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Performance of Crop Insurance Scheme in Udaipur District of Rajasthan[§]

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Abstract

The study has assessed the performance of crop insurance scheme on beneficiary and non-beneficiary farms in Salumber tehsil of Udaipur district during 2008-09. The study has revealed that farm income per family is higher on beneficiary farms as compared to non-beneficiary farms. The progress of crop insurance scheme in Rajasthan has been found positive, as is evidenced through compound and linear growth rates. In the Udaipur district, the progress of crop insurance scheme has been found positive, except the claim passed to the number of farmers and amount of sum insured. At the overall level, the total area insured under the crop insurance programme has been only about 45 per cent of the total cropped area of the beneficiary farms. Use of inputs such as human and bullock labour, seed, manures, fertilizers, pesticides, etc. has been found significantly higher on beneficiary farms than non-beneficiary farms. The beneficiary farmers have invested more on hired human, machine and bullock labour, seeds, manures, fertilizers, chemicals, etc. mainly because of guaranteed compensation from the crop insurance scheme. Positive elasticity for area in maize and wheat crops in both the beneficiary categories has indicated the scope of further use of this input to increase crop production and gross income. The majority of beneficiary farmers have been found satisfied with crop insurance scheme; however, they have shown discontent towards delay in payment of claim, present basis fixing compensation and inadequate payment of compensation. The same response for these shortcomings has been reported by non-beneficiary group also.

Key words: Crop insurance, Insurance premium, Compensation

JEL Classification: Q15, Q18, Q19

Introduction

The agricultural production in India is highly dependent upon the vagaries of monsoon. There is a considerable variation in the occurrence of rainfall with wide diversity in the seasonal and annual distribution pattern. It culminates into a great amount of losses due either to the floods or droughts. Under the situation of

risks and uncertainties in agriculture; a farmer hesitates to take decisions related to adoption of new technologies, cultural practices and use of adequate quantities of various costly inputs. This in turn affects farm production and farm economy (Birari *et al.*, 2002) Hence, there is a need to stabilize and protect farm economy through adoption of appropriate measures.

The most rational method of protecting farmer's economy from different types of risk is to provide some kind of shield against the possible adverse effect of different risks. The 'crop insurance program' could, therefore, be considered not only as a hedge to protect

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[§] The paper has been extracted from M.Sc. (Agricultural Economics) thesis submitted by the first author to MPUAT, Udaipur in 2010

farm economy from the adverse effect of crop failure but also as an incentive to the farmer to shoulder risk of using new technology and affecting improvement in farming (Ardhanareeswaran, 1985). The process of modernization of agriculture could be accelerated with the introduction and adoption of crop insurance programme (Raju and Chand, 2008).

Insurance is a technique in which losses suffered by few are met from funds accumulated through small contributions made by many who are exposed to similar risks. Crop insurance is a means to protecting the cultivators against financial loss on account of anticipated crop-loss arising out of practically all natural calamities such as natural fire, drought, floods, pests, diseases, etc. (Manoj *et al.*, 2003) The sum insured could be the total expenditure or a multiple of it or a proportion of expected income from crop(s) for which premium is paid. The indemnity (claims payable against the paid out of pocket expenses) is payable on the basis of shortfall in average yield from the guaranteed yield (threshold yield). The claims are paid after the loss in yield is ascertained. Weather index based crop insurance (WBCI) is another avenue for transferring production risk to the insurer (Singh, 2010). It aims to mitigate the hardships of the insured farmer against the likelihood of financial loss on account of anticipated crop loss resulting from incidence of adverse conditions of weather parameters like rainfall, temperature, frost, humidity, etc., while crop insurance specifically indemnifies the cultivator against shortfall in crop yields.

The business of crop insurance amounted to ₹ 40.30 crore as premium and ₹ 76.52 crore (187.89%) as claimed amount and the number of insured farmers were 8.64 lakh in which number of claim passed farmers were 2.2 lakh (25.46%) in Rajasthan during *rabi* season 2008-09. During *kharif* season of 2009, ₹ 79.51 crore was premium and ₹ 1399.20 crore (1759.77%) was the claimed amount and the number of insured farmers was 25.92 lakh out of which claim-passed farmers were 21.03 lakh (81.13%) in Rajasthan.

