IOSR Journal of Agriculture and Veterinary Science (IOSR-JAVS)
e-ISSN: 2319-2380, p-ISSN: 2319-2372. Volume 9, Issue 7 Ver. I (July 2016), PP 05-10
www.iosrjournals.org

Agriculture Practices Sustainability in Vidarbha

Dr. Raju M. Thakare[1], Kalpana R. Thakare (Kawathekar)[2],
[1]*Director, Online computer academy, Nagpur, M.S., India,*
[2]*Research Scholarand Associate Prof., Dept. of Architecture, K.I.T.S., Ramtek, Dist. Nagpur, M.S.,India.*

Abstract: *Agriculture is a largest economic sector and plays a very significant role in the socio economic development of our country, which is now in crises. The farmers of various states particularly in Maharashtra are in distress due to multiple factors ending in suicide in large scale. Farmer's suicides in growing numbers throughout the states of Maharashtra, Karnataka, Andhra Pradesh, and Punjab is the most crucial problem and calls for the topmost priority in the agenda of rulers & policy makers. The suicidal trend set in 1991 by the farmers of Andhra Pradesh has spread to Maharashtra in 2000-01 and has been continued even today. Vidarbha is observed as the suicide prone/ danger zone of the state. In Vidarbha region more numbers of farmers have committed suicide to overcome the miseries due to various reasons viz. nonproduction of crops, bad debts, drought, lack of markets, marketing and irrigation facilities exploitation by private money lenders and other social and family causes arising out of the combination of various factors, but no one particular reason could be attributed to this saddest event of the mankind in the Indian history. The Rural Development agencies are coming in picture for the post suicidal help within their limits. Looking at the gravity of the problem it needs to be thought in an integrated manner. This paper is an attempt to understand andanalyze the sustainability requirements in the agriculture practices in India and in Vidarbha in view to reduce/ stop the farmers' suicides.*

Keywords: *Farmer, Farmer's Suicides, Green Revolution, Fertilityof soil, Environment affects, Agriculture sustainability.*

I. Farming & Farmer's Suicides

Farm means to use the land for growing crops or/ and for keeping animals. A farmer is a person who is engaged in agriculture, raising living organisms for food or raw materials. This is a way of life that had long been the dominant occupation of human beings since the dawn of civilization. Farming is the practice or business of growing crops or keeping animals on a farm. India being agriculturist country majority of the population is occupied in farming and animal keeping activities since beginning. As on year 2011 the 53% of the population in India is involved in farming and farm related activities.

The term *suicide* in English is derived from the latin words '*sui*' meaning 'oneself' and '*cideo*' meaning 'to kill'. Thus suicide means to kill oneself. Oxford dictionary meaning of Suicide is an act of killing yourself. Farmers' suicide is an act of suicide being performed by the farmer. The phenomenon of the suicides of the farmers is one of the most tragic events in the history of India. Agriculture in India is passing through a difficult time now. It is widely acknowledged by various research studies. Recently farmers' suicides have been receiving a lot of social, public and political and media attention due to daily newspapers'. The seed of farmers' suicides starts in the Prakasam district of Andhra Pradesh in 1887-88. The number of suicides observed in Prakasam District was more than three hundred due to natural calamities – cyclone coupled with pest infestation - 'White fly' and 'Heliothis' affected the crop as known popularly. Many small and marginal indebted farmers were disappointed and frustrated resorted to suicides.

Earlier Farming was based on the traditional method. Traditional farming was conservative type of farming technique. Farmer used to conserve the crop seeds for the next session. During that time farmer was completely dependent on natural environment. After independence the population was increased to almost double. The traditional farming was not producing the crops needed to feed all of the populous. We had to beg in front of other countries for our basic food. In 1950-51 the food grain output recorded was low as 0.3 percent per year. With the increase in cultivable lands by reclamations with irrigation the output reached 2.9 percent per year in 1964-65. In 1959, India invited a team of American experts which submitted its report entitled 'India's Food Crisis and steps to meet it' in the same year. The report indicated that, given normal weather conditions, an output of 82 million tonnes of foodgrains by 1965-66 was a reasonable expectation. But by that Year the requirement of foodgrains was estimated at 100 million tonnes – or 110 million tonnes to provide a large enough cushion against weather hazards. There was, thus, a clear gap between demand and supply. The report therefore emphasized the immediate need for a reorientation in India's food policy and programmes and recommended, among others, that efforts should be concentrated 'where results will be the greatest.' In short, a new agricultural strategy to set up food production was visualized for India as it entered the sixties –a strategy which was to be motivated by technocratic considerations.

