

## Causes of farmer suicides in Chhattisgarh

**Comment [uz1]:** title, objective and conclusion should be in line so please ammend it a bit

### Abstract

The study confined to Chhattisgarh State on the basis of primary and secondary data have been collected for the investigation. Surajpur district purposively selected for the study as number of victims were found to be maximum in the State in the year 2014. A village/police station wise list of all the victims (194) was collected from the Superintendent of Police, District Surajpur for the year 2014 and 50 victims (25.8%) have been selected for the study from various villages of the district. The causes of suicide and their after effect on family members were examined and found that the victim was mingling with his/her own family/community (64%) and neighbours households/friends (68%). The study also revealed that among the social causes of suicides family problems and commitments followed by marriage related issues were found to be major causes of suicide. Poverty and property disputes were not found to be major cause of suicide in the area under study. Indebtedness related causes of the suicide were not found as major causes of the suicide for the year 2014-15 and 2015-16. The after effect of farmers' suicides were also examined and found that the HHs have lost their earning member of the family (38%), insecurity arrived in the family (42%), family member under depression (18%), mortgage their property/jewellery etc. (12%) and schooling of children stopped (8%) were found to be major after effect on HH family as reported by the majority of respondents.

**Comment [uz2]:** what does that mean? Is it a cause of suicide?

**Comment [uz3]:** grammatical correction required

**Comment [uz4]:** dont use abbreviations in abstract please

**Comment [uz5]:** if this was part of your study and objective and abstract throws more light on effects than causes then better make it paert of your title as well

**Comment [uz6]:** are these MeSH key words?

**Key Word :** Suicides, indebtedness, causes of Suicides and Chhattisgarh

### Introduction

Agriculture has seen tremendous changes in the past century, with Agricultural Research investments paving the way for productivity gains leading to reduction in production costs and capacity to carter larger population. The contribution of agriculture to the GDP is on the decline and so does profitability. Farmer suicides were not a common phenomenon in India before 1990, but more than two lakh farmers committed suicides between 1990 and 2010. The

underlying causes for failure in agriculture could be many including climate change, reduction in profitability and fragmentation of land<sup>1</sup>. Farmers committing suicides was uncommon before the early 1990s, but has become a widespread phenomenon today in many States of India<sup>2</sup>. Suicide mortality rates (SMRs) of farmers are even higher than the national suicide rate, and still these numbers are considered to underestimate the real burden<sup>3</sup>. This already severe situation is aggravated by the fact that agriculture still constitutes the only source of livelihood for about two thirds of India's population, offering employment options to more than half of its work force<sup>4</sup>. Yet not all states of India are equally affected. There are certain states which account for the largest number of suicides in the country: These are Maharashtra, Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Karnataka and Kerala<sup>5ab</sup>. clarifies that mostly farmers are unaware of being insured. Moreover, he demands a risk management which addresses credit, prices, and income, weather as well as yield risks and found alternative strategies by farmers such as non-farm income, crop diversification and inter-cropping<sup>6</sup>.

**Comment [uz7]:** is same referencne cover all the data u provided in this paragraph?

Over two lakh farmers committed suicides in India between 1990-91 and 2009-10 and the proportion was alarmingly high in States notably Maharashtra, Andhra Pradesh and Karnataka<sup>7</sup>. It has been reported that over 2000 farmers quit agriculture every day<sup>8</sup>. The prominent causes recognized for farmers' suicides were bankruptcy or indebtedness (20.6 per cent), 'family problems' (20.1 per cent), failure of crops (16.8 per cent), illness (13.2 per cent) and drug abuse/alcoholic addiction (4.9 per cent)<sup>9</sup>. The Situation Assessment Surveys of the National Sample Survey Organization has reconfirmed the worsening situation of farm households which indicated that about 51.9 per cent of the farm households in India are indebted. Interestingly, indebted farmers have taken higher credit from institutional sources (60%) as compared to the non-institutional sources (40%)<sup>10</sup>. The NSSO in its 59th round survey has revealed that given the choice, 40 per cent farmers will quit farming because it is not profitable, risky and it lacks social status<sup>11</sup>. The report also stated that the main reason for incidences like these was due to both natural and manmade factors: "While natural factors like uneven rains, hailstorms, droughts and floods adversely affect crop yield, manmade factors such as pricing policies and inadequate marketing facilities result in post-yield losses<sup>12</sup>. The following five States together accounted for 89.5 per cent of the total farmer suicides (5056) reported in the country in the year 2014 and are presented in table 1.

