DEAR WORKING PAPER : 2014 - 1

This paper presents credit related aspects for rainfed and non-rainfed districts of four southern states of India. Based on input survey data, the results indicate that rainfed districts have improved access to credit overtime that the gap between the two types of the districts narrowed by 2006-07 over 1996-97.

Institutional Credit in Rainfed Areas

District Level Analysis in Southern States

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This paper is a part of the larger study in progress. The views expressed here are of the authors only and cannot be interpreted to be those of the organization they are affiliated to. The paper presents preliminary results and hence to be quoted with caution. Suggestions and comments may be sent to authors.

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This paper covers…

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Introduction

Financial exclusion is a single major factor that can preclude people and regions from the growth process. The exclusion manifests in terms of inequalities in access to finance across location (rural-urban), farm size groups, gender, regions, social groups and so on. Lack of finance, as modern development theory perceives, slows the growth and perpetuates income inequalities and financial inclusion helps taking advantage of growth opportunities (World Bank, 2008). Thus, financial inclusion has been pursued on mission mode as a means to ensure inclusive growth.

Needless to say, economic activity is not possible without access to capital, both for investment and operations. And, credit is one of the important sources of capital and lack of access to it is a disadvantage. Time and again, it has been pointed that access to credit for vast majority of rural households has been very poor in terms of proportion of borrowing households in the total, share of institutional sources in credit supply, extent of coverage of credit needs and so on. It is especially so for marginal and small farmers and weaker sections including women. Similarly, certain regions had lower access and within a given region also there is differential access to credit on account of farm size, resource endowment of the area and the people, gender, affiliation to certain social groups, etc. Dryland regions of the country, poorly endowed as they are with natural resources including water are likely to be disadvantaged in terms of access to credit. Within the dryland areas too inter-personal inequalities in access to credit linkage exist. But not many focussed studies are available that explained this aspect. In the present paper, an attempt is made to know the pattern of institutional credit availed across the districts.

Methodolgy

Database

Most of the studies on access to credit focused on state level and country level data which is likely to mask many trends and hence, we chose to analyse trends at district level. The districts are classified according to their rainfall status into rainfed vs. non-rainfed districts for employing further analytics. The districts selected for Drought Prone Areas Programme (DPAP), Desert Development

Programme (DDP) or where the net irrigated area (NIA) is less than 30 percent of net sown area (NSA) are classified as rainfed and the remaining are considered non-rainfed districts[1]. The paper is based on the secondary data on institutional credit taken for agriculture purposes collected during input surveys conducted by Agricultural Census Division, Ministry of Agriculture, and Government of India (http://agcensus.nic.in/). Sampling scheme followed and other details of the survey are available in Government of India (2012) This massive database, available at quinquennial interval, that gives district level flavour was least used by researchers as of today. We choose to analyse the data collected during 2006-07 round, which is the latest available and compare with the data for 1996-97. We considered data for only four southern states, viz., Andhra Pradesh, Karnataka, Tamil Nadu and Telangana in this paper. In total, 69 districts (made comparable between 1996 and 2006 by aggregating the data for bifurcated districts) are covered across four states and five farm size categories (plus all size groups as a whole) over two points in time adding the number of observations to 828. Some results which we presented earlier based on state level and all-India data also are presented in this paper to give overall view of the trends. The analysis will focus on aspects, among others, like i) penetration of institutional credit,ii) per hectare institutional credit taken for agriculture, iii) share of term loan to total.

Important Concepts and Definitions

Operational Holding (OH) : All land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to the title, legal form, size or location.

Operated Area (OA): It would include both cultivated and uncultivated area, provided part of it is put to agricultural production during the reference period.

Farm-size Classes: Farmers are classified based on operational area into marginal (less than 1 ha.), small (1 to 1.99 ha), semi-medium (2 to 3.99 ha), medium (4 to 9.99 ha) and large (10 ha and above) farm-size classes.

Agricultural credit: Input survey records loans taken during the year for agricultural purposes only obtained from institutional sources, i.e., cooperatives,

[1]I am grateful to Dr.C.A.Ramarao, CRIDA, Hyderabad for providing the list of districts for this purpose. See Venkateswarlu*et al* (2014) on classification of drought prone districts.

regional rural banks and commercial banks.

Results and Discussion

Credit Delivery Arrangements in the Country

India pursued institutionalization of rural credit to address to the problems of adequacy and exploitation by informal sources of credit and followed multi-agency approach. As of today, the major sources of formal credit are cooperatives, regional rural banks and commercial banks. Besides, rural households depend on semi-formal agencies like NBFCs, MFIs, SHGs, JLGs and informal agencies like dealers, friends, relatives, private money lenders. The rural credit system and structural constraints thereof have been discussed in Satyasai (2008). To carry the discussion forward, we only highlight that due to several structural and other constraints, the credit delivery did not yield desired results. And, in fact, it resulted in certain anomalies, among others, like inequitable access of the certain regions and the weaker sections including small and marginal farmers to formal credit. The market share of cooperatives declined severely. Share of term loans to total declined overtime. Several needy rural households remained out of the formal credit net. Not that growth in credit to agriculture remained static over time. In fact, overall direct credit flow grew at an average annual compound rate of 13.86 per cent during the 36 year period between 1971-72 to 2006-07 (Satyasai, 2010).

Overtime several changes took place in rural credit scenario and some of them are of serious concern. Subbarao (2012) identified a few long term trends, some positive and some negative, in rural credit, *viz*., (i) increasing share of formal credit, (ii)increasing credit intensity (credit to GDP ratio), (iii)increasing share of commercial banks in to formal credit, (iv)faster growth of indirect credit, (v)decline in share of term credit, (vi) skewed regional distribution, (vii)growing importance of Kisan Credit Cards, and (viii) higher level of non-performing assets (NPAs). One important aspect missing in the list was inter-farm size class distribution of credit or differential access. The weak among farming community did not have due access to formal credit, the issue that has drawn attention of policy makers and academia. Credit penetration in rainfed areas and the need for special attention needed by them, compared to irrigated areas, also did not receive adequate attention of policy makers and practitioners.

Credit related Issues in rainfed areas

Agricultural credit plays an indirect but instrumental role in increasing farm productivity as the timeliness in application of these inputs largely depends on timely and adequate availability of credit. Also, credit needs of the dry lands are very distinct and require different arrangements. Some of the credit related issues in rainfed agriculture are mentioned below.

