IMPACT OF NATIONAL AGRICULTURE INSURANCE SCHEME IN RISK MINIMIZATION

NAMDEV GOVIND PRASAD*, AWASTHI P.K., KHARE AJAY AND RAGHUWANSHI N.K.

Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (MP) 482004
*Corresponding Author: Email-gnamdev58@gmail.com

Abstract- Indian agriculture dependent on monsoon, which is always uncertain, it leads to operating risk in crops cultivation. Natural calamities may effect on the yield from agriculture sector. To cover the risk, which may occur in future, there, is need to some provision and crop insurance is only mechanism available to safeguard against production risk in agriculture. For fulfilling this need the Government of India has made experiments & efforts by introducing various schemes of crop insurance. Since the year 1999-2000, National Agricultural Insurance Scheme has been launched by National Agricultural Insurance Scheme Corporation of India. His research paper has made attempt to study the Impact of National Agriculture Insurance Scheme in risk minimization. The family type of sample respondents under different size group overall type of individual family occupied greater percentage than joint family in both the categories. Young farmers were 33.33% under beneficiary category, which is more than under non beneficiary category. Similarly, percentage of old respondents was higher (22.66%) under beneficiaries than non-beneficiaries (16%). The maximum difference in actual and expected yield was noted on large farms (580 Kg/ha) followed by medium farm (550 Kg/ha) for beneficiaries category. On the other hand, the lowest yield gap of 150 Kg/ha was recorded on medium farms followed by large farms for non-beneficiaries. Amongst non-beneficiaries 56 % farmers of medium size group adopted the technology at high level while moderate adoption was observed by 60 % farmers of large size group.
On an average the cost of cultivation of beneficiary farmer was ₹ 33191/- as compared to non-beneficiary farmers (₹ 28967/-). The maximum and minimum benefit cost ratio of 1.94 and 1.53 was noted for small and large farmers in beneficiaries. In case of non beneficiaries it was again highest for small size group (1.86) followed by medium (1.66) and lowest for large size group (1.34). The probit regression analysis that education and news are not so effective to create awareness about crop insurance schemes/products. Diversification index influenced the premium paid by the farmers negatively. On an average the cost of cultivation of beneficiary farmer was ₹ 33191/- as compared to non-beneficiary farmers (₹ 28967/-). Increase in cost of cultivation is due to additional expenditure on improved seed, fertilizer, irrigation, plant protection measures and premium. It is suggested that sincere effort be made by the extension personnel to motivate the farmers to adopt improved production technology to minimize the yield gap.

Keywords- Crop Insurance, Impact, Madhya Pradesh, Risk minimization and Uncertainty

Introduction

Agriculture is the backbone of Indian economy. From time immemorial, agriculture has occupied a pivotal position in India's economic development and it has been regarded as a major economic powerhouse that has a bearing on the whole economy. It has been realized that success of economic planning in India largely depends on the growth of agriculture sector.

In field of agriculture, especially in developing countries, the basic problem is the low productivity associated with high instability. The population growth in these countries has been exclusive laying greater stress on food supply with the consequent malnutrition, poor health, low productivity, chronic poverty and ultimately narrow outlook toward the development. During the past, the development efforts made by these countries have been mostly washed away by the population flood. This created the anxiety and the awareness to balance the equation between flood supply and population growth. Several studies worked out on crop insurance scheme [1-8] suggested that crop insurance is one of the endeavors which are gaining ground in the economic pursuits irrespective of the level of their scientific advancement and susceptibility either to manmade or to natural hazard. Risk and uncertainty are twin dangers, which hamper agricultural production and bring about instability in rural economy of the state. Inadequate and uneven rainfall, hail-storm, incidence of insect pest and diseases etc. are important factors, which cause considerable losses in agriculture. Farmer and nature are the opposite players in crop production. Raisen district of Madhya Pradesh is an important agricultural district of Narmada valley. Paddy, Wheat, gram, soybean and pigeon pea etc. their production level fluctuated widely due to these climatic changes, thus, farmer loose considerable amount of farm income.

