Agricultural Economics Research Review
Vol. 25(No.1) January-June 2012 pp 125-135

Progress and Performance of Kisan Credit Card Scheme with a Case Study of Bihar§

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Abstract

The performance of Kisan Credit Card (KCC) scheme in India has been studied by finding its share in the total amount of loan disbursed to agriculture. The flow of credit through KCCs has been investigated from three types of financial institutions, viz. cooperative banks, regional rural banks and commercial banks in terms of total loan amount, enrolement of membership and amount per card. Region-wise study has revealed a wide disparity in the performance of these institutions. The case study of Bihar has depicted a similar picture with a vast disparity across different districts of the state in terms of amount, number of cards and amount per card. The gross returns and consequently net margins have been found higher for KCC-beneficiary than non-beneficiary farmers. The factors influencing the adoption of KCC scheme and constraints perceived by the farmers have been identified. Some measures have also been suggested to attract more farmers towards the scheme.

Key words: Kisan Credit Card, logit model, Garrett's ranking technique, KCC scheme

JEL Classification: Q14, Q16

Introduction

The performance of agricultural sector has a significant effect on the growth of Indian economy. The agriculture and allied sector contributed 14.6 per cent to the gross domestic product (GDP at constant price), 58.2 per cent to employment and 10.6 per cent to national exports in 2009-10 (GoI, 2010-11). In the sustained growth of agricultural sector, credit plays a crucial role. Considering the problems being faced by the farmers in having access to credit, the Government of India introduced the Kisan Credit Card (KCC) scheme in the year 1998-99 to provide timely and adequate credit support to the farmers from formal banking system in a flexible, hassle-free and cost-effective manner. This scheme has facilitated the availability of credit in time and has simplified the procedure for availing loan from banks to a large extent (Nahatkar *et al*., 2002). The timely availability of crop loan has helped the farmers realize higher returns from farming (Singh and Sekhon, 2005). Most of the farmers are aware about the benefits of the KCC scheme irrespective of their literacy level (Vedini and Durga, 2007). The factors like age, gender, household size, farm size, education level, etc. positively influence the decision of adoption of KCCs (Kumar *et al.*, 2007). Although KCC has gained popularity, there are growing concerns among farmers about this program; these include: (i) it should involve less paper work, (ii) interest rate should be lower, (iii) there should be flexibility in instalment payment or some rebate in times of hardship/crop failure, and (iv) should have higher credit limits than the existing ones. The simplification of procedure is also required (NABARD, 2009). Also, there is a gap between the

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§ The paper is part of the M.Sc. thesis entitled "Inclusive Finance through Kisan Credit Card Scheme in Bihar: Performance and Prospects" of the first author.

amount required and sanctioned for crop production and other activities. A number of farmers have diverted loan amount towards purposes other than for which it was taken (Rao and Sahu, 2005). The present paper has studied the performance of KCC scheme with the specific objectives of (i) assessing the progress and impact of KCC scheme on farm economy; (ii) analysing the constraints being faced by KCC beneficiary and non-beneficiary farmers; and (iii) identifying the factors that influence the adoption of KCC scheme.

Data and Methodology

Both secondary and primary data on KCC were used in the study. The secondary data on the number of KCC issued, amount of loan sanctioned by institutions and by regions were collected from various publications of NABARD, RBI, GoB (2008-09), and GoI (2010-11). The primary data were collected from 60 KCC beneficiary farmers in the Samastipur district of Bihar in the year 2009-10. To make a comparison, data were also collected from 60 non-beneficiary farmers of the district. The primary data were collected using pre-structured schedule on such aspects as farm business, perception of farmers about the KCC scheme, etc. The Cobb Douglas production function was fitted to assess the resource-use efficiency among the KCC beneficiary as well as non-beneficiary farmers. Factors affecting adoption of KCC scheme were identified by using logit model and constraints faced by the farmers were ranked using Garrett's ranking technique.

