

# PERSPECTIVES ON ENVIRONMENT DEGRADATION AND AGRARIAN CRISIS IN INDIA

Edited By

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Proceedings of Seminar on  
**PERSPECTIVES ON ENVIRONMENT DEGRADATION AND  
AGRARIAN CRISIS IN INDIA**

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## **PREFACE**

Economic development during post reforms period have drastically change an environment of the country. According to the models of economic growth and development; development at the cost of environment will never helps to achieve the goal of inclusive and sustainable development. Mere negligence of the agrarian and environmental issues in the policy domain will further worsen the situation. Day by day declining quality of the environment will leads to the multiplier effects on the factor productivity. This has further increase in the cost of production as well as declining production. And lastly it has resorted at the grave issues like unemployment and inflation. In this situation the agrarian community suffers badly.

Agrarian relations in India had undergone a sea-change during the period of green revolution in general and to that of last two decades of economic reforms in particular. One of the serious outcomes of these changes is the incidence of suicides of farmers in different states of the country. Changes in agrarian relations occurred due to the changing policies and change in ecology. Changing macroeconomic policies and other changes led to the gross neglect of agriculture consisting of 60 per cent of the population and one fifth of the electorate. This took agriculture and rural economy towards distress. The number of suicide cases in rural parts has been mounting in last fifteen years. During the period of 1995 to 2012 (2, 87, 967) farmers has been committed suicide in the country. Since the mid 1990s, large section of farm households have been facing a distress as a consequence of decline in agricultural income and loan repaying capacity and increased debt burden. Rain-fed areas are particularly prone to year to year fluctuations in production and degradation in environmental resources. In the present book we tried to analyze and criticize the reciprocal relationship between the agrarian reforms and environmental degradation. As well as it also focuses on the functional relationship between climate changes, declined agricultural productivity, unremmunarative profession and thereby agrarian crisis and farmers suicides in India.

**Onkar Rasal**

**Yuvraj Patil Narawade**

## CONTENTS

Sr. No.	Title of the Paper	Name of the Author/s	Page No.
1	<b>Agrarian Crisis and Farmers Suicides: A Ground Reality of Maharashtra</b>	<b>Dr. Onkar Rasal</b>	<b>01</b>
2	<b>Institutional Credit Apathy, Indebtedness and Farmers Suicides in India</b>	<b>Dr. Yuvraj Narawade J. R. Singar</b>	<b>19</b>
3	<b>Farmers Suicides Reality In Maharashtra</b>	<b>Dr. Sambhaji Kale</b>	<b>34</b>
4	<b>Causes &amp; Responses to Farmers Suicides in India</b>	<b>Dr. Deshmukh Subhash Ghodke Amruta</b>	<b>39</b>
5	<b>Changes In Biochemical Properties Of Cow Manures During Processing By Earthworm (Eudrilus eugeniae) And The Effect Of Crop Growth.</b>	<b>R.S. Tambe</b>	<b>46</b>
6	<b>Spatial and Temporal Changes of Mangrove Forests in Mumbai and Suburban Region</b>	<b>Amit B. Shinde D.D. Dabhade</b>	<b>52</b>
7	<b>Causes of Farmers Suicides in Maharashtra</b>	<b>Dr. D.B. Salve</b>	<b>57</b>
8	<b>Caste, Land and Income in Rural India: Implication for Inclusive Development</b>	<b>Narayan Gore Rajesh Raushan Subhash Jagdambe</b>	<b>62</b>
9	<b>Nesting &amp; Foraging behaviour of <i>Apis dorsata</i> in Shevgaon</b>	<b>Makasare Sachin Petras</b>	<b>71</b>
10	<b>Sugar Industry Effects on O<sub>3</sub> Air Pollution on Crop Yield in Pathardi Tehashil</b>	<b>Ravindra R. Shirsat</b>	<b>78</b>
11	<b><i>Conyza Bonariens(L.) Less.Var.Cronq.</i> (=Erigeron linifolius willd.) an Antifungal Weed Species of Asteraceae Family</b>	<b>Dahatonde P.A. Belhekar.S.T. Kadlag.S.D</b>	<b>82</b>

<b>12</b>	<b>Description Of Cestode Parasite Circumoncobothrium Dnyaneshwarinae In Fresh Water Fish Clarius Batrachus From Pravara River.</b>	<b>Naik V.P. Tambe D. S</b>	<b>90</b>
<b>13</b>	<b>Soil Analysis From Near The Lake Of Kapurwadi</b>	<b>Waghmare Rupali Sahebrao</b>	<b>95</b>
<b>14</b>	<b>Agriculture and Indebtedness</b>	<b>Shelke D. S. Pankar Anita Namedo</b>	<b>100</b>
<b>15</b>	<b>Smart City Infrastructure Planning and Environment</b>	<b>Sonu R. Funde</b>	<b>103</b>
<b>16</b>	<b>Changes in Land Holding and Cropping Pattern in Maharashtra</b>	<b>Madhav H. Shinde</b>	<b>107</b>

## **Agrarian Crisis and Farmers Suicides: A Ground Reality of Maharashtra**

**Onkar Rasal\***

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### *Abstract*

‘Agriculture is the backbone of the Indian Economy’, a world known phrase for the Indian economy. It is widely acknowledged by the academician and policy makers that the growth of agriculture sector is the prerequisite for the inclusive development of an economy. It was also mentioned by the several economist in the growth models i.e. Gunnar Myrdal, Rostow, Libenstein and also found in the Gandhian perspective of economic development. But what seems to be happened in Indian economy over the last two decades. During past two decades majority of farmers have become poor and harried outcasts in their own country with no respectful place in the economic policy. Agriculture has become a relatively unrewarding profession causing abandoning of farming and increasing migration. It brings out the fact that something is terribly wrong in the countryside (Swaminathan-2006). The farm economy of the country is at the back foot during the reforms period. The mismatch between the increasing aspirations of the rural masses and the inability of the State and its economic model to satisfy these aspirations is not new. But the gap seems to be widening significantly after the launched of economic reforms in the early 1990s. There is no doubt that the growth process of the Indian economy has been highly impressive and that many of the macroeconomic indicators have also been equally impressive. According to the neo-liberal economic theory, such a growth performance should have resulted in the trickling down of benefits to the lower section of the society thereby lifting the laboring poor out of the poverty and various forms of deprivation. But the gap between income and expenditure of agriculture as well as the gap between the incomes of rural and urban has been widen during the reforms period. It has an outcome of the declined farm and factor productivity and lack of, off farm employment opportunities. On the other hand the development policies are urban centric. Nonetheless, we are far away from the goal of inclusive development. The present paper focuses on the factors that are responsible for the declining agricultural productivity and deterioration of the rural and agrarian economy. It has also pointing towards the impact of the deterioration of farm economy on the inclusive development of the Indian economy. The present paper will focus on the issue of agrarian crisis and dismal act of committing suicides by the farming community in the countryside.

