

An Analysis of Socio-Economic Parameters of Indian Farmers

Amit Kumar Singh

Assistant Professor,
Deptt of Economics,
Mahatma Gandhi Kashi Vidyapith,
Varanasi, U.P.

Abstract

India is country of villages; around 60 percent of population belongs to rural background and still their livelihood directly and indirectly depend on agriculture practices. The majority of Indian farmers are subsistence level farmers. Their landholding size is small, their living environment is challenging and they continue to remain chronically poor. They have little or no formal education, and bound by traditional mode of agricultural practices. Since, the small and marginal farmers are the most vulnerable and they are not given incentive to integrate in the prevailing modern agricultural practices (only a small group of big and medium scale farmers who adopted modern agricultural techniques/practices of production), so their interests/rights and sustenance are to be relevant. It is this relationship which has prevented the state from rolling the market led bulldozer over the poor community of farmers as the reactions against such policies have been astoundingly beyond state capacity to control.

Among a vast sea that the Indian economy is enwrapped in and that are sapping its vigour and much talked about potential to emerge as an economic power, a very pertinent one is decay of agriculture and despair and desperations of the farmers. The aim of this land understanding these reforms and this paper is to increase productivity, equality and stability for societal coherence and uplift landless labourers and small and marginal farmers, and removal of vested interests of the landed elite and their powerful connection with the political-bureaucratic system have blocked meaningful land reforms.

Keywords: Land Reform, Tenancy, Landholding Size, Small and Marginal Farmers, Social Identity

Introduction

Indian history of agriculture is of immeasurable ecological interventions that have given nature its cordiality, and imparted distinctive characteristics to the land. Due process of human civilization, the transformation of land changes in general form of the *social identity* and *social structure of farming community*. Such identity posed most serious problem in human life because it *further* strengthen the power of the *dynastic lineage* into agrarian space. In the medieval period, there was kinship agrarian expansions/relations in lineages, clans, castes, sects, and the four varnas of Brahmans, Kshatriyas, Vaisyas, and Sudras, which adopted by society of farmers and kings. The *social class status of peasant as poor farmers* not established and they had no voice at all in the system, were burdened with many types of tax or rent obligations for land entitlements to intimate personal bondage. During the Gupta Empire Brahmans, Bhumiars, Rajputs, Kayasthas, and Baniyas represented as an influential zamindar class, while traditional lower-castes peasant cultivators groups such as *Ahirs, Kurmis, Koeri, Lodh* who in turn engaged. The labour, land, and assets of lower class of farm families of Sudra and untouchable caste groups were engaged for their livelihood under dominant caste families Brahman and Kshatriya's control in the cultivation (Ludden, 1999). In other place, low-caste and tribal farmers were placed to ecological margins by more powerful communities (Ludden, 1999:143-144). In British India, land became attractive for industry and market purpose. After independence, governments take into account of national development which has prevented small and marginal farmers from rolling the market led transformation. But history of state policy on the land simply pushed poor farmers more deeply into the margins because they are lacking technology, land holding, contracts, marketing, living standards, and depend on credit (ibid).

Objective of the Study

1. To understanding land reforms and its different sizes in India.
2. To analyse parameters to increase productivity, equality and stability for societal coherence. To uplift landless labourers, small and marginal farmers.
3. To remove vested interests of the landed elite and their powerful connection with the political-bureaucratic system which have blocked meaningful land reforms?
4. To compare historical and current scenarios on above mentioned points.

Review of Literature

Small Farms and Agricultural Productivity-A Macro Analysis R.G.Kadapatti & S.T.Bagalkoti, at International Journal of Social Science Studies Vol. 2, No. 3; July 2014 ISSN 2324-8033 E-ISSN 2324-8041 Published by Redfame Publishing

Findings

1. Small holders are those with a low asset base operating less than 2 hectares of crop land (World Bank 2003).
2. Small farmers are those with limited resource endowments relative to other farmers in the sector. (Dixon, et al 2003).
3. A smallholder is a farmer practicing a mix of commercial and subsistence production or either where the family provides the majority of labour and the farm provides the principal source of income.(Narayan and Gulati 2002).