The area covered under crop insurance scheme in *rabi* 2008-09 in the Udaipur district was 74596 hectares of 18668 beneficiary farmers. During this period, the premium was ₹ 39.76 lakh and the claimed amount was ₹ 94.28 lakh and the area covered under *kharif* 2009 in the Udaipur district was 56101.17 ha of 33452 beneficiary farmers. During this period, the premium paid was ₹ 105.63 lakh and the claimed amount was ₹ 360.41 lakh.

To examine the impact of crop insurance scheme in Rajasthan, a study was undertaken with the following objectives:

- To analyze the progress of crop insurance scheme in the Udaipur district of Rajasthan,
- To examine the impact of crop insurance scheme on the economics of crop production, and
- To assess farmers expectations and identify the problems faced by them related to crop insurance scheme.

Methodology

The Udaipur district of Rajasthan state was selected purposively, as it has remained on the forefront in deriving benefits of the crop insurance programme in the Rajasthan state. Salumber tehsil of the Udaipur district was purposively selected on the basis of highest area covered under crop insurance scheme, and the total number of farmers benefited from the crop insurance scheme during 2008-09. From three randomly selected villages from the tehsil, a random sample of 90 farmers was selected. These farmers were divided into four size- groups, viz. marginal (< 1ha), small (1-2 ha), medium (>2-4 ha) and large (> 4 ha) size groups comprising equal number of beneficiary farms and non-beneficiary farms. Maize crop of *kharif* season and wheat crop of *rabi* season were selected on the basis of highest area and number of farmers who insured their crops under crop insurance scheme in the district.

The primary data on input use and outputs of the selected crops and the opinions and suggestions from the selected farmers were collected through personal interviews for the year 2008-09. The secondary data on various aspects, viz. number of farmers covered, area covered, premium collected, sum insured and claim received were collected for the period *kharif* 2003 to *rabi* 2009-10 from the Office of Agriculture Insurance Company of India, Jaipur.

The tabular analysis was carried out and compound growth rates were estimated by fitting the exponential function. The Cobb-Douglas production function was used to estimate production elasticity of major inputs. The difference between the two sample means of input-use was tested by 't' test.

Results and Discussion

General Features of Sample Farmers

The total annual family income from different sources was ₹ 78485/- on beneficiary group, while it

was lower (₹ 42348/-) in case of non-beneficiary groups (Table 1). In both the groups of households, the major source of income was farm with other income sources being livestock and their products, services and wages,

Table 1. Personal and economic characteristics of beneficiary and non-beneficiary farms

Sources	(in ₹)	
	Beneficiary farms	Non-beneficiary farms
Farm income	63111 (80.41)	35533 (83.91)
Bullocks (hiring out)	955 (1.22)	195 (0.46)
Machinery (hiring out)	1953 (2.48)	000
Livestock and their products	8355 (10.65)	3177 (7.50)
Services and wages	2111 (2.69)	2488 (5.87)
Others sources	2000 (2.55)	955 (2.26)
Total income	78485 (100)	42348 (100)

Note: Figures within parentheses indicate per cent to total income.

bullocks and machineries. The share of area insured under the crop insurance programme was only 44.76 per cent of the total cropped area on the beneficiary farms (Table 2). The proportion of area under the insured crops, viz. maize and wheat, was less in large and medium farms than marginal and small farms, indicating high response of the marginal and small farmers to crop insurance scheme. The maize and wheat crops occupied more or less the same area on all the farm- size groups on beneficiary and non-beneficiary farms. On an average, wheat and maize crops occupied 21.98 per cent and 22.77 per cent area under crop insurance scheme to the total cropped area.