Results and Discussion

Performance of KCC Scheme in India

Flow of Institutional Credit to Agriculture and Share of KCC

The flow of credit to the farmers through KCCs was studied from three types of financial institutions, viz. cooperative banks, regional rural banks (RRBs) and commercial banks. The share of KCC in the total amount of loan disbursed to agriculture and allied sector showed a steady increase during the initial few years of its launch. It increased from 31.1 per cent in the year 2000-01 to 41.7 per cent in 2001-02, but after 2001-02, the total share and respective shares of each agency of financial institutions declined (Table 1). Only two institutional agencies have recorded a positive growth rate for the amount sanctioned under KCC and it was highest for RRBs (22.4%), followed by commercial banks (23.5%). BIRD (2000) has also reported that amount sanctioned under KCC to the total production credit increased during 1998-99 to 2000-01.

Region-wise Coverage of Operational Holdings under KCC Scheme

The number of KCCs issued vis-à-vis the number of operational holdings in various regions of the country was studied. The Southern and Northern regions together accounted for 55 per cent of the total number of KCCs issued in the country (Table 2). These two regions also accounted for a higher number of cards issued as a proportion of operational holdings. Sangwan (2005) has reported that among states, Punjab ranked the highest with more than 100 per cent coverage of operational holdings, followed by Haryana, Andhra Pradesh, Orrisa and Rajasthan. The Eastern and North-Eastern regions had the lowest number of KCCs issued and their proportion was lower than the number of operational holdings, which depicts a poor performance of the scheme in these regions.

Agency-wise Growth Rate of Number of KCCs Issued, Amount Sanctioned and Amount per Card

The number of cards issued in India has recorded the growth rate of 3.3 per cent during the period 2001-02 to 2010-11. The North-East region recorded the highest growth rate (16.0%) in number of cards issued and in amount advanced (34.4%) during this period. The amount per account advanced under KCC was ₹ 36800 in India during 2010-11. Only two regions, namely Northern (₹ 104200) and Western (₹ 84500) had a higher amount per account than all-India average. The Northern region recorded a higher growth rate (17.5%) of amount per account advanced under KCC, while it was lowest for Western region (6.9%) (Table 3).

The institution-wise analysis of the performance of KCC revealed that at all-India level RRBs showed the highest growth rate for the number of cards issued. In the case of cooperative banks, North-Eastern region showed the highest growth rate for the number of cards issued (9.7%) and amount sanctioned (19.7%) which

Table 1. Share of KCC in the total flow of credit to agricultural sector: 2000-01 to 2010-11

(Amount in crore ₹)

Year	Flow of credit to agriculture					Credit flow under KCC			
	Cooperative banks	Regional rural banks	Commercial banks	Other agencies	Total	Cooperative banks	Regional rural banks	Commercial banks	Total
2000-01	20712	4220	27807	82	52827	9412	1400	5615	16427
						(45.4)	(33.2)	(20.2)	(31.1)
2001-02	23524	4854	33587	80	62045	15952	2382	7524	25858
						(67.8)	(49.1)	(22.4)	(41.7)
2002-03	23636	6070	39774	80	69560	15841	2955	7481	26277
						(67.0)	(48.7)	(18.8)	(37.8)
2003-04	26875	7581	52441	84	86981	9855	2599	9331	21785
						(36.7)	(34.3)	(17.8)	(25.1)
2004-05	31231	12404	81481	193	125309	15597	3833	14756	34186
						(49.9)	(30.9)	(18.1)	(27.3)
2005-06	39404	15223	125477	382	180486	20339	8583	18780	47702
						(51.6)	(56.4)	(14.9)	(26.4)
2006-07	42480	20435	166485	0	229400	13141	7373	19786	40300
						(30.9)	(36.1)	(11.9)	(17.6)
2007-08	48258	25312	181088	0	254658	19991	8743	19900	48634
						(41.4)	(34.5)	(10.9)	(19.1)
2008-09	45966	26765	228951	226	301908	13172	7632	25865	46669
						(28.7)	(28.5)	(11.3)	(15.5)
2009-10	63497	35217	285800	-	384514	7605.8	10131.7	39940.5	57678
						(11.9)	(28.8)	(13.9)	(15.0)
2010-11	70105	43968	332706	-	446779	10719	11468	50438	72625
						(15.3)	(26.1)	(15.2)	(16.3)
CAGR (%)	13.1	27.8	30.7		25.7	-1.5	22.4	23.5	13.7

