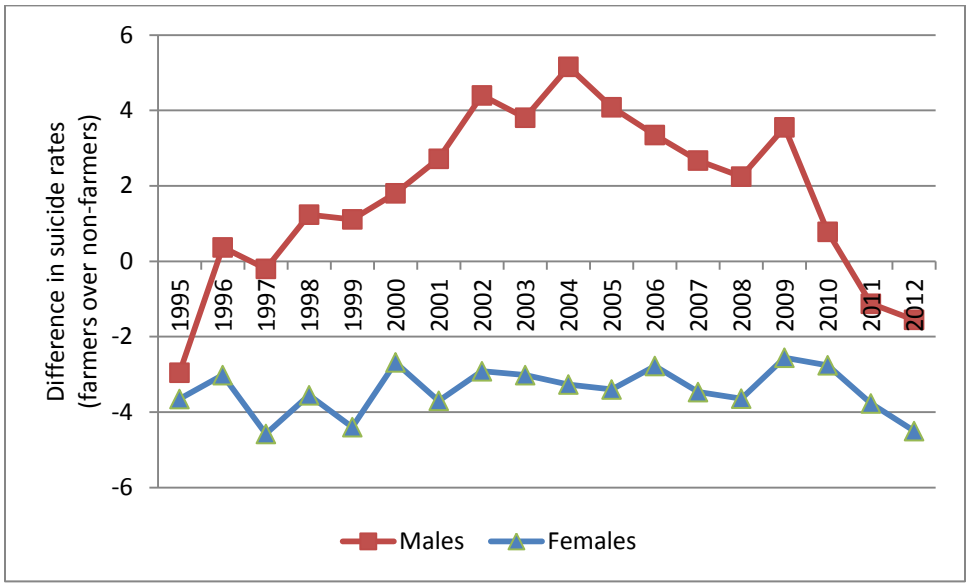
Three-year average State-specific shares of Male Farmer and All Male Suicides in India, 1995-2012

(per cent)