Adoption of Crop Insurance Scheme

The progress in adoption of crop insurance scheme in the Udaipur district is given in Table 3 in terms of average area (in ha), number of insured farmers, sum insured (in lakh ₹), premium paid (in lakh ₹) and claim passed number of farmer with claim amount (in lakh ₹) for both *kharif* and *rabi* season. The compound growth rates and linear growth rates in adoption of crop insurance scheme in the Udaipur district were calculated and have been reported in Table 3.

Table 2. Average area under maize and wheat crops on beneficiary and non-beneficiary farms: 2009-10

Crop	(Area in ha)				
	Marginal farms	Small farms	Medium farms	Large farms	All farms
Beneficiary farms					
Maize	0.75 (30.7)	1.35 (27.99)	1.87 (26.72)	3.07 (25.03)	1.71 (22.77)
Wheat	0.71 (29.1)	1.323 (27.25)	1.83 (26.15)	2.93 (23.85)	1.65 (21.98)
Total area*	1.46 (59.88)	2.68 (55.25)	3.71 (52.88)	6.00 (48.89)	3.37 (44.76)
Total cropped area	2.44 (100)	4.85 (100)	7.02 (100)	12.28 (100)	7.54(100)
Non-beneficiary farms					
Maize	0.57 (29.60)	0.96 (26.30)	1.36 (25.83)	2.41 (22.05)	1.29 (22.09)
Wheat	0.57 (29.81)	0.98 (26.85)	1.46 (27.68)	2.41 (22.03)	1.33 (22.61)
Total area	1.14 (59.42)	1.94 (53.16)	2.83 (53.52)	4.83 (44.02)	2.62 (44.71)
Total cropped area	1.93 (100)	3.65 (100)	5.29 (100)	10.97 (100)	5.88 (100)

Notes: The figures within the parentheses indicate percentages to total cropped area

* Area insured under wheat and maize crops.

Table 3. Season-wise progress in adoption of crop insurance scheme in the Udaipur district

Crop season	Area (ha)	No. of farmers insured	Sum insured (in lakh ₹)	Premium paid (in lakh ₹)	Claim-passed farmers		Claim- passed amount	
					Number	Percentage	Amount (in lakh ₹)	Percentage
<i>Kharif</i> 2003	342	79	5.97	00.15	0	0.00	0.00	00.00
<i>Kharif</i> 2004	50479	24822	11496.67	38.08	3107	12.51	6.90	18.14
<i>Kharif</i> 2005	42656	19609	1546.38	38.88	3664	18.68	28.90	74.33
<i>Kharif</i> 2006	55108	27338	2263.41	56.58	17590	64.34	574.45	1015.28
<i>Kharif</i> 2007	59604	32676	2506.81	63.31	1059	3.24	8.52	13.45
<i>Kharif</i> 2008	22192	12260	1128.34	28.79	952	7.76	23.46	81.48
<i>Kharif</i> 2009	56101	33452	4111.30	105.63	11670	34.88	360.41	341.20
Mean	40926	21462.29	3294.12	047.34	5434.57	20.20	143.23	220.55
C.G.R. (%)	64.0	85.13	73.60	101.37	-0.67	-0.41	53.25	35.46
L.G.R. (%)	11.13	14.65	-8.08	24.31	18.46	14.05	27.27	17.63
<i>Rabi</i> 2003-04	66	131	11.04	00.16	000	0.00	0.00	00.00
<i>Rabi</i> 2004-05	941	850	89.36	01.40	256	30.11	1.06	75.71
<i>Rabi</i> 2005-06	583	300	42.80	00.71	003	1.00	0.02	02.81
<i>Rabi</i> 2006-07	1782	951	223.68	03.42	049	5.15	0.46	13.45
<i>Rabi</i> 2007-08	14851	19572	2354.98	41.50	13227	67.58	310.19	747.44
<i>Rabi</i> 2008-09	74596	18668	2579.64	39.76	6276	33.61	94.28	237.12
<i>Rabi</i> 2009-10	25165	17033	2519.97	38.31	Data not available yet		Data not available yet	
Mean	16854.85	8215	1117.353	17.89	2830.14	19.63	58.00	153.79
C.G.R. (%)	190.02	143.85	162.52	164.13	338.85	55.78	543.99	119.60
L.G.R. (%)	11.03	45.91	47.36	46.28	031.88	13.34	30.56	24.78

