
Incidence of Farmers Indebtedness and Suicide in Odisha: An Analysis

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ABSTRACT:

The economic reforms of 1991, designed to integrate the Indian economy with the rest of the world has in fact failed to prevent the deceleration of agricultural growth rate and the increasing application of modern technology with a view to increasing agricultural productivity has led to increased demand for credits. Unaccompanied by expected growth this has resulted in increasing incidence of indebtedness and farmer's suicide. Odisha is also not free from the bitter blow. Using secondary data the present study finds that 48 per cent of farmer households in Odisha are indebted. The farmer households belonging to OBC is highly indebted as compared to other social groups'. The highest number of indebted households is small farmers. Banks are preferred source of borrowings for majority of indebted farmers whereas the numbers of farmers borrowing for current expenditure in farm business are indebted. An attempt is made to study the incidence of farmers' suicide in Odisha as compared to major states of the country.

Keywords: *Farmers Indebtedness, Farmers Suicide, Incidence, Commercialization.*

I. INTRODUCTION

The economic reforms of 1991, designed to integrate the Indian economy with the rest of the world has in fact failed to prevent the deceleration of agricultural growth. Agricultural sector despite its falling share in country's GDP still continues to be the largest sector in terms of employment. Deceleration of its growth rate has serious implications on the living standards of farmers and agricultural labourers. The increasing application of modern technology with a view to increasing agricultural productivity has increased the demand for credits. The money lenders are still dominating the rural credit market despite several attempts by the government to institutionalize the same. Exorbitantly high interest rate charged by them unaccompanied by expected growth in agricultural production has accounted for increasing incidence of indebtedness among farmers and farmer's suicide as a consequence. Odisha is no exception. With more than 75 per cent of its population dependent on agriculture, this poorest state of the country is not free from the bitter blow. The present paper is a modest attempt to study the extent indebtedness and farmers' suicide in Odisha.

II. OBJECTIVES

The present paper focuses on two broad objectives.

1. To study the incidence of indebtedness among farmer households in Odisha.
2. To analyze the trends of farmers suicide in Odisha.

III. METHODOLOGY

The paper makes use of secondary data collected from Reports of National Crime Record Bureau (NCRB), National Sample Survey Organization (NSSO), Agricultural Statistics in Odisha, Economy Survey of Odisha, 2013-14 and Economy Survey of India 2013-14. For trend analysis cubic function is used as it is found to be best fit. Line diagrams, pie chart and tables are also used to analyse the data.

Equation:

$$Y = b_0 + b_1t + b_2t^2 + b_3t^3$$

$$\ln y = b_0 + b_1t + b_2t^2 + b_3t^3$$

$$1/y \, dy/dt = b_1 + b_2t + b_3t^2$$

Where, Y- Dependent variable (numbers of farmer suicide)

b_0 - Constant

b_1, b_2 and b_3 are the coefficients of independent variable t.

t- Time

IV. RESULT AND DISCUSSION

Indebtedness of Farmer Households

Odisha, an agrarian state in the country with 75 percent of population depending on agriculture for their livelihood has about 87.46 lakh hectares as gross cropped area out of which only 18.79 lakh hectares are irrigated leaving the rest to the mercy of nature. Over last two decades the state is witnessing extreme weather conditions. Cyclical occurrence of drought and flood has become common happenings. The number of rainy days is gradually decreasing causing crop loss in almost all the districts of the state.