Credit needs are of two types – short term for working capital and long term for investment that builds production capabilities on a farm. Credit supply also is geared for these needs and is of two types- short term (ST) credit and long term (LT) credit. In a situation with uncertain annual inflows, the distinction between credit needs gets blurred and long term needs may take back seat for ensuring next production cycle. In the same vein, short term loans may be used for investments like digging wells. Credit dispensation needs to take care of this. Since the returns are fluctuating over time and such variation follows rainfall cycles, cyclical credit may be followed with indexed repayment schedule in tune with variation in annual returns. A pilot project for cyclical credit was implemented about two decades ago and discontinued after a couple of years and not much is heard about it subsequently though it returns into discussions here and there. As a concept cyclical credit appears sensible as repayment burden comes down during the years of low income. But what about the working capital needs during the ensuing year? Should banks extend loans even when recovery is not full? What happens if crop damage is experienced during successive years too? When crop failure risks are inherent in the rainfed areas an isolated innovation like cyclical credit may not help. What is required may be risk mitigation and insurance linked to credit. Kisan Credit Card is one innovation which can take care of this issue if made fully flexible and with a few tweaks in its design.

Institutional (banks, cooperatives) as well as non-institutional agencies (private money lenders, dealers, etc) cater to credit needs, the latter being more expensive and sometimes prohibitively so leading to exploitation. But, given the systems and procedures as well as checks and balances to be followed by institutional agencies, they may not be able to cater to the demand to the desired extent thereby driving farmers to high cost agencies.

Institutional agencies follow the security oriented lending approach and borrowing

limits are determined by the value of the security (in most cases land). Since value of rainfed lands is generally low, underfinancing becomes the rule. Individual orientation adopted by formal (institutional) agencies is, most of the times, not suitable in dry land areas, underfinancing being one outcome. Community orientation is desirable as it builds social capital that can serve as collateral for borrowing. Also, certain risks arising due to information asymmetries can be minimised.

Further, lack of area approach and adopting sporadic lending in the absence of a credible integrated plan can escalate intraregional and interpersonal differences. Also, proper linkages would not get established limiting the growth of new investments besides threatening the sustainability of existing ones.

The rainfed areas traditionally depended on community water sources like tanks and villages, in fact, are hydraulic societies built around these water bodies with social and economic connect across various water users. Over time, mass lending for groundwater structures, and more so for bore wells that can displace large volumes of water in shortest time, disturbed the water balance in these regions. Credit has gone heavily for investments that deteriorated the water/resource balance (e.g. groundwater structures) and too less and too late for water saving and soil conservation investments. The problem is importing package suitable for water abundant areas into rainfed areas that have delicate water balance. Lending needs to take local situation into account. That is, lending for community water development must be promoted.

Diversification with livestock provides insurance against crop failures. But, the composition of livestock should be different compared to irrigated areas. Small ruminants that can fit the resource regime of the rainfed areas and people there should be given preference. GoI schemes for promoting small ruminants should be implemented in spirit.

Investments supported by infrastructure development programmes like Rural Infrastructure Development Fund (RIDF) are not allocated to different regions according the needs but rather on other considerations. Special drive to plan such investments and allocate funds from various programmes according to equity principles needed.

Credit trends across rainfed and non-rainfed districts

In the following discussion, we attempted to examine a few trends in institutional credit across districts of four southern states other than Kerala.

i) Penetration of institutional credit

Table 1 gives farm size category-wise proportion of operational holdings borrowing from institutional sources. In 2006-07, about one-fifth of the marginal farmers borrowed from institutional sources as against the 25 per cent in the overall and 40 per cent among large farmers. The level of penetration of institutional borrowing was 23.1 per cent during 1981-82 in the overall sample which declined to 13.4 per cent during 1996-97 only to improve again by 2006-07 (Figure 1).

Table 1. Proportion of holdings availing institutional credit, size class-wise, All India

Farm size group	Proportion of OH availing institutional credit (%)						Increment in 2006-07 over 1996-97 (% points)
	1981-82	1986-87	1991-92	1996-97	2001-02	2006-07	
Marginal	17.5	14.8	15.7	9.5	14.0	19.6	10.1
Small	27.4	24.1	17.9	17.6	27.7	32.8	15.2
Semi-Medium	31.0	29.3	21.5	19.9	31.6	34.5	14.6
Medium	33.2	30.2	22.5	23.1	33.1	39.4	16.3
Large	33.2	29.4	22.5	23.0	29.4	40.1	17.1
Overall	23.1	20.1	17.5	13.4	20.2	25.0	11.6

Source: Satyasai(2012).

The situation was brighter way back in 1980s when small farmer friendly credit policy orientation produced more than equitable credit access with small and marginal farmers getting higher share of total credit than their share in total area operated. After the financial sector reforms (FSR) of 1991, credit flow grew faster. But inequalities soared. Table 2 shows index of access computed as the ratio of shares of each size class in the borrowing OH to their share in total OH. Higher the index, better is the access of the given class to the institutional sources. Medium and large farm-size classes of farmers have much better access as

reflected in their higher index of access. The index is much lower than one for marginal farm-size class which indicates that they enjoyed less than due access to institutional sources. The Theil's indexof inequality further indicates that the inequality, though not very high, increased over time from 0.038 to 0.072. This was the picture till 2001-02. The trend reversed to some extent by 2006-07 as the index of access for marginal farmers rose to 0.78 and the Theils's index declined.

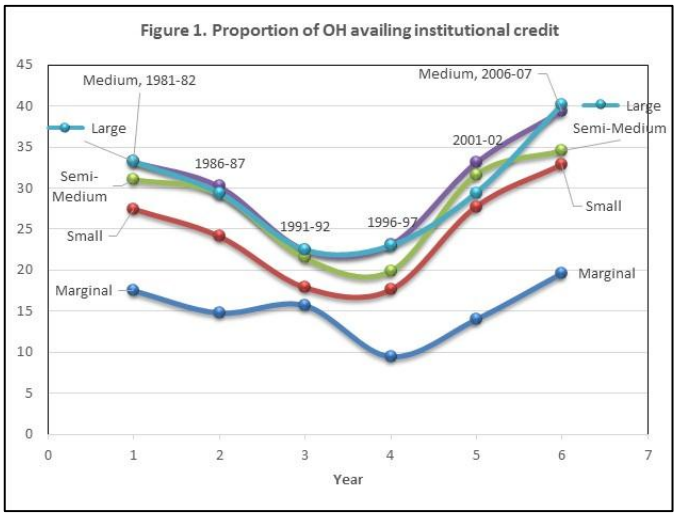


Table 2. Inequality in distribution of number of OH availing formal credit, All India

