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Socio-economics dimensions of poverty among cotton growing farmers in Karnataka

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ABSTRACT

An attempt has been made to analyze the dimensions of poverty among cotton growing farmers in Northern Karnataka districts of Haveri and Bellary which were purposively selected. A sample of 200 farmers was selected through a stratified random sampling method. The families of the cotton growing farmers were interviewed during the crop year 2007-08 with a pre-tested questionnaire. The results indicated that most of the annual family incomes were below Rs.25,000 and averaged at Rs.1,26,328 while the annual expenses were Rs.1,22,857. The average size of the holdings was 2.88 hectares. The returns from cotton cultivation ranged from Rs. 1,535 to Rs.12, 246/ha., increasing with the size of holding. All respondents were debtors with nearly half of them defaulters to the loans taken while others were repayers to different extents. Loan utilization was mostly to the purpose borrowed which was for raising crops and loan defaults was due to crop failure or low price. Lending sources were mainly banks and money lenders the latter charging twice as much as banks as interest. Owned property was also sold to clear-off old debt repayment, marriage and medical expenses. Migration to seek seasonal jobs was seen among 10 to 22 % of the respondents, which seasonally supplemented their incomes to as much as 10% of their annual income. External factors that were quoted by the farmers as the reasons for their poverty were lack of proper market mechanism for their agricultural produce, inadequate supply of inputs, credit, power etc. for cultivation.

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INTRODUCTION

Cotton is one of the most important commercial crops playing a major role in economic, political and social affairs of India. In India, cotton industry ranks first in the agro-based industry and engages about 4 to 5 million people. The hybrid cottons and of late, genetically modified Bt. cotton largely dominates the irrigated sector of cotton cultivation.

Karnataka is one of the nine major cotton-growing states in the country. During 2007-08, area under cotton in Karnataka was 3.71 lakh hectares with production of 8 lakh bales (170 kgs/bale) and productivity is 367 kgs per hectare. The main cotton growing districts in Karnataka are Dharwad, Haveri, Mysore, Gadag, Bellary, Belgaum, Raichur, and Gulbarga. There is a fluctuation in cotton area, production and productivity over the years owing to various factors such as weather and price (Anonymous, 2005). Cotton has been in the news in the state for reasons of farmers' distress. Cotton has been projected as the reasons for the insolvency of farmers and even their suicides. The present paper focuses on how farmers progressively degenerate into financial crisis within an environment of public goods.

METHODOLOGY

A purposive sampling technique was adopted for the selection of districts, taluks and villages were selected based on the highest area under cotton cultivation and the number of farmer's suicides in the area. Thus, two districts *viz*., Haveri and Bellary were selected for the study. From each district, two taluks were selected *viz*., from Haveri district, Haveri and Shiggoan taluks and from Bellary district, Bellary and Siraguppa taluks were selected for the investigation. From each taluk, five villages were selected. From each village, ten farmers, consistently growing cotton were randomly selected; from each district 50 small (<2 ha.) and 50 big (2 to 4 ha.) farmers were selected.

Thus, 100 farmers were totally selected from each district. The total sample size constituted for the study was 200 respondents. The primary data were collected from the sample respondents through personal interview with the help of well structured pre-tested schedule. The study pertained to the crop year 2007-2008. Secondary data were also collected from the State Department of Agriculture. The collected data were analyzed by applying

appropriate statistical tools.

RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below:

Social characteristics of the cotton growing farmers:

The socio-economic profile of the farm families is presented in Table 1. It can be inferred from the table that most of the farmers engaged in cotton cultivation were middle-aged, educated up to 4th standard, education level being better among large farms.

Cultivating seasonal crops remained the main business of the sample farmers. Small farms mostly supplemented their farming income by working out as hired-out casual labour compared to larg farms, which were mainly cropping based. Both categories of farms were largely nuclear families. Gross annual incomes were mostly concentrated around Rs.1,00,000 / annum. Large farms generally had higher incomes than small farms.

Table 2 indicate the farm size of the sample farmers. The average operational holding size was 2.88 hectares, which in majority of the cases was self-cultivated (2.64ha). Overall, the farmers supplemented their own land with leased land (0.44ha.).

Table 3 reveals that cotton was the dominant crop accounting for 46 % of the gross cropped area. Bt-cotton was grown in an area of 1.31 ha. with production of 16.17q. The productivity was 12.35 q/ha. While non-Bt cotton was grown in an area of 0.12 ha. with production of 1.11 q and its productivity was 9.29 q/ ha. On an average rate received by the farmers were Rs.2289.50 and Rs.2310 /q for Bt-cotton and non-Bt cotton (DCH-32), respectively. In both *Kharif* and *Rabi* seasons, sample respondents obtained gross income of Rs.1,21,328.62.