The report titled ‘Situation Assessment Survey: Indebtedness of Farmer Households’ published by National Sample Survey Organisation mentioned that 48 percent of farmer households are indebted and approximately 70 percent of them own less than one hectare of land. It has been observed that to repay the loan obtained from different sources, the small and marginal farmers finally sell the land which in turn leads to suicide or migration. The burden of indebtedness in rural Odisha is great and it falls mainly on the agrarian households of rural area. The reasons are many. The important ones are simultaneous borrowings from different sources, crop failure and mis- utilisation of funds. Therefore, indebtedness is the main reason for farmers’ suicide in Odisha.

a. Indebtedness Farmer Households by Different Social Groups

Table-1 shows the distribution of indebted farmer households per 100 by different social groups like ST, SC, OBC and Others. It is found that 23 percent of indebted households belong to ST, 14 percent to SC, 44 percent to OBC and 18 percent of total belong to other categories. Thus, the farmer households belonging to OBC is highly indebted as compared to other three social groups. The same is represented in Figure-1

b. Indebtedness Farmer Households by Different Source of Income

Table-2 presents per 100 distribution of indebted farmer households by different sources of income like cultivation, farming other than cultivation, other agricultural activities and others. Here the cultivation means activities related to production of crops by tillage

and related ancillary activities. The farming other than cultivation includes animal husbandry, poultry, fishery, piggery, bee-keeping etc. while growing of trees, horticultural crops and plantations (rubber, cashew, pepper, coffee, tea etc) are considered under other agricultural activity. And others comprise wage or salaried employment, non agricultural enterprises, pension, interest and dividends and other sources. Out of 1000 indebted households 520 has cultivation as their source of income, 11 households get income from farming other than cultivation, 48 households from agricultural activities and 421 from other sources.

c. Indebtedness Farmer Households by Size Class of Land Possessed (in hectare)

Table-3 shows per 100 distributions of indebted farmer households by size class of land possessed (in hectare). A classification of size of land holdings consist very small farmer (<0.01ha to 0.40ha), small farmer (0.41ha to 2.00ha), marginal farmer (2.01ha to 10.00ha) and large farmer (10.00ha>). Out of 1000 indebted farmer households, the numbers in different size classes of land possessed were 3, 235, 465, 206, 73, 17 and 0. Thus, the highest number of indebted household i.e. 465 per 1000 is small farmers followed by very small farmers. No households with a land holding above 10 hectares are indebted. Figure-3 clearly shows the above result.

d. Indebtedness Farmer Households by Purpose of Loan and by Source of Loan

A cursory glance at the Table-4 reveals that out of 100 indebted households 26 has borrowed for capital expenditure in farm business, 36 for current expenditure in farm business, 8 for non- farm business, 21 for consumption expenditure, 8 for marriage and other ceremonies while none has spent for education. Considering the source of loan , it is observed that out of 100 indebted farmer households 2 has borrowed from government, 30 from cooperative societies, 36 from bank, 23 from agricultural or professional money lenders, 4 from traders, 16 from relatives and friends while 3 has borrowed for others. It is good to see that banks followed by cooperatives happen to be the preferred source of borrowings for majority of indebted farmers. The figure-4 presents the scenario.

Trends of Farmers Suicide

India is an agrarian county. Most of the people directly or indirectly depend on agriculture. People commit suicide for multiple reasons but farmers commit suicide for the cause of failure in farming. In 2014, the farmer suicide rate in India was 26 percent. On the basis of suicide rate the states are classified into four categories. In Group-I Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh are there with large number of farmer suicide while Kerala and Tamil Nadu belong to Group-II with high general suicide but low farmer suicide. Assam, Gujarat, Odisha and Haryana fall in Group-III with moderate general suicide and farmer suicide. In Group-IV with low general suicide and farmer suicide come Bihar, Jharkhand, Uttar Pradesh, Punjab and Rajasthan. We are fortunate enough to be in 3rd group still farmers suicide is a very serious issue as it reflects inability of a person to have respectful appearance in the society.

Table-5 presents the incidence of farmers' suicide in Odisha as compared to the major states of the country in 2014. From among them 5 states namely Maharashtra, Madhya Pradesh, Karnataka, Andhra Pradesh and Kerala accounted for 3982 farmer suicides i.e.69.7 percent of

total suicide (133,666) in India, the State of Maharashtra being at the top. In 2014, 68 farmers suicide in Tamil Nadu followed by 63 in Uttar Pradesh, 45 in Gujarat and 24 in Punjab. While in Assam and Haryana the numbers of farmers' suicide attempt are 21 and 14 respectively. Whereas, in Odisha the number of farmers' suicide is 5.