Note: The figures within the parentheses indicate percentage to the total flow of credit
Source: RBI (various issues); Samantara (2010); and NABARD (various issues)

Table 2. Number of KCC issued as percentage of the number of operational holdings

Region	No. of operational holdings (2005-06)	No. of KCCs issued (2010-11)	Percentage of No. of cards to the number of operational holdings
East	29465844	2014000	6.8
	(22.8)	(19.8)	
West	32546033	2441000	7.5
	(25.2)	(24.0)	
North	28324503	1861000	6.6
	(21.9)	(18.3)	
South	34775550	3687000	10.6
	(26.9)	(36.2)	
North-East	4110307	165000	4.0
	(3.2)	(1.6)	
India	129222237	10169000	7.9

Note: Figures within the parentheses indicate percentage in the respective columns
Source: GoI (2011); RBI(various issues)

Table 3. Region-wise number of cards issued, amount advanced and amount per KCC account by banks

(Number in lakh, amount in billion ₹ and amount per KCC account in thousand ₹)

Region	2001-02			2010-111			CAGR (2001-02 to 2010-11)		
	No. of cards	Amount advanced	Amount/ KCC account	No. of cards	Amount advanced	Amount/ KCC account	No. of cards	Amount advanced	Amount/ KCC account
Cooperative Banks									
East	7.6	10.2	13.4	5.9	13.5	22.7	-2.7	3.1	6.0
West	13.8	70.5	51.2	9.4	60.8	64.5	-4.1	-1.6	2.6
North	15.4	29.6	19.2	3.1	10.7	34.5	-16.4	-10.7	6.7
South	11.1	27.6	24.9	9.6	22.2	23.1	-1.6	-2.4	-0.9
North-East	0.0	0.0	6.9	0.1	0.1	15.0	9.7	19.7	9.1
India	43.7	129.9	29.7	28.1	107.2	38.1	-4.8	-2.1	2.8
Regional Rural Banks									
East	0.6	0.7	11.2	6.0	26.2	43.8	28.9	50.0	16.4
West	1.2	4.1	35.7	1.8	28.7	162.8	4.8	24.1	18.4
North	3.0	8.8	29.7	4.6	36.7	80.2	4.9	17.2	11.7
South	2.9	9.6	32.6	4.9	21.1	43.1	5.8	9.2	3.1
North-East	0.1	0.1	16.3	0.5	2.0	38.2	25.4	37.8	9.9
India	7.7	23.2	30.2	17.7	114.7	64.6	9.8	19.4	8.8
Commercial Banks									
East	2.9	4.7	16.3	8.2	44.2	53.6	12.4	28.3	14.1
West	4.4	15.1	34.0	13.2	116.8	88.4	12.9	25.6	11.2
North	7.2	24.1	33.7	10.9	146.6	134.0	4.8	22.2	16.6
South	10.0	23.7	23.6	22.4	192.8	86.2	9.3	26.2	15.5
North-East	0.3	0.3	8.8	1.1	4.0	37.4	13.7	33.5	17.5
India	24.6	67.4	27.3	55.8	504.4	90.4	9.5	25.1	14.2
All									
East	11.1	15.6	14.1	20.2	83.8	41.6	6.9	20.6	12.8
West	19.3	89.7	46.3	24.4	206.2	84.5	2.6	9.7	6.9
North	25.5	62.6	24.5	18.6	194.0	104.2	-3.5	13.4	17.5
South	24.0	60.9	25.3	36.9	236.1	64.0	4.9	16.3	10.9
North-East	0.4	0.4	9.8	1.7	6.1	36.8	16.0	34.4	15.8
India	76.0	220.5	29.0	101.7	726.3	71.4	3.3	14.2	10.5