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*Key Words:- Agrarian Crisis, Farmers Suicides*

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## **Introduction**

**Indian agriculture has never been a profession of profit. As has been pointed out by Amartya Sen (1962, 1964), if the family members working in agriculture are given an ‘imputed Value’, most of the Indian agriculture will turn to be an unremunerative. Agrarian relations in India had undergone a sea-change during the period of last two decades of economic reforms. Changes in agrarian relations occurred due to the changing policies and change in agricultural market. Changing macroeconomic policies and other changes led to the gross neglect of agriculture consisting of 53.6 per cent of the population and one fifth of the electorate. This took agriculture and rural economy towards distress. Since the mid 1990s, large section of farm households have been facing a distress as a consequence of decline in agricultural income and loan repaying capacity and increased debt burden. Rain-fed areas are particularly prone to year to year fluctuations in production and degradation in environmental resources. In the liberalized market, farmers are exposed to price volatility because of fluctuations in domestic production and international prices of agricultural commodities. The most serious aspect of this crisis is deceleration in agricultural growth with distress state of farmers in general and that of small and marginal in particular. The issue of farmers indebtedness become a matter of intense debate whenever agricultural sector faces distress. But, indebtedness is not the root cause of the current crisis. The factors that are responsible for indebtedness are vital in this phenomenon. The declined or mere stagnation in agricultural productivity, increasing production and marketing risks, institutional credit shrunk, increase in cost of cultivation and lack of alternative opportunities of employment at countryside are causes for the indebtedness and thereby pathetic act of committing suicides. The ‘Demonstration Effect’ has been observed among the farmers either in production or consumption practices.**

## **Conceptual Framework**

**A plethora of writings is available on farmers suicides bringing out reasons for the crisis and the suicidal behaviour of farmers in India. Most of the studies that have been conducted by scholars focused on the states of Maharashtra, Punjab, Kerala, Karnataka and Andhra Pradesh which are most affected by farmers suicide in the country. In fact the situation assessment survey of farmers carried out during the year 2003, by the National Sample Survey Organization of India, brought out several startling findings on farm level crisis. The survey revealed that more than half of the Indian farmers were in debt and much of the debt was a consequence of the gap between agricultural expenses and returns from it. As a result, the agricultural activity has become an unrewarding profession in a generally unfavourable price regime. Surinder Jodhka in a study on farmers suicides in Punjab highlighted the decadal changes in policy and agrarian situation and held it responsible for the suicide of the farming community. When there was a bumper crop of Paddy with favourable natural conditions, government was not ready to buy at the minimum support price and this led to further distress (Jodhka 2005). There has been a general stagnation in the agriculture sector over the last two decades which pushed farmers into distress (Govt. of Punjab 2004). Cash expenditure on crop production has been steadily rising for different crops while the prices have shown a declining trend. The compound growth rate of cash expenditure between 1974-75 and 1991-92 was nearly 9 per cent for Wheat and more than 11 per cent for Paddy in Punjab (Shergil 1998). This type of a situation causing indebtedness has been identified as a major cause for the crisis.**



**Borrowing from informal sources invites trouble for farmers. Studies by Gill and Kaur (2002) pointed out that the middlemen (*arthyas*) are the major source of credit for farmers in Punjab. The purpose of borrowing found that farmers borrowed for both the “productive” (41%) and “unproductive” (59%) purposes whereas the present study finds that in Maharashtra 83.16% of farmers borrowed for productive and 16.83% for the non-agriculture unproductive purposes. The agrarian scenario in Maharashtra has also changed fast. Srijit Mishra (2006) discussed the agrarian crisis that has precipitated a spate of suicides in the state. In Maharashtra the contribution of agriculture to GSDP has come down from 40% in 1960-61 to 13% in 2004-05 but the population dependent is still 58.5 per cent. Deshpande (2002) in a study on farmers suicides in Karnataka, brought out the agrarian distress and debt of farmers as a major cause for the curse. P. Narsimha Rao and K. C. Suri (2006) in a combined study on dimensions of agrarian distress in Andhra Pradesh pointed out that it was a debt burden that pushed farmers into the suicide trap. High cost of cultivation, diminishing productivity, and low returns make farmers further difficult to withstand crop failures and lead them to distress. S. Mohankumar and R. K. Sharma (2006), in an analysis of farmers suicides in Kerala, concluded that agrarian crisis and farmers distress are closely linked to the neo-liberal policy regime implemented in the country during the 1990s. V. Shridhar (2004) writes that farm individuals and communities are under pressure to cope with the changes brought about by a churn in socio-economic conditions in Andhra Pradesh. Some other studies covering various aspects of farmers’ suicide are by Assadi Muzaffar (1998), Kumar Pramod and L S Sharma (1998), Bhalla G S (1998), Patnaik Utsa (2002), Choudhary (2002), Govt. of Kerala (2004), Shridhar V. (2004), Deshpande and Prabhu (2005), Mohanty B B (2005), Mohankumar and Binni (2005), Sainath P. (2007), Dandekar et. al. (2005), M S Swaminathan (2006), Gnyanmudra (2007), etc. International academic development process has also given an equally adequate amount of attention to the studies on suicides. The beginning is contributed by a known sociologist like Durkheim (1951). The study known as; Suicide: A Study in Sociology where he discovers socio-psychological factors that lead the causation analysis of suicidal behaviour. Recent studies on suicides in the world have stressed more on economic aspects and macroeconomic policy changes. Studies have attempted to assess the impact of change in macroeconomic policies of countries and its impact on socio-economic relations in urban and rural agrarian economy and its dominance in the suicidal causes. Stone G.D. (2002) studied the impact of Biotechnology on agrarian situation and farmers distress leading to suicides. Murphy, Lilliston and Lake (2005) assessed the agrarian distress from the WTO and Agreement on Agriculture (AoA) point of view and studied the impact of a decade of United States dumping on agriculture markets and thereby agriculture prices and cost benefit effectiveness in developing economies. The foregoing analysis clearly shows that recent studies on suicides in the world have become farmer centric and the determining factors vary from the changing political economy to the macro-economic policies, change in technology, impact of neo-liberal policies and the role and dominance of advanced countries in the world agriculture market.**

**The agrarian crisis in India has both long term structural and institutional as well as short term manifestations. The long term structural features indicate sharp decline in the share of agriculture in the Gross Domestic Product (GDP) accompanied by very low rate of labour force diversification away from agriculture. This has resulted in declining relative productivity of agriculture and non-agriculture sector. The growth rate of agriculture has**

decelerated noticeably during the post reforms period. The crisis has been exacerbated further by rapid environmental degradation and plate aching the existing agricultural technology. The liberalization of economy has failed to give a big push to agriculture sector and to increase income and employment in agriculture. The gradual withdrawal of state from active participation in development activities has resulted in sharp decline in public investment in agricultural infrastructure in general and agriculture science and technology in particular. This has resulted in deterioration of rural infrastructure; decline in factor productivity in farm economy and thereby stagnation in rural development particularly during the post reforms period.

Although, almost all the regions of the country have experienced a deceleration in their agricultural growth, the adverse impact is especially serious in rain fed regions and among small and marginal farmers. The income from agriculture had been declined with increased cost of cultivation. However, the institutional credit supply dried up and farmers resorted at private moneylenders for their credit needs. The moneylenders took disadvantage of the footloose situation of farmers and charged heavy rates of interest on loan amount doubling the principal amount within a year or two. The situation further aggravated during the post reforms period.