The trends of farmer suicide and general suicide in Odisha from the year 2001 to 2014 represent in Table-6. In Odisha, the general suicide rate is 11.0 percent and farmer suicide rate is 6.9 percent. Both farmers' suicide and general suicide has been fluctuating day by day because of crop failure, poor marketing system, inherited poverty and weak psychology. As a result the number of general suicide and farmer suicide was high in the years 2013 and 2004 i.e. 5252 and 379 as compared to other years. Figure-5 clearly shows the above result.

Table-7 shows the year wise percentage growth rate of general suicide and farmer suicide in Odisha. During the year 2003, 2004 and 2005 the percentage growth of general suicide was negative i.e. -4.63, -0.16 and -3.39 while in 2008 and 2009 the percentage growth of general suicide was -10.99 and -2.52 respectively. In 2013 and 2014, the percentage growth of general suicide is -20.79 and -0.09. But in 2004, 2006, 2008, 2010 and 2013 the percentage growth of farmer suicide has been highly negative as compared to the general suicide i.e. -32.98, -15.19, -40.76, -8.02 and -11.24.

Table-8 presents the year wise data for net sown area, gross cropped area and crop intensity in Odisha. Over the year the net shown area has been fluctuating and gross cropped area has gradually increased. Whereas in the year 2000-04 cropping intensity was fluctuating but after 2004-14 it has increased.

Table-9 presents year wise area under commercial crops in Odisha. Here the commercial crops are cotton, sugarcane, jute and groundnut. In 2000-07 it was fluctuating and at the end of 2007 it was decreased day by day. But, at the end of 2010, it has increasing.

Table-10 shows the year wise percentage of gross cropped area under commercial crops in Odisha. It was fluctuating in the year 2000-07 but after 2007 it has decreased. That means farmers are avoiding commercial cropping, so farmers suicide has been declining in Odisha. Thus, it has increased after the end of 2010.

Table-11 shows the cubic growth trend of farmer suicide and general suicide in Odisha. Here the probability value of farmer suicide is .000 and general suicide is .666. That means both farmer suicide and general suicide are significant at 5% level. As a result farmer suicide is increasing at a diminishing rate, then it is gradually increases and general suicide is decreasing at an increasing rate. Figure 6 and 7 clearly shows the above result.

REASONS FOR FARMER SUICIDE

Farmer commits suicide because of multiple reasons. These are as follows.

- **Crop failure-** Crop failure is a major cause of farmer suicide. Agriculture heavily depends on monsoon. The success of crop production and availability of water are inseparable components. The major reasons for crop failure are lack of irrigation, non-availability of farm inputs, high labour cost and high cost of inputs, poor farm management and climatic hazards.