Genetically, modified 'Bt' and other non- GM varieties were cultivated. Most of the *Kharif* crops, apart from paddy, were cash crops dependant on assured canal water. Food crops were mostly relegated to *Rabi* and were largely dependant on rainfall or residual soil moisture. Cotton yields ranged between 11.05 to 16.40 q / ha. as compared to benchmark yields of 20 q under rainfed and 30 q under irrigated conditions.

Table 1 : Socio-economic characteristics of the sample farmers

Category	Small farms		Large farms	
	Number	%	Number	%
Age				
Young (up to 35)	17	17	18	18
Middle (36 to 50)	40	40	52	52
Old (51 and above)	43	43	30	30
Education				
Illiterate	27	27	4	4
Primary education (up to 4th std)	30	30	23	23
Middle school (5th to 7th std)	18	18	25	25
High school (8th to 12th std)	17	17	30	30
College education (above 12th std)	8	8	18	18
Occupation				
Cropping + Casual labour	45	45	22	22
Cropping	23	23	46	46
Cropping + Animal husbandry	12	12	16	16
Cropping + Business	4	4	8	8
Cropping + Salaried job	16	16	8	8
Family type				
Joint	30	30	23	23
Nuclear	70	70	77	77
Annual gross income				
Up to Rs. 25,000/-	13	13	4	4
Rs. 25,001/- to Rs. 50,000/-	12	12	16	16
Rs. 50,001/- to Rs. 75,000/-	18	18	16	16
Rs. 75,001/- to Rs. 1,00,000/-	23	23	20	20
Above Rs. 1,00,000/-	34	34	44	44

Table 4 shows the brief economics of cotton farming in this study. Apart from land and familys labour, the farmers had to incur considerable paid-out costs in cotton cultivation.

Between the two types of farms, there was not much difference between the input usages which was dependant on area, but labour use was higher (Rs.5,286.70) among large farms resulting in about 6 % increase in the total cultivation costs. Cotton yields were higher (16.40q/ha.) among large farms by 32 % which was reflected in the gross and net returns as well. In general cotton cultivation was profitable only for large farms (B: C ratio was1:1.48)

Table 2 : Average land holding pattern of the respondents

Type of land	Total owned land (ha)	Owned land (ha.)		Land taken on lease (ha.)	Average operational holding
		Self-cultivated	Given on lease to others		
Rainfed	0.80	0.60	0.20	--	0.60
Irrigated	1.84	1.84	--	0.44	2.28
Total	2.64	2.44	0.20	0.44	2.88

Table 3: Cropping pattern of the respondents under study

Crop sown	Variety	Area in hectares			Total production(q)	Productivity q/ ha	Av. rate received Rs./Qts.	Gross returns (Rs.)
		Irrigated	Rainfed	Total				
Kharif (July-Sept.)								
B.T. cotton	Brahma	1.10	0.21	1.31	16.17	12.35	2289.50	37040.68
Non B.T. cottons	DCH-32 etc	0.12	-	0.12	1.11	9.29	2310.00	2575.18
Paddy	BPT	0.72	-	0.72	39.60	55.00	570.60	22595.76
Chilli	Guntur	0.50	-	0.50	6.60	13.20	3150.00	20790.00
Maize	Vijay	0.23	-	0.23	4.60	20.00	600.00	2760.00
Total				2.88				
Cropping intensity (%) -*Kharif*		100.00						
Rabi (Oct.-Feb.)								
Paddy	BPT	0.85	-	0.85	38.25	45	645.00	29,501
Wheat	Local	-	0.14	0.14	1.54	11.00	900.00	1386.00
Jowar	M35-1	-	0.58	0.58	5.85	10.10	800.00	4680.00
Total				1.57				Rs.121328.62
Cropping intensity (%) -*Rabi*		100.00						

Table 4 : Economic viability of cotton farming

Particulars	Average cost (Rs./ ha.)	
	Small farms	Large farms
Human and bullock labor	4619	5286.70
Inputs (other than labor etc.)	11311.88	11719.20
Total (Cost 'A')	15930.88	17005.90
Cost B (Cost 'A'+ Interest on value of owned capital, land)	21434.45	22888.69
Cost C (Cost 'B'+ Imputed value of family labor) or total cost of cultivation	23764.45	25278.69
Yield	11.05	16.40
Gross returns	25300.00	37525.50
Net returns	1535.55	12246.81
Benefit : Cost ratio	1.06	1.48

Table 5 : Annual income and expenditure of the sample farms

Income	Rs.	Expenditure	Rs.
Cropping (cotton)	39616	Food	11736
Other crops	81712	Clothing	6500
Wages	3000	Housing	4150
Livestock	2000	Education	4500
		Health	5500
		Traveling	4000
		Lighting and fuel	1700
		Religious festivals and family functions	6500
		Debt servicing	24026
		Cost incurred on crop production	52245
		Miscellaneous	2000
Total returns	126328	Total expenses	122857
		Net returns	3471

than for small farms (B: C ratio was1:1.06) where the farms could barely manage to breakeven.