OH size group	Index of access[2]					
	1981-82	1986-87	1991-92	1996-97	2001-02	2006-07
Marginal	0.76	0.74	0.89	0.71	0.69	0.78
Small	1.19	1.20	1.02	1.32	1.37	1.31
Semi-Medium	1.34	1.46	1.23	1.48	1.56	1.38
Medium	1.44	1.50	1.28	1.72	1.64	1.57
Large	1.44	1.46	1.28	1.72	1.45	1.60
Theil's index of inequality[3]	0.038	0.049	0.010	0.066	0.072	0.041

[2] Access to credit can be measured in terms of proportion of operational holdings which could avail institutional credit and also in terms of amount they could obtain. In fact, equity in access is a better measure as the distribution of number of borrowers or amount of credit in different farm size classes can be judged against their due. The distribution of total number of OH or area can be generally taken as the standard to compare with.
Index of access can be computed using the following formula:

$$(Y_i/\Sigma Y_i)/(X_i/\Sigma X_i)$$

Where, X and Y are the two parameters like number of OH and number of borrowing OH which are compared for their relative distribution. An index value of less than one means less than due share to the farm-size class in question (Bakshi, 2008).

[3] There are several other measures of inequality. In this paper we computed Theil's index to measure inequality among m groups using the following formula (for more details on the index and its interpretation, see Conceição and Ferreira, 2000).

The index of access and Theil's measure of inequality for distribution of institutional credit vs. that of OH area are presented in Table 3. The estimates reveal that the index of access is higher than one for marginal and small farmers signifying that the adverse bias is not present in distribution of credit amount across farm-size classes.

Table 3. Inequality in distribution of amount of institutional credit with respect to that of area operated, All India

Farm size category	Index of access					
	1981-82	1986-87	1991-92	1996-97	2001-02	2006-07
Marginal	1.78	1.90	1.66	1.52	1.26	1.57
Small	1.53	1.22	1.20	1.17	1.18	1.11
Semi-Medium	1.08	1.06	1.04	1.00	1.05	0.89
Medium	0.84	0.80	0.79	0.85	0.89	0.79
Large	0.40	0.44	0.51	0.46	0.46	0.45
Theil's index of inequality	**0.106**	**0.093**	**0.062**	**0.053**	**0.035**	**0.059**

Small and marginal farmers need to have relatively higher share in credit due to low propensity to save and hence, lower owned resources, lower credit worthiness and ability to offer collateral security and hence, lower access to instant credit, among others. The higher index for 2006-07 (1.57) marked the return of positive bias towards marginal farmers. The trend in inequalities in terms of Theil's index for distribution of number of borrowers which showed upward trend with a dip in 1991-92 and declined again in 2006-07(as shown in Table 2) showed reverse trend in respect of distribution of credit amount.

Table 4 gives farm size-wise estimates of proportion of borrowing OH in four

$$T' = \sum_{i=1}^{m} w_i \log \frac{w_i}{n_i}$$

Where, wi= share of the ith size class in credit/number of households availing credit, and,
ni = share of ith size class in the area operated/population

We implicitly assume here that share of farmers covered by institutional agencies in a given size class should be in accordance with the proportion of farmers in that size class in the total number of farmers. The index will be closer to zero in such case which indicates more equitable coverage. Similar interpretation would be done in case of distribution of credit amount across size classes with reference to the distribution of operated area.

southern states. When districts are classified according to their rainfed status, rainfed districts have lower proportion of borrowing OH at 19.53 per cent compared to 28.15 per cent in non-rainfed districts during 1996-97 (Table 5 & Figure 2). The pattern continued even during 2006-07 though the proportion of borrowing OH improved on the whole. However, the situation has improved by 2006-07 compared to 1996-97 in both the categories of the districts with a slightly higher improvement margin in case of rainfed districts, comparatively.

Table 4. Proportion of holdings availing institutional credit, size class-wise in sample states

Farm size category	Andhra Pradesh		Karnataka		Telangana		Tamil Nadu	
	1996	2006	1996	2006	1996	2006	1996	2006
Marginal	21.2	70.5	15.1	25.1	20.5	84.7	12.1	10.4
Small	29.2	85.0	29.5	40.0	32.5	86.0	26.8	17.6
Semi-Medium	32.0	74.1	34.3	45.4	34.0	66.9	24.1	19.9
Medium	32.9	95.8	42.7	51.0	35.5	91.8	23.9	20.9
Large	30.7	91.8	45.1	50.8	30.4	86.6	25.1	22.4
Overall	24.7	74.9	26.0	34.9	26.2	83.0	15.6	12.4

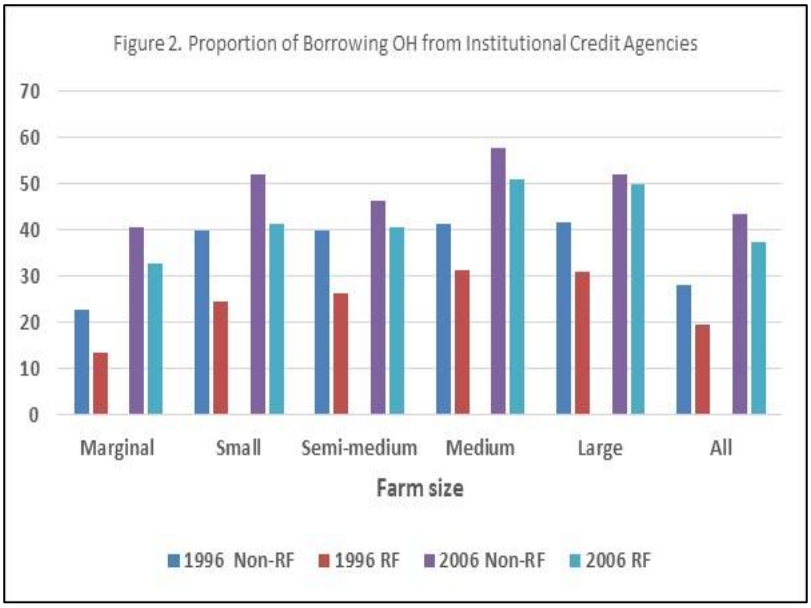


Table 6 gives the distribution of districts according to the proportion of borrowing OH. The distribution of rainfed districts was concentrated in lower frequency classes in 1996-97 while the distribution was spread out to higher classes by 2006-07 (Figure 3).