- **Agriculture credit-** This is the key input for farmers to operate farm at any place. Poor farmers depend on credit to raise crops. Non-availability of credit in time, high rate of interest, insufficient time and increased pressure to repay the loan, refusal for second loan because of first loan was not been cleared and diversion of farm credit to other nonproductive uses force the farmers to commit suicide..
- **Economic condition-** Economic condition has been the major cause for farmer suicide. Poor economic condition, inherited poverty, insufficient farm income and increasing cost of living which make them end their lives.
- **Social factor-** In social life farmer feel frustrated because of unpaid loan for which they bear social stigma. Increased family burden expansion of aspiration of family members specifically children and non-cooperation of family member to bear with poverty force the farmers to escape from world.
- **Market-** Agriculture and market are interlined. Once market is favorable farmers derive good income to support their lives. But in rural areas the poor farmers are left at the merely of market which are never in favour of producers. Poor market structure has been the cause of acute poverty of the farmers. Non guarantee for procurement by government, low market price of farm produce and non- disposal of produce are the reasons for market fails. Thus, market also plays a very significant role in sustainability of farm families.
- **Policy protection-** Present farm policy is not much helpful to farming communities. It revealed that lack of production incentives, no protection to produce at the time of problem and absence of crop insurance to the policy of government is not much helpful to the farmers. Thus, farmers find no alternative and are forced to commit suicide.
- **Technology-** The present technology advocated to the farmers is not profit oriented, not suiting to small and marginal farmers, not remunerative and not market driven. Farmers realized technology not profit oriented in the present neither market nor is of much remunerative for which farmers felt helpless to maintain the family. When situation become grave, the farmers end their life imaging a dark future.
- **Weak psychology-** A weak psychology of farmers particularly small and marginal groups do not have risk bearing capacity and feel distress in event of any deviation from normal situation. When crop fails those with weak psychology take early decision to end their lives. Afraid of future, low risk bearing capacity, feeling of isolation in family were the major causes of weak psychology of the farmers.

SUGGESTIONS TO STOP FARMER'S SUICIDES

- A comprehensive Agricultural Insurance Scheme should be launched and specific attention should be given to cash crops like rice, cotton, sugarcane and edible oils.
- Organic farming should be promoted to avoid or minimise the cost of pesticides and fertilizers.
- Biodiversity must be on the basis of production to reduce vulnerability to climate and markets.

- Seed supply must be maintained as a public good to protect farmers’ rights.
- Integrated Pest management should be popularised among farmers.
- Institutionalized credit system to the farmers must be simplified.
- Gram Panchayats should evolve a mechanism to identify the indebted and suicide prone farmers and help them to overcome the crisis.
- Extension agencies with a vision of eco-friendly sustainable development should guide the farmers to make the efficient use of water, electricity, pesticide and other inputs.
- The role of commission agents, traders and intermediaries should be minimised to facilitate the farmers to bring maximum price of their produce.
- Agriculture policy needs to shift from its current bias of “corporate first to farmers first”.

Table-1: Distribution of indebted farmer households by social groups

Social Groups	No.of Indebted farmer households	Percentage (%)
Schedule Tribe	233	23.2
Schedule Caste	142	14.2
Other Backward caste	441	44.1
Others	185	18.5

Source: National Sample Survey 59th Round (2003)

Figure-1

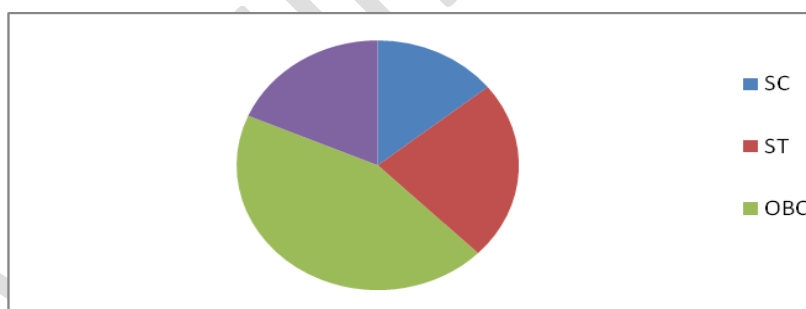


Table-2: Distribution of indebted farmer households by sources of income

Source of Income	No. of Indebted farmer households	Percentage (%)
Cultivation	520	52
Farming other than cultivation	11	1.1
Agricultural activities	48	4.8
Other sources	421	42.1

Source: National Sample Survey 59th Round (2003)

