

Original Research Article

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Impact of Krishi Bhagya Yojana on Cropping Pattern and Irrigation Practices of Farmers in Kalyana Karnataka Region

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ABSTRACT

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The present paper explains the impact of Krishibhagya Yojana on social participation, cropping pattern and irrigation practices of farmers in the North Eastern Karnataka. For the study primary data were collected from 75 beneficiaries of farm pond scheme (Krishibhagya Yojana) and 75 non-beneficiaries through pre-tested questionnaire. The findings of the study reveals that after implementation of KBY the cropping intensity was increased from 103.33 to 121.66 per per (17.73 %). There was a substantial increase in area under irrigation farming after the implementation of Krishi Bhagya Yojana in the study area.

Introduction

Karnataka state is agricultural based state, having 70 per cent of cultivable land under dry land condition. The dry land area contributes 55 per cent of food grains and 75 per cent of oilseed production to the overall agricultural production of the Karnataka state. Karnataka state has 10 agro-climatic zones, out of which five are dry zones, farmers in dry land areas are small and marginal farmers facing more uncertain climatic situation. In addition, effect of climate change seen in the form of long dry spells and heavy rains in rain fed areas, it caused severe drought and floods in the state. Therefore, rainfed areas that to in

those low rainfall receiving agro-climatic zones need a suitable agricultural policy to achieve sustainability in dry land agriculture in the state by providing assured irrigation facilities to the farmers. To unlock the potential of rainfed agriculture, the Government of Karnataka has launched flagship scheme to achieve revolutionary change in Karnataka's farm sector named 'Krishi Bhagya Scheme' on September 2014. Under this scheme, government is committed to transform agricultural sector by increasing farm productivity through infusion of new technology and equipments, sustainable agricultural practices, efficient use of water and irrigation facilities in the state. In

2016, the Government of Karnataka extended this scheme to all the zones of Karnataka state. The present study was undertaken to analyse the impact of Krishi Bhagya Yojana scheme on cropping pattern and irrigation practices of farmers in the study area.

Materials and Methods

A multi stage random sampling method was adopted for the selection of sample farmers. In the first stage, Bidar, Kalaburgi and Yadgir district were selected as the study area, which was covered during the first phase of the Krishi Bhagya Yojana (KBY). In the second phase, among the selected district, all the taluks i.e. Bidar, Basavakalyan, Humnabad, Aurad, Bhalki in the Bidar districts, Yadgir, Surapur and Shahpur in the Yadgir district and Kalaburgi, Chitapur, Aland, Jevargi, Chincholi, Afzalpur and Sedam in the Kalaburgi district were selected. Again among the selected taluks, one Raitha Samparka Kendra (RSK) was selected randomly. Again among the selected RSK's, four Krishi Honda beneficiaries and one shade net/ polyhouse beneficiary were selected randomly. So that each taluk having 5 beneficiary farmers and 5 non-beneficiary farmers are selected. The total sample size was 150, out of which 75 were beneficiaries and 75 were non-beneficiaries in the study area.

Both primary and secondary data were collected for the study. The secondary data pertains to the list of the beneficiaries of KBY from Department of Agriculture of different taluks in the study area. The primary data related to the agriculture year 2017-18 was elicited using pre-tested structured schedules. Tabular analysis was employed including percentages and averages in respect of socio-economic features of sample farmers, cropping system and irrigation practices.

Results and Discussion

Distribution of sample farmers according to their social participation

The social participation of beneficiaries and non-beneficiaries of KBY are presented in table 1. It was seen that majority of the beneficiary farmers (73.06 %) are not participated in the social organizations. While, 15.46 per cent of farmers regularly participated in social organizations and 14.13 per cent had occasionally participated (fig. 1) in the social organizations. Among non-beneficiaries, majority of the farmers (92.80 %) participated in social organization (fig. 2). While 3.73 per cent of farmers participated regularly and occasionally in the social organizations. In both, beneficiaries and non-beneficiaries the social participation was high in co-operative societies. The social participation of beneficiaries of KBY was significantly high in comparison with the non-beneficiaries

Impact of KBY on cropping system among the beneficiaries

Change in cropping system of the respondents gives a picture of the change in area under different crops before and after implementation of KBY. Change in cropping system in terms of area under crop was compared before and after the implementation of KBY.

The results presented in the table 2 depicts that percentage area under sugarcane increased from 41.80 to 41.93 per cent after implementation of KBY and tur decreased from 18.72 to 16.77, soyabean increased from 16.05 to 17.41 per cent, cotton increased from 15.05 to 15.48 per cent and paddy increased from 3.67 to 3.87 per cent. Where as in the inter cropping system, the area was decreased to 14.25 per cent.