Table 5. Proportion of operational holdings (OH) accessing institutional credit in sample states

Farm Size Category	**1996**			**2006**		
	Non-rainfed districts	Rainfed Districts	**Overall**	Non-rainfed districts	Rainfed Districts	**Overall**
Marginal	22.68	13.59	17.15	40.53	32.76	35.80
Small	39.97	24.60	30.62	52.11	41.41	45.60
Semi-medium	39.80	26.56	31.74	46.29	40.63	42.84
Medium	41.32	31.30	35.22	57.90	50.87	53.62
Large	41.75	30.89	35.14	52.09	49.96	50.79
All	28.15	19.53	22.90	43.51	37.47	39.83

Source: computed based on data from Input Survey reports.

Table 6. Frequency distribution of proportion of OH accessing institutional credit in sample states(%)

Frequency class	Districts **in 1996**		Districts **in 2006**	
	Non-rainfed	Rainfed Districts	Non-rainfed	Rainfed Districts
Less than 20	30.87	44.44	27.16	34.92
20 to 40	27.78	41.27	20.37	19.44
40 -60	28.40	8.33	10.49	15.08
60 -80	9.26	4.37	16.67	9.92
80 & above	3.70	1.59	25.31	20.63
Total	100.00	100.00	100.00	100.00

State-wise break up is given in Table 7. Tamil Nadu remained a puzzle in respect of both non-rainfed and rainfed districts with reduction in penetration of borrowing from institutional credit by 2006-07 compared to 1996-97. Importantly, there was much improvement in the penetration in rainfed districts of Karnataka while the improvement in non-rainfed districts was negligible. Spectacular improvement happened in Andhra Pradesh and Telangana, where besides significant improvement in the penetration ratio over the decade, the difference between rainfed and non-rainfed districts faded out.