Original Data Source: Agriculture Insurance Company of India, Regional Office, Jaipur, Rajasthan

CLR= Compound growth rate, LGR= Linear growth rate

The compound growth rates of area, number of insured farmers, sum insured, premium paid and claim-passed number of farmers with claim amount were found to be positive, except for the claim-passed number of farmers. The linear growth rates were also positive, except for the sum insured amount for both seasons in the Udaipur district.

On the whole, crop insurance scheme has performed well in terms of coverage of farmers and benefits extended to the farmers. But, it also signals towards the substantial increase in the amount of claim paid compared to the premium received, as this may create fund management problems to the government.

Impact of Crop Insurance Scheme on Output and Input-use on Farms

Comparative Analysis of Input-use

A comparative picture of input-use on both beneficiaries and non-beneficiaries across different

categories of farms has been shown in Table 4. A perusal of Table 4 revealed that on overall basis per hectare use of bullock labour, machine labour and human labour was lower in both maize and wheat crops for beneficiary than non-beneficiary farms. A comparison of bullock labour utilization across different farm-size groups among the beneficiary and non-beneficiary farms showed a higher difference in bullock labour utilization by small and medium farms for maize (100%) and wheat (104.3%), while in large-size group, it was negative in maize (-51.1%) and in wheat (-49.3%) crops. For machine labour utilization, a lower difference was observed in both maize and wheat crops. Thus, it could be inferred that extent of labour utilization was more on beneficiary farms and the proportion of increase was higher in small farm-size group than large-size group.

The use of inputs was found quite high on beneficiary than on non-beneficiary farms (Table 5). The overall proportionate change in the use of chemicals

Table 4. A comparative analysis of input utilization by insurance beneficiaries and non-beneficiaries

Crop	Input				
	Marginal farms	Small farms	Medium farms	Large farms	All farms
Human labour (human days /ha)					
Insurance beneficiaries					
Maize	29.12 (-6.03)	26.65 (14.57)	23.58 (6.02)	19.12 (-13.99)	23.15 (-1.19)
Wheat	34.18 (-4.79)	27.15 (1.07)	24.77 (1.43)	21.38 (-7.80)	24.96 (-1.18)
Non-beneficiaries					
Maize	30.99	23.26	22.24	22.23	23.43
Wheat	35.90	26.86	24.42	23.19	25.26
Bullock labour (hours /ha)					
Insurance beneficiaries					
Maize	0.00*	17.43 (167.74)	6.72 (279.66)	1.72 (-51.13)	6.46 (100)
Wheat	0.00	12.26 (133.00)	6.62 (518.44)	1.49 (-49.31)	5.21 (104.31)
Non-beneficiaries					
Maize	0.00	6.51	1.77	3.52	3.23
Wheat	0.00	5.26	1.13	2.94	2.55
Machine labour (hours /ha)					
Insurance beneficiaries					
Maize	7.01 (0.71)	4.25 (-15.00)	4.77 (-22.43)	5.23 (17.26)	5.73 (8.31)
Wheat	5.23 (6.30)	3.04 (-0.20)	3.34 (-22.68)	4.51 (35.02)	3.93 (1.55)
Non-beneficiaries					
Maize	6.96	5.00	6.15	4.46	5.29
Wheat	4.92	3.81	4.32	3.34	3.87

Note: Figures within the parentheses indicate per cent increase over corresponding non-beneficiary farm.