Source: RBI (various issues)

was higher than all-India level as well. In the case of RRBs, the growth rate for number of cards issued and amount sanctioned were highest for the Eastern region, followed by North-Eastern region. However, for the amount per account, growth rate was highest for the Western region (18.4%), followed by Eastern region (16.4%). The commercial banks also showed the highest growth rate for the number of cards issued, amount sanctioned and amount per account for the North-Eastern region, followed by Western region for the number of cards issued, and Eastern region for the amount advanced.

Thus, the performance of KCC scheme varies widely across regions of the country and across financial institutions. The Eastern and North-Eastern regions continue to be underperformers with respect to Kisan Credit Card program. Therefore, the performance of KCC scheme was analysed in Bihar, which is an important state in the Eastern region.

Table 4. Agency-wise flow of Kisan Credit Cards in Bihar

(Amount in lakh ₹ and amount per KCC account in ₹)

Agencies	2001-02			2010-11			CAGR (2001-02 to 2010-11)		
	No. of cards	Amount advanced	Amount/ KCC account	No. of cards	Amount advanced	Amount/ KCC account	No. of cards	Amount advanced	Amount/ KCC account
Cooperative Banks	129944	10060	7742	0	0	0	-	-	-
Regional Rural Banks	7604	994	13072	262000	142700	54466	48.2	73.7	17.2
Commercial Banks	76518	16597	21691	305000	186500	61148	16.6	30.8	12.2
All agencies	214065	27651	12917	567000	329200	58060	11.4	31.7	18.2

Source: RBI (various issues)

Performance of KCC Scheme in Bihar

The performance of KCC scheme in Bihar has been good as is revealed from the growth rate for number of cards issued (11.4%), amount advanced (31.7%) and amount per KCC account advanced (18.2%). The amount per KCC account has increased by more than four-times from ₹ 12917 in 2001-02 to ₹ 58060 in 2010-11 (Table 4).

Only two financial institutions have shown a positive growth rate for the number of cards issued and amount advanced in Bihar. During 2001-02 to 2010-11, increase in the amount per account was observed to be highest in the case of RRBs (17.2%), followed by commercial banks (12.2%). The amount per account purveyed under KCC scheme was highest by the commercial banks (₹ 61148), followed by RRBs (₹ 54466). The poor performance of cooperative banks could be due to their poor resource position.

The number of cards issued varied across districts of the state of Bihar (GoB, 2009). East Champaran, Begusarai and Samastipur districts have recorded more than 5 per cent of the total cards issued in the state. Among the three agro-ecological zones of Bihar, Zone-I alone shared 47.0 per cent of the total cards issued in the state. Compound annual growth rate for the number of cards issued in Bihar was 22.4 per cent. All the districts showed a positive growth rate for the number of cards issued, and 25 districts showed growth rate higher than that of the state (22.4%) (Table 5).

The cooperative institutions need to be strengthened so that they could serve the rural population better because of their rural reach and wide presence. On the other hand, there is also a need to understand the problems affecting the performance of KCC scheme so that strategies could be developed to overcome the observed regional disparities in Bihar.