The present agrarian crisis is closely associated with the misapplication of the macroeconomic policies towards agriculture during the post independence period in general and that of the post reforms in particular. The blindly following of the developmental polices of the developed countries has an adverse impact on the agriculture sector of the country. The innovation in the agriculture during the 1960s expected an inclusive growth of the sector as well as economy but has been limited to few crops (Paddy and Wheat) and in few states i.e. Punjab and Haryana. The increase in the agricultural credit remains only on paper and in real terms it has been stagnant over the decades. The co-operatives are far away from their target group i.e. small, marginal and weaker sections of the agrarian community. However, the institutional structure of agricultural produce marketing failed to address the farming community and became a play ground for the new comers in the politics. The functioning of APMCs is like a private entity of the traders, whereas farmers are the mute receiver. This is the situation of the domestic institutional marketing mechanism of agricultural produce. Whereas, at international level, farmers have to face the international market competition without State support. Government withdrew the institutional support through reduction in import duties during the 1998 to 2001 from earlier 35 to 5 per cent. At the same time developed countries continuously support their farmers through direct subsidies under different schemes. Over the years, Indian government reduced the volume of indirect subsidies to the agriculture sector. It has resulted into increase in the cost of cultivation and the mere stagnant or declined support prices caused for the increase in the gap between income and expenditure.

In all, declined factor and crop productivity and thereby deterioration of agrarian economy in the country has the positive correlation with the agricultural and macroeconomic policies since the independence in general and post reforms in particular. It has been the negative impact on the inclusive development in India.

### **Agrarian Scenario in India**

The agricultural development in India essentially involves five important phases. The first phase involves the period prior to independence of the country. This period was marked by

the retrogression of the sector and ended by leaving the country with perhaps the world's most refractory land problem. The second phase of development of agriculture sector covers the period of independence influenced both by the indigenous thinking about development i.e. Gandhian Perspective and also the western process of growth borrowed from the industrialized countries. This phase ended with the drought of mid-sixties when food security and acute poverty became prominent issues. The third phase consist the Green Revolution after the mid-sixties. Afterwards India not only met the domestic requirement of food but also became a net exporter of food grains particularly the Wheat and Rice. This was the success of the technological changes of the 1960s. This should be equally credited to the participation of farmers in readily accepting technological innovations along with the availability of new inputs. The role of farmers in the process of the spread of technological changes is of prime importance but acknowledged or highlighted rarely. The half-clad, ill-fed and under-nourished farmer with strong resource constrains was fully charged to provide food security to the country and to prove wrong the predictions of a widespread famine by the western economists. Therefore, the achievements of the technological change were possible only due to the farmers' positive role and whole-hearted participation in the process. This was followed by two distinct phases of growth, i.e. the immediate fall-outs of technological change and the phase of new economic policy.

At the time of independence, the agricultural economy of the country was clearly a stagnant with wide regional diversities, lower resource availability, inadequate institutional support and acute poverty. The policy makers then began with an optimistic note and recognized the problems at the outset. The farmers became the focus of reforms and increasing their efficiency became major objective. Farmers and food crops became the focus of the strategy during the period of Green Revolution. The technological changes focused on Cereals as a broad group and Paddy as well as Wheat as the vanguards of the revolution. The process involved providing essential resources for the transfer of the technology from lab to land along with extension support. In addition to this other support institutions also helped the technology to take roots in the farm i.e. price policy, agricultural education, extension services and provision of credit. All these presumed the farmer as a active participant, without really making the group as a part of decision making process at least overtly.

**Table- 01 Growth Rates in Area, Production and Productivity by Crop Groups in India (in per cent)**

Crop Groups		1949-50 to 1964-65	1967-68 to 1980-81	1979-80 to 1989-90	1999 to 2000-01
Food grains	Area	1.35	0.38	-0.11	-0.17
	Production	2.82	2.15	3.54	1.94
	Productivity	1.36	1.33	3.33	1.52
Non-Food-grains	Area	2.44	0.94	1.21	1.37
	Production	3.74	2.26	4.02	2.78
	Productivity	0.89	1.19	2.47	1.04
All Crops	Area	1.58	0.51	0.21	0.25
	Production	3.15	2.19	3.72	2.28
	Productivity	1.21	1.28	2.99	1.31

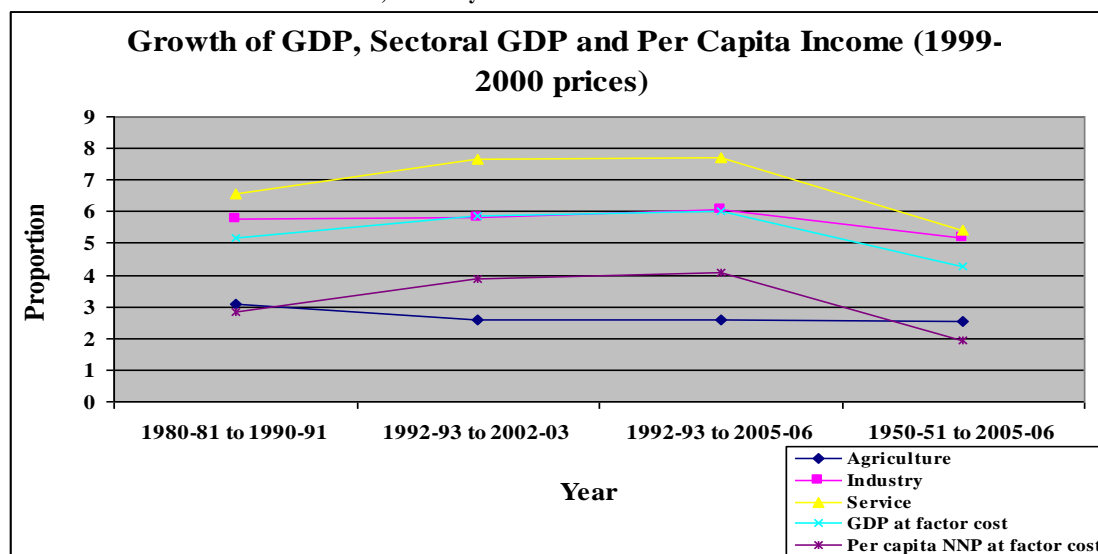
Source: Government of India(1999)Agricultural Situation in India, Directorate of Economics and Statistics

It comes out clearly from data that the non-food crops dominated the growth in the crop economy during 1949-65 and the growth in the production of food crops came mainly through the expansion of area. Growth in productivity of food crops was quite low indicating little gains due to technological innovations during that period. The situation changed after the introduction of new technology. Growth of food-grains was quite impressive. It was food-grains, which contributed mainly to the crop economy, and the growth came out of improvement in yield per hectare. The growth rates in production of food-grains stayed ahead of the growth rates in population in following decades thereby ensuring certain minimum per capita availability of food-grains. The expansion in area under foodgrains more or less ceased by 1980s and growth in production was clearly visible during eighties and nineties. Yield improvement is seen during the seventies and the second spurt in the growth is visible around the late eighties. Production and productivity seem to be stagnated in the post 1997 period. The gains of technological changes were incurred in a few states and for a few crops. A large portion of the farming community was out of the technological changes during the mid1960s. As a result, the gains from the innovation were not as per the level of expectation. And more vigorously small and marginal farmers were at the marginal in this new commercial agricultural practice.