Table.1 Distribution of samples according to social participation in the study area

Sl. No.	Particulars	Beneficiaries (n= 75)			Non-beneficiaries (n=75)		
		Regularly	Occasionally	Never	Regularly	Occasionally	Never
1.	Village Panchayat	00 (00.00)	01 (1.33)	74 (98.66)	00 (00.00)	00 (00.00)	75 (100)
2.	Co-operative society	24 (32.00)	20 (26.66)	31 (41.34)	07 (9.34)	07 (9.34)	61 (81.32)
3.	Youth club	20 (26.66)	12 (16.00)	43 (57.34)	02 (2.66)	01 (1.34)	72 (96.00)
4.	Farmers forum	14 (18.66)	10 (13.34)	51 (68.00)	04 (5.33)	06 (8.00)	65 (86.67)
Total		58	53	274	13	14	348
Percentage share (%)		15.46	14.13	73.06	3.73	3.73	92.8

Table.2 Impact of KBY on cropping system among the beneficiaries

Sl. No.	Cropping system	Before (2013-14)		After (2016-17)		% change
		Area (Acre)	(%)	Area(Acre)	(%)	
1	Mono cropping					
	a. Sugarcane	125	41.80	130	41.93	4.00
	b. Tur	56	18.72	52	16.77	-7.14
	c. Soyabean	48	16.05	54	17.41	12.5
	d. Cotton	45	15.05	48	15.48	6.66*
	e. Sorghum	7	2.34	7	2.25	0
	f. Maize	7	2.34	7	2.25	0
	g. Paddy	11	3.67	12	3.87	9.09
	Total	299	100	310	100	3.67
2	Inter Cropping					
	a. Tur+ Soyabean	77	100	66	100	-14.25
3	Sequence cropping					
	a. Groundnut	11	73.30	12	75.00	8.33
	b. Chickpea	4	26.70	4	25.00	0
	Total	15	100	16	100	-
	Cropping intensity (%)	103.33		121.66		17.73

Note: * indicates significant at 5 % level

Table.3 Impact of KBY on irrigation practices

SI. No.	Crop	Before (2013-14)				After (2016-17)				% Change		
		Total Area (acre)	Rainfed area (acre)	Irrigated area (acre)		Total Area (acre)	Rainfed area (acre)	Irrigation area (acre)		Rainfed area (acre)	Irrigation area (acre)	
				Sprinkler	Furrow irrigation			sprinkler	Furrow irrigation		Sprinkler	Furrow Irrigation
1	<i>Kharif</i>											
	Sugarcane	125	-	-	125	130	-	-	130	-	-	04
	Tur	56	24	32	-	52	-	40	12	-100	25.00	-
	Soyabean	48	12	36	-	54	-	54	-	-100	50.00	-
	Cotton	45	45	-	-	48	18	-	30	-60	-	-
	Sorghum	7	2	-	5	7	-	-	7	-100	-	40.00
	Maize	7	3	-	4	7	-	-	7	-100	-	75.00
	Tur + Soyabean	77	37	40	-	66	-	45	21	-100	12.50	-
	Paddy	11	-	-	11	12	-	-	12	-	-	9.09
	Sub-total	376	123	108	145	376	18	139	219	-85.36	28.70	51.03
2	<i>Rabi</i>									-	-	-
	Groundnut	11	5	-	6	12	4	-	8	-20	-	33.00
	Chickpea	4	4	-	-	4	-	-	4	-100	-	-
	Sub-total	15	9	-	6	16	4		12	-55		100.00
	Total	391	132	108	151	392	22	139	231	-83.33	28.70	52.98