Impact of KCC Scheme on Farm Economy of Bihar

Transactions Cost

For taking loan from formal sources of finance, farmers have to bear transaction cost on legal documentation, commission agents, travel cost on visits to the bank, etc. The average transaction cost on taking loan was found to be much lower for KCC beneficiary farmers (₹ 1055) than non-beneficiaries (₹ 2745). Since a card is valid for three years, the cost on legal documentation and commission is incurred only once at the time of issue of KCC, while the non-beneficiary farmers have to incur these costs each time they take a loan. Further, after the issue of cards, farmers have to visit banks on an average twice in a year for borrowing and repayment of the loan, but the non-beneficiary farmers have to visit the banks four times on an average, resulting in a higher travel cost. The transaction cost of borrowing was found to be more than double for non-beneficiary farmers than beneficiary farmers (Table 6). The transaction cost should be brought down to attract more farmers by minimizing the documentation procedure, increasing direct access of farmers to banks without involvement of commission agents, etc. (Sindhu and Gill, 2006).

Table 5. District-wise adoption of Kisan Credit Cards in Bihar: 2000-01 to 2010-11

Districts	No. of cards issued	% of total cards issued	CAGR (2000-01 to 2010-11)
Saran	34841	2.5	18.7
Siwan	34165	2.4	18.3
Gopalganj	53928	3.8	36.4
Muzaffarpur	58142	4.1	28.5
Vaishali	45605	3.3	28.1
Sitamarhi	30368	2.2	24.0
Sheohar	12123	0.9	48.8
E. Champaran	82860	5.9	32.5
W. Champaran	75740	5.4	24.4
Darbhanga	26360	1.9	56.8
Samastipur	80395	5.7	19.0
Begusarai	72811	5.2	35.6
Madhubani	55261	3.9	28.5
ZONE I (North West Alluvial Plains)	**662599**	47.2	26.5
Saharsa	18904	1.3	27.0
Supaul	16790	1.2	24.0
Madhepura	14707	1.0	8.7
Purnea	30384	2.2	1.2
Araria	29469	2.1	44.5
Kishanganj	20790	1.5	34.1
Katihar	31618	2.3	18.9
Khagaria	39919	2.8	25.8
ZONE II (North East Alluvial Plains)	**202581**	14.4	15.4
Patna	50522	3.6	17.7
Nalanda	42065	3.0	16.6
Bhojpur	59020	4.2	23.3
Buxar	32040	2.3	29.9
Rohtas	57664	4.1	19.9
Habua	29355	2.1	21.9
Gaya	41012	2.9	26.5
Jehanabad	25154	1.8	31.8
Arwal	8363	0.6	18.7
Nawada	28980	2.1	15.6
Aurangabad	42353	3.0	23.6
Bhagalpur	37938	2.7	17.6
Banka	22829	1.6	48.4
Munger	16701	1.2	18.0
Lakhisarai	15848	1.1	51.0
Sheikhpura	5216	0.4	38.5
Jamui	22590	1.6	37.2
ZONE III (South Bihar Alluvial Plains)	**537650**	38.3	18.7
Bihar	**1402830**	100.0	22.4

Source: GoB (2012)

Table 6. Transaction cost for borrowing loan through Kisan Credit Cards: 2009-10

(in ₹)

Sl. No.	Particulars	KCC beneficiary	KCC non-beneficiary
1	Legal documentation	375	1125
2	Commission	400	1200
3	Travel cost	280	420
4	Total	1055	2745
5	Per year cost	352	915

Table 7. Cost of cultivation of paddy, maize wheat and potato for KCC beneficiary and non-beneficiary farmers in Bihar: 2009-10

(in ₹/ha)