**Table-02 Growth of GDP, Sectoral GDP and Per Capita Income (1999-2000 prices)**

Sr. No.	Year	Agriculture	Industry	Service	GDP at factor cost	Per capita NNP at factor cost
1.	1980-81 to 1990-91	3.08	5.79	6.54	5.15	2.82
2.	1992-93 to 2002-03	2.61	5.82	7.65	5.85	3.89
3.	1992-93 to 2005-06	2.57	6.05	7.72	6.00	4.10
4.	1950-51 to 2005-06	2.54	5.19	5.40	4.26	1.94

Source: CSO National Accounts Statistics, Various years



The most important manifestation of the crisis is deceleration of agricultural growth combined with increasing inefficiency in use of input and thereby adversely affecting the profitability of the sector. The growth rate of GDP from agriculture decelerated from 3.08 per cent during 1980-81 to 1990-91 to 2.61 per cent in 1992-93 to 2002-03. The growth rate of agriculture both in terms of GDP from agriculture and agricultural output has also decelerated in most of the states. Increasing share of service sector in GDP is an obstacle in sustainable development due to lack of creativity. Hence, sectoral transformation in the economy is required. Industrial sector has also shown an increasing trend during the mentioned period. But the share of service sector was high as compare to other sectors. Increasing share of the service sector in GDP indicates that the post reforms policies were more in favour of the same and adverse to the agriculture sector. As a result the economy is facing the problem of 'Jobless Growth' during reforms period. The negligence of the agriculture in the policy domain has reflecting by the declining share of the sector in GDP during the post reforms period.

**Table-03 Farmers Opinion about Agriculture as Profession**

States	Liking farming (%)	Not liking farming		Total (%)
		Not Profitable (%)	Others (%)	
Andhra Pradesh	75.4	16.7	7.5	24.2
Arunachal Pradesh	72.1	10.7	14.3	25
Assam	59	21.2	19.7	40.9
Bihar	48.6	35.5	15.3	50.5
Chhatisgarh	53.7	24.2	22.1	46.3
Gujarat	66.8	25.4	7.5	32.9
Haryana	60.3	29.9	8.4	38.3
Himachal Pradesh	64.6	18.4	16.7	35.1
J & K	61.5	20.9	17.6	38.5
Jharkhand	52.8	30.2	16.8	47
Karnataka	56.7	27.9	15.4	43.3
Kerala	66.6	27.9	5.1	33
Madhya Pradesh	59.5	21.4	18.9	40.3
Maharashtra	60.7	28.6	10.7	39.3
Manipur	67.4	28.2	4.2	32.4
Meghalaya	77.4	15.2	7.4	22.6
Mizoram	50.8	34.1	14.6	48.7
Nagaland	67.6	26.8	4.5	32.3
Orissa	53.1	33.8	12.9	46.7
Punjab	60.8	27.2	9.7	36.9
Rajasthan	61.2	21.5	17.3	38.8
Sikkim	64.6	30.2	5.2	35.4
Tamil Nadu	68.9	25	6	31
Tripura	52.5	20.2	25.1	45.3
Uttar Pradesh	58.8	24	16.5	40.5
Uttaranchal	46.8	42.3	10.9	53.2
West Bangal	53.8	35.4	10.1	45.5
All India	59.4	26.5	13.6	40.1

Source: NSSO (2005 a;, 2005b)

Farmers in India have perhaps reported willingness at first to leave agriculture as a profession provided that the substitute way of livelihood is available mainly because that the cultivation is no more remunerative. Overall proportion of the negative desire is of 40.1 per cent with Uttaranchal, West Bengal, Tripura, Uttar Pradesh, Karnataka, Maharashtra, Haryana and Andhra Pradesh leading the list. All the states from where farmers don't prefer agriculture is because it is not profitable to them due to increased cost of cultivation, stagnated productivity and mismatch between input and output prices. Unwillingness of farmers for agriculture profession has become a matter of concern because still we do not have the mechanism or substitute source to merge the farmers or say unskilled labour force. Already economy is facing the problem of informal sector labour and the trend among the farmers will further aggravate the situation. Hence, in future policy makers should take concern that to draft such a policy which will create the off farm employment opportunities in rural parts.

### **Agrarian Crisis In Maharashtra**

Maharashtra is considered as one of the progressive states in the country. The state has achieved the massive development in the field of agriculture particularly after the green revolution. Also Maharashtra was a pioneer state in adopting the new economic policy. At that time it was expected that the new economic policy will help in booming the economy in general and agriculture in particular. But, after the one and a half decade of the introduction of the new economic policy it was clear that the policy brought in the benefits to the industrial and services sector at the cost of agriculture and cultivators. The contribution of agriculture and allied sector to the net state domestic product at current prices declined from 40 per cent in 1960-61 to 13 per cent in 2004-05. According to census 2001 around 55 per cent of the total work force was either cultivators or agricultural labourers. For the period of 1993-94 to 2003-04, the growth rate of the Gross State Domestic Product (GSDP) at 4.8 per cent was lower than that of India's Gross Domestic Product (GDP) (5.8 per cent per annum). The eight major crop groups in terms of gross area under cultivation are Cereals with nearly half of it under Jowar, Pulses (3/10 under Arhar lentils), Fiber (mostly Cotton), Oil Seeds (nearly half of it under Soyabean), Sugar cane, Fruits and Vegetables, Condiments, Spices, Drugs and Narcotics etc.

There are four divisions in Maharashtra indicating the crop specialization. In which, Western Maharashtra consists Sugarcane, Wheat, Onions and other irrigated crops, Konkan region is famous mostly for Paddy and Fruits, Marathwada consisting Cotton, Pulses and Oil Seeds while Vidarbha cultivating mostly the Cotton, Arhar and Soyabean. Western Maharashtra is more irrigated as compare to rest of the Maharashtra. As a result, the income of the farmers of the Western Maharashtra increased and thereby standard of living through employment generation in agriculture sector i.e. Animal Husbandry, Dairy, Poultry and Goat Farming. Also the political leadership of Western Maharashtra has the greater say and dominance in the state policy as compare to other regions of the state. It is one of the reasons of the agricultural development of the region. The successful organisation of co-operatives also strengthened the efforts of the farmers in Western Maharashtra. However, the co-operative movement did not acquire expected success in Marathwada and Vidarbha regions of the state.

Disparities in development across Marathwada, Vidarbha and rest of the Maharashtra state have been a matter of socio-economic and political concern ever since the existence of separate statehood in 1960. After the formation of Maharashtra state in 1960, development

efforts continued in the three regions during the subsequent five year plans as expected in the Nagpur Agreement (SDBs Report- 2007). During the sixth plan (1980-85), State Planning department undertook a study on district wise development achievements and pointed to the noticeable disparities across regions in irrigation, roads, public health and technical education. During the sixth plan, government announced a 38-point, 35-point and 17 point development programmes for all three regions i.e. Vidarbha, Marathwada and Konkan mainly for the removal of the regional imbalance. Hence, the government set up a Fact Finding Committee (FFC) (1984) under the chairmanship of Prof. V.M.Dandekar to measure the nature and extent of the regional imbalance in the state of Maharashtra. The Fact Finding Committee worked out a total state backlog of Rs.3186.78 crore for 9 development sectors i.e. roads, irrigation, village electrification, general education, technical education, health services, water supply, land development and soil conservation and veterinary services. The FFC suggested its implementation through appropriate allocation of resources in the three regions to remove the backlog within 5-7 years. Though the government did not formally accept the FFC recommendations, it started allocating special outlays for removal of backlogs accumulated in the three regions from 1985-86 onwards. However, low budgetary outlays for the removal of backlog, inadequate deployment of implementing machinery and inequitable allocation of funds for non-backlog schemes resulted in the increase of regional imbalance. Which have been the negative multiplier effects on the regional economy. The Western Maharashtra has developed whereas Vidarbha and Marathwada regions remained backward. It can be called as a Backwash Effect of the development earlier mentioned by Gunnar Myrdal during the mid-1960s.