In view to make our country self-sufficient the green revolution was introduced in India.***Green Revolution*** refers to a series of research, development, and technology transfer initiatives, occurring between the 1940s and the late 1970s,that increased agricultureproduction around the world and in India, beginning most marking in the late 1960s. It forms a part of the 'neo-colonial' system of agriculture wherein agriculture was viewed as more of a commercial sectorthan a subsistence one. The term "Green Revolution" was first used in 1968 by former United States Agency for International Development (USAID) director William Gaud, who noted the spread of the new technologies. Green Revolution was initiated by Norman Borlaug, the "Father of the Green Revolution". He involved the development of high-yielding varieties of cereal grains, expansion of irrigation infrastructure, modernization of management techniques, distribution of hybridized seeds, synthetic fertilizers and pesticides to farmers in Mexico. Countries all over the world including India in turn benefited from the Green Revolution work conducted by Borlaug and this research institution.

II. Effects of green revolution

After using the High yielding variety of seeds, chemicals and fertilizers the production of crop has increased by almost double. But the soil fertility has reduced with each crop and the quality of crop has started affecting the health due to content of chemicals and fertilizers.
The main effects of green revolution are as stated below:

(a) Positive Effects:
1. Shift from Traditional Agriculture,
2. Impact on Employment,
3. Significant Change in Cropping Pattern,
4. Prosperity of Farmers,
5. Reduction in Import of Food grains,
6. Enlargement of Production Function,
7. Increase in Agricultural Production,
8. Increase in Per Hectare Yield.

(b) Negative Effects:
1. Production Reduction,
2. Soil Degradation,
3. Health Problems in Human Beings and Animals,
4. Environment degradation.

III. Cropping and Fertility of soil in Vidarbha

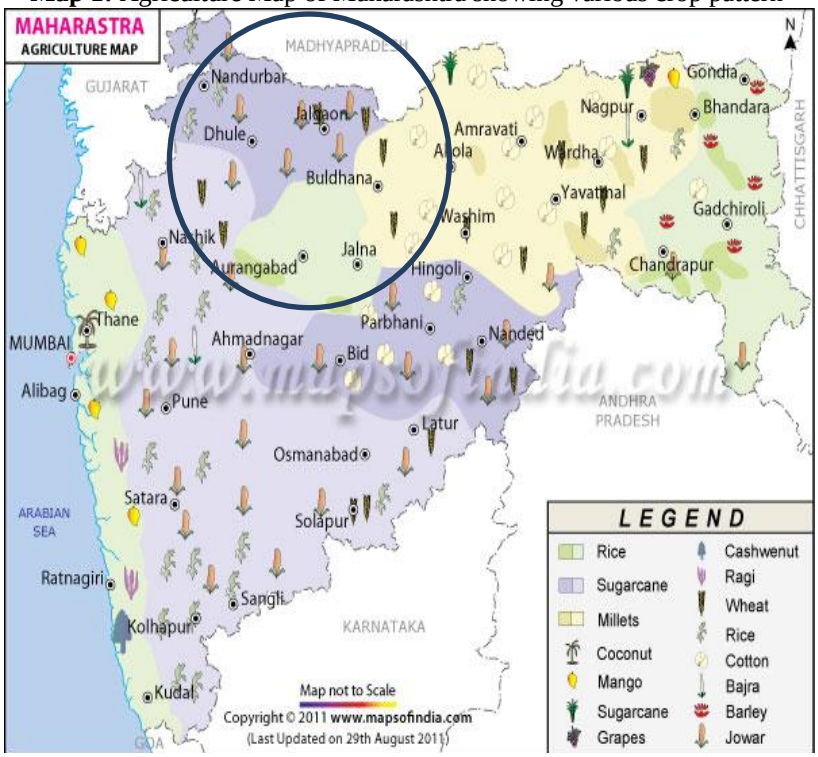
Table 1: Kharif and Rabbi Crops in Maharashtra

	Kharif Crop	Rabi Crop	
Konkan	5.12	0.32	
Khandesh	20.21	3.22	
West Maharashtra	20.53	25.03	Marathwada
	40.23	20.56	
Vidarbha	48.89	7.15	
Total Area	**134.98**	**56.28 (Areas in Hectares)**	

(Source: Census of India/ Maharashtra/ agriculture)