**Table 1**

### Number of suicides and indebtedness in major suicide prone States of India.

State	Number of Suicides in 2014	% of farmer Suicides to all India total in 2014	% of indebted farm HH to total farm HH 2012-13
Maharashtra	2,568	45.5	57.3
Telangana	898	15.9	89.1
Madhya Pradesh	826	14.6	45.7
Chhattisgarh	443	7.8	37.2
Karnataka	321	5.7	77.3
<b>Total</b>	<b>5056</b>	<b>89.5</b>	<b>51.9</b>

Source: National Crime Records Bureau, 2015

The following five States together accounted for 89.5 per cent of the total farmer suicides (5,650) reported in the country, while the State only 7.8 per cent of the total farmer suicides (443) was reported in the year 2014 (National Crime Records Bureau, 2015).

### Material and Methods

The study confined to Chhattisgarh State. Both primary and secondary data have been collected for the investigation. Surajpur district purposively selected for the study as number of victims were found to be maximum in the State in the year 2014. A village/police station wise list of all the victims (194) was collected from the Superintendent of Police, District Surajpur for the year 2014 and 50 victims (25.8%) have been selected for the study from various villages of the district (Table 2).

The primary data were collected from the relatives/neighbours/friends of the victims by survey through interview schedule provided by the Co-ordinator, ADRT, Bangalore and translated the same in Hindi language and tested in the selected district environment. The detailed information was elicited from victim households with the aid of a structured and pre-tested questionnaire covering two sections. The first section was designed to collect information about the family size, education level of the victim household, social group, cropping pattern, size of the land holdings, sources of irrigation, cost and returns from crop cultivation and so on.

**Table 2**

**Sample size of primary data of CG. (2015).**

District	Talukas / Blocks	Villages	No. of Victims
Surajpur	Bhaiyathan	Kevara	1
	Jainagar	Kedrai	1
	Ramajunagar	Tivaragudi, Kaushalpur, Pandari,	14

**Comment [uz8]:** no tables in introduction please. Introduction should be brief and comprehensive. Define the topic, give relevant references and funnel it towards the objective

**Comment [uz9]:** was psychological autopsy done?

**Comment [uz10]:** how was sample size calculated? what was the sampling technique?

**Comment [uz11]:** don't use tables in methods. Use in result section please

**Comment [uz12]:** what was inclusion and exclusion criteria?

		Krishanpur, Krishanpur, Madneshwerpur, Vaknapadaripani, Chhidiya	
	Surajpur	Satpata, Dwarikinagar, Kasalgiri, Judwani, Kasela, Latory, Phoolwar, Sunvahi, Garhatpur	34
Total	4	19	50

In the second section, information regarding causes of farmers' suicides with special focus on the institutional and non-institutional credit, extent of indebtedness, coping strategies after the suicide incident and suggestions for preventing farmers' suicides were collected. The primary data related to the study collected in the year 2015-16. The Secondary data on district wise suicide cases in Chhattisgarh for the period of 2001-02 to 2015-16 were collected from the office of the Additional Director General of Police, Chhattisgarh, Raipur. Suitable statistical tools i.e. mean, percentage, growth rates were used for the study. The cost of cultivation of the respondents was worked out on per acre basis.

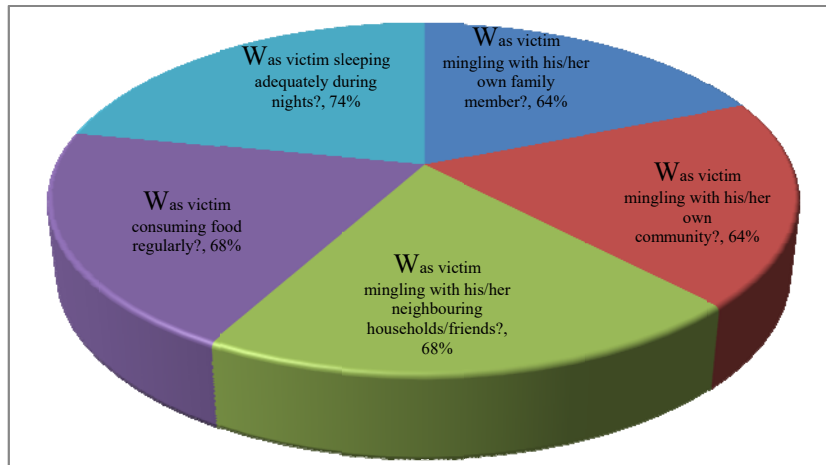
### Results and Discussion

Hot spot of the farmer suicides in CG, symptoms observed by family members before suicide of victims, causes of suicide and impact on HH after committing suicide has been analyzed for the study.