#### A Comparative Financial Backlog of Irrigation and Roads of Three Regions

Region	Sector	Years			
		1984	1994	2000	2002
Vidarbha	Irrigation	38.05	55.04	59.78	60.78
	Roads	48.55	42.68	38.78	42.53
Marathwada	Irrigation	22.85	32.37	32.85	33.08
	Roads	18.29	23.88	24.46	20.74
Rest of Maharashtra	Irrigation	39.10	12.59	7.43	6.24
	Roads	33.15	33.44	36.76	36.73

Source: Report on the performance evaluation of statutory development boards in Maharashtra 2003

The data in above table explains the regional financial backlog of irrigation and roads. Vidarbha region has consistently been at the altitude of financial backlog both in irrigation and roads. Whereas, rest of the Maharashtra showed a declining trend in the financial backlog of irrigation with 10 times less than Vidarbha and 6 times less than of Marathwada region. But the backlog in roads for rest of the Maharashtra shows increasing trend. However, Marathwada has the incremental financial backlog during the mentioned period. Irrigation and roads are the two wheels of the rural economic development and here the state government neglects both the sectors in general and for Vidarbha region in particular. Hence, the farmers of Vidarbha region remain dependent on uncertain monsoon for agricultural practices. As a result, uncertainty of income has increased and the farming community became more vulnerable. Farmers of this region have to spend more money on making of infrastructural facilities and less on actual cultivation purpose.

## The Ground Reality

Since 1997 the problems of agrarian crisis and farmers suicides have become an obstacle to the growth in general and that of rural economy of suicide dominant states in particular. It is widely acknowledged that the growth of agriculture sector is a prerequisite of achieving macroeconomic growth of the country. The problem of farmers suicides was aggravated in the country particularly after the second phase of the Economic Reforms i.e.1997-98. Most striking thing is that, the states which are agriculturally developed, suffer badly by the spate of farmers suicides. The green revolution of the 1960s and the commercialization of agriculture had sown the seeds of agrarian crisis and thereby farmers suicides in India. The problem is related to the ineffective implementation of the policy as well as unviable and uneconomical technology introduced in the country in general and during post reforms in particular. Looking at the overall spread of farmers suicides in the country, it is found that all category of farmers by size of holding, irrigated, dry land, cash crops and food-grains growers, etc. have been in suicidal trap. And the core issue of the distress act of suicides is unremmunarative state of the agriculture and thereby mounting debt burden. The incidences of farmers suicide are found in Northern states like Punjab and Haryana and in Western parts of the country consisting Maharashtra, Gujarat and Madhya Pradesh and in Southern states like Andhra Pradesh, Karnataka, Tamil Nadu and Kerala. The geographical spread of farmers suicides clearly indicates that the farmers of all category and regions are affected of the distress. Therefore the entire Maharashtra was selected for the present study rather than a particular region or a district of the state. Maharashtra constitutes four regions. They are Western Maharashtra, Marathwada, Vidarbha and Konkan. Since the Konkan region did not have any reporting of farmers suicides therefore the study does not consist any information on the same. Hence the primary data based study consist Western Maharashtra, Marathwada and Vidarbha regions of the state. Most of the incidences of farmers suicides have been reported from the six districts of Western Vidarbha region of the state. These districts are Amravati, Yavatmal, Akola, Wardha, Buldana and Washim. Eastern Vidarbha is a tribal area and there is no direct dependence on agriculture hence the number of suicide cases has been far less than any other district of the region. It was decided to cover all regions of the state to understand the ground reality of the problem. The present study is conducted in Western Maharashtra, Marathwada and Vidarbha regions of the state of Maharashtra. In all, 200 farm households affected of suicide were selected from 9 districts, 24 tehasils and 166 villages on the basis of Simple Random Sample Method.

### Farmers suicides in Maharashtra 1997-2006

Sr. No.	Year	Number of Farm Suicides	Proportion to total No. of Suicide in State (%)	Proportion to total No. of Farm Suicide in Country (%)	No. of Male Farmers Suicide	No. of female Farmers Suicide
1	1997	1917	15.2	14.1	1600	317
2	1998	2409	17.6	15.0	1938	471
3	1999	2423	17.8	15.1	2050	373
4	2000	3022	21.6	18.2	2492	530
5	2001	3536	24.2	21.5	2945	591
6	2002	3695	25.4	20.6	3155	540



7	2003	3836	26.0	22.3	3381	455
8	2004	4147	28.2	22.7	3799	348
9	2005	3926	27.2	22.9	3638	288
10	2006	4453	28.7	26.1	4111	342
<b>Gross total</b>		<b>33364</b>	<b>26.3</b>	<b>20.1</b>	<b>29109</b>	<b>4255</b>

Source: K Nagraj MIDS,2008

The data on suicides reveal that, the problem of farmers suicides is acute and distressing in the state of Maharashtra. Over the ten years i.e. between 1997 and 2006, the number of farm suicides in the state has more than doubled from 1917 to 4453. It gives an annual compound growth rate of an exceedingly high figure of 9.8 per cent for farm suicides, here a rate at which the number would double every 7-8 years. Considering the period 1997-2006 as a whole, every fifth farm suicide committed in the country occurred in the state of Maharashtra. The problem of farmers suicides became more acute after the year 2003 and mostly the Cotton growing farmers were found in to the trap. The entry of private traders in Cotton procurement was the major reason of the distress among the Cotton growing farmers. Hereafter the gap between cost of cultivation and income has widened. And also the functioning of the government procurement became poor during that period. The private traders have their hold over these centers. The picture of male farm suicides in the state is even blacker. The male farmers suicides substantially increased than female in the mentioned period. It clears that the stress among the male farmers was severe than women.

### District Wise Number of Cases Studied by Gender

Region	Districts	Region total	No. of Tehasils	No. of Villages	No. of Cases Studied		
					Male	Female	Total
Western Maharashtra	Ahmednagar	34 (17)	07	33	33	01	34 (17)
	Marathwada	33 (16.5)	01	11	11	--	11 (5.5)
	Aurangabad		01	12	12	--	12 (6)
Vidarbha	Buldana	133 (66.2)	04	21	26	--	26 (13)
	Amravati		03	23	29	01	30 (15)
	Akola		02	34	50	02	52 (26)
	Yavatmal		01	10	10	01	11 (5.5)
	Washim		02	19	20	--	20 (10)
	Wardha		03	04	04	--	04 (2)
	<b>Total</b>	<b>200</b>	<b>24</b>	<b>167</b>	<b>195</b>	<b>05</b>	<b>200</b>