* Marginal farms do not use bullock labour.

was found highest in maize (187.2%), followed by wheat (107.1%) on beneficiary farms. On an average, the increase in use of fertilizers on beneficiary farm was found almost same (50.0%) in both maize and wheat. Seed rates remained more or less same for the maize crop and a slight difference (4.3%) was observed in wheat crop on beneficiary and non-beneficiary farms. The overall use of manures was higher by 25.0 per cent in maize by beneficiary farms. Thus, higher rates of change were observed for the inputs like chemical, fertilizers and manures on beneficiary farms as compared to non-beneficiary farms.

Test of Significance ('t'-test)

The difference in expenditure on machine labour between beneficiary and non-beneficiary farms was not statistically significant in the maize crops revealed from Table 6. It may be due to the fact that the machine labour is generally used for certain operations under both the situations. In the wheat crop, difference in expenditures on machine labour and irrigation was not found statistically significant because machine labour is required at primary stage and wheat crop is grown as *rabi* season crop hence irrigation requirement remains almost same in the same region on beneficiary

Table 5. Use of inputs in insured crops

Crop	Inputs				
	Marginal farms	Small farms	Medium farms	Large farms	All farms
Seed (kg/ha)					
Beneficiaries					
Maize	20.41 (4.13)	19.88 (-5.06)	19.23 (-2.18)	20.25 (4.05)	19.94 (0.15)
Wheat	95.26 (-6.08)	100.58 (4.68)	100.85 (3.39)	100.78 (16.94)	99.36 (4.26)
Non-beneficiaries					
Maize	19.60	20.94	19.66	19.46	19.91
Wheat	101.43	96.08	97.54	86.18	95.30
Manures (carts/ha)					
Beneficiaries					
Maize	10.25 (17.68)	10.18 (16.74)	11.76 (50.19)	9.93 (17.93)	10.53 (25.05)
Wheat*	0.00	0.00	0.00	0.00	0.00
Non-beneficiaries					
Maize	8.71	8.72	7.83	8.42	8.42
Wheat*	0.00	0.00	0.00	0.00	0.00
Fertilizers (kg /ha)					
Beneficiaries					
Maize	242.90 (32.21)	233.70 (50.57)	234.67 (62.53)	233.83 (62.65)	236.27 (50.70)
Wheat	275.14 (39.82)	282.5 (57.16)	271.33 (46.99)	271.36 (55.23)	275.08 (49.51)
Non-beneficiaries					
Maize	183.71	155.20	144.38	143.85	156.78
Wheat	196.78	179.75	184.58	174.81	183.98
Chemical (kg /ha)					
Beneficiaries					
Maize	3.00 (170.27)	2.94 (525.53)	2.78 (212.35)	2.11 (61.06)	2.70 (187.23)
Wheat	2.04 (56.92)	2.44 (264.17)	1.95 (209.52)	1.78 (28.05)	2.05 (107.07)
Non-beneficiaries					
Maize	1.11	0.47	0.89	1.31	0.94
Wheat	1.30	0.67	0.63	1.39	0.99

Note: Figures within the parentheses indicate per cent increase over non-beneficiary farms.

* No manures are applied to wheat crop.

and non-beneficiary farms. The difference in use of inputs like human labour, bullock labour, seeds, manures, fertilizers, chemicals and total inputs were found statistically significant for both the crops.

Cost of Cultivation on Beneficiary and Non-beneficiary Farms

The cost of cultivation of wheat and maize crops was worked out and is shown in Table 7. The average

Table 6. Results of 't'-test for mean difference of inputs used in maize and wheat crops on beneficiary and non-beneficiary farms

Inputs	Maize			Wheat		
	Mean difference of beneficiaries (₹ /ha)	Mean difference of non-beneficiaries (₹ /ha)	t-value	Mean difference of beneficiaries (₹ /ha)	Mean difference of non-beneficiaries (₹ /ha)	t-value
Human labour	4082	2946	2.84*	4117	3268	2.49*
Bullock labour	1115	397	2.15*	954	348	2.15*
Machine labour	3514	2646	1.70	2621	1939	1.45
Seeds	696	506	2.07	3619	2606	2.38*
Manures	3358	2161	2.74*			
Fertilizers	2715	1265	4.28*	3111	1663	4.13**
Irrigation				4913	4506	0.61
Chemicals	1233	385	7.19**	849	376	4.83*
Total	16716	10300	3.54**	20188	14710	2.49*

Note: ** and * indicate 1 per cent and 5 per cent levels of significance, respectively.