Figure-2

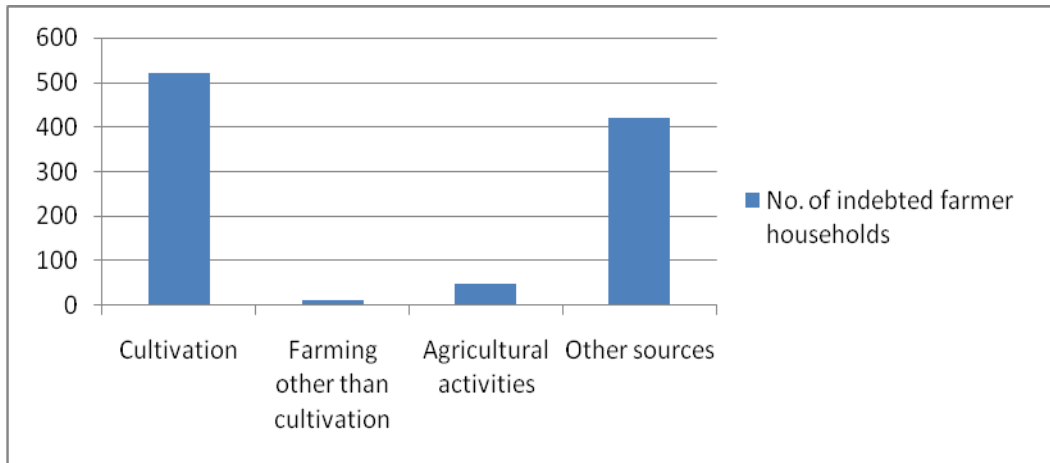


Table-3: Distribution of indebted farmer households by size class of land possessed (in ha)

Different size class of land possessed(in Ha)	No. of Indebted farmer households	Percentage (%)
<0.01	3	0.3
0.01-0.40	235	23.5
0.40-1.00	465	46.5
1.01-2.00	206	20.6
2.01-4.00	73	7.3
4.01-10.00	18	1.8

Source: National Sample Survey 59th Round (2003)

Figure-3

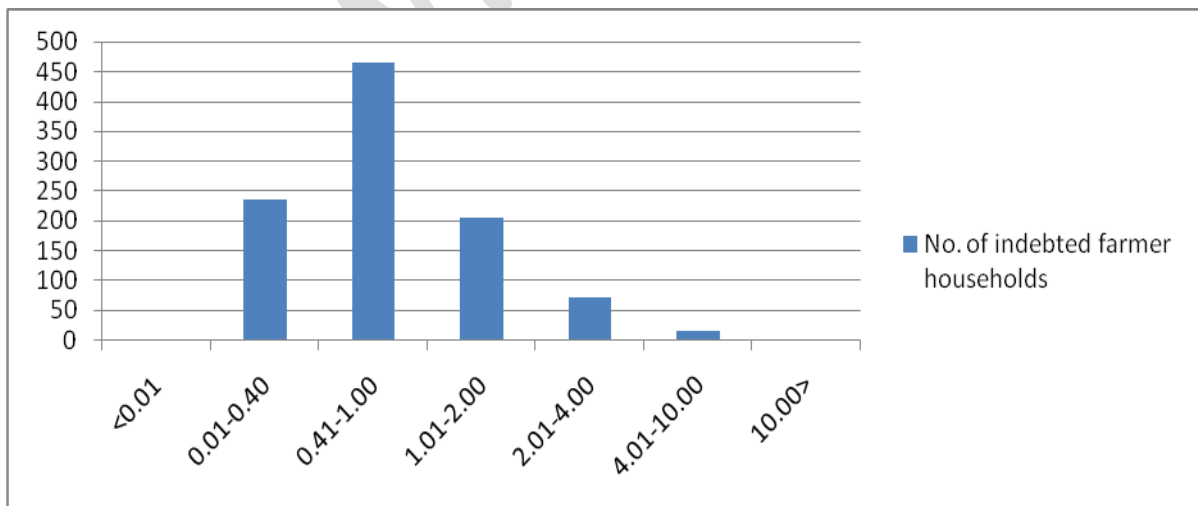


Table-4: Distributions of indebted farmer households by purpose of loan and by source of loan.