Figure 3. Distribution of districts as per proportion of borrowing OH

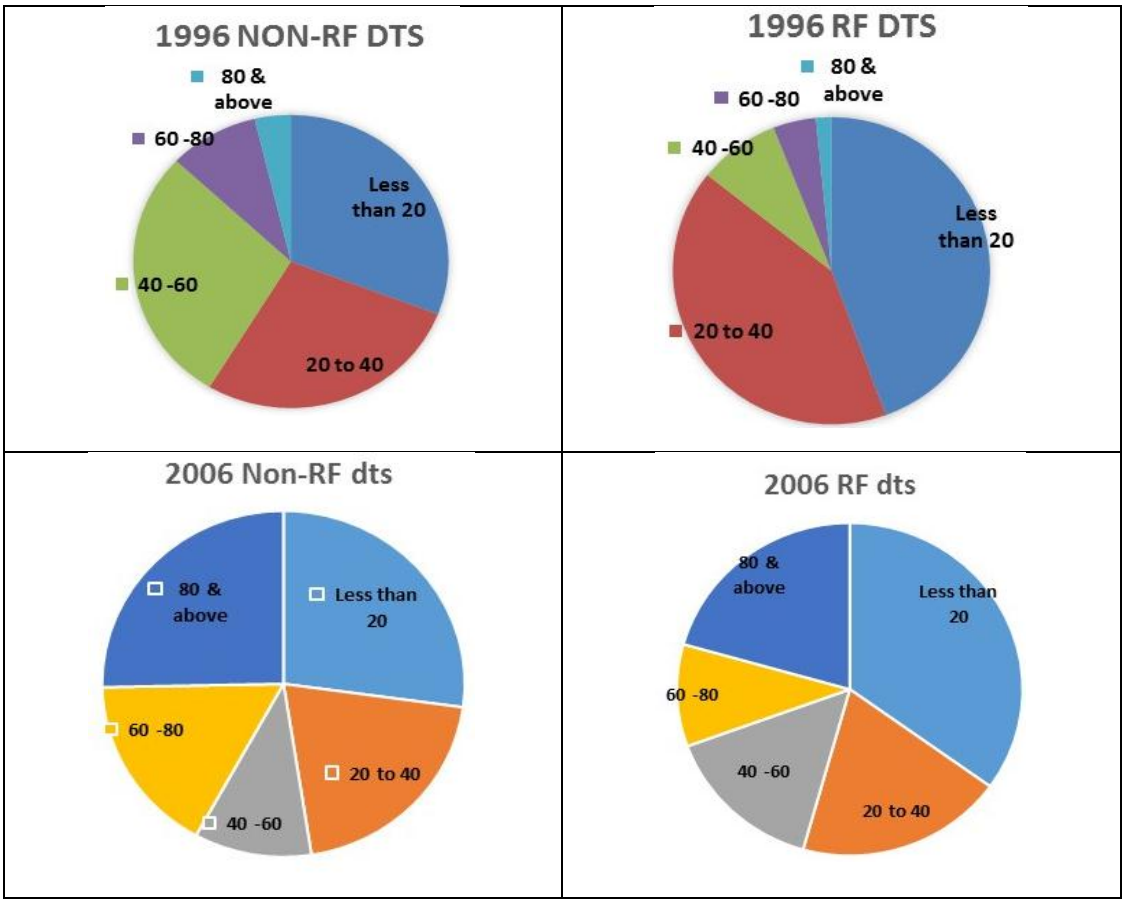


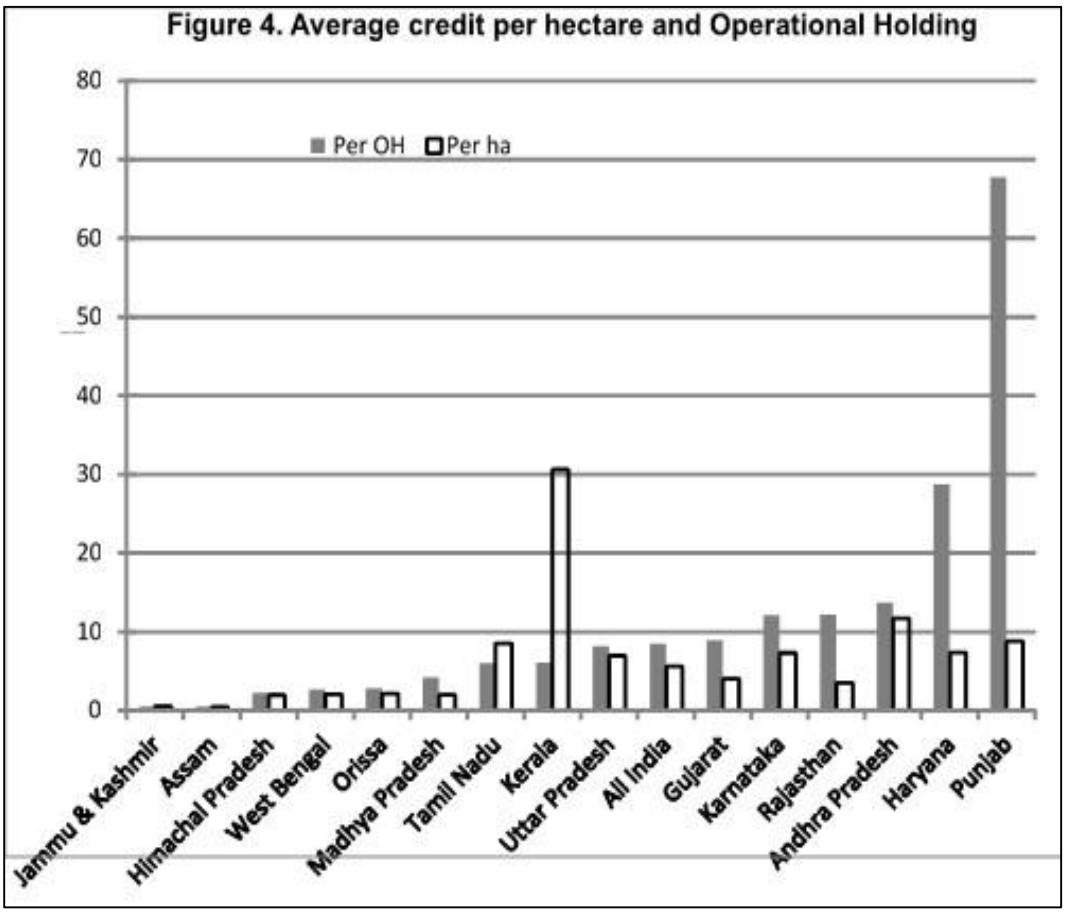
Table 7. Proportion of operational holdings (OH) accessing institutional credit in sample states, district category-wise (%)

Farm size category	Andhra Pradesh		Karnataka		Telangana		Tamil Nadu	
	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts
1996								
Marginal	24.4	15.7	23.5	17.7	26.3	17.1	20.4	7.9
Small	31.9	24.1	42.3	28.5	43.5	28.7	42.8	19.8
Semi-Medium	33.8	26.7	55.7	32.3	48.6	30.8	34.5	19.8
Medium	33.4	27.6	60.5	40.6	50.7	33.9	35.6	23.6
Large	28.8	28.8	68.3	43.1	36.5	33.5	39.5	20.0
Overall	26.9	19.6	34.2	27.2	33.2	23.2	25.1	11.4

Farm size category	Andhra Pradesh		Karnataka		Telangana		Tamil Nadu	
	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts
2006								
Marginal	71.8	70.4	28.9	23.7	86.1	83.8	15.7	7.4
Small	87.1	82.1	43.7	38.6	87.6	84.6	26.3	12.4
Semi-Medium	68.1	71.3	49.1	44.1	65.1	66.3	27.7	16.5
Medium	95.2	95.1	51.0	51.0	92.8	92.3	30.3	18.6
Large	84.3	91.9	48.2	51.8	82.4	89.1	27.4	18.0
Overall	74.7	74.6	35.5	34.7	84.4	82.1	18.4	9.2

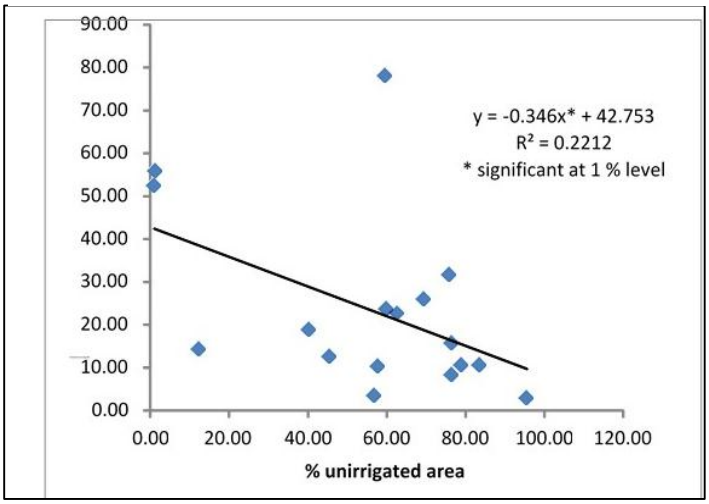
ii) Per hectare institutional credit taken for agriculture

Figure 4 gives the average credit per cropped hectare in graphical view. At the country level, Rs.5580 of credit could be obtained per hectare. As reported by



Satyasai (2012) marginal farmers could obtain Rs.7754 per hectare compared to Rs.2953 for large farmers. Except in Uttar Pradesh where credit availed for agriculture by marginal farmers is lower than the overall average, in all the states marginal farmers received higher amount of credit per hectare compared to the overall level. Credit obtained per operational holding was Rs.8425 overall with the ratio, between what large farmers obtained to that availed by marginal farmers, of almost 11. Punjab farm household obtained maximum of Rs.67, 722 compared to mere Rs.452 by a farm household in Jammu and Kashmir.

Figure 5. Relation between Unirrigated area and Penetration of Institutional credit



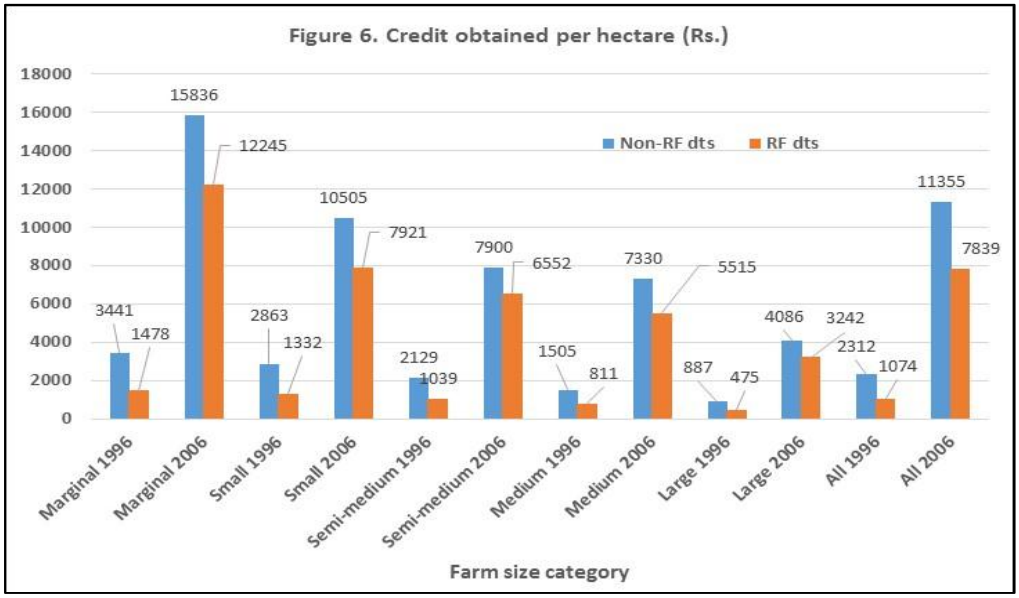
Credit data is not possible to get for rainfed areas separately. Credit per hectare of irrigated as well as rainfed area for 2006-07, hence, is estimatedbased on regression analysis (suppressing the intercept) of state-wise data for 2006-07 on institutional credit vs. extent of irrigated and unirrigated area. The data is compiled from Input Survey, 2006-07. Credit per one hectare of irrigated area (Rs.12318) is about 5.35 times larger than credit per rainfed hectare (Rs.2303)*. One percentage point increase in unirrigated area is associated with reduction in proportion of borrowing HH from formal sources by 0.35 percentage points. That is, higher the proportion of unirrigated area, lower the coverage of HH by formal agencies (Figure 5).