Poverty and coping mechanisms:

Table 5 indicates the annual income and expenditure of the sample farm families. The gross incomes (Rs.1,26,328) were realized from cropping, wages, animal husbandry, etc. The remaining were costs of basic essential items and servicing of debts (Rs.24,026) – both installments as well as interest payments. It is evident from the table that farmers were in the high income-high expenditure equation and the farm families could hardly meet their expenditures as is reflected in a meagre profit of Rs.3,471, with debts still outstanding.

Faced with a financial situation depicted in Table 6 and 7, one of the first measures that the farmers had resorted to borrow. All respondents had taken loans from external agencies. Formal agencies (12-14%) were given first preference due to easier interest rates and informal agencies (24-48%) were approached only in the event of non-availability of loan from formal sources. About half of the farmers borrowed from formal sources and one-third borrowed conjunctively both from formal and informal sources. Outstanding loans were high among formal sources. Informal sources employed stringent measures to recover interest on their loans.

Table 8 describes the type of loans availed, utilization and their repayment. Small farms availed loan basically

Table 6: Sources of loan for the sample

Scores of loan	Average loan taken (Rs.)	Rate of interest	Loan repaid (Rs.)	Interest paid (Rs,)	Average loan outstanding (Rs.)
Formal sources					
Co-operative Societies	12109	13	-	1574	12109
Co-operative Bank	14580	12	4580	1750	14580
Urban Bank	-	-	-	-	-
Commercial Bank	20846	14	5410	2918	15430
Rural Bank	12000	12	-	1440	12000
Total (A)	59535			-	54125
Informal sources					
Money lender	14240	36-48	-	5126	14240
Affluent farmer	-	-	-	-	-
Friends/ Relatives	-	-	-	-	-
Agricultural traders/ Owners of agricultural input store	-	-	-	-	-
Self-help-groups	2400	24	858	370	1542.50
Total (B)	16640				15782.5
Grand total (A+B)	76175	--	10848	13178	69907.5

Table 7 : Borrowing structure of the sample farmers

Type of loan	Small		Large		Total		% share of each institution type
	Nos.	%	Nos.	%	Nos.	%	
Borrowers	100	100.00	100	100.00	100	100.00	
Only formal	26	27.08	70	72.92	96	100.00	48
Only informal	25	83.33	5	16.67	30	100.00	15
Both formal and informal sources	49	66.22	25	33.78	74	100.00	37
Total	100	50.00	100	50.00	200	100.00	100

to purchase seed, fertilizer etc. Other expenses were for domestic purposes such as for marriages, major hospitalization etc. Purchase of equipment mostly comprised of agricultural equipment, machinery, two wheelers etc. Even though 80 to 85 % of the loans were used totally for the purpose for which they were intended, total repayment ranged only between 15 to 22 %. The reasons were mainly either failure to realize the crop due to adverse weather conditions or due to low price at the time of dispose of produce. Thus, the liability positions of the farms were compounded by enterprise failures, non-productive domestic loans and equipment purchase loans which had long-term return spans and which were linked with the agricultural enterprises. Loans for consumptive purposes, for which no finance from formal sources was forthcoming and was therefore, sourced from non-formal sources like money lenders, SHGs.

Such loans were often given when the borrower pledged some asset of his with the money lender which was later confiscated by the lender when repayments were

Table 8 : Purpose, utilization and repayment of the loans

Borrowing behavior	Small (%)	Large (%)
Purpose of the loan	100	100
Crop loan	68	35
Domestic	32	40
Purchases equipment	20	25
Loan utilization	100	100
Total loan utilized for the purpose intended	85	80
Part of loan utilized for some other purposes	10	9
Total loan utilized for the purpose other than intended	5	11
Repayment		
Loan taken	100	100
Loan partially repaid	30	32
Loan fully repaid	15	22
Defaulters	55	46
Reasons for loan default	100	100
Crop failure	68	52
Low price for produce	45	35

not forthcoming (Table 9). Due to the usurious interest levied, these debts quickly accumulated to high amounts. In other instances sales of owned assets were done to clear-off earlier loans especially those of money lenders who were persistent in their efforts to recover their dues. Assets such as tractors bought on loan and which were hypothecated to the banks were also auctioned by the banks when payments defaulted. Health expenses requiring immediate payments also necessitated such sale.