Source: Field Survey

Figures in parentheses indicate percentage

There are a number of reasons for highest number of reporting of farmers suicides from Vidarbha region of the state which consist six districts. The cropping pattern of the region is dominated by Cotton which has undergone various technological and institutional transformations, which made the crop more of unremunerative of nature for cultivators. As is revealed by earlier studies that the technological changes in Cotton seed research in favour of GM varieties (BT Cotton) promised higher output per hectare and profit of rupees ten thousand. Ultimately it resulted in per hectare loss for rupees six thousand. Suicide cases have also been reported from other regions of the state which are covered under the present study. It revealed to us that the deceased families have been trapped in negative income as the agriculture has become unremunerative for them. The basic reasons for the state of unremunerative farming are the cultivation of commercial crops, stagnation of productivity (i.e. Sugarcane per acre productivity has declined to 27 m. tons in the sugar belt of Western Maharashtra), absence of irrigation and thereby more dependence on well irrigation with low water tables and low attainment of rural electrification in the state. Around 80 per cent of the state agriculture is rain fed and 64 per cent of rest of the 20 per cent of irrigated agriculture has a dependence on well irrigation and the irrigability of the same is determined by underground water table and the nature of the supply of rural electricity which are not at the satisfactory levels. The status of irrigation of Maharashtra shows a wide range of inter-regional disparities with Vidarbha region the lowest irrigation cover and highest irrigation attainment (expenditure) backlog (Danderkar-1984) ever since the separate statehood.

#### Source Wise Loan and Rates of Interest Paid

Sr. No.	Source	No. of Farmers	Proportion to total No. of farmer (%)	Amount (Rs.)				Interest Rate (%)		
				Maximum	Minimum	Total	Average	Max.	Mini.	Avg.
1.	Co. Op.	104 (37.14)	52	3,38,000.00	800.00	26,59,300.00 (27.98)	25,570.00	16	12	14
2.	Nationalized Bank	72 (25.71)	36	4,00,000.00	5,000.00	27,65,800.00 (29.10)	38,413.00	14	12	13
3.	Money lender	67 (25.71)	33.5	2,75,000.00	6,000.00	27,76,000.00 (29.20)	41,432.00	120	36	78
4.	SHGs	1 (0.35)	0.50	18,000.00	18,000.00	18,000.00 (0.18)	18,000.00	24	24	24
5.	Urban Co-Op.	12 (4.28)	6	2,05,000.00	10,000.00	10,05,000.00 (10.57)	83,750.00	19	10	14.5
6.	Sugar Factory	2 (0.71)	1	2,50,000.00	30,000.00	2,80,000.00 (2.94)	1,40,000.00	12	12	12
7.	No loan	06 (2.14)	3	--	--	--	--	--	--	--
8.	Information Not available	16 (5.74)	8	--	--	--	--	--	--	--
	Total	280				95,04,100.00				

Source: Field Survey

Figures in parentheses indicate percentage

Borrowing by farmers for agricultural operations and capital investments in agriculture is neither a new nor is it wrong but the use of credit, time, adequacy, price and resultant long term impacts of the same have wide range of repercussions on the lives of peasantry and farms. It is a fact that the performance of co-operatives and nationalized commercial banks

in agriculture credit could not wipe out the legacy of private moneylenders from the Indian countryside. Many research attempts on rural credit in India have noted the fact that the farmers receive discriminatory treatment by the nationalized commercial bank officials. And the co-operatives had never been free of political interference and historic record of unsatisfactory performance. The rural institutional credit sector of the country neither could eliminate nor has been able to control the lending rates and the dominance on lending by private moneylenders. It has been noted by our study that the proportion of suicide affected farmers borrowing from private moneylenders ranks at three (one third) in table no.7.34 with 33.50 per cent of farmers borrowing from them after 52 and 36 per cent of the farm households borrowing from co-operatives and commercial banks but both, the amount borrowed from and the rates of interest charged by moneylenders have been far higher than both the institutional sources. The average amount borrowed from moneylenders has been of Rs.41,432 whereas the same has been of the order of Rs. 25,570 from co-operatives and Rs.38,413 from the nationalized commercial banks with huge difference in the rates of interest the average of which comes out as 14 per cent by co-operatives, 13 per cent by commercial banks and 78 per cent by the moneylenders which can double the amount borrowed within a period of less than one year ( the maximum rates charged have been 16% by co-operatives, 14% by banks and 120% by the moneylenders). Despite the aforementioned usurious practices by moneylenders the farmers in the regions are not ready to reveal anything about them due to the strong hold the moneylenders retain on the rural farm economy and society on account of their ancestral dominance and the contemporary political links. But still the farmers borrow from them because loans are available on demand (which they term as Demand Loan) and they will have to pay commission to the tune of around 30 per cent of borrowing amount to agents at banks and co-operatives plus the time of processing is longer also the credit ability of them is at the bottom due to the pendency of earlier loans. For the purpose the agriculture sector it needs to be guaranteed for an adequate lending, strict observance of the performance of commercial banks in this direction and fulfillment of the statutory provision of lending of 18 per cent for agriculture by commercial banks.

### Reason and Source Wise Loan Obtained by Farmers

Sr. No.	Reason	Co-Op.	Nationalized Bank	Money lender	SHGs	Urban Co-Op.	Sugar factory	Total
<b>Agriculture Related Loans – (83.81)*</b>								
1.	Agri Exp.	91 (85.84)	32 (40.50)	24 (32.43)	--	04 (25)	--	151
2.	Seeds & Fertilizers	01 (0.94)	02 (2.53)	05 (6.75)	--	01 (6.25)	01 (50)	10
3.	Modern Agriculture Implements	05 (4.71)	08 (10.12)	01 (1.35)	01 (100)	03 (18.75)	--	18
4.	Irrigation	05 (4.71)	23 (29.11)	06 (8.10)	--	02 (12.5)	--	36
5.	Live stock	02 (1.88)	08 (10.12)	03 (4.05)	--	02 (12.5)	--	15

6.	Land Parching	--	01 (1.26)	01 (1.35)	--	01 (6.25)	--	03
<b>Non-Agriculture Related Loans- (16.18)**</b>								
7.	Housing	--	01 (1.26)	03 (4.05)	--	02 (12.5)	--	06
8.	Marriage	01 (0.94)	-	23 (31.08)	--	--	--	24
9.	Business	01 (0.94)	03 (3.79)	02 (2.70)	--	01 (6.25)	01 (50)	08
10.	Health	--	--	03 (4.05)	--	--	--	03
11.	Education	--	--	02 (2.70)	--	--	--	02
12.	Reason not Cited	--	01 (1.26)	01 (1.35)	--	--	--	02
	<b>Total</b>	<b>106</b>	<b>79</b>	<b>74</b>	<b>01</b>	<b>16</b>	<b>02</b>	<b>278</b>

Source: Field Survey

Figures in parentheses is percentage of total No. of respondent

\*, \*\* Proportion of deceased farmers obtained loans

Usually the society has a presumptive opinion about the unproductive use of farm loans but information cited in the above table makes it clear that most of the loans are borrowed and used for productive purposes. Hence it is clear from the study that the farmers does not make any unproductive use of loans which can bring an imbalance at their farm economy. 83.81 per cent of the farm households from where suicides reported have been found borrowing and strictly using the loan amount for agriculture related productive purposes such as investments, buying of implements, seeds and fertilizers, irrigation and on livestock. As has been noted in the foregoing parts the farmers incur more expenses because they need to spend on the infrastructure which is otherwise expected to be made available by the state investment which stands as merit public agriculture infrastructure such as irrigation, rural electrification and other extension facilities. For example, as there is no regular electricity many farmers have spent on buying of generators for energizing of pump sets and the additional expenditure on diesel for operating those generators has become a costly affair when they attempt to irrigate crops with inadequate state electricity infrastructure. Also spending on cattle or livestock takes place because of the scarcity of public animal hospitals. Only 16.18 per cent of the farmers were found borrowing for non-agricultural purposes but these borrowings also cannot be termed as unproductive borrowings which consisted health, education of children, attempt of non agriculture employment and housing. The borrowing for marriage for which the farmers have always been accused of has been found more from the moneylenders which is a matter of concern. But uncertainty of returns from agriculture and unavailability of basic infrastructure on the part of the government makes them to spend more and remains very little or often nothing for the household social responsibilities makes to borrow even for marriages but this activity being a significant part of the social life (and particularly when corporate houses, bureaucrats and politicians arrange for exorbitant spending on marriages of their children) cannot be called as unproductive one but on the contrary it is significant for the social pride of everyone in all societies in the world.