Conclusion

The intense debate about the relationship between farm size and productivity has largely conformed to the view, that small holdings in India in agriculture exhibit a higher productivity than large holdings. The inverse relationship between farm size and productivity based on the aggregate of all crops has been quite pronounced in recent years. The findings

Socio-Economic Status of Farmers and Their Perception About Technology Adoption: A Case Study, at *EPRA International Journal of Economic and Business Review*; Vol. 2, Issue 3, pp. 7-13, 2014

Adoption of new farm technology is very crucial for agricultural productivity and development. Farmers' perception of new agricultural technology influences their decision to adopt the same. The main aim of this study is to examine the socio-economic status of farmers and their perception about technology adoption using a case study of Udham Singh Nagar district of Uttarakhand. The study is based on personal interview and group discussion with sample farmers of the district. The study finds that marginal and small farmers are reluctant to use new technology because it increases the cost of production, whereas relatively large farmers believe that technologies are good to them in terms of high yield, less pests and more benefit. The study suggests that there is a need of government assistance to promote the participation of farmers, particularly female ones in agricultural training and workshop.

Study of Socioeconomic Status of Farmers in Drought Prone Regions of Maharashtra, India- A Case Study P., Vidya Kumbhar and , Sneha Kumari, in *International Journal of Current Research* Vol. 8, Issue, 06, pp.33304-33306, June, 2016

Socio-economic status of the farmers plays an important role in agriculture in India. The socioeconomic, psychosocial, situational factors are the major causes of suicides of farmers in India (Kale et al., 2014, Mohanty we have found that there has a lot of research being done on Indian farmers however the socio economic status has been explored in few research papers indicating the economic status of our farmers.

Materials and Methods

The stratified random sample method was used for collection of socioeconomic data. Three villages were selected randomly for the same. Statistical Package for Social Sciences was used for analysis of the data.

Conclusion

The paper has explored the socio economic status of the farmers of the villages of study area. With time and increasing awareness the farmers have shown a drastic change in their life style. The farmers are aware of the increasing needs and requirements. Survival of farmers in the semiarid region has somewhat improved as compared from the past trends.

Research Methodology

Indian agriculture is very primitive, scattered and complex; hence I have to search various data sources collections. Basically, secondary sources are used to reach to analysis. But in some cases for viability of prospect of objectivity direct communication with farmers is also considered. The objectives of research being study the impact of landholding size on the growth and advancement of lives of small and marginal farmers in the country's agricultural policy by affecting their landholding's environmental dynamics.

Indian Farmers and Social Movement

Base root cause of evolution of agrarian problems and those facing the poor farmers and landless labourers addressed in national agrarian movement. State institutions support Peasant struggles for their land rights, collective mobilisation. Dr. B.R. Ambedkar in his essay, "Small Holdings in India and Their Remedies" stresses the strong need for land reforms for the state in economic development by the insensitive production as reflected in the amounts of productive investment made on the land and the amounts of all other inputs used, including labour. He also stresses the need for industrialisation so as to move surplus labour from agriculture to other productive occupations. He seeks to form cooperatives in order to promote agriculture. Communist parties had mobilised people for land rights to end feudalism while, Jawaharlal Nehru advocated to remove social disparity from Indian society. The proponent of zamindari abolition in Uttar Pradesh, Chaudhari Charan Singh mobilised support from all levels of society for zamindari abolition and supported land rights to poor, tenant rights, implemented reform (Ludden, 1999: 175). He argued

that majority of farmers in Uttar Pradesh are small and marginal and constitute highest percentage base of the rural electorate, so farmers may be an aggressive political force. On the same platform, other states also followed the logic of state electoral politics as land reforms.

Struggles over occupancy rights Gandhi's movement in 1917-1918 deployed in the local issues concerned with Champaran, Bihar Indigo farmers and the Kheda peasants for rural development. In Champaran, Bihar planters always forced peasant them to sell their crop for a fixed and usually uneconomic price. At this time the demand of Indian indigo in the world market was declining due to the increasing production of synthetic indigo in Germany. So, most planters at Champaran realised and tried to save their own position by forcing the tenants to bear the burden of their losses. So, Gandhi's participation justified and enhanced rents were reduced, and as for the illegal recoveries from tenants. The tenants' status on zamindari estates between upper and lower castes in Bengal, Bihar, and eastern UP remained much the same even as policy level interventions accrued. While, in Bengal tenant status has improved, as political opportunities increased. So the social inequality, oppression and protection by state's political opportunism became more noticeable as constituents of village society. Punjab and Rajasthan regions dominant farmers, mostly Jats and Rajputs, make the strongest political connections who acquire state subsidies electrical supplies, pump sets, credit, tractors, fertiliser, and high quality seeds, and on state procurement prices.