Table 7. Cost of cultivation on beneficiary and non-beneficiaries farms in maize and wheat crops

Cost	(₹/ha)				
	Marginal farms	Small farms	Medium farms	Large farms	All farms
Maize					
Beneficiary farms					
Variable	8760 (18.36)	9637 (37.45)	8927 (29.38)	8807 (17.93)	9124 (26.80)
Fixed	6923 (7.84)	5791 (5.96)	5435 (12.29)	5073 (28.65)	5805 (12.35)
Total	15684 (13.47)	15429 (23.65)	14363 (25.54)	13880 (21.63)	14839 (20.03)
Non-beneficiary farms					
Variable	7401	7011	6900	7467	7195
Fixed	6420	5465	4840	3943	5167
Total	13821	12477	11440	11410	12362
Wheat					
Beneficiary farms					
Variable	11014 (5.95)	11980 (23.10)	11280 (7.93)	11078 (17.05)	11338 (13.26)
Fixed	7421 (7.14)	5872 (3.28)	5546 (11.65)	5147 (24.24)	5997 (10.43)
Total	18436 (6.43)	17853 (15.69)	16827 (9.13)	16225 (19.24)	17335 (12.26)
Non-beneficiary farms					
Variable	10394	9732	10451	9464	10010
Fixed	6926	5686	4967	4143	5430
Total	17321	15418	15419	13607	15441

Note: Figures within the parentheses indicate per cent to total cost.

variable cost, average fixed cost and total cost were all found higher in both maize and wheat crops on beneficiary farms than non-beneficiary farms. The magnitude of difference in the cost was found higher in maize than wheat crop. This shows that the beneficiary farms had invested more on hired human labour, machine labour, manures, fertilizers, chemical, insurance premium, etc.

Yield and Return of Insured Crop on Beneficiary and Non-Beneficiaries Farms

As shown in Table 8, the overall per hectare yield of maize and wheat crops on beneficiary farms was higher by 10.74 per cent and 16.27 per cent in main

product and 65.88 per cent and 27.76 per cent in by-product. The overall, per hectare total returns were found higher by 20.14 per cent in maize and 18.12 per cent in wheat crops in case of beneficiary farms.

The returns over variable cost for both maize and wheat crops were higher on beneficiary than non-beneficiary farms. The positive returns over cost C_3 in wheat were observed on both beneficiary and non-beneficiary farm groups, i.e. profit of ₹ 21467/- and ₹ 16982/- per hectare, respectively.

Thus, a crop insurance programme was successful in extending help to the beneficiary farmers and minimizing their loss in crop production.

Table 8. Yield and return of the insured crop on beneficiary and non-beneficiary farms

Crop	Marginal farms	Small farms	Medium farms	Large farms	All farms
Main product (q/ha)					
Beneficiary farms					
Maize	22.82 (14.50)	20.14 (4.24)	18.15 (-1.99)	21.79 (27.50)	20.72 (10.74)
Wheat	31.75 (3.45)	30.50 (11.59)	31.40 (16.29)	30.64 (40.03)	31.07 (16.27)
Non-beneficiary farms					
Maize	19.93	19.32	18.52	17.09	18.71
Wheat	30.69	27.33	27.00	21.88	26.72
By-product (q/ha)					
Beneficiary farms					
Maize	71.25 (64.09)	76.00 (72.33)	70.66 (59.53)	68.96 (67.66)	71.71 (65.88)
Wheat	60.54 (9.97)	54.27 (25.33)	58.85 (28.60)	58.05 (54.22)	57.93 (27.76)
Non-beneficiary farms					
Maize	43.42	44.10	44.29	41.13	43.23
Wheat	55.05	43.30	45.76	37.64	46.43
Total value of output (₹/ha)					
Beneficiary farms					
Maize	27958 (22.96)	25375 (13.45)	23668 (10.21)	26480 (35.42)	25870 (20.14)
Wheat	43175 (2.65)	40987 (13.39)	42420 (20.93)	41028 (43.40)	41903 (18.12)
Non-beneficiary farms					
Maize	22737	22365	21474	19553	21532
Wheat	42056	36145	35076	28609	35472

Note: Figure within the parentheses indicate per cent increase over non-beneficiary farms.