**Symptoms Observed by the Family Members:** Symptoms observed by family member before suicide of victims were examined and found that the victim was mingling with his/her own family members (64%), community (64%) and neighbours households/friends (68%). He was also consuming food regularly (68%) and sleeping adequately during night (74%) as reported by the majority of HHs, which indicate that in spite of normal behaviour the victims committed suicide and family member were helpless to stop it (Fig. 1).

**Comment [uz13]:** were these questionnaires validated and reliable? Any references? Which language? client rated or clinician rated? research tool has been back bone of the study so please elaborate

**Comment [uz14]:** statistician to comment on statistical analysis and result section.



**Figure 1 : Symptoms observed by family members before suicide (% of HH)**

**Causes of Suicide:** The various causes of suicide i.e. social, farming and indebtedness were examined for the study.

**Social Causes:** The social causes of suicide includes poverty, property dispute, marriage related issues, family problems/commitments, illness, drug abuse/alcoholic addiction, gambling/batting/chit-fund and falling social reputation were examined with respective respondents as well as neighbours/relatives/friends of victims and presented in table 3.

All the HHs reported that poverty (BPL, AYY) is not a cause of suicide, while only 10 (AYY) and 4 (BPL) per cent of neighbours/relatives/friends of victims reported that poverty was also a cause of suicide. Although, the percentage of HH. under APL, BPL and AAY was found to be 22, 60 and 18, respectively. Property dispute i.e. partition of land and house was found a cause of suicide as reported by only 4 and 2 per cent of respondents and only 4, 2 and 2 per cent of neighbours/relatives/friends of victims respectively.

Thus property dispute of land, house and jewellery may also not considered as major cause of suicide in the area under study. In case of marriage related issues, extra marital affairs were found to be major cause of suicide as reported by 28 per cent of

respondents. It was also confirmed by 32 per cent of neighbours/relatives/friends of victims respectively.

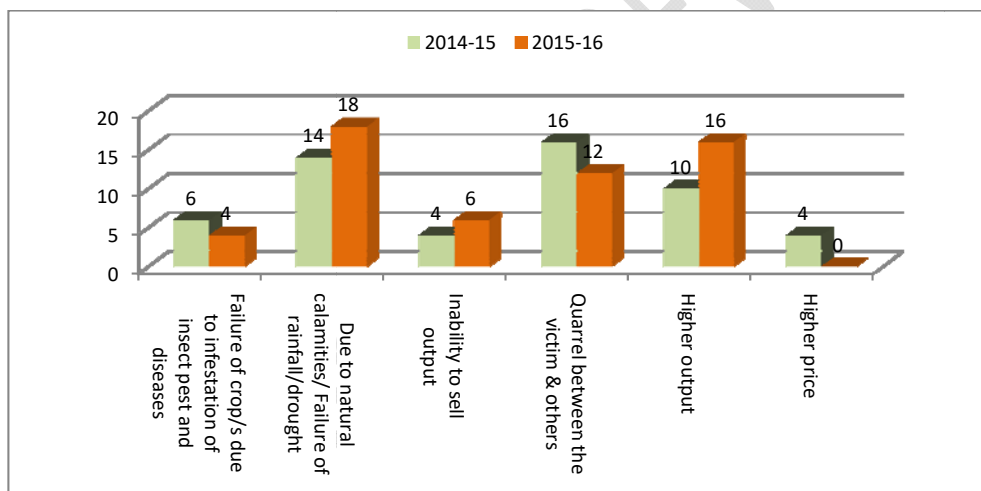
**Table 3.**  
**Social causes of suicide**