Credit per hectare was higher in non-rainfed districts compared to rainfed districts in 1996 as well as 2006 (Table 8).

* The estimated equation based on data for 17 major states is:
Insttcredit = 12318 Irrigarea + 2302 unirrigarea R-sq. = 0.83
(5.86) (1.13)
Figures in brackets are t-values.

Table 8. Credit per hectare in Rainfed vs Non-rainfed Districts(Rs).

Farm size category	Districts in 1996			Districts in 2006		
	Non-rainfed	Rainfed	Overall	Non-rainfed	Rainfed	Overall
Marginal	3441	1478	2246	15836	12245	13650
Small	2863	1332	1931	10505	7921	8933
Semi-medium	2129	1039	1466	7900	6552	7079
Medium	1505	811	1082	7330	5515	6225
Large	887	475	636	4086	3242	3572
All	2312	1074	1559	11355	7839	9215



Good news is that the hiatus between non-rainfed and rainfed districts got reduced in 2006 compared to 1996. Credit per hectare grew from Rs.1559 in 1996-97 to Rs.9215 in 2006-07 i.e., by 5.9 times in the whole sample. The growth in rainfed districts was 7.3 times (from Rs.1074 to Rs.7839) compared to mere 4.9 times (from Rs.2312 to Rs.11355) in case of non-rainfed districts. These estimates need to be adjusted for price changes overtime. Considering the growth in GDP deflator between 1996-97 and 2006-07 of 1.59 times, the credit per hectare here grew significantly even in real terms (Figure 6).

Distribution of districts according to per hectare credit given in Table 9 revealed that the distribution is more flat in 2006 compared to 1996 across loan size classes. For instance, 88.41 per cent of the districts had less than Rs.2500 of credit per hectare in 1996 compared to 26.09, 24.64 and 34.78 per cent of districts falling

under less than Rs.2500, Rs.2500 to Rs.5000 and Rs.5000 to Rs.10,000 of credit per hectare class intervals, respectively.

Table 9.Distribution of districts in sample states according to per hectare credit (%)

Credit/ha (Rs.000)	MARGINAL		SMALL		SEMI-MEDIUM		MEDIUM		LARGE		ALL	
	1996	2006	**1996**	2006	**1996**	2006	**1996**	2006	**1996**	2006	**1996**	2006
Upto 2.5	**71.01**	10.14	**60.87**	11.59	**82.61**	4.35	**97.10**	14.49	**97.10**	17.39	**88.41**	26.09
2.5 -5	23.19	21.74	37.68	18.84	15.94	21.74	2.90	20.29	2.90	11.59	11.59	24.64
5-10	2.90	**33.33**	0.00	**37.68**	1.45	**42.03**	0.00	**46.38**	0.00	**33.33**	0.00	**34.78**
10-15	2.90	13.04	1.45	18.84	0.00	15.94	0.00	11.59	0.00	27.54	0.00	8.70
15-20	0.00	11.59	0.00	8.70	0.00	8.70	0.00	4.35	0.00	5.80	0.00	2.90
20-25	0.00	2.90	0.00	2.90	0.00	4.35	0.00	2.90	0.00	2.90	0.00	1.45
25-30	0.00	5.80	0.00	1.45	0.00	1.45	0.00	0.00	0.00	1.45	0.00	1.45
30&above	0.00	1.45	0.00	0.00	0.00	1.45	0.00	0.00	0.00	0.00	0.00	0.00
Total	100	100	100	100	100	100	100	100	100	100	100	100

State-wise estimates of credit per hectare for the sample states are given in Table 10. The data revealed that in all the four states the credit per hectare showed growth several fold in a decade. The increase was in multiple of 12 in Andhra Pradesh and Telangana while it was in the range of 6 to 7 times in Karnataka and Tamil Nadu. In Telangana and Tamil Nadu the rainfed districts showed higher degree of increase in per hectare credit compared to non-rainfed districts. In Andhra Pradesh and Karnataka the trend was the opposite. That is, the rainfed districts showed lower degree of increase in credit per hectare between 1996 and 2006.

Table 10. State-wise estimates of credit per hectare (Rs./hectare)

Farm size/year	Andhra Pradesh			Karnataka			Telangana			Tamil Nadu		
	NRF	RF	Over all	NRF	RF	Over all	NRF	RF	Over all	NRF	RF	Over all
1996												
Marginal	1872	1190	1536	2796	1272	1429	1658	906	1131	1898	1187	1482
Small	2655	1722	2346	3007	1872	2160	2450	1361	1790	1969	1348	1626
Semi-Medium	1812	1543	1687	2956	1618	1788	1782	1049	1297	2279	1368	1734

Farm size/year	Andhra Pradesh			Karnataka			Telangana			Tamil Nadu		
	NRF	RF	Over all	NRF	RF	Over all	NRF	RF	Over all	NRF	RF	Over all
Medium	1343	1200	1269	3029	1320	1475	1365	857	990	1869	1009	1352
Large	1148	751	902	2377	1073	1156	923	645	717	1350	931	1093
Overall	386	462	446	1420	688	723	519	378	400	699	606	644
2006												
Marginal	12276	10599	11447	10946	6880	7300	12771	11864	12148	8545	8517	8528
Small	17545	17486	17524	8670	9347	9192	23007	24317	23803	10898	10257	10519
Semi-Medium	10858	10564	10712	10880	7786	8140	10771	11374	11172	8432	7996	8170
Medium	7905	8151	8040	11497	6848	7221	5965	6667	6477	6319	7883	7247
Large	8822	8094	8387	14393	5838	6356	6739	7274	7142	6083	5939	5998
Overall	5620	5257	5358	13257	4133	4698	4239	5083	4887	3733	4864	4407

iii) Share of term loan to total.