States	Male Farmers						All Males					
	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	2010-2012
AP	10.07	10.97	10.05	13.68	12.09	16.09	8.05	9.20	10.43	12.12	12.25	11.61
AR	0.04	0.03	0.10	0.08	0.09	0.11	0.07	0.08	0.10	0.09	0.10	0.11
AS	1.37	0.84	1.25	1.90	1.80	2.64	3.14	2.91	2.53	2.72	2.47	2.37
BI†	0.82	0.59	0.39	0.75	1.26	1.46	1.09	1.12	0.50	0.96	1.61	1.55
BI	‡	‡	0.38	0.20	0.52	0.58	‡	‡	0.53	0.38	0.69	0.61
CT	‡	‡	7.10	7.96	9.57	2.08	‡	‡	3.82	4.23	4.33	4.97
GO	0.15	0.06	0.10	0.05	0.02	0.05	0.39	0.27	0.29	0.27	0.23	0.24
GU	4.15	3.88	3.35	3.03	2.82	3.73	3.93	4.12	3.89	3.98	4.47	4.59
HA	1.00	1.40	1.12	0.99	1.27	2.34	1.95	2.15	2.21	2.13	2.34	2.55
HP	0.20	0.23	0.17	0.19	0.43	0.34	0.30	0.30	0.30	0.34	0.43	0.37
JK	0.01	0.08	0.07	0.07	0.10	0.10	0.05	0.09	0.12	0.18	0.21	0.17
JN	‡	‡	0.11	0.54	0.74	0.89	‡	‡	0.14	0.58	0.92	0.93
KA	15.18	13.98	14.80	10.58	11.76	14.19	11.80	11.76	11.83	10.74	10.28	9.67
KE	11.06	9.61	8.96	6.50	6.30	6.68	10.79	10.33	10.15	9.04	7.89	7.20
MP†	13.29	14.74	14.45	15.81	17.27	10.43	7.29	8.85	9.00	8.74	9.69	11.08
MP	‡	‡	7.35	7.86	7.70	8.36	‡	‡	5.18	4.51	5.36	6.11
MR	13.64	16.30	21.64	25.34	23.47	25.32	12.95	12.81	13.90	13.57	12.47	12.54
MU	0.00	0.00	0.02	0.01	0.00	0.00	0.03	0.03	0.04	0.04	0.03	0.02
MY	0.06	0.03	0.03	0.04	0.09	0.11	0.10	0.06	0.07	0.07	0.08	0.11
MZ	0.02	0.01	0.01	0.01	0.08	0.07	0.05	0.07	0.07	0.07	0.05	0.11
NA	0.05	0.00	0.00	0.00	0.00	0.03	0.06	0.02	0.03	0.03	0.03	0.02
OD	2.55	1.99	1.92	1.63	1.28	1.07	3.01	3.07	3.63	3.38	3.40	3.18
PN	1.13	0.67	0.24	0.45	0.56	0.66	0.83	1.02	0.63	0.73	0.79	0.86
RA	3.21	4.35	3.38	3.22	4.72	2.17	3.41	3.27	3.13	3.73	4.25	3.65
SI	0.08	0.09	0.09	0.20	0.18	0.10	0.08	0.10	0.09	0.10	0.17	0.17
TN	4.35	5.73	6.65	5.80	3.79	3.54	9.89	10.24	10.34	10.38	11.06	11.99
TR	0.81	0.58	0.16	0.11	0.21	0.22	0.62	0.76	0.70	0.57	0.55	0.55
UP†	4.36	4.85	3.37	2.71	3.66	4.44	4.35	4.02	3.29	2.71	2.86	2.88
UP	‡	‡	3.17	2.57	3.51	4.26	‡	‡	2.97	2.48	2.68	2.65
UT	‡	‡	0.20	0.14	0.15	0.18	‡	‡	0.32	0.23	0.18	0.23
WB	11.94	7.45	6.84	5.73	5.66	3.89	13.75	11.61	10.72	11.48	10.51	10.48
AN	0.07	0.09	0.03	0.04	0.13	0.02	0.15	0.13	0.12	0.12	0.12	0.11
CN	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.07	0.08	0.08	0.07	0.06
DA	0.12	0.11	0.14	0.07	0.10	0.08	0.05	0.04	0.05	0.04	0.04	0.05
DD	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.01	0.02
DE	0.14	0.18	0.12	0.05	0.10	0.11	1.08	0.90	1.03	1.15	1.12	1.28
LA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PD	0.12	1.16	0.43	0.95	0.78	0.01	0.67	0.58	0.54	0.46	0.41	0.42
IN	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: AP is Andhra Pradesh, AR is Arunachal Pradesh, AS is Assam, BI is Bihar, CT is Chhattisgarh, GO is Goa, GU is Gujarat, HA is Haryana, HP is Himachal Pradesh, JK is Jammu and Kashmir, JN is Jharkhand, KA is Karnataka, KE is Kerala, MP is Madhya Pradesh, MR is Maharashtra, MU is Manipur, MY is Meghalaya, MZ is Mizoram, NA is Nagaland, OD is Odisha, PN is Punjab, RA is Rajasthan, SI is Sikkim, TN is Tamil Nadu, TR is Tripura, UP is Uttar Pradesh, UT is Uttaranchal, WB is West Bengal, AN is Andaman and Nicobar Islands, CN is Chandigarh, DA is Dadra and Nagar Haveli, DD is Daman and Diu, DE is Delhi, LA is Lakshadweep and has no farmer population, PD is Puducherry and IN is India. The shares do not include Tamil Nadu in 1995 and West Bengal in 2012 for farmers and Jharkhand in 2003 for both categories. † refers to the undivided states with the same name prior to 2001 where BI included JN, MP included CT, and UP included UT. ‡ denotes not applicable.
Source: Author's calculation based on relevant data from NCRB.

Figure 1
Difference in suicide rates (farmers over non-farmers) by sex in India, 1995-2012



Note: Suicide rates denote suicide deaths per 100,000 people.

Figure 2
Suicide rates for male farmers and male non-farmers in Andhra Pradesh, 1995-2012