After independence, India's agricultural policies focussed towards markets and agro-industrial demand and protected by state politics (Hindu, 2011; 10). The result is that capital is moving up from villages into towns and down from cities into towns and villages, creating a more and more intricate web of connections between the village economy and the world economy. With due course agricultural development and small and marginal farmers rights diluted and market oriented contract farming practices favoured big farmers in global market. If it continued and small and marginal farmers not taken into consideration then future food securities lessen and feeding a large portion of humanity and climate change will be endangered. Naandi, a NGO working with private sector company Mahindra & Mahindra Ltd on livelihoods for small and marginal farmers. It also working towards children's health, nutrition and education right until high school, and provide employability training support of most disadvantaged youths, namely the SCs and STs Communities to provide equal opportunities in society.

Comparison between Size of Landholding and Agricultural Productivity

As we all aware that India being an agriculture country dominates the economy to such an extent that a very high proportion of working population is engaged and depends on agriculture. The higher degree of concentration of land holding constitutes among the big landlords, farmers and money lenders throughout the country. On the other

hand, more than 80% of small and marginal farmers constitute below 2 hectares of a very small and uneconomic size of landholdings in India. Even though the Zamindari system has been abolished and Tenancy legislation enacted but the tenants status is not satisfactory. Before independence, during the first half the 20th century agricultural production rose only marginally as compared to growth of population. For example, India's population rose by 38 percent between 1901-1946, but the area of the cultivated land rose by only 18 percent. It was due to deterioration in fertility of land and general decline in efficiency of agricultural practices (Dutt and Sundaram, 1995:423). At the time of independence, ownership of land was highly unequal. While the vast majority of cultivators were peasant proprietors engaged in personal cultivation of their land. A large portion of the cultivable land area was in the hands of relatively large landowners which were cultivated either with the help of tenants or wage labourers. But the reforms as an abolition of the zamindari estates, tenancy reforms, and imposition of land ceilings on land ownership were expected to correct the gross inequalities in land ownership (Basu, 1994, 2000).

In India, during 1950s, there was opposite relationship between agricultural productivity per acre and landholding size. It means the small and marginal landholding size showed higher productivity, employment, and higher labour intensity as well. So it tends to support redistribution of land in society. Moreover, it drives the small land holding size over the big ones is the effect of using family labour to the limit where the marginal productivity of labour may tends to zero (Venkateswarlu, 1998: 17). Therefore, the small and marginal landholding size efficiency stands correct so long as the traditional agricultural conditions exist. In India, population is remarkable, average landholding size has been reduced due to fragmentation of holding for division of household property. It is clear that in agriculture sector in India, there is disguised unemployment or surplus labour. Therefore, this surplus labour can be diverted to non-agricultural sectors. But, the non-agriculture sectors do not have so much absorbing capacity. So, it is need of hour to strengthen economic criterion towards per labourer agricultural productivity through technological transformation (Venkateswarlu, 1998: 18-19). The reason of a positive relationship between size of landholding and small and big farm and negative relationship on medium farm is that the medium farmers are not in position to utilize their indivisible farm machinery optimality due to insufficient landholdings. Positive relationship implies that output per hectare increase in the size of landholdings. The gross income of overall size is different from the gross income of small, medium and large size farms. The net income is negative on small and medium farms while it is positive on large farms. So, small size of landholding is a big constraint in the enhancement of agricultural production because the diffusion of agricultural inputs and improvement of infrastructure would not help the farmers to raise productivity to any significant extent (Mahipal, 1992).

Current Scenario of India

However, the minimum or maximum size of an economic holding will vary from region to region and country to country. During the agricultural year July 2012 - June 2013, rural India had an estimated total of 90.2 million agricultural households. These agricultural households were about 57.8 percent of the total estimated rural households of the country during the same period. Uttar Pradesh, with an estimated 15.5 percent share of rural households in the country, accounted for about 20 percent of the

total agricultural households in rural India. Among the major States, Rajasthan had the highest percentage of agricultural households (78.4 percent) among its rural households followed by Uttar Pradesh (74.8 percent) and Madhya Pradesh (70.8 percent). Kerala had the least percentage share of agricultural households (27.3 percent) among its rural households preceded by other southern States like Tamil Nadu (34.7 percent) and Andhra Pradesh (41.5 percent). Details are given in following table:

Table 1 : Percentage Share of Agricultural Households and Rural Households in Major States During the Agricultural Year July 2012 – June 2013

State	Percentage Share (%) of		Agricultural Households as Percentage of Rural Households	Estimated Number (00) of	
	Agricultural Households	Rural Households		Agricultural Households	Rural Households
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	4.0	5.6	41.5	35968	86763
Assam	3.8	3.4	62.2	34230	52494
Bihar	7.9	9.0	50.5	70943	140611
Chhattisgarh	2.8	2.4	68.3	25608	37472
Gujarat	4.4	3.8	66.9	39305	58719
Haryana	1.7	1.7	60.7	15693	25849
Jharkhand	2.5	2.4	59.5	22336	37516
Karnataka	4.7	5.0	54.8	42421	77430
Kerala	1.6	3.3	27.3	14043	51377
Madhya Pradesh	6.6	5.4	70.8	59950	84666
Maharashtra	7.9	8.0	56.7	70970	125182
Odisha	5.0	5.0	57.5	44935	78120
Punjab	1.6	1.8	51.1	14083	27552
Rajasthan	7.2	5.3	78.4	64835	82722
Tamil Nadu	3.6	6.0	34.7	32443	93607
Telangana	2.8	3.2	51.5	25389	49309
Uttar Pradesh	20.0	15.5	74.8	180486	241328
West Bengal	7.1	9.1	45.0	63624	141359
All India*	100	100	57.8	902011	1561442

Ref.: NSS Report No. 569: Some Characteristics of Agricultural Households in India

* All India figures include all States and UTs which are not shown in the Statement

** The estimate of rural households as per the results of the Land and Livestock Holdings Survey of NSS 70th

Percentage distributions of Social groups of farmer households by land size and Operational holdings by category wise of farmers group of Operated area in India is shown by table. The 59th round NSSO report, 2003 highlight that certain social groups, SCs and STs dominate (total 31 percent of

the farmers' households) in the labour market (Table:1). The SCs have more than half of their holdings of less than half a hectare. Although, among STs land ownership appears to be better, but it is fact that high incidence of poverty and wage labourer among them too. It is because denial of land and

cultivation rights to such groups. While such groups play a very important role in production. Other side, OBCs is the largest percentage of farmer households i.e., 42 percent, while others category constitute 28 percent. NSS 70th round report says SC community were the highest proportion of households grouped under wages/ salaried employment followed by self-

employed in cultivation. Report says for each social group, the maximum number of households reporting staying away of their members for employment was in the marginal category of land holdings and their proportion is high as compared to the other land holding categories.

Table: 2 Distribution of Social Groups of Farmer Households by Land Size, 2003.

Social group	Semi-marginal and marginal famers	Small farmers	Marginal and Small farmers	Medium and Large farmers
SCs	21.6	10.3	19.3	7.8
STs	12.4	15.6	13.1	14.9
OBCs	41.8	41.8	41.8	39.7
Others	24.2	32.3	25.8	37.6
Total	100.0	100.0	100.0	100.0

Source: NSSO report 59th round status of farmers, 2003.

In India by 2002-2003 small and marginal farmers having below 2 hectares of land holdings, almost 80% of all operational holdings with area covering above 40% of all holdings (Table.2).

Alongside, during 1960-61 small and marginal farmers having around 63 percent of operational holdings that show small and marginal farmers' operational holdings increased by time.

Table: 3 Percentage Distributions of Operational Holdings by Category of Operated Area in India (1960-2003)

Land Holding Class	Percentage distribution of Operational Holdings				Percentage Distribution of Operated Area			
	1960-61	1981-82	1991-92	2002-03	1960-61	1981-82	1991-92	2002-03
Marginal farmers (Less than 1 ha)	39.1	45.7	56	62.8	6.8	11.5	15.6	22.6
Small farmers (1-2 ha)	22.6	22.4	19.3	17.8	12.3	16.6	18.7	20.9
Semi-medium farmers (2-4 ha)	19.8	17.7	14.2	12	20.7	23.6	24.1	22.5
Medium farmers (4-10 ha)	14	11.1	8.6	6.1	31.2	30.1	26.4	22.2
Large farmers (More than 10 ha)	4.5	3.1	1.9	1.3	29	18.2	15.2	11.8
All size	100	100	100	100	100	100	100	100

Sources: NSSO reports on land holdings 59th Round survey on status of farmers, 2003.