Sr. No.	Causes	% of HH to total sample who answered Yes	
		As per respondent	As per neighbors/ Relatives/friends
<b>1. Poverty</b>			
a	APL (22)	0.00	0.00
b	BPL (60)	0.00	4.00
c	AAY (18)	0.00	10.00
<b>2. Property dispute</b>			
a	Partition of land	4.00	4.00
B	Partition of house	2.00	2.00
c	Partition of jewelleries	0.00	2.00
<b>3. Marriage related issues</b>			
a	Extra marital affairs	28.00	32.00
<b>4. Family problems/Commitments</b>			
a	Social functions,	4.00	4.00
b	Frequent quarrel among the family members	36.00	36.00
<b>5</b>	<b>Illness</b>	<b>44.00</b>	<b>48.00</b>
<b>6</b>	<b>Drug abuse/Alcoholic addiction</b>	<b>58.00</b>	<b>62.00</b>
<b>7</b>	<b>Gambling/betting/chit fund</b>	<b>18.00</b>	<b>10.00</b>
<b>8</b>	<b>Fall in social reputation</b>	<b>24.00</b>	<b>26.00</b>

Figures in the parenthesis shows the percentage of HH under APL, BPL & AAY Categories. Family problems/commitments were also taken into consideration, while examining the social causes of suicide. Drug abuse/alcoholic addiction (58%) the similar findings also reported by (Deshmukh, Gohad and Werulkar, 2010) followed by Illness (44%), frequent quarrel among the family members (36%), fall in social reputation (24%) gambling/betting/chit-fund (18%), and social function (4%) were found to be major causes of suicide as reported by the majority of respondents in the area under study. These causes of suicide were also confirmed by the neighbours/relatives/friends of victims in same frequency and proportion with minor variation. Thus, among the social causes of suicides, family problems and commitments followed by marriage related issues were found to be major causes of suicide. In case of family problems/commitment, drug abuse and illness, frequent quarrel among the family

members, fall in social reputation were found to be major causes of suicide, while extra marital affairs were found to be major causes under marriage related issues. These were also confirmed by the neighbours/relatives/friends of victims. Poverty and the society was found to be least affected by poverty and property dispute in the area under study. According to Mohanty, Bibhuti and Shroff (2004) reported suicide mainly attributable to social issue(e.g. family problem, illness, drinking and gambling)

**Farming Related Causes:** Failure of crops, natural calamities and expectation from others were examined for the year 2014-15 and 2015-16 from the respondents (Fig 2). It is observed from the data that failure of crop due to infestation of insect pest and diseases was found to be a cause of suicide in both the year 2014-15 and 2015-16 as reported by 6 per cent of respondents.



**Figure 2: Farming related causes of suicides (%)**

Quarrel between the victim and others was found to be major cause of suicide as reported by 16 (2014-15) and 12 (2015-16) per cent of respondents. Natural calamities viz. failure of rainfall and occurrence of drought accidental fire and inability to sell output were also found to be other minor causes of suicides as reported by only 14 and 4 per cent of respondents respectively. The vulnerability of the region in term of poor soil quality, uncertain rainfall, crop failure, social & family causes suicide incident as reported by (Mishra, 2007; Mukharjee, 2009; Nagaraj, 2008). Expectation of higher

output (10 & 16%) and higher prices of output (4 & 0%) were found to be causes of farming related suicides for the years 2014-15 and 2015-16.

**Indebtedness Related Causes:** Indebtedness related causes of suicides were not found as major causes of suicide for the year 2014-15 and 2015-16 in the study area (Table 4).

**Table 4**  
**Indebted related causes of suicides.**

Sr. No.	Causes	% of HH to Total sample who answered Yes	
		2014-15	2015-16
1	Indebtedness – Institutional & Non-Institutional		
A	Due to farm equipment's loan	0	2
B	Due to non-agricultural loan	2	0
c	Due to non-institutional loan	2	2
2	Due to pressure from institutional sources	2	2
3	Due to pressure from non-institutional sources	2	2

However, few respondents reported that suicide would have been committed due to farm equipment loan (0 & 2%), non-agriculture loan (2 & 0%) non-institutional loan (2 & 2%) and pressure created from institutional (2 & 2%) and non-institutional (2 & 2%) agencies in recovery of loan for the year 2014-15 and 2015-16.