Table 9: Reasons for sale of owned property

Prominent reason for sale	Number of respondents
To meet marriage expenses	12
To meet health expenses	24
To repay earlier debt to money lenders	35
To repay earlier debt repayment to banks	15

Such of those farms which had limited irrigation capabilities had no cropping activity in the summer months compelling the farm families to migrate to cities in search of casual work so as to augment their income (Table 10). Such migration ranged from four to six months depending on the irrigation capability of the farm and availability of work locally.

Table 10: Migration made by the respondents

Migration issues	Small farms		Large farms	
	Number	%	Number	%
Respondents migrated				
Family members				
Only males migrated	22	22	10	10
Whole family migrated	4	4	2	2
Income received through migration				
Less than Rs. 5000	12	12	8	8
Rs. 5001 to Rs. 10000	-	-	-	-
Rs. 10001 to Rs. 15000	-	-	-	-
More than Rs. 15000	-	-	-	-

Constraints:

The constraints observed among the sample farms have been classified into internal constraints and external constraints. Table 11 indicates that alcoholism, present both in intermittent (44-60%) and regular forms (21-25%) was the major problem among both the categories of farms. Inadequate liquidity for farming (33-47%), were the second most prevalent constraint.

Lack of cohesion among family members (35-41%), both during farming operations as well as in daily life and disputes; litigations among family members and other farmers (35-40%) were the manifestations of interpersonal discontent. Farm boundary disputes, property, water sharing disputes, etc were the most prevalent litigations. Health problems(25-35%) arising out of mental tension, alcoholism had manifested as health problems among the farm family(30-35%).

Table 11: Internal constraints of the respondents

Constraints	Proportion of small farms (%)	Proportion of large farms (%)
Intermittent alcoholism	60.00	44.00
Inadequate finance	47.00	33.00
Lack of cohesion among family members	41.00	35.00
Litigations/ disputes within families and between other farms	40.00	35.00
Chronic health problems	35.00	25.00
Transient health problems	35.00	30.00
Regular alcoholism	25.00	21.00

Dimensions of public goods and farm environment:

Table 12 depicts the extent of public goods available to the farmers in the study areas. The inputs *viz*., good quality seeds, fertilizers, sprayer, dusters and farm machines, were adequately available. Other inputs such as labour, weedicides, insecticides, credit, irrigation and electricity were inadequately available. With respect to credit infrastructure, credit cooperative societies, and money lenders were adequately available whereas nationalized banks and land development banks were inadequately available to the sample farmers.

When it came to information infrastructure, the radio, TV, cell phones, post-office, and schools were adequately available. Some of the inputs such as land phones, computers with internet facilities were not available to the respondents.

Transport infrastructure in the from of metalled all-weather roads, State Transport Buses and private vehicles though available were still inadequate. This also affected the supply of newspaper which was dependant on transport.

A lot seemed to be inadequate among post-harvest infrastructure, such as cold storages, godowns/ warehouses, and efficient market system were almost non-existent for the majority of the farmers. The lack of farmer contact with village level extension workers was noteworthy.

Inadequate availability of some of the inputs specially affected the production process, affecting the production process and thereby livelihood. Inadequacy of watershed

Table 12 : Dimensions of public goods and perceived constraints in crop production

Facilities	Number of respondents		
	Adequate	Inadequate	Not available
Input infrastructure			
Good quality seed	198	2	-
Fertilizers	195	6	-
Biofertilizers	87	113	-
Insecticides	48	152	-
Weedicides	50	150	-
Labours	42	158	-
Farm implements	92	108	-
Heavy farm machinery	121	79	-
Sprayer and dusters	140	60	-
Irrigation	66	134	-
Credit	68	132	-
Electricity for farm operation	31	169	-
Watershed development work	26	174	-
Credit infrastructure			
Co-operative society	116	73	11
Land development Bank	31	135	12
Nationalized Bank	18	145	15
Money lender	187	7	-
Information infrastructure			
Post office	187	3	10
Schools	114	86	-
Radio	195	5	-
Television	180	20	-
Library	100	82	18
Village extension worker services	48	102	50
PHC for health care	50	40	170
News papers	50	50	100
Shetkari Mandal	-	-	-
Computer (Inter net)		20	180
Telephone	140	35	15
Mobile phone	180	10	10
Transport infrastructure			
All weather roads	80	100	20
State transport buses	70	35	95
Private vehicles	75	25	100
Post-harvest infrastructure			
Godowns / ware houses	-	10	190
Cold storage	-	-	200
Rural agro based industries	-	-	-
Efficient market system	10	10	180

Note: Figures indicate responses in percentage terms

development works which comprised of canal irrigation structures, electricity supply for irrigation ranked the highest among the deficiency.

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