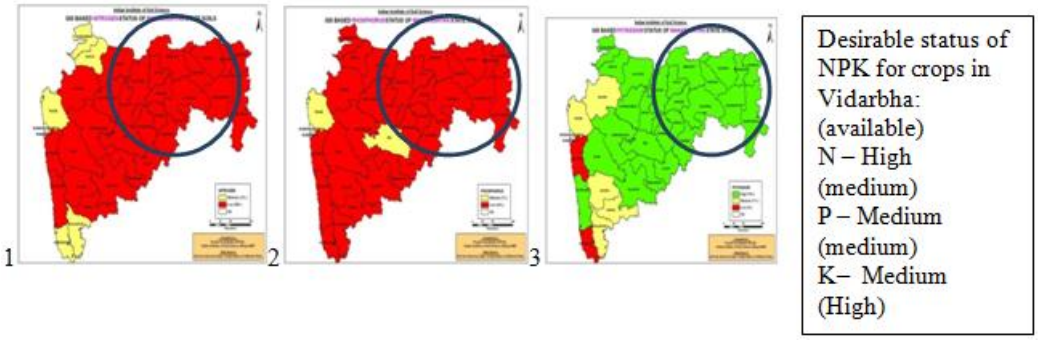
Cotton is the largest production crop in India. Maharashtra leads the country in commercial organic cotton production so in Vidarbha.

Map 1: Agriculture Map of Maharashtra showing various crop pattern



(Source: Maps of India/ Maharashtra/ agriculture map)

Maps 2-4: Map of Maharashtra with Nitrogen, Phosphorus and Potassium content of soil in the Maharashtra



1. Map 2: Nitrogen content in Maharashtra soil (Source: IISS)
2. Map 3: Phosphorous content in Maharashtra soil (Source: IISS)
3. Map 4: Potassium content in Maharashtra soil

(Source: Indian Institute of Soil Science/ Maharashtra maps dtd 2012 May)

Nitrogen, Phosphorus and Potassium content of soil in the Maharashtra region shows Medium, Medium and High status[i]. The desirable status for the same is given as High, Medium and Medium for N, P and K respectively.

4) Scenario of Farmers' Suicides and sustainability

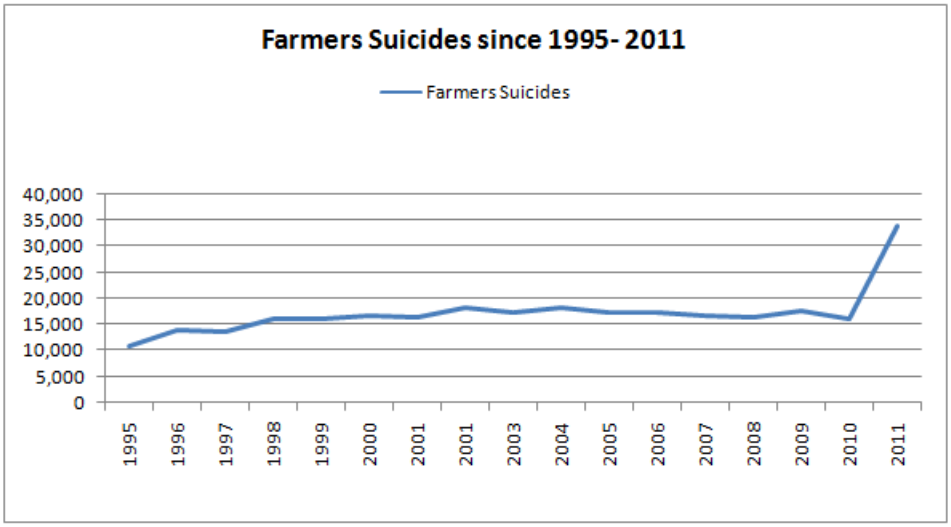
Close to 2.9 lakhs Indian farmers committed suicide since 1995 till date. While farm suicides have occurred in many States, nearly two thirds of these deaths are concentrated in five States where just a third of the country's population lives. This means that farmers' suicides occurred in those (mainly cash crop) regions with shocking intensity.

The five worst-hit States are Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh (including todays Chhattisgarh) and Kerala. Of these States, only Kerala showed no sustained increase in the number of yearly farm suicides over this period. That's mainly because of a decline after 2003 which was that State's worst year. Maharashtra, for which data exists from 1995, is by far the worst state in the country. Farm suicides there have increased from 1995 to 2010.