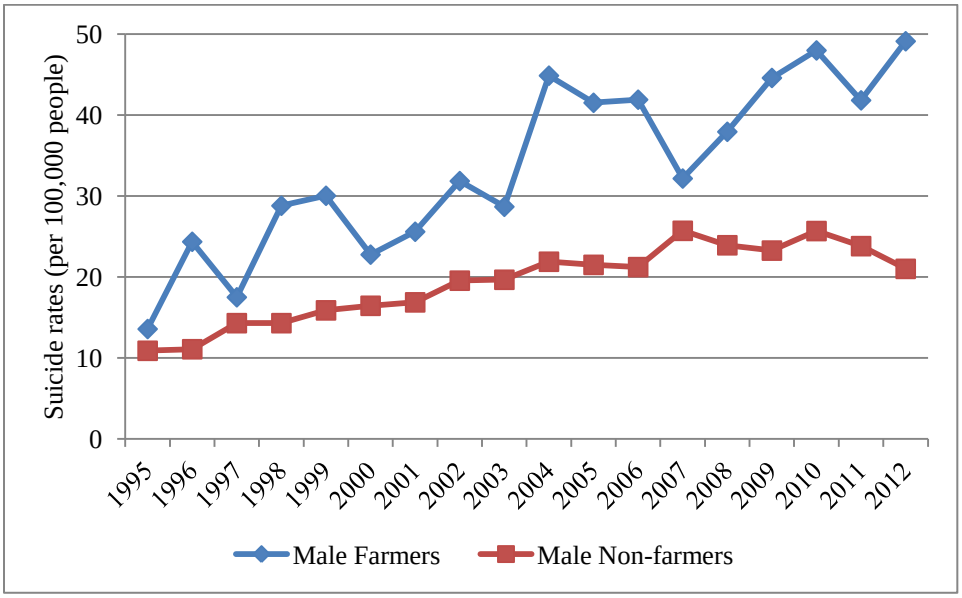


Figure 3
Suicide rates for male farmers and male non-farmers in Chhattisgarh, 2001-2012

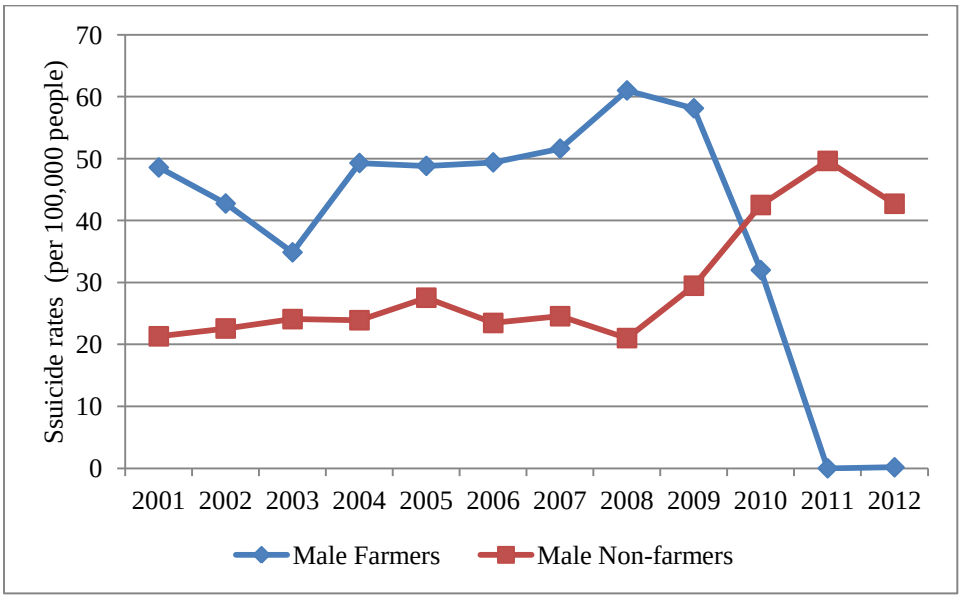


Figure 4
Suicide rates for male farmers and male non-farmers in Karnataka, 1995-2012