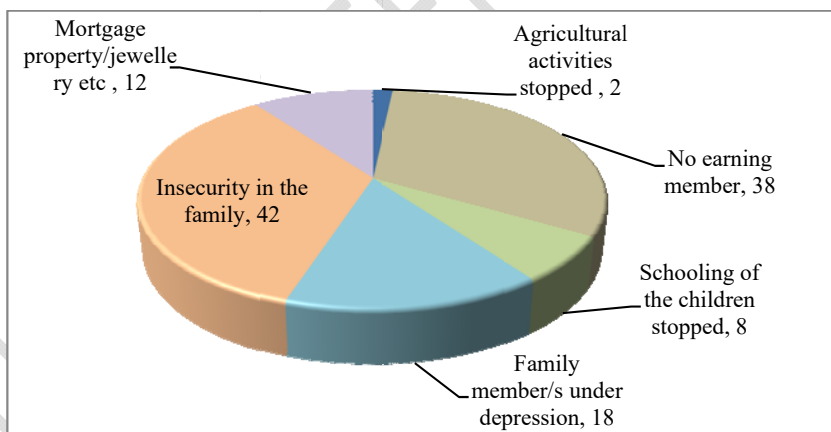
**Table 5**  
**Ranking of the social, farming and indebted causes of suicides.**

Particulars	Causes	Ranking
Social causes	Extra marital affairs	IV
	Fall in social reputation	V
	Illness	II
	Drug abuse/Alcoholic addiction	I
	Gambling/betting /chit fund	VI
	Frequent quarrel among family members	III
	Social function	VII
	Partition of land	VIII
	Partition of house	IX
Farming related causes	Failure of rainfall/drought	I
	Inability to sell output	IV
	Quarrel between the victim & others	III
	Expectations of higher output	II
	Failure of crops	V



Drug abuse/Alcoholic addiction followed by illness, frequent quarrel among family members, partition of house, extra marital affairs, fall in social reputation, gambling/betting /chit fund, social function and partition of land were found to be social cause prevalent in the study area (Table 5). In case of farming related causes failure of rainfall/drought followed by expectations of higher output, quarrel between the victim & others, inability to sell output and failure of crops were found to be major causes of suicides. The indebtedness, crop failure due to environmental problem, lack of support, family or health problem were reported to be important reasons for farmers suicides by (Kakde, 2006).

**Impact on HH after Committing Suicide by the Victims:** As far as the effect on HHs family after committing suicide by the victims is concern it is found that they have lost their earning member of the family (38%), insecurity in the family (42%) family member/s under depression (18%), and mortgage their property/jewellery etc (12%) were found to be major effect on HH family as reported by the majority of respondents (Fig. 3).



**Figure 3: Impact on HH household after committing suicide**

Schooling of children stopped (8%) and agricultural activities stopped (2%) were found as minor after effect on the HHs after committing suicide by the victims.

**Suggestions to Prevent the Suicide in Future:** The suggestions given by the respondents to prevent suicide in future were also examined and listed in Table 6. The

most important suggestions given by the respondents are: a Psychologist should be appointed at least at district hospital for mental patient (92%), crop insurance scheme should be reached at individual level (88%), establishment of rehabilitation centre for drug/alcoholic addiction (82%), increase/declaration of MSP for all crops (78%), creation of non/off-farm level employment opportunities by village levels (72%), compensation for crop damage/losses should at least meet input costs (66%) and skill up-gradation/ capacity building centre must be established at block level. (58%) as reported by the majority of respondents.

**Table 6**

**Suggestions to prevent the suicides in future (% of HH to Total sample who suggested).**

S. No.	Suggestions	%
1	Establishment of rehabilitation centre for drug/alcoholic addiction	41 (82)
2	A Psychologist should be appointed at least at district hospital for mental patient	46 (92)
3	Skill up-gradation / capacity building centre must be established at block level.	29 (58)
4	Creation of non/off-farm level employment opportunities by village levels.	36 (72)
5	Public awareness should be created for difference developmental programmes of the Govt.	24 (48)
6	Increase/declaration of MSP for all crops	39 (78)
7	Crop insurance scheme should be reached at individual level	44 (88)
8	Compensation for crop damage/losses should at least meet input costs	33 (66)
9	Crop/variety diversification	9 (18)
10	Supply of better quality inputs	22 (44)
11	Health insurance should be made mandatory with Govt. support for the farming community	11 (22)
12	Increased role of social institutions	15 (30)

The respondents also suggested that suicides can be checked if public awareness should be created for different developmental programmes of the Govt. (48%), supply of better quality inputs (44%), increased role of social institutions (30%), health insurance should be made

mandatory with Govt. support for the farming community (22%) and crop/variety diversification (18%).

### **Conclusion**

It is concluded from the above results that major causes of suicides prevailing in the area under study were found to be social and farming related causes. Among these social related causes were found to be more prominent as compared to farming related causes. The prominent causes of farmers' suicide in Chhattisgarh as recognised by the majority of the respondents were found to be family problems, illness drug abuse/alcoholic addiction, fall in social reputation, extra martial affairs and quarrel between victims and others. None of farmers was found to commit suicides due to poverty.