Purpose of loan and source of loan	No. of Indebted farmer households
Capital expenditure in farm business	26
Current expenditure in farm business	36
Non-farm business	8
Consumption expenditure	21
Marriage and ceremonies	8
Education	0
Govt.	2
Co-operative society	30
Bank	36
Agricultural/ professional money lender	23
Trader	4
Relatives & friends	16
Others	3

Source: National Sample Survey 59th Round (2003)

Figure-4

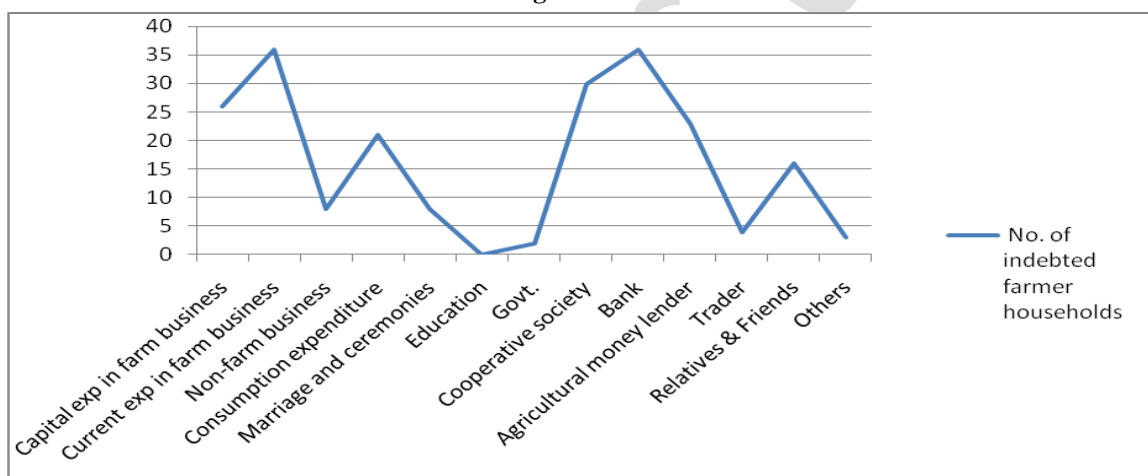


Table-5: Farmer suicides in Indian States (2014)

States	No. of Farmers Suicide
Maharashtra	2568
Madhya Pradesh	826
Karnataka	321
Andhra Pradesh	160
Kerala	107
Tamil Nadu	68
Uttar Pradesh	63
Gujarat	45
Punjab	24
Assam	21
Haryana	14
Odisha	5

Jharkhand	0
Rajasthan	0
Bihar	0

Source: National Crime Report Bureau

Table-6: Year wise Value of General Suicide and Farmer Suicide

Year	General Suicide	Farmer Suicide
2001	4052	256
2002	4388	345
2003	4420	365
2004	4215	379
2005	4208	254
2006	4065	283
2007	4308	240
2008	4904	260
2009	4365	154
2010	4255	162
2011	4249	144
2012	4450	146
2013	5252	169
2014	4160	150

Source:

National Crime Report Bureau

Figure-5

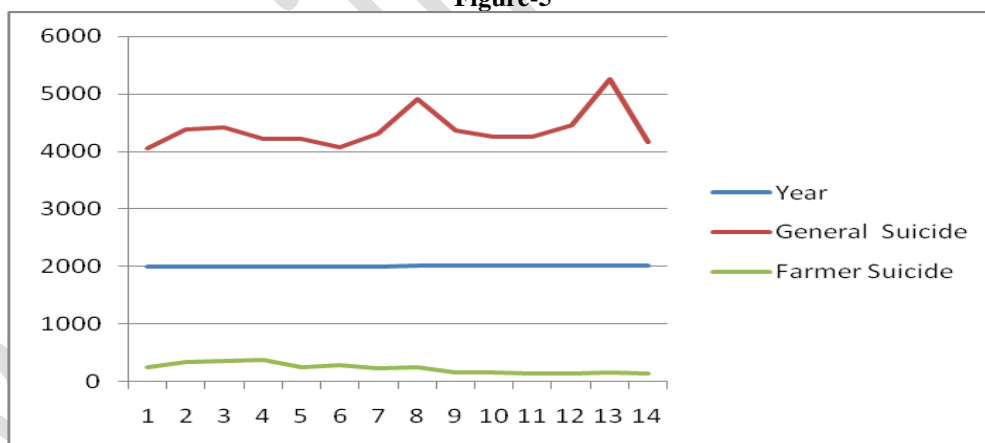


Table-7: Year wise percentage Growth Rate

Year	General Suicide	Farmer Suicide
2001	8.29	34.76
2002	0.72	5.79
2003	-4.63	3.83
2004	-0.16	-32.98
2005	-3.39	11.41
2006	5.97	-15.19
2007	13.83	8.33

2008	-10.99	-40.76
2009	-2.52	5.19
2010	22.46	-8.02
2011	4.73	1.38
2012	18.02	15.75
2013	-20.79	-11.24
2014	-0.09	5.33

Table: 8 Year wise NSA, GCA and CI (%) in Odisha

Years	Net Sown Area	Gross Cropped Area	Cropping Intensity (%)
2000-01	5829	7877	135
2001-02	5845	8798	151
2002-03	5680	7852	138
2003-04	5795	8638	149
2004-05	5739	8718	152
2005-06	5691	8928	157
2006-07	5654	8960	158
2007-08	5624	9016	160
2008-09	5604	9071	162
2009-10	5574	9074	163
2010-11	5407	8565	158
2011-12	5292	8799	166
2012-13	5331	8879	167
2013-14	5424	9054	167

Source: Agricultural Statistics in Odisha

Table: 9 Year wise Area under Commercial Crops in Odisha (in '000' hect.)

Year	Cotton	Sugarcane	Jute	Groundnut	Total
2000-01	0.5	31.11	24	-	55.91
2001-02	0.78	29.66	22	-	52.44
2002-03	0.36	25.21	35	-	60.57
2003-04	0.45	28.78	02	-	31.23
2004-05	0.56	33.81	30.1	-	64.47
2005-06	16.72	36.71	25.07	6.67	85.17
2006-07	3.85	40.51	26.7	22.89	93.95
2007-08	1.75	38.08	27.9	22.19	89.92
2008-09	0.58	37.94	22.5	23.53	84.55
2009-10	0.54	36.00	20.2	21.00	77.74
2010-11	74	13	3	73	163
2011-12	102	14	4	66	186
2012-13	119	15	2	66	202
2013-14	124	15.21	2	60	201.21

Source: Agricultural Statistics in Odisha

Table: 10 Year wise GCA under Commercial Crops (%)

Year	GCA	GCA under CC	% of GCA under CC
2000-01	7877.96	55.91	0.79
2001-02	8798.61	52.44	0.59
2002-03	7852.56	60.57	0.77
2003-04	8638	31.23	0.36
2004-05	8718	64.47	0.73
2005-06	8928	85.17	0.95
2006-07	8960.35	93.95	1.04
2007-08	9016	89.92	0.99
2008-09	9071	84.55	0.93
2009-10	9074	77.74	0.85
2010-11	8565	163	1.90
2011-12	8799	186	2.11
2012-13	8879	202	2.27
2013-14	9054	201.21	2.22

Source: Agricultural Statistics in Odisha
Where, GCA- Gross Cropped Area
CC- Commercial Crop

Table: 11 Cubic Growth Trend of farmer suicide and general suicide in Odisha

Variables	R Square	Probability Value	Constant	B ₁	B ₂	B ₃
Farmer Suicide	.865	.000	225.797	75.203	-14.579	.639
General Suicide	.139	.666	4229.210	-17.436	7.436	-.330