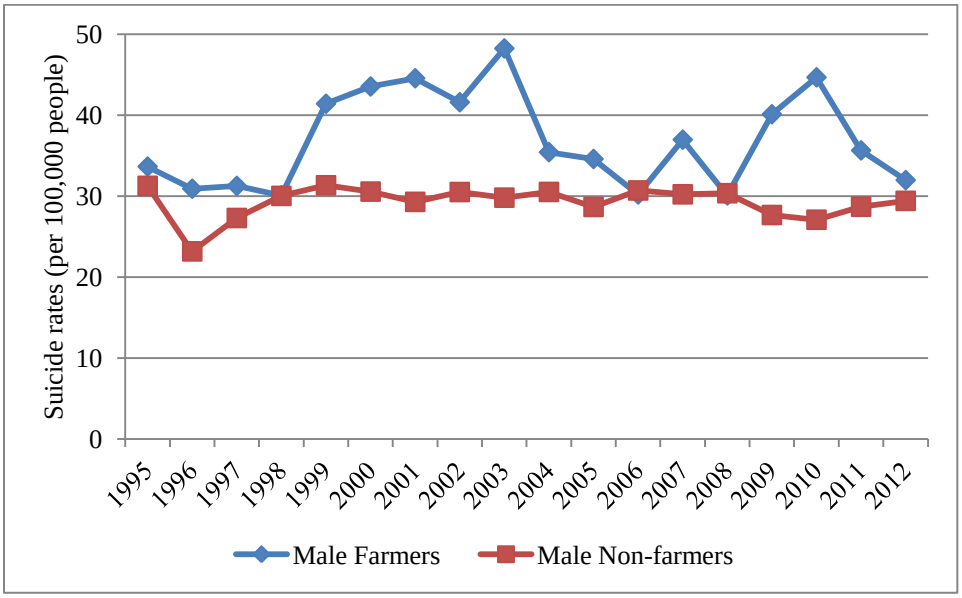


Figure 5
Suicide rates for male farmers and male non-farmers in Kerala, 1995-2012

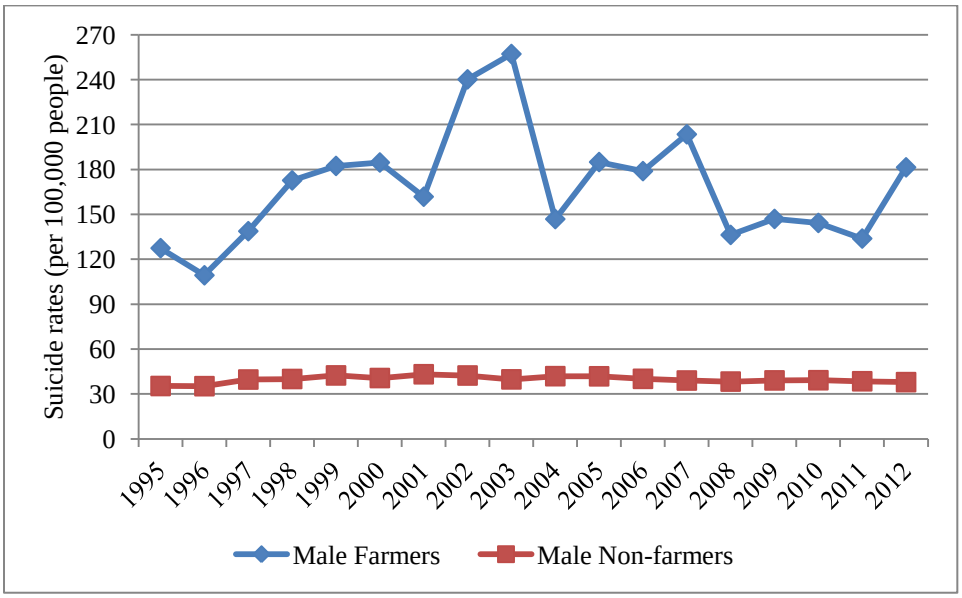


Figure 6
Suicide rates for male farmers and male non-farmers in Madhya Pradesh, 2001-2012

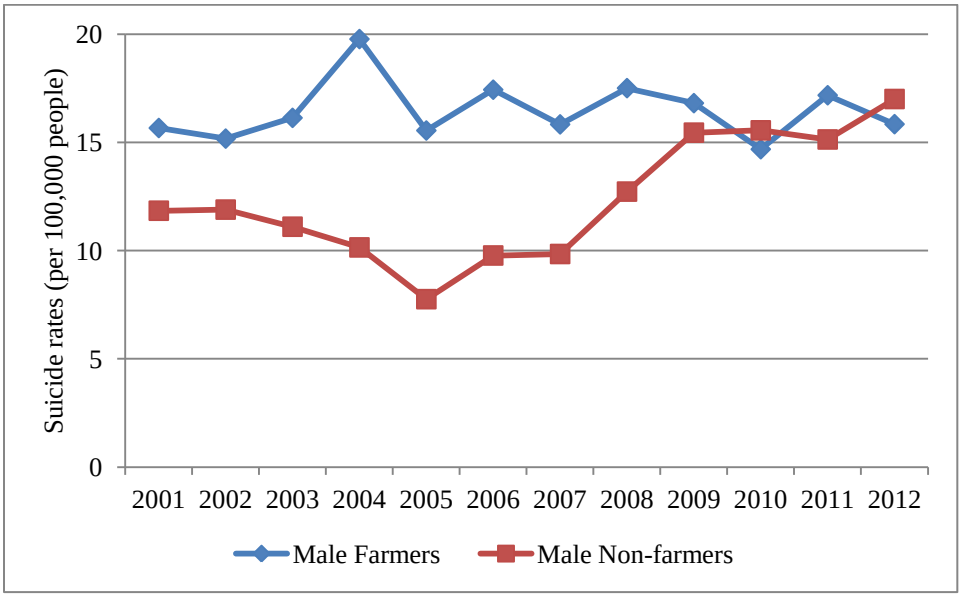


Figure 7
Suicide rates for male farmers and male non-farmers in Maharashtra, 1995-2012