Table 9. Opinion and suggestions of the beneficiary farmers on crop insurance scheme

Sl. No.	Particulars	Response N = 45
A	Opinion	
1.	Farmers can do agricultural operations better	34 (75.6)
2.	Farmers' economic condition improves	26 (57.8)
3.	Farmers can sustain safely in drought years	28 (62.2)
4.	Receipt of compensation in cash	39 (86.7)
5.	Inadequate compensation	35 (77.8)
6.	Farmers can sustain in the case of poor production	35 (77.8)
7.	Compensation is less compared to premium paid and losses	20 (44.4)
8.	Poor awareness about crop insurance scheme	33 (73.3)
9.	Decision about compensation is defective	30 (66.7)
10.	Do not get compensation in time	36 (80.0)
11.	Premium of crop insurance is high	30 (66.7)
12.	National agricultural insurance scheme (NAIS) is best	17 (37.8)
13.	Weather index based insurance scheme (WBCIS) is best	28 (62.2)
14.	A few crops are covered under crop insurance scheme	16 (35.6)
15.	Problem is faced in processing of insurance case at the village level	32 (71.1)
16.	Problem is faced in completion of formalities in the bank	33 (73.3)
B	Suggestions for improvement	
1.	Unit area may be individual or village level	29 (64.4)
2.	Timely payment of compensation should be ensured	40 (88.9)
3.	Base of compensation should be effect of weather and loss in production	41 (91.1)
4.	Crop insurance should not be compulsory	28 (62.2)
5.	Higher premium in case of <i>kharif</i> crops	29 (64.4)
6.	Weather stations should perform more efficiently and their number should be increased	26 (57.8)
7.	More crop cutting experiments should be conducted	26 (57.8)

Note: Figures within parentheses indicate per cent to total respondents.

Farmers' Expectations and their Problems Related to Crop Insurance Scheme

The opinions of the farmers on different aspects of crop insurance scheme and their suggestions for improvement in implementation of the scheme indicated that beneficiary farmers were able to use higher quantities of inputs for crop production (75.6%) and thereby could obtain higher yields and returns (57.6%), as shown in Table 9. Also, for them, the crop insurance scheme proved to be an effective solution to avoid bad effects of natural calamities (62.2%). Moreover, the majority of them demanded compensation in cash (86.9%) and in time (80.0%) and opined that compensation amount was inadequate (77.8%). More than three- fourths farmers (77.8%) opined that they could sustain though the production was poor, because

their crops were insured. Many farmers reported about the poor awareness of the crop insurance scheme. They also reported that premium of crop insurance was high (66.7%) as compared to losses (44.4%).

Most of the beneficiary farmers reported the weather based crop insurance scheme (WBCIS) to be better to national agriculture insurance scheme (NAIS) (37.8%). One-third of the farmers (35.6%) reported that only few crops were covered under crop insurance scheme. More than 70 per cent beneficiaries faced problems related to processing of crop insurance at the village level as well as formalities in the bank (73.3%).