According to 61th round NSSO report, 2004-05 highlighted the fact that poverty and societal identity are correlated. In rural India, there is a hierarchy in term of poverty status in every size of class of land ownership. The lower status is STs, followed by SCs, Muslims, Hindu OBCs and then others-who do not belong to any of the earlier groups. The ST farmers are most vulnerable with one-third of them being in poverty. Even among them possessing more than two hectare of land are a high incidence of poverty. According to 61th round NSSO report, poverty levels among SCs households were higher than those for OBCs and upper castes in all land size classes. The landless among the Upper Castes and

Muslims clearly had access to non-agricultural sources of income, reducing their poverty levels. Although, size of land holdings does reduce poverty and improve economic position of small and marginal farmers but, one's social identity also mediate the education level, social networking and asset position into one of wellbeing.

Land Tenure System and Small and Marginal Farmers

In India, British colonization affected whole economic activities. Before independence, contractual relations were understood as feudal agrarian relations. It had a strong effect on the legal and agricultural system. There were two groups one is

landlords who was collecting revenue from the areas like Bengal, Bihar, Orissa, etc. and an elite class that had economic and political power. It meant at the time of independence, these areas inherited more unequal land distribution and a very specific set of social splits, which was absent elsewhere (Banerjee and Iyer, 2003:1). In 1793 in India, first Governor-General Lord Cornwallis introduced the 'Zamindari' or 'permanent settlement' mainly for Bengal, Bihar, Orissa, the Central Provinces (modern Madhya Pradesh State) and some parts of Madras Presidency (modern Tamil Nadu and Andhra Pradesh states). By the settlement, the Zamindars or landlords were as the proprietor of the land with the right of hereditary succession and the collectors of land revenue. They had to make a fixed payment to the government to the East India Company. Whatever remained after paying the British revenue demand was for him to keep. They had also enjoyed the right to transfer, sell or mortgage over the land in their possession. But all their rights disowned with their failure to pay the fixed revenue on the fixed date to the government. The government confided the landlord with duty of safeguarding the rights of their tenants by giving them land to look after and its rent was stated. The peasants who suffered most from the Settlement they were left entirely at the mercy of their landlords, who also had share in the production and the land which was not fixed.

The government soon found that this settlement was economically disadvantages because of they were not able to have fixed permanent revenue from the landlords. So a new land revenue settlement was introduced on a 'temporary settlements' basis. It covered the major portions of the united provinces, certain parts of Bengal and Bombay, the Central provinces and Punjab. In a 'temporary settlement' the revenue was fixed for a certain number of years, after which it was subject to revision. In most areas of Madras and Bombay Presidencies and in Assam, the 'Raiyatwari System' was introduced by the Governor of Madras Sir Thomas Munro in 1820. Under which the revenue settlement was made directly with the individual peasant proprietor / raiyat or cultivator and individual cultivator was transformed into the owner of the land he tilled. There was no middleman like the landlord or zamindar who mediated between the government and the tiller of the soil. The government fixed the revenue (mostly kept at fifty percent of the produced) directly with the cultivators and collected with the help of local village officers. This share typically varied from place to place, was different for different soil types and was adjusted periodically in response to changes in the productivity of the land (Banerjee and Iyer, 2003:17). The Settlement neither protected the rights of the cultivators nor put them to any financial gain. The cultivators had to pay regular revenue otherwise they could be dispossessed of their land at any time. The high rate of assessment fixed by the government proved at times hard for cultivators. They often suffered oppression and harsh treatment at the hands of the government's tax collectors.

Moreover, a new type of land system 'Mahalwari System' (also known as Mahalwa or

village settlement or joint village tenure) in the most areas of Uttar Pradesh, Punjab and Madhya Pradesh was introduced. Under the system state fixed the revenue for a limited period of thirty years at some places. The settlement of the revenue was made with the members of the villages. The amount of the revenue which the whole village was required to pay was paid by the individual villager in their respective holdings. Actually, this system was modified version of the Zamindari system which benefited only the upper class of the village. Under this they took large area of village land under their possession and used the small tenants as cultivators. Therefore, in British India, the motive behind the introducing Zamindari, Ryotwari and Mahalwari system was to increase the revenue of the Government. By the system, the mode of production and villages' agricultural production were now determined by market or for sale purpose. The collections of the revenue were not in the interests of the cultivators. The British policy gave advantage only to the government or the privileged sections of the society at the cost of the cultivators i.e., landless labourers and Small and marginal farmers.