The main problems were found to be lack of access to mental health services in rural areas and shame attached to treatment, lack of rehabilitation centres for drug and alcoholic addiction and lack of off/non farm income. Although, none of the farmer in the area under study was found to commit suicide due to indebtedness but on the basis of reviews indebtedness was found to be a major cause of farmers' suicide. It is also observed during the course of investigation that the farmers who committed suicide were found to have poor repaying capacity and risk bearing ability. Therefore utmost care should be taken before sanctioning of loan to the farmers.

The government should also remove the bottlenecks and increase access programme/services in remote areas. In addition to these a psychologist must be appointed in Govt. Hospitals and rehabilitation centre for drug abuse and alcoholic addiction should be established at least at block level particularly in identified hot spot of farmers' suicides districts of the state. Efforts should also be made so that Crop insurance scheme should reach at individual level and health insurance should be made mandatory with Govt. support for the farming community. A campaign should also be launch for crop/variety diversification in various agro climatic regions of Chhattisgarh for this role of various social institutions must be increased in future.

## References

**Comment [uz15]:** add more referenes and recent references. cite all eferences in one styl e s recommended by the guidelines of the target journal

1. Chandra Gupta B., Prabhakaran T. Raghu., Aditi N., Kalaiselvan N.N., and Arivudai Nambi V Comparative trend analysis in cost of paddy cultivation and profitability across three States of India. *European Scientific Journal./SPECIAL/ edition*, **3**, 271-280 (2014)
2. Narayanamoorthy, A., Profitability in Crops Cultivation in India: Some Evidence from Cost of Cultivation Survey Data. *Indian Journal of Agricultural Economics*, **68(1)**, 104-121 (2013)
3. Nagaraj, K., Farmers' Suicides in India: Magnitudes, Trends and Spatial Patterns. *Macrosan*. Accessed December 1, 2014. [http://www.macrosan.org/anl/mar08/anl030308Farmers\\_Suicides.htm](http://www.macrosan.org/anl/mar08/anl030308Farmers_Suicides.htm), (2008)
4. Behere, P.B. and Behere, A.P., Farmers' Suicide in Vidarbha Region of Maharashtra State: A Myth or Reality?. *Indian Journal of Psychiatry*, **50(2)**, 124 (2008)
- 5a. Kennedy, Jonathan and Lawrence King, The Political Economy of Farmers' Suicides in India: Indebted Cash-Crop Farmers with Marginal Landholdings Explain StateLevel Variation in Suicide Rates. *Globalization and Health*, **10(16)**, 1-9 (2014)
- 5b. Radhakrishnan, Rajiv and Chittaranjan Andrade, Suicide: An Indian Perspective. *Indian Journal of Psychiatry*, **54(4)**, 304-319 (2012)
6. Mishra, Srijit., Risks, Farmers' Suicides and Agrarian Crisis in India: Is There A Way Out?. *Indian Journal of Agricultural Economics*, **63(1)**, 38-54 (2007)
7. Sainath, P., Farm Suicides - A 12 year Saga. *The Hindu*, **January 25**, (2010)
8. Sainath, P., The mistaken notion that the 53 per cent of India's population depend on agriculture' are all farmers' leads many to dismiss the massive farmers' suicides as trivial. *The Hindu*, **May 2**, (2013)
9. Anonymous. Accidental Deaths & Suicides in India, National Crime Records Bureau. *Ministry of Home Affairs Government of India*, pp: 1-322-127, (2015)

10. Anonymous. Situation Assessment Survey of Formers: NSS 59th Round SCH 33:2003. *National Sample Survey Organization - Ministry of Statistics and Programme Implementation (MOSPI), Government of India*, Pp: 1-146, **(2012)**

11. Anonymous., Situation Assessment Survey of Farmers: Access to Modern Technology for Farming-NSS 59th Round (January-December 2003). *National Sample Survey Organization - Ministry of Statistics and Programme Implementation (MOSPI), Government of India*, No. 499 (59/33/2) **(2005)**

12. Government of India., Agriculture Census 2010-11: All India Report on Number and Area of Operational Holdings. *Agriculture Census Division Department of Agriculture and Co-operation, Ministry of Agriculture, Government of India*, **(2014)**

UNDER PEER REVIEW