The beneficiary farmers also highlighted several shortcomings in the crop insurance scheme. The

Table 10. Opinion and suggestions of non-beneficiary farmers on crop insurance scheme

Sl. No.	Particulars	Response N = 45
A	Reasons for not joining crop insurance scheme	
1.	Lack of proper information about crop insurance scheme	32 (71.1)
2.	No need of crop insurance	17 (37.8)
3.	Unit being block, it is not good	22 (48.9)
4.	The scheme is not attractive	16 (35.6)
5.	No interest in crop insurance scheme	24 (53.3)
6.	Premium of crop insurance is higher	23 (51.1)
7.	Other reasons	17 (37.8)
B	Suggestions for improvement of crop insurance scheme	
1.	Compensation should be paid in time	43 (95.6)
2.	Compensation is not sufficient as compared to the premium	39 (86.7)
3.	Compensation should be paid on the basis of village average crop productivity/weather data	23 (51.1)
4.	Crop insurance should not be attached with crop loan	24 (53.3)

Note: Figures within parentheses indicate per cent to total respondents.

majority of beneficiaries (64.4%) suggested that unit should be individual farmer or village level and they were not in favour of block level. About 90 per cent beneficiaries suggested that there should be timely payment of compensation amount and the base of fixing the compensation should be impact weather as well as loss in production. About 62.6 per cent of beneficiary farmers suggested that crop insurance scheme should not be compulsory for the borrowers. Beneficiaries were also of the opinion that the rate of premium was high in case of *kharif* season compared to *rabi* season. About 58 per cent beneficiary farmers suggested to establish more weather stations and improvement in their functioning. A majority of the beneficiaries suggested that there should be more number of crop cutting experiments.

Thus, the majority of farmers appreciated the benefits of crop insurance scheme and also offered suggestions for the removal of shortcomings in the scheme such as adequate payment of compensation well in time and based on the loss of crop production.

The opinion of the non-participating farmers was equally important in assessing shortcomings of the crop insurance scheme. A majority of such farmers (71.1%) did not participate due to lack of proper information about crop insurance scheme. One-third of the farmers opined that they were not in need of crop loan. About 48.88 per cent of non-beneficiary farmers reported that

the existing unit of block was not appropriate for compensation. For one third of sample farmers, crop insurance scheme was not attractive. Almost 51 per cent farmers reported that the premium of crop insurance was high in comparison to the compensation being paid.

The important suggestions made by almost all the non-beneficiary farmers were that compensation should be paid in time; amount of compensation should be sufficient and be paid on the basis of average productivity of the village. More than 50 per cent non-beneficiary farmers suggested that the crop insurance should not be attached with crop loan.

Conclusions and Suggestions

The study has found that farm income per family is higher on beneficiary farms than non-beneficiary farms. The progress in adoption of crop insurance scheme in Rajasthan has been found positive as evidenced through compound and linear growth rates. In the Udaipur district, the progress of crop insurance scheme was found positive except claim passed number of farmers (compound growth rate) and sum insured amount (linear growth rate). At overall level, the total area insured under the crop insurance programme has been only about 45 per cent of the total cropped area of the beneficiary farms. Use of inputs like human and bullock labour, seed, manures, fertilizers, pesticides, etc.

has been significantly higher on beneficiary than non-beneficiary farms. No significant difference has been observed in the use of machine labour and irrigation for both the selected crops. The beneficiary farmers have invested more on hired human, machine and bullock labour, seeds, manures, fertilizers, chemicals, etc. mainly because of guaranteed compensation from crop insurance scheme. Positive elasticity for area in maize and wheat crops in both the categories has indicated the scope of further use of this input to increase the production and gross income. The majority of beneficiary farmers have been found satisfied with crop insurance scheme; however, they have shown discontent towards delay in payment of claim, present basis of rainfall for fixing compensation and inadequate payment of compensation. A similar response for these shortcomings has been reported by the non-beneficiary group also.

The important suggestions emerged from the study are:

- Awareness generation about the crop insurance scheme in the state is necessary to extend its benefits to the large number of farmers.
- A comprehensive method should be evolved to identify the actual losses. This will help in reducing the burden of funds on the government.
- The insurance scheme should not be made compulsory for crop-loan borrowers.
- The network of compensation payment needs to be strengthened to avoid delay in payment.
- The rate of premium for various crops should be made affordable to farmers.
- The average productivity of the village should be the base for fixing the compensation.

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Received: December 2010; Accepted: February 2011