### Risk Factors Responsible for the Distress Act of Suicide

Sr. No.	Risk Factors	Total No. of Respondent	Proportion to Total (%)
1.	Deterioration of Social Status	79	39.5
2.	Economic Crisis	151	75.5
3.	Marriageable daughter/sister	82	41
4.	Indebtedness	178	89
5.	Family Discord wife/husband	16	08
6.	Discord with other Family Members	36	18
7.	Disputes with villagers	03	1.5
8.	Disputes with any one before the incidence	07	3.5
9.	Suicidal case in nearby village	162	81
10.	Death occur in family before the incidence	06	03
11.	Suicide in Family	06	03
12.	Serious illness	16	08
13.	Behavioural changes	119	59.5
14.	Addiction	96	48
15.	Social Isolation	186	93
16.	Crop failures	147	73.5

Source: Field Survey

Mounting of stress on account of the accumulation of economic burden caused by repeated crop failures, negative income from agriculture, pending of over dues of bank credit, co-operatives and moneylenders, etc. have been found to be leading to the socio-psychological tensions and the tragic end of life by farmers in the state of Maharashtra. On the whole it may be said that the farm indebtedness on account of the reasons accruing to agricultural vagaries and the lack of infrastructural investment on the part of the government ever since 1985-86 and the absence of institutional extension facilities have been instrumental in negative returns from agriculture of the regions and thereby the crisis and farmers succumbing to the way of tragic end of their life. The study confirms the main reason, i.e. farm indebtedness brought out by earlier studies by the Government of India and independent research attempts with the incidence of the same of the order of 89 per cent for the regions and households under study. 73.50 per cent of the farmers have faced a frequent crop failures resulting into the gap between income and expenditure of the order of 75.50 per cent thereby causing mounting of stress and behavioural changes in the case of 59.50 per cent of the farmers (usually the heads of the family) who ended their lives through suicide.

### Number of Risk Factors Identified in One Suicide Case

No. of HH.	Social status	Economic crisis	Marriage	Indebtedness	*H/W discord	Family Discord with	Disputes with other	Suicide in near place	Suicide in family	Serious illness	Behavioural changes	Addiction	Social isolation	Crop failure	No. of Risk factors
02										√			√		02
08				√		√				√					03
06	√				√				√	√					04

32	√		√	√							√	√		05
39	√	√		√				√				√	√	06
18		√		√				√		√		√	√	06
36		√		√				√		√	√	√	√	07
29		√	√	√				√		√	√	√	√	08
21		√	√	√		√		√		√		√	√	09
09		√		√	√	√	√	√			√	√	√	10

Source: Field Survey, \* Husband/Wife Discord

**Suicide is an individual act and also the outcome of the multiple socio-economic and psychological factors. Hence, through the study, one can just throw some light on the factors that lead to distress and thereby towards suicide. It is difficult to find the exact reason of the suicide due to the multidimensionality of the act. The factors that are responsible for distress can be categorized as social, economic, cultural and psychological. We found the multiple reasoning of suicides by farmers. In the earlier analysis we mentioned the factors responsible for the distress act of suicide and here the number of risk factors identified in each suicide case. It is minimum two and maximum of ten. Average six risk factors are identified in each case of suicide which proves that the act of suicide is a multidimensional. It also proves the fundamental theory of suicide; that suicide is an outcome of complex and multiple factors. There are about six factors responsible for taking of lives of 19.5 per cent of the farmers through suicide followed by eight risk factors in case of 14.5 per cent. Nine risk factors are identified in 10.5 per cent of the farm families/farmers.**

### **Conclusion**

**The foregoing analysis brings out the fact that the suicides by farmers in the state is not an outcome of poverty of farmers but the punctured socio-economic pride which made practicing agriculture difficult pushed them in to a debt trap and thereby suicidal behaviour. The migration of rural to urban creates the pressure on the civil services and increase in the incidence of poverty in urban area. The gap between urban and rural income has been widened during the economic reforms period. The incidence of rural poverty is still high at alarming rate which is the matter of concern. The central and state government has taken several steps (Economic Relief Packages- PM and CM) to reduce the farmers suicides and boost the agrarian economy. But all those steps were short term impact. After 2012 onwards again the rate of farmers suicides in the state has been increased. Initially, the spread was limited to Vidarbha but in last three years it widely spread in Marathwada with much faster rate. The government announced policy or delightful schemes for the farmers without understanding the ground reality. On the one hand economy is growing at the faster rate and on the other the rate of unemployment and poverty has been increased. Can economy achieve the inclusive growth in this dualism? Certainly not. In order to reverse the emerging dualism, it is not merely enough to draft an inclusive policy by having a number of supplementary programmes and scheme. It is necessary to restoration of the original agenda of economic development of which inclusion is an integral part. The focus should be on planned development of agriculture and related activities and establishment of micro and cottage industry to generate off farm employment opportunities in rural part. Which will reduces the dependency on agriculture sector for the livelihood purpose. It will also help to reduce the incidence of ‘Disguised**

**Unemployment’ in farm sector and thereby increasing agriculture productivity. The cropping pattern should be eco friendly. ‘Zero Budget Natural Farming’ will help to reduce the cost of cultivation and the quality of the produce. The organic produce gets the good price in the market. And the most importantly the reforms in the input output market mechanism. The issue of Marketed Surplus is the matter of concern and should be focused. The new model like ‘Agriculture Produce Bank’ will give the fare and remunerative price to the farm produce. The farm practices with the rational combination of tradition and new technology will help to release the economic and psychological stress on the farmers. Also, the shift on the policy front for creation of quality rural infrastructure is required. Role of agricultural universities and *Krishi Vigyan Kendras* (KVKs) is vital to revitalize agrarian conditions to some extent. Creation of quality rural infrastructure and provision of credit can improve the resource use efficiency. Hence, unless the plan incorporates the rural and farming economy with the policy intervention on the one front and special targeting of agriculture on the other it will not be possible to achieve the objective of inclusive growth in years to come.**