Fig.1 Distribution of beneficiaries according to social participation

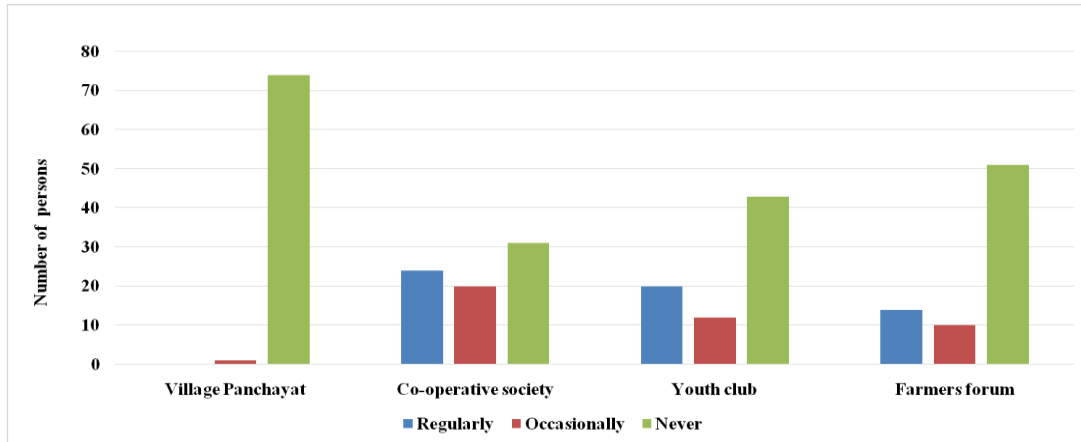
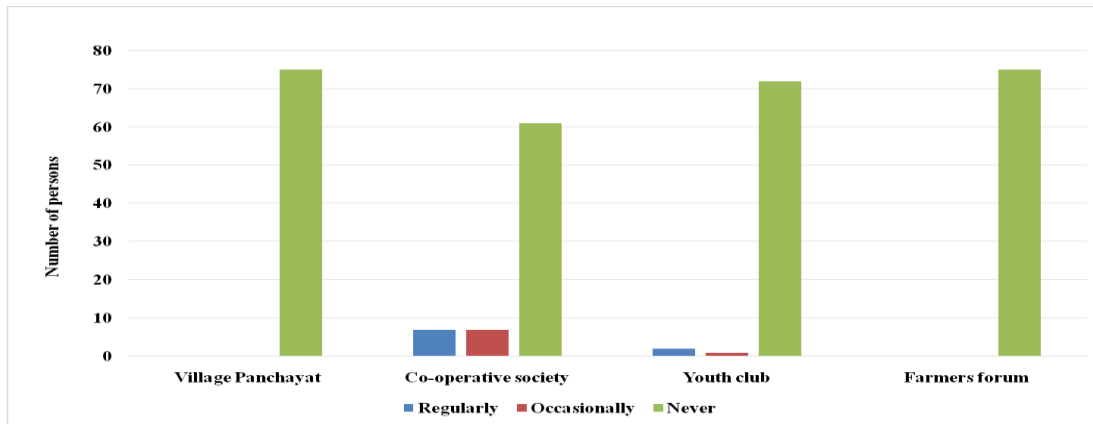


Fig.2 Distribution of non-beneficiaries according to social participation



Similarly, the crop sequence paddy followed by groundnut increased from 73.30 per cent to 75.00 per cent and sorghum followed by chickpea was not changed in area. Hence the per cent change in the area of sugarcane, soyabean, cotton, paddy and groundnut after KBY was 4, 12.5, 6.66, 9.09 and 8.33 per cent respectively. The cropping intensity was increased from 103.33 to 121.66 per cent after implementation of KBY. The per cent change in cropping intensity after implementation of KBY was 17.73 per cent. The similar results can be seen in Ashturkar (1986) made a study on ‘Progress and prospects of irrigation water management in Maharashtra’ and reported that jowar, bajra, paddy and cotton based cropping systems were equally profitable

compared to sugarcane. Similar findings also found in Patil (2012) and Chavi and Shinde (2017).

Impact of KBY on the irrigation practice among the beneficiaries

The practice of usage of farm pond as a source of protective irrigation for cultivation of crops is presented in the table 3. It was observed from table 3 that there was considerable difference in the area under sugarcane before (125 acre) and after (130 acre) the implementation of the KBY. In general, all farmers having Krishi Honda used to provide 5 to 6 irrigations in the month of March and April at the harvesting stage of

sugarcane crop through furrow irrigation. After construction of Krishi Honda, due to increase in the water availability to the farms and it leads to increased area in sugarcane production.

It is noticed that area under tur, soyabean, cotton, sorghum cultivation increased due to construction of Krishi Honda (farm pond). In general, all tur, soyabean, cotton, sorghum cultivating farmers after the construction of Krishi Honda, water used as protective irrigation when there was no rains for longer period (more than 40 days), so that area was lower before KBY as compared to the after KBY. While Groundnut and chickpea Cultivating farmers used Krishi Honda water during the rabi/summer whenever there was a need for the critical stages of the crop growth.

Some farmers before implementation of KBY, followed sprinkler method of irrigation to the crops includes tur, soyabean. Whereas after the implementation of KBY, farmers followed furrow method of irrigation due to availability of water in the Krishi Honda. The irrigated area of sugarcane extended from 125 to 130 acre by practicing furrow method of irrigation and also some of the crops used both sprinkler and furrow irrigation such as out of 56 acre of tur, 32 acre were sprinkler before KBY, whereas after the implementation of KBY the area extended up to 40 acre of sprinkler and 12 acre of furrow irrigation.

In *Kharif*, the total percentage change in the

sprinkler irrigation and furrow irrigation was 28.70 and 51.03. Where as in *Rabi* season, the percentage change in irrigation area of groundnut was 33.00 per cent and for chickpea, the area of chickpea brought under furrow irrigation was about 4 acre after implementation of KBY. It was noticed that there was a positive impact on dryland crops which decreased about 83.33 per cent of rainfed area after the implementation of KBY because of increased in area under irrigation. Before KBY, there was no irrigation to the crops in some part of area, whereas after the implementation of KBY, full area of sorghum and maize crops were covered with irrigation using farm pond water.

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