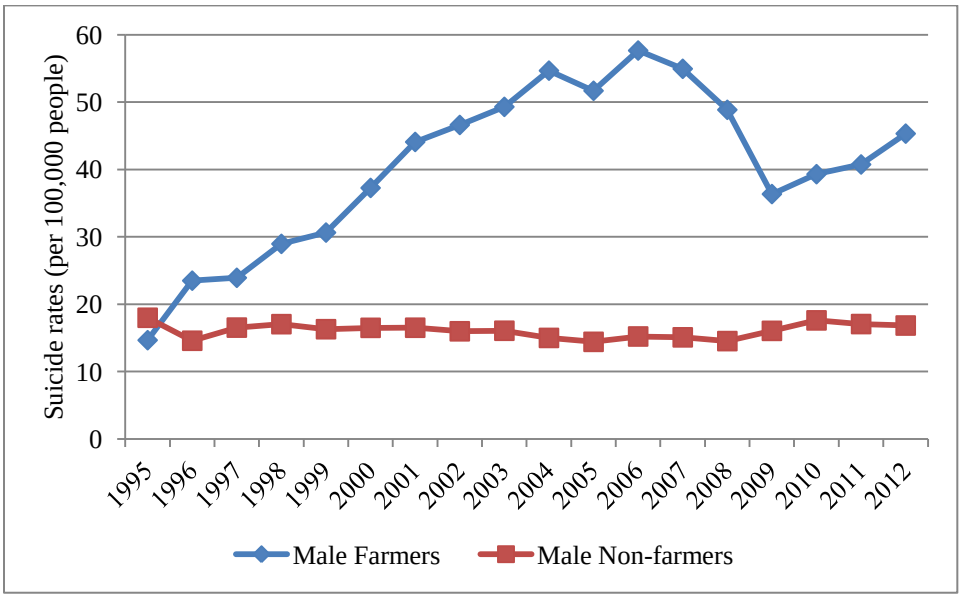
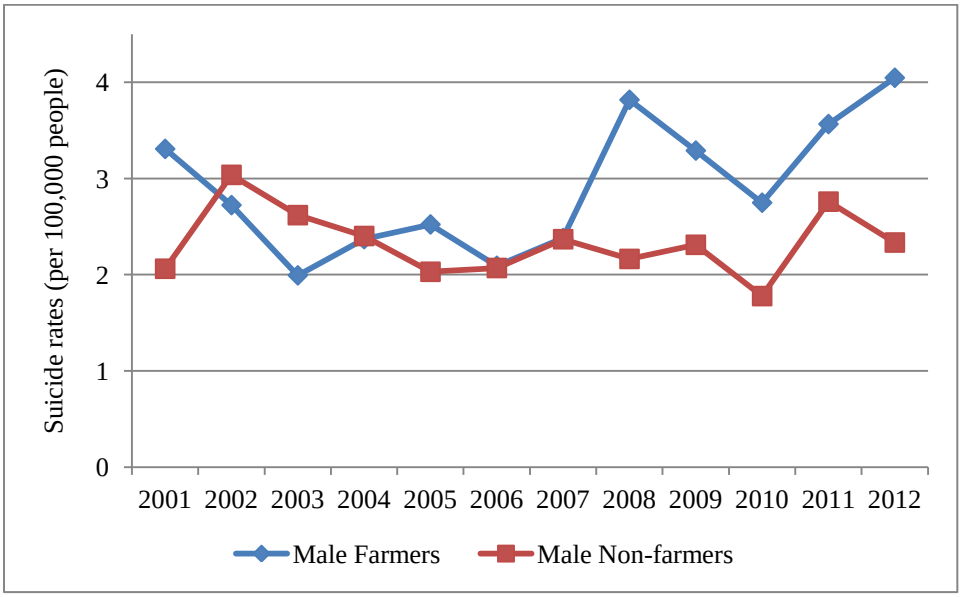


Figure 8
Suicide rates for male farmers and male non-farmers in Uttar Pradesh, 2001-2012



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