Of late, banks have been purveying short term credit even as the importance of term loans in encouraging private capital formation. Here, we examined the ratio of term loans to total during 1996 and 2006 (Table 11 and Figure 7). Term loans as proportion of total improved from 23.18 per cent in 1996 to 36.5 per cent in 2006, which is an encouraging result. Rainfed districts showed higher share of term loans compared to non-rainfed districts which means the investment in rainfed districts might be higher, comparatively. One reason for this result may be that in rainfed districts farmers need to invest even in irrigation which is general provided on public account in irrigated districts. Also, for every rupee of fructuous investment in rainfed districts, there may be several rupees of investment lost due to failure of wells and other investments due to inherent risks in the region.

Table 11. Share of Term Loan to Total Loan in Rainfed vs. Non-rainfed Districts.

Farm size category	**Districts in 1996**			**Districts in 19962006**		
	Non-rainfed	Rainfed	**Overall**	Non-rainfed	Rainfed	**Overall**
Marginal	11.86	22.13	18.14	20.85	30.90	26.91
Small	10.68	25.28	19.57	34.35	42.00	38.96
Semi-medium	21.39	28.34	25.62	31.09	40.97	37.10
Medium	25.30	33.49	30.29	41.67	49.84	46.72
Large	30.51	39.51	35.88	42.96	44.24	43.74
All	15.20	28.31	23.18	27.62	42.22	36.50

Distribution of districts according to the share of investment credit in total as given in Table 12 revealed that the rainfed districts are distributed more evenly compared to non-rainfed districts during 1996 (Figure 8).

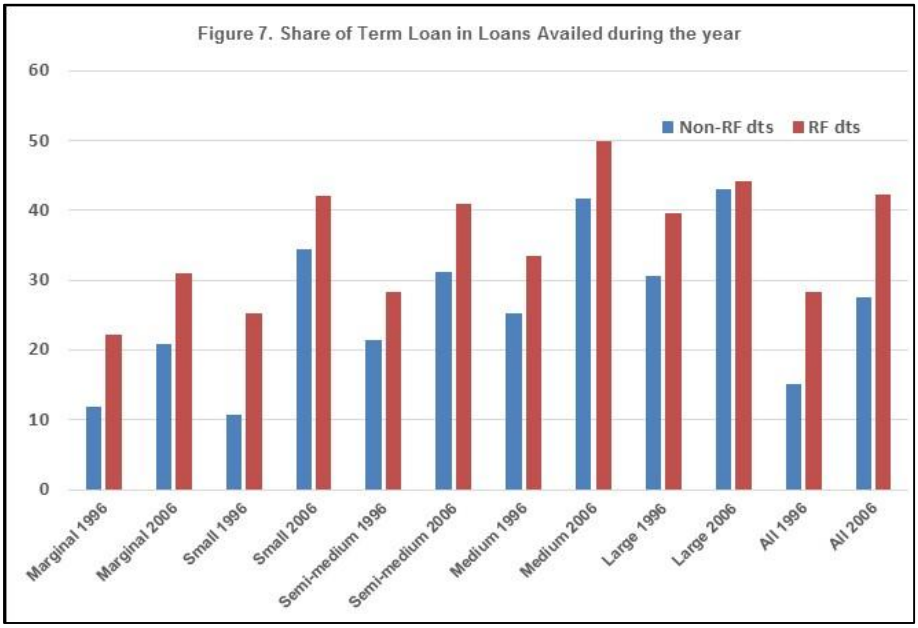


Table 12. Distribution of districts according to share of term loan to total loan.

Share of term loans (%)	**1996**		2006	
	Non-rainfed districts	Rainfed districts	Non-rainfed districts	Rainfed districts
0	25.47	16.87	12.50	7.63
0.01 - 20	40.99	23.69	23.13	18.47
20-40	15.53	24.90	25.00	27.71
40-60	10.56	23.69	26.88	17.27
60-80	3.11	7.63	8.13	18.07
80&above	4.35	3.21	4.38	10.84
Total	100	100	100	100

The distribution is more or less flatter in both the categories of districts in 2006. Districts reporting zero investment credit during the reference years declined from 25.47 per cent in 1996-97 to 12.50 per cent in 2006-07 for non rainfed districts. Among rainfed districts, this proportion declined from 16.87 per cent to 7.63 per cent during the reference decade. Proportion of rainfed districts with higher ratio of investment credit to total is higher, compared to non rainfed districts, in 2006-07. It is difficult to tell if this is a favourable trend. To the extent it reflects increasing

demand for investment in rainfed districts, the credit agencies need to gear up. The question that remains is if the additional investments lead to incremental output or help in reinforcing the existing ones.

Figure 8. Distribution of Districts according to Share of Term Loans

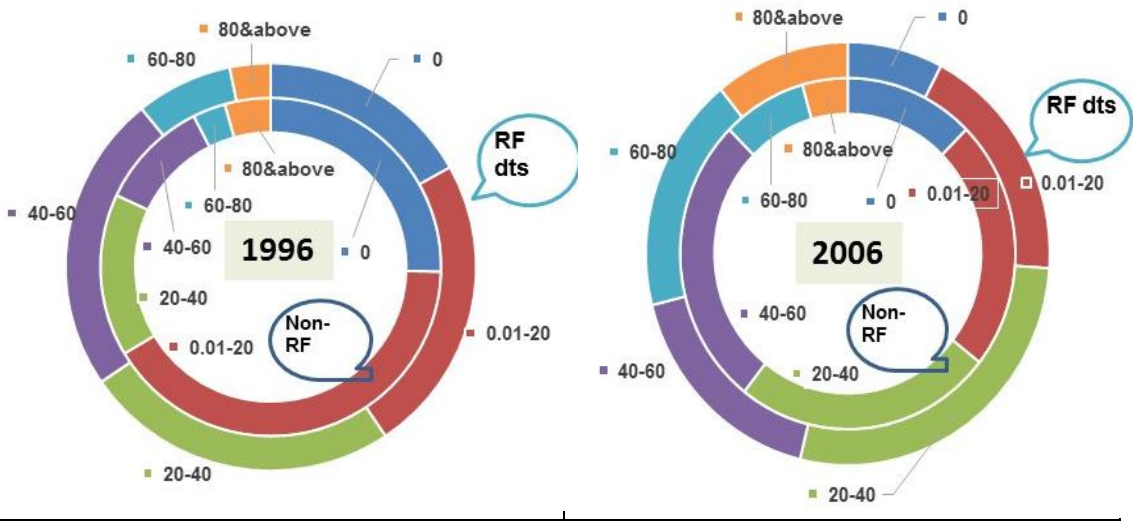


Table 13 give distribution of districts according share of term loans to total across farm size categories. The distribution of districts in overall sample improved and shifted to right (higher share of term loans) in 2006 compared to 1996. Semi-medium, medium and large farmers showed comparable distribution which is flatter. Distribution for marginal and small farmers peaked at higher share of term loans in 2006 compared to 1996 and distribution is flatter, relatively.