Growth rate of

1st derivative - $g = 1/y$. $dt/dy = 2t + 3t^2$

2nd derivative - $dg/dt = 2t + t$

3rd derivative - $d^2g/dt^2 = d/dt.(dg/dt)$

Figure- 6

farmers suicide

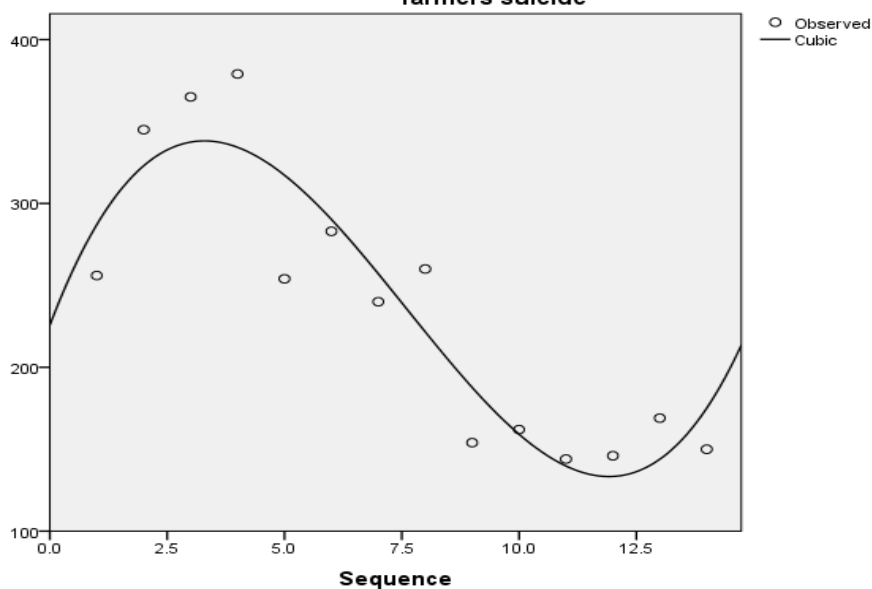
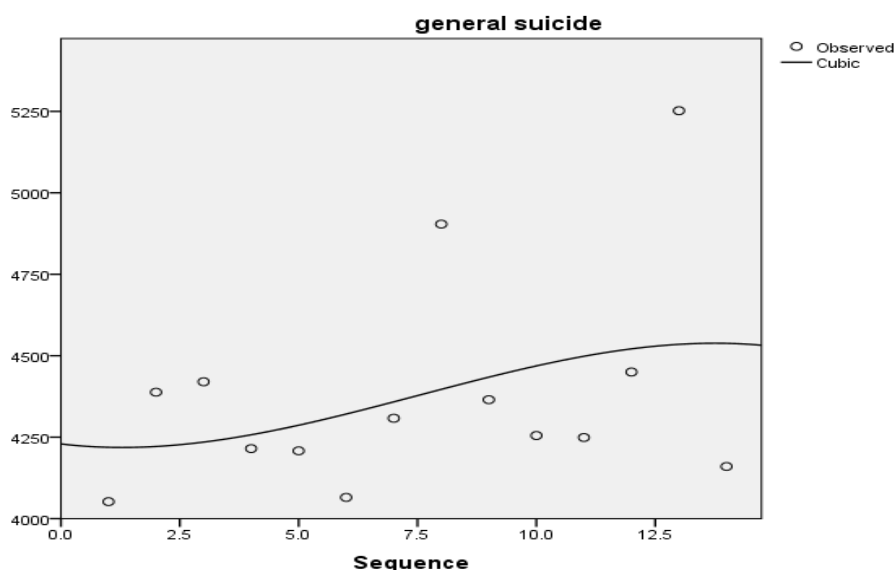


Figure-7



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