Table 2: Numbers of farmers' suicides in India since 1995-2011(Source: NCRB Data, 2012).

Sr. No	Year	Nos. of Farmers Suicides in India		Sr. No	Year	Nos. of Farmers Suicides in India
1	1995	10,720		11	2005	17,131
2	1996	13,729		12	2006	17,060
3	1997	13,622		13	2007	16,632
4	1998	16,015		14	2008	16,196
5	1999	16,082		15	2009	17,368
6	2000	16,603		16	2010	15,964
7	2001	16,415		17	2011	33,827
8	2002	17,971		**Total**	**1995-2011**	**2,90,740**
9	2003	17,164				
10	**2004**	**18,241**				

Chart 1: Trend of farmer's suicides since 1995-2011



(Source: NCRB Dataas per ADSI 2012)

Table 3: Division of suicides in major suicide prone states of India

Sr. No.	State with high number of suicides of farmers	Number of farmers committed suicide 1997-2007
1	Andhra Pradesh	1797
2	Chhattisgarh	1593
3	Karnataka	2135
4	Kerala	1263
5	**Maharashtra**	**4238**
6	West Bengal	1102

(Source: NCRB data)

The Eastern part of Vidarbha comprising of Nagpur, Bhandara, Chandarpur, Gondia, Gadchiroli, known as rice belt is less affected area in comparison to the western part including Wardha, Amaraoti, Akola, Yeotmal, Washim, Buldhana districts which are referred to as cotton belt where maximum number of cotton growers have committed suicides. Once upon atime cotton was one of the rich natural resource contributing to the state economy to a very great extent. Now the scenario is extremely dingy since the 'Cotton' as a backbone of Vidarbha is breaking. The same gold which gave the extreme wealthy status to India is now becoming a means to farmers for buying the poison for committing suicides. The farmers are caught in the vicious cycle of tremendous losses of the crop leading to hunger deaths followed by their inabilities to carry on family obligation ultimately leading to suicide. The same insecticide which once upon a time was a tonic for the healthy crop has now turned to be deadly poison releasing the poor farmer from this devastating situation. Till now about 8410 cotton growers of Vidarbha has committed suicide with in the period of last 3 years. Though disheartening the figures shows the trend of suicide comparatively more prevalent in the cotton belt of Vidarbha which constrains us to investigate into the issue from this particular aspect. All the top political leaders including President, Prime Minister, Chief Ministers, administrators, social workers, researchers, academicians and media have shown their

concern for the tragedy through their visits, relief packages, focusing this problem before the world but it did not prove beyond sympathy. On an average 7farmersare committing suicides in a day.

So to say, the Eastern part of Vidarbha comprising of Nagpur, Bhandara, Chandarpur, Gondia, Gadchiroli, known as rice belt is less affected area in comparison to the western part including Wardha, Amaraoti, Akola, Yeotmal, Washim, Buldhana districts which are referred to as cotton belt where maximum number of cotton growers have committed suicides. Once upon a time cotton was one of the rich natural resource contributing to the state economy to a very great extent. Now the scenario is extremely grim since the 'Cotton' as a backbone of Vidarbha is breaking, imagine the pangs! The challenges of LPG are making this white gold undergo the acid test. The same gold which gave the extreme wealthy status to all us is now becoming a means to farmers for buying the poison for committing suicides. The farmers are caught in the vicious cycle of tremendous losses of the crop leading to hunger deaths followed by their inabilities to carry on family obligation ultimately leading to suicide. The same insecticide which once upon a time was a tonic for the healthy crop has now turned to be deadly poison releasing the poor farmer from this devastating situation. Till now about 8410 cotton growers of Vidarbha has committed suicide with in the period of last 3 years. Hence this attempt to study the various aspects of crises, on the cotton growers of this region. Though disheartening the figures shows the trend of suicide comparatively more prevalent in the cotton belt of Vidarbha which constrains us to probe into the issue from this particular aspect. All the top political leaders including President, Prime Minister, Chief Ministers, administrators, social workers, researchers, academicians, media have shown their concern for the tragedy through their visits, relief packages, focusing this problem before the world but it did not prove beyond lip sympathy as there are no visible results as yet and the suicides are continued even to this date when I started writing this paper for its presentation. There has been 7suicides in a day, every three and half hour one farmer is ending his life.