Sl. No.	Cost items	Paddy		Maize		Wheat		Potato	
		Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
1	Human labour	4465	3844	4180	4036	3374	3393	8518	8217
2	Machine power	1683	1422	1540	1203	1638	1329	1799	1556
3	Seed	702	533	458	377	1392	1205	7808	5539
4	Manure	1991	1800	1723	1533	1710	1602	2025	1635
5	Fertilizer	4135	3760	3885	3832	3916	3653	5293	4204
6	Irrigation charges	1653	1356	2252	1338	1644	1430	1258	929
7	Plant protection	712	825	514	479	577	470	1843	1446
	Working capital	13359	11739	12829	11265	12541	11480	26518	21891
8	Interest on working capital	178	157	171	150	167	153	354	292
9	Land revenue & other taxes	33	33	33	33	33	33	33	33
10	Depreciation on farm assets	270	486	270	486	270	486	270	486
	Cost A1	13840	12414	13302	11934	13011	12152	27174	22702
11	Interest on fixed capital	216	389	216	389	216	389	216	389
12	Rental value of land	2038	2038	2038	2038	2038	2038	2038	2038
	Cost B1	1456	12803	13518	12323	13227	12541	27390	23091
	Cost B2	16093	14841	15556	14361	15265	14579	29428	25129
13	Family labour	1603	1330	1615	1615	2090	1710	2280	1900
	Cost C1	16658	14133	15133	13938	15317	14251	29670	24991
	Cost C2	17696	16171	17171	15976	17355	16289	31708	27029
	Cost C3	19466	17788	18888	17573	19090	17918	34820	29731

Cost and Return Analysis of KCC Beneficiary and Non-beneficiary Farmers of Bihar

The cost and return analysis of beneficiary and non-beneficiary farmers has revealed that the cost of cultivation per hectare for all the four major crops (paddy, maize, wheat and potato) was higher for beneficiary than non-beneficiary farmers. It was due to application of higher amount of purchased inputs facilitated by the borrowed money (Table 7).

The gross return per hectare for all the crops was also higher for beneficiary than non-beneficiary farmers. The net return per ha was higher for all the crops and it was the highest in potato (Table 8). The KCC beneficiary farmers realized higher returns due to higher use of inputs (Singh and Sekhon, 2005).

Resource-use Efficiency

The resource-use efficiency for major crops of beneficiary and non-beneficiary farmers was estimated

Table 8. Returns over costs for KCC beneficiary and non-beneficiary farmers in Bihar: 2009-10

(in ₹)

Particulars	Paddy		Maize		Wheat		Potato	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Gross returns	24013	21241	21899	20130	22313	20378	57057	45644
Farm business income	10173	8827	8596	8196	9301	8225	29883	18738
Return over cost B_1	9957	8438	8381	7807	9086	7836	29667	18349
Family labour income	7919	6401	6343	5770	7048	5799	27629	16311
Net return over cost C_1	8354	7108	6766	6192	6996	6126	27387	16449
Net return over cost C_2	6317	5071	4728	4155	4958	4089	25349	14411
Net return over cost C_3	4547	3454	3011	2557	3223	2460	22237	15912

Table 9. Production functions for major crops for KCC beneficiary and non-beneficiary farmers in Bihar: 2009-10

Estimates	Paddy		Maize		Wheat		Potato	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Constant	-2.42	0.27**	3.94**	2.59**	4.35**	1.90**	0.29**	3.32**
	(1.74)	(0.09)	(0.32)	(0.13)	(0.36)	(0.19)	(0.39)	(0.12)
Human labour	0.22*	0.02*	0.56**	-0.07	0.24	0.01	0.15**	0.16**
	(0.09)	(0.01)	(0.09)	(0.06)	(0.14)	(0.01)	(0.04)	(0.02)
Tractor	0.007	0.25**	0.03**	0.01	-0.04	-0.01	-0.02	0.004
	(0.02)	(0.35)	(0.04)	(0.04)	(0.02)	(0.02)	(0.01)	(0.05)
Seed	0.31**	-0.01	0.09*	0.05	0.09**	0.09	0.15**	0.004
	(0.19)	(0.04)	(0.04)	(0.04)	(0.02)	(0.07)	(0.05)	(0.01)
Manure & fertilizer	0.05	0.22**	-0.66**	0.49**	0.06**	0.15**	0.05	0.23**
	(0.25)	(0.06)	(0.11)	(0.06)	(0.02)	(0.05)	(0.06)	(0.01)
Irrigation	0.27**	0.04	0.04	0.01	0.29**	0.34**	0.14**	0.08
	(0.24)	(0.03)	(0.06)	(0.01)	(0.07)	(0.14)	(0.04)	(0.01)
Plant protection	0.33**	0.02	0.13	0.04	0.20	0.19	0.05**	0.001
	(0.11)	(0.04)	(0.02)	(0.04)	(0.08)	(0.14)	(0.02)	(0.01)
R^2	0.81	0.79	0.85	0.79	0.77	0.83	0.76	0.85

Note: Figures within the parentheses indicate the respective standard errors.