## Reference Notes

- MS Swaminathan (2006)- Report of the fact Finding Team on Agrarian Distress and farmers Suicides in Vidarbha, 2006, GoI.
- Amartya Sen (1962)- An Aspects of Indian Agriculture, Economic Weekly, Annual No. Feb. 1962.
- (1964)- Size of Holding and productivity, Economic Weekly, Annual No. Feb. 1964.
- State of the Indian Farmer A Millennium Study Vol.09- Crops and Cultivation, Academic Foundation, New Delhi.
- National Crime Record Bureau Annual Report (2010).
- National Sample Survey Organisation (2005):- Some Aspects of Farming, Situation Assessment survey of Farmers, Report No. 496; Indebtedness of Farmer Households, Situation Assessment survey of Farmers. Report No. 498; Household Assets and Liabilities in India, Reports No. 500; Ministry of Statistics and Programme Implementation, Government India. New Delhi.
- Surinder S. Jodhka (2006):-Beyond ‘Crises’ Rethinking Contemporary Punjab Agriculture, EPW (vol. XLI No.16), PP-1530-37.
- Govt. of Punjab (2004):- Annual Survey 2003-04.
- Shergil H S (1998) :- Rural Credit and Indebtedness in Punjab, Institute for Development and Communication, Chandigarh (monograph series IX).
- Kaur and Gill (2002) :- Role of Informal Rural Financial Markets in Punjab: A Case Study, working paper-1 NABARD, Department of Economic Analysis and Research, Mumbai.
- Mishra S. (2006):- Suicides of Farmers in Maharashtra, Report Submitted to the Government of Maharashtra, IGIDR Mumbai. <http://www.igidr.ac.in/suicide/suicide.htm>. (accessed 8th June 2006).
- Deshpande, R.S. (2002):- Suicide by Farmers in Karnataka: Agrarian Distress and Possible Alleviatory Steps, Economic and Political Weekly, 37(25) PP-2601-10.
- P Narasimha Rao, K. C. Suri (2006):- Dimensions of Agrarian Distress in Andhra Pradesh, EPW (vol. XLI No.16), PP-1546-52.
- S. Mohanakumar, R. K. Sharma (2006):- Analyses of Farmer Suicides in Kerala, EPW (vol. XLI No.16), PP-1553-58.
- Sridhar V. (2004):- ‘Neoliberalism Spurned’, Frontline, 21(12), PP-23-28. (2004a):- ‘From Debt to Death, Frontline, 21 (13), PP-13-16
- Assadi M. (1998):- ‘Farmers Suicides: Sings of Distress in Rural Economy’, Economic and Political Weekly, 33(14): PP-747-48.
- Kumar Pramod and S. L. Sharma (1998):- Suicides in Rural Punjab Institute for Development and Communication, Chandigarh.
- Bhalla G. S., S. L. Sharma, N. N. Wig, S. Mehta, S and P Kumar (1998): Suicides in Rural Punjab, Monograph Series -5, Institute for Development and Communication, Chandigarh.
- Patniak , Utsa (2002) :- Agrarian Crisis and Distress in India, paper presented in the International Congress on Kerala Studies, Thiruvananthapuram.
- Chowdhary P. A. (et all-2002):- Report of the Farmers Commission of Experts on Agriculture in Andhra Pradesh, Hyderabad.
- Government of Kerala (2004) :- Report on Farmers Suicides in Kerala.
- Sridhar V. (2004):- ‘Neoliberalism Spurned’, Frontline, 21(12), PP-23-28. (2004a):- ‘From Debt to Death, Frontline, 21 (13), PP-13-16
- Deshpande R S and Nagesh Prabhu (2005):- Farmers Distress Proof Beyond Question, EPW 44(45) pp 4663-65.
- Mohanty B.B. (2005):- We Are Like the Living Dead : Farmer Suicides in Maharashtra, Western India, Journal of Peasant Studies, 32 (2) pp 243-76.
- Mohankumar and Binni (2005) :- Impact of Market Uncertainty on Investment and Employment in Rubber Small Holding Sector: An Analysis of Trend in the Post Reforms Phase, EPW, XL (46)pp. 4850-56.
- P Sainath (2007):- Maharashtra Graveyard of Farmers The Hindu 14<sup>th</sup> Nov. 2007.
- Dandekar A.S. Nrawades, R. Rathod, R. Ingle, V. Kulkarni And Y. D. Sateppa, (2005): Causes of Farmers Suicides in Maharashtra: An Enquiry , Final Report Submitted to the Mumbai High Court, Tata Institute of Social Sciences, Rural Campus, Tuljapur.
- M.S. Swaminathan (2006):- Farmers Suicide Report- 2006, submitted to GOI.
- Gyanmudra (2007):- ‘Farmer’s Suicide: Dynamics and Strategies of Prevention’, Paper Presented in the Workshop, National Institute of Rural Development, Hyderabad, November 28-29.
- Durkheim, Emile (1951):- ‘Suicide: A Study in Sociology’, translated by George Simpson and John A Spaulding, The Free Press, New York.
- Stone G. D. (2002):- Biotechnology and Suicide in India,

**Murphy S. B. Lilliston and M. B. Lake (2005):- WTO Agreement on Agriculture: A Decade of Dumping, (United States Dumping on Agricultural Markets), Institute for Agriculture and Trade Policy Minneapolis.**  
**Deshpande R S (2008) :- Farmers Distress and Indebtedness: Miseries and Myths, working paper, ADRT, ISEC, Benglore.**  
**Government of India (1999)- Agricultural Situation in India, Directorate of Economics and Statistics.**  
**Ministry of Agriculture (2004) Area and Production of Principle Crops in India.**  
**Directorate of Economics and Statistics, Department of Agriculture and Co-operation.**  
**IBID**  
**CSO. National Accounts Statistics, Various Years.**  
**CSO Gross State Domestic Product, Various years.**  
**CSO (2005)- Employment and unemployment situation in India (2004) and CSO Gross State Domestic Product (2004-05).**  
**NSSO (2005)- Situation assessment survey of farmers' : Indebtedness of Farmer Household Report. No. 498, 59<sup>th</sup> round.**  
**NSSO (2005, a,b) –Situation assessment survey of farmer some aspects of farming, Report No. 496, 497 59<sup>th</sup> Round**  
**FFC Reoprt (1984)- V.M. Dandekar (1984) Fact Finding Committee on Regional Imbalance in Maharashtra.**  
**IBC Report (2000)- Indicator and backlog Committee , Maharashtra.**  
**Report of the performance evaluation of statutory development boards in Maharashtra, 2003**  
**K. Nagraj MIDS (2008)- “Farmers’ Suicides in India: Magnitudes, Trends and Spatial Patterns Madras Institute of Development Studies, March 2008.**



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Uncertainty and adequacy are the fundamentals characteristics of the indian monsoon. variations in the mansoon affect the agricultral production. However, the agricultural in maharashtra is camparatively developed in india. But at the same time, there have been huge amount of disparities in agrucultural development in the state. Adequate irrigation facilities are the prerequisite for the sustainable development of the sector. Over the year s there is increase in number of failure of indian mansoon. It is an outcome of the changing nature of climate and moreover, the increase in temperature of earth surface. I strongly believe that to come up with the problem we need along term constructive policy measure. As well as the people participation is the prerequisite while coping with the problem of climate change. I congratulate the orgniser for the conducting the academic discussion on this burning issue. The academic debate on this vital issue will be helpful for designing the long term policy on climate change and Agrarian Crisis. I wish greate success for these seminars.

**Hon'ble Dr. Rajendra Vikhe Patil**

Trustee And Secretery Pravara Medical Trust , Loni

Pro vice Chancellor, PIMS, ( Deemed University) Loni