Map 5: Map showing 11 districts in Vidarbha Region, Maharashtra
(Source: Maps of Maharashtra)

Division wise Number of farmers Committing Suicide in Vidarbha Region 2011
(Six out of 35 Districts of Maharashtra account for 76% Suicides)

Table 4: Farmer's Suicides in Vidarbha 2001-2011

Amraoti Division	2034	72%
Yeotmal		28%
Amraoti		16%
Buldhana		10%
Akola		8%
Washim		7%
Nagpur Division	251	9%

(Source : Lokmat Daily 2012)

***Distress in Farmers from selected districts of Vidarbha and at National and State level*:**

Print media brought forward many reasons whereas the govt. is blamed for giving incorrect figures, misguiding the public at large. In the present globalized scenario dominated by WTO and GATTfarmers are unable to compete with their counterparts selling their better quality cotton to the ginning factories of the Maharashtra State at much cheaper rates.Rich farmers laced by latest farming technologies, producing better quality of cotton in contrast to a poor farmer farming manually with little money, heavy rate of interest on the loan borrowed, delayed payment disbursal of the loan sanctioned by the banks, lack of facilities, surviving on loan either from bank or the private money lenders, lack of good quality seeds, irrigation facilities, no subsidies, heavy electric bills along with many other constraints of operating in domestic market are making it extremely difficult to attain the sustainability from any angle, resultantly the poor farmer has no access neither to domestic

nor international market making his life most miserable, unable to seek even two meals a day for himself & the family.Finding themselves unable to meet the family obligations most of them are committing suicide in distress.

IV. Conclusion

- Use of chemicals and fertilizers and HYV of seeds have observed the temporary growth in the crop production. But in the long run it proves ineffective. TheseAgriculture practices are affecting theenvironment at large.
- Organic farming may require more investment but it is sustainable in the long run.

Use of natural resources over the artificial products with the check of the quality of soil is advice sustainability.

References

[1] Agriculture Census 20 10 -11, Agriculture Census Division, GOI, 2012.
[2] *Dr. Narendra Jadhav*, Vice-Chancellor, University Of Pune, Farmers'' Suicide And Debt Waiver An Action Plan For Agricultural Development Of Maharashtra R E P O R T Submitted To Government Of Maharashtra (July, 2008)
[3] *P. D. Jadhav*, Agriculture Situation in Vidarbha Region, Research Paper—Economics, International Referred Research Journal, July, 2011. ISSN- 0974-2832 RNI-RAJBIL 2009/29954.VoL.III *ISSUE-30
[4] Agrarian Crises faced by the Farmers of Vidarbha with special reference to its Cotton Growers"By Dr. Smt. Neelima Deshmukh, M.Sc. Ph.D. M.A. M.Phil. DIRPM, PGDTT, BMC, Ph.D.D.Litt, Professor & Head, Dept. of Public Administration & Local Govt.Director, Centre For Women's Studies & Development, RTM Nagpur University, Nagpur
[5] Report on Suicide of Farmers in Maharashtra –Causes & Remedies, (S.M.Wakude, AGM, CSID, NABARD, HO, Mumbai)
[6] Causes of Farmer Suicides in Maharashtra: An Enquiry. Tata Institute of Social Sciences 2005, http://www.tiss.edu/Causes%20of%20Farmer%20Suici des %20in%20Maharashtra.pdf , accessed 18 December 2009
[7] Farmers Suicides – Facts and possible policy intervention.Yashwantrao Chavan Academy Development Admenstration, 2006 , http://www.yashada.org/organisation/FarmersSuicideExcerpts.pdf, accessed 14 May 2010.
[8] *Prof: Mahesh Ratnaparkhi, Prof:Vijay Rajade, Prof : Jayendra Wasnik, A.S.C. College Badnapur, Dist. Jalna,* research paper title 'Crop Diversification Patterns In East Vidarbha Of Maharashtra, ' ISSN No-2231-5063 Vol.1,Issue.IX/March 2012pp.1-4
[9] *Raymond Guiteras_,y University of Maryland*, The Impact of Climate Change on Indian Agriculture, September 2009
[10] Guillaume P. Gruere, Yan Sun, Measuring the Contribution of Bt Cotton Adoption to India's Cotton Yields Leap, Environment and Production Technology Division, IFPRI Discussion Paper 01170 , April 2012.
[11] http://www.mapsofIndia/ Maharashtra/ regional divisions/ rainfall map
[12] http://www.mapsofIndia/Maharashtra/geologicalandstructuralmap/
[13] http://www.mapsofIndia/Maharashtra/agriculturemap/