** significant at 1% level of significance, * significant at 5% level of significance.

using Cobb-Douglas production function and the results are presented in Table 9. In the case of paddy of beneficiary farmers, the coefficients have been found positive and significant for all inputs, except tractor and manure. The inputs like human labour, seed, irrigation and plant protection chemicals have shown positive impact on return of the beneficiary farmers. For non-beneficiary farmers, the coefficients have been found positive for all inputs except seed. Also, the coefficients for irrigation and plant protection have been observed non-significant. Tractor has depicted highest impact on return from paddy for non-beneficiary farmers.

For maize, inputs like human labour, tractor and seed have shown a positive impact while manure and fertilizer have depicted a negative impact on return of

Table 10. Constraints in adoption of KCC scheme as perceived by beneficiary and non-beneficiary farmers in Bihar: 2009-10

Sl. No.	Constraints	Garrett Mean Score	Rank
	Beneficiary farmers		
1.	Lengthy paper work	76	1
2.	Insufficient credit limit	70	2
3.	High interest rate	66	3
4.	Loan not available on time	57	4
5.	Difficulty in opening bank account	52	5
6.	Inflexibility in use of branch	48	6
7.	Inflexibility in withdrawal	43	7
8.	Lack of consumption loan	32	8
9.	Locational difficulty	31	9
10.	Lack of motivation from officials	24	10
	Non-beneficiary farmers		
1.	Difficulty in opening bank account	75	1
2.	Easy access to non-institutional loan	66	2
3.	Fear of being a defaulter	63	3
4.	Bad experience of peer groups	52	4
5.	Insufficient credit limit	45	5
6.	Lack of awareness about the benefits of scheme	39	6
7.	Lack of motivation from officials	32	7

the KCC beneficiary farmers. For the maize crop of non-beneficiary farmers, the manure and fertilizer had a positive and significant impact on gross returns.

For wheat crop, the coefficients for manure and irrigation were positive and significant for both beneficiary and non-beneficiary farmers. Irrigation has depicted highest impact on return from wheat crop for both the categories of farmers. For potato crop in case of beneficiary farmers, human labour, seed, irrigation and plant protection chemicals had positive and significant impact. In case of non-beneficiary farmers for potato crop, only human labour and manure were significant and had a positive impact. The highest impact was shown by human labour for beneficiary farmers and by manure for non-beneficiary farmers.

It is revealed that for most of the crops the KCC scheme had generated more demand for the purchased inputs and had also impacted the use of human labour which is essential for creating job opportunity in the rural areas. It is also generating demand for irrigation input, which needs provisioning of investment credit.

Constraints Reported by Beneficiary and Non-beneficiary Farmers

The constraints faced by farmers in the use of KCCs have been ranked using Garrett's ranking technique. Most of the KCC beneficiary farmers have reported the lengthy and tedious paper work to be the major problem. The insufficient credit limit, higher interest rate, non-availability of loan on time, inflexibility in the number of withdrawals and use of bank branches were other major problems reported by the farmers (Table 10).

The non-beneficiary farmers reported difficulty in opening a bank account as the most pressing problem, followed by easy access to non-institutional loan, insufficient credit limit, lack of awareness about the benefits of and lack of motivation by the officials.