Table 13. Distribution of districts according to share of term loans, farm-size wise

Share of Term Loan	MARGINAL		SMALL		SEMI-MEDIUM		MEDIUM		LARGE		ALL	
(%)	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006
0	11.76	7.46	42.03	21.74	7.25	1.45	14.49	5.80	22.39	4.35	23.53	16.67
0.01 - 20	54.41	26.87	21.74	23.19	36.23	18.84	17.39	20.29	23.88	23.19	29.41	9.09
20-40	19.12	22.39	14.49	27.54	21.74	40.58	28.99	24.64	26.87	23.19	16.18	21.21
40-60	7.35	28.36	11.59	20.29	27.54	31.88	27.54	20.29	16.42	13.04	20.59	12.12
60-80	1.47	10.45	5.80	2.90	5.80	5.80	4.35	21.74	10.45	24.64	7.35	19.70
80 & above	5.88	4.48	4.35	4.35	1.45	1.45	7.25	7.25	0.00	11.59	2.94	21.21
Total	100	100	100	100	100	100	100	100	100	100	100	100

Summary and Conclusions

The present paper analysed data for 69 districts during at two points of time, 1996 and 2006. The data was culled from input survey results. Five farm size categories and overall estimates for all size groups together were covered. Proportion of borrowing households (penetration of institutional borrowing), credit per hectare, share of term loans are analysed for rainfed vs. non-rainfed districts.

The results revealed that access to credit has deteriorated till 1996-97 and again improved by 2006. Small farmer friendly programmes helped create a positive bias towards small and marginal farmers before 1990s. The positive bias that got diluted during subsequent periods could be regained to large extent by 2006. The penetration of institutional borrowing was lower in rainfed districts though the latter showed faster improvement in the ratio bridging the gap overtime. Andhra and Telagana showed spectacular growth in the proportion of borrowing households over time. Also, the gap between rainfed and non-rainfed districts declined. Tamil Nadu was the odd man out with decline in the penetration of institutional borrowing during the reference decade. Credit per hectare improved almost 6 times in the overall sample with faster growth of 7.3 times in rainfed districts compared to 4.9 times in non-rainfed districts. This was impressive even in real terms**.** Of course, the amount is higher in non-rainfed districts compared to rainfed districts. Share of term loans improved overtime and was higher in rainfed districts compared non-rainfed districts. This result though counter-intuitive augurs well with the reality in rainfed districts where more investment is required and still most of it may be infructuous especially in irrigation structures. The lower proportion of borrowing operational holding in rainfed districts coupled with the inability of the farmers there to offer collateral highlight the need for different institutional arrangements in these regions. Perhaps, SHG bank linkage programme and programmes to build producer organisations need special drive to bring financial inclusion and thereby inclusive growth. Joint Liability groups (JLGs) can be the other intervention to bring tenants and other excluded sections into institutional fold.

The scope of this paper was limited to examining access to credit in a limited way and that too based on a slice of information from four southern states. Many more issues need to be studied extending coverage to more number of regions which can bring focus to regional disparities also.

References

Asian Development Bank, 2007. Low Income Households' Access to Financial Services – International Experience, Measures to Improvement, and the Future., EARD Special Studies, October.

Chand, Ramesh, P.A.Lakshmi Prasanna and Aruna Singh, 2011. Farm Size and Productivity: Understanding the Strengths of Smallholders and Improving Their Livelhoods, ***Economic and Polictical Weekly***, June 25, XLVI(26&27).

Government of India, 2012. ***All India Report on Input Survey 2006-07***, Agricultural Census division, Department of Agriculture and Cooperation, Ministry of Agriculture, New Delhi.

----------, 2010. ***Report of the Task Force on Credit Related Issues of Farmers*** (Chairman: Shri U.C.Sarangi). June. http://www.nabard.org/pdf/TaskForce_Report%20final%20loaded%20on%20website_new.pdf (Accessed on 4 February 2011).

Satish, P. And Nirupam Mehrotra, 2009. Credit Markets for Small Farms: Role for Institutional Innovations, 111 EAAE-IAAE Seminar 'Small Farms: Decline or Persistence', University of Kent, Canterbury, UK, 26th-27th June 2009.

Satyasai, K.J.S., 2012. Access to Rural Credit and Input Use: An Empirical Study, *Agricultural Economics Research Review,* Vol. 25 (Conference Number) 2012 pp 461-471

----------2010. Equity in Indian Agricultural Credit Delivery. Paper presented in 12thAnnual Conference on Money and Finance in the Indian Economy held during 2010 in Indira Gandhi Institute of Development Research, Mumbai.http://www.igidr.ac.in/~money/mfc-12/index12.html (accessed on 28 February 2011).

---------- 2008. Rural Credit Delivery in India: Structural Constraints and Some Corrective Measures. ***Agricultural Economics Research Review***, Vol. 21 (Conference Number) 2008, pp 387-394

Subbarao, Duvvuri, 2012. Agricultural Credit – Accomplishments and Challenges, Speech delivered at 30 years anniversary celebration of NABARD at Mumbai on July 2012.

Bakshi, Aparajita, 2008. Social Inequality in Land Ownership in India: a study with particular reference to West Bengal, **http://www.networkideas.org/featart/jan2008/Land_Ownership.pdf** (accessed on 12 Jan 2010)

Conceição, Pedro and Pedro Ferreira, 2000. The Young Person's Guide to the Theil Index: Suggesting Intuitive Interpretations and Exploring Analytical Applications,The University of Texas at Austin, Texas, UTIP Working Paper Number 14, February 29.

Venkateswarlu, B, B M K Raju, K V Rao, C A Rama Rao (2014). Revisiting Drought-Prone Districts in India, ***Economic & Political Weekly***,June 21, 2014,VolXLIX No 25