Concluding Remarks

The majority of Indian farmers are subsistence level farmers. Their landholding size is small, their living environment is challenging and they continue to remain chronically poor. In British India, the motive behind the introducing Zamindari, Ryotwari and Mahalwari system was to increase the revenue of the Government. The British policy gave advantage only to the government or the privileged sections of the society at the cost of the landless labourers and poor small and marginal farmers. Post-independence in India, many five-year plans allocated substantial budgetary amounts for the implementation of land reforms. The aim of those land reforms was to increase productivity, equality and stability for societal coherence and uplift landless labourers and small and marginal farmers. But, vested interests of the landed elite and their powerful connection with the political-bureaucratic system have blocked meaningful land reforms. So the social inequality, oppression and protection by state's political opportunism became more noticeable as constituents of village society. However, the minimum or maximum size of an economic holding will vary from region to region and country to country. The maximum size of a landholding will depend upon the fertility of the soil, overall production and the expertise of the management. The size of economic holdings must be progressively increased keeping all these factors in mind.

References

1. Banerjee, A. and Lakshmi Iyer (2003), "History, Institutions and Economic Performance: The Legacy of Colonial Land Tenure Systems in India", December, p.17.
2. Banerjee, A. and Lakshmi Iyer (2003), "History, Institutions and Economic Performance: The Legacy of Colonial Land Tenure Systems in India", December, p.1.

3. Basu, K. (1994, 2000), "Agrarian Questions", Article by A. Vaidyanathan, 'Performance of Indian Agriculture since independence', OUP, p.57.
4. Dutt, R. and K.P.M. Sundaram (1995), 'Indian economy, S. Chand and company ltd, New Delhi, P.423.
5. Dutt, R. and K.P.M. Sundaram (1995), 'Indian Economy', S. Chand and company Ltd, New Delhi, P.429.
6. http://india_resource.tripod.com/indianagriculture.html(accessed on 13.05.2017)
7. http://nceus.gov.in/Special_Programme_for_Marginal_and_Small_Farmers.pdf, p.15, December, 2008 (Accessed on 15.04.2017) and http://mospi.nic.in/sites/default/files/publication_reports/Report_571_15dec15_2.pdf (p.17)
8. <http://trcollege.net/study-materials/119-land-tenure-reforms-under-british-rule?catid=66%3Ahistory> (Accessed on 30.12.2016).
9. <http://trcollege.net/study-materials/119-land-tenure-reforms-under-british-rule?catid=66%3Ahistory> (Accessed on 30.12.2016).
10. <http://www.frontline.in/static/html/fl1915/19151150.htm>: (Accessed Dated: August 08,2017).
11. http://www.naandi.org/strategy_papers/livelihoods_13b.aspx.
12. http://www.worldproutassembly.org/archives/2007/04/economic_landho.html.(Accessed on:12.03.2017)
13. Ludden, David (1999), "An Agrarian History of South Asia", The New Cambridge History of India, Vol. 4; University of Pennsylvania, Cambridge University Press (CUP),p.175.
14. Ludden, David (1999), "An Agrarian History of South Asia", The New Cambridge History of India, Vol. 4; University of Pennsylvania, Cambridge University Press (CUP),pp.74-76.
15. Ludden, David (1999), "An Agrarian History of South Asia", The New Cambridge History of India, Vol. 4; University of Pennsylvania, Cambridge University Press (CUP),pp.143-144.
16. Ludden, David (1999), "An Agrarian History of South Asia", The New Cambridge History of India, Vol. 4; University of Pennsylvania, Cambridge University Press (CUP), p.167
17. Mahipal (1992), "Land Productivity and Employment in Indian Agriculture", Mittal Publications, Delhi.
18. The Hindu (2011), Monday, November, 14,p.10.
19. Venkateswarlu, A. (1998), "Developing Agricultural Technology", Rawat Publication,p.17.
20. Venkateswarlu, A. (1998), "Developing Agricultural Technology", Rawat Publication, pp.18-19.
21. mospi.nic.in/sites/default/files/national_data_bank/ndb-rpts-70.html/page 14