Thus, it is necessary to reduce the legal procedures involving lengthy paper work. Application of computers and capacity enhancing of bank staff could help in this aspect. The existing credit limit under KCC needs to be increased to meet the credit needs of

Table 11. Estimates of factors influencing adoption of KCC scheme: 2009-10

Parameter	Estimate	Standard error	t-value	Approx Pr > |t|	Odds ratio	Marginal effect
Intercept	0.567	1.23	0.46	0.645	-	-
Education	0.209	0.27	0.76	0.147	1.23	0.040
Age	-0.035	0.02	-1.47	0.142	0.96	-0.007
Farming experience	0.087	0.03	2.61	0.009	1.09	0.016
Land size	0.163	0.08	1.95	0.050	1.17	0.031
Membership to cooperatives	-1.448	0.72	-2.00	0.045	0.23	-0.276

farmers for production process. Similarly, reduction in the existing rate of interest, incorporation of consumption loan along with crop loan, provisioning of ATMs and flexibility in the use of bank branches could attract more farmers towards the scheme.

To bring large number of rural farmers under the scheme, the process of opening bank accounts should be simplified. This can be facilitated by organizing village campaigns for the issuance of KCCs. Efforts should be made to enhance awareness about the scheme and its benefits. Also, regular motivation from the bank officials would develop confidence among the farmers about the scheme.

Factors Influencing the Adoption of KCC Scheme

The logit analysis has revealed that the variables like land size, educational level and farming experience have positive influence on the decision of farmers regarding the adoption of KCC scheme, while the factors like age and membership of a cooperative society have a negative relationship. To find the magnitude of change in dependent variable due to the unit change in explanatory variable, marginal effect of the associated variables was calculated which is presented in Table 11. The maximum marginal effect on adoption of KCC has been depicted by education, followed by land size. It was observed that one per cent increase in educational level would increase the probability of adoption by 0.04 per cent. Similarly, with one percentage increase in land size, the probability of adopting the scheme would increase by 0.03 per cent. For the farming experience, this increment would be 0.016 per cent. However, it was noted that the age and membership of cooperative societies had a negative relationship with the adoption of the scheme.

Conclusions and Policy Implications

The performance of the KCC scheme has been found to vary across different regions of the country and across financial institutions. The Eastern and North-Eastern regions continue to be underperformers with respect to KCC scheme. The flow of credit through KCC in the state of Bihar has not been impressive. The growth rate in the amount per account advanced under KCC has been positive for regional rural banks (RRBs) and commercial banks, and negative for cooperative banks. The amount per account advanced in Bihar is much lower which probably discourages the farmers to adopt the KCC scheme.

The KCC scheme has played a significant role in farm operation and income of farmers in Bihar. The availability of crop loan has helped in realizing higher per hectare gross return for the KCC beneficiaries for all the crops studied. To bring more farmers under the scheme, the process of opening bank accounts should be simplified. This can be done by organizing village campaigns for issuance of KCCs. Similarly, farmers have the fear of being a defaulter. For this awareness generation and regular motivation from the bank officials about the scheme and its benefits should be done to develop confidence among the farmers. Similarly, expanding educational opportunities and organising training about improved techniques of farming could be helpful in encouraging the farmers to adopt KCC scheme.

Policy Implications

- There is a need to adopt measures to reduce paper work and time in sanctioning a loan under KCC scheme.

- To reduce regional disparity in the performance of KCC scheme, the government should launch awareness generation programmes about the benefits of this scheme.
- The limit of the loan amount per account should be raised to attract more farmers.
- The process of opening a bank account should be simplified to bring more farmers under the scheme.
- There is a need to strengthen the cooperative banking system in the rural areas by infusing more resources.
- The government should ensure the timely availability of good quality inputs like seed, manure, plant protection materials by improving marketing infrastructure so that farmers could properly utilize the loan taken under KCC scheme.

Acknowledgement

The authors thank the anonymous referee for his constructive suggestions to improve the presentation of the paper.

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Received: October 2011; Accepted: February 2012