In order to cope up these risks arising due to insured causes, In place of the old comprehensive crop insurance scheme (CCIS) which was implemented in rabi since 1985, Government of India introduced new insurance scheme called "National Agriculture Insurance Scheme from rabi 1999-2000 season. In this scheme all food crops (cereal, millets, pulses) , oilseed , horticultural/ commercial crops (banana, cotton) and live stock are covered.

Materials and Methods

The study is confined to Raisen district of Madhya Pradesh as it covered maximum claim settlement and investigator is also well acquainted with the area, which in turn could be helpful in the collection of relevant information. Raisen district comprises seven tehsils namely Bari, Bareli, Gairatganj, Goharganj, obadullaganj, Silwani, Udaipura. In order to keep the study within manageable limits two tehsils (Bareli and Udaipura) where maximum claim settlement were provided to the farmers have been selected purposively. Similarly, five village from each tehsil were selected for ultimate selection of respondents. For the selection of sample respondent from the selected villages, officials of the financing institutions of the selected tehsil were contacted. During primary survey of the financing institutions of the tehsil it was observed that the maximum cases under

NAIS scheme was covered by the State Bank of India and few cases were covered by other commercial banks for the Soybean in a selected tehsil. Therefore, it was decided to collect the primary information of the beneficiaries of the scheme from the State Bank of India only. For selection of beneficiaries of the scheme, a list of the beneficiaries selected of crop from selected village was obtained from the branch of state bank of India Bareli.

A total number of sample of 75 beneficiaries and 75 non-beneficiaries farmers having same size group i. e. small (up to 2 ha), medium (2.01 to 4.0 ha) and large (above 4 ha) were selected by simple random sampling method. From the selected villages , a list of NAIS beneficiaries were obtained from the SBI Bareli and further categorized into three size groups based on their size of holding *viz.* small(up to 2 ha.) , medium (2.01 to 4.0 ha.) and large (above 4.01 ha.). A sample of 25 beneficiaries from each size group was selected by simple random sampling technique. Equal number of non-beneficiaries from each size group was also selected from the selected villages to assess impact of NAIS.

The primary data regarding impact of NAIS on general information of the respondents, information on land ownership and its utilization, crop production practices for selected crop, actual yield and expected yield and problems and opinion on the scheme for further improvement. Technology adopted, area under crop productivity level, stability in income and production and problems faced by the farmers and implementing agencies etc. were obtained from the selected respondents with the help of pre-structural schedules by survey method.

Profitability level (Farm Income): Total cost, Gross Income, Net Income, Cost-benefit ratio, Break-even Analysis, Average, Percentage and Ranking Techniques were also be used to analyses the collected data.

The operational cost was worked out for the Soybean crop on sample beneficiary and non-beneficiary farmers. The operational cost were worked out considering expenditure on human labour, bullock labour, machine labour, seed, manure, fertilizers, insecticides, irrigation, interest on working capital (@ 10.5 % for half of the crop duration) and premium paid for the crop insurance.

Result and Discussion
Type of family:
[Table-1] depicts the family type of sample respondents under different size group. It is evident from the table that type of individual family is dominated in small farm in both the categories i.e. beneficiaries (20) and non-beneficiaries farmers (18). On the other hand majority of large farmers belong to joint family irrespective of the category (14 and 17 beneficiary and non beneficiary farmers respectively), while medium farmers under beneficiaries' category had the more individual families than joint families and under non beneficiary category number of joint families were more (16 and 15 respectively). Over all type of individual family occupied greater percentage than joint family in both the categories.

Table-1 *Type of family of sample farmers*

Category	Size	No. of Farmers	Type of Family		
			Individual	Joint	Total
Beneficiaries	Small	25	20	5	25
	Medium	25	16	9	25
	Large	25	11	14	25
	Overall	**75**	**47 (62.66)**	**28 (37.33)**	**75 (100)**
Non- Beneficiaries	Small	25	18	7	25
	Medium	25	10	15	25
	Large	25	8	17	25
	Overall	**75**	**45 (60)**	**30 (40)**	**75 (100)**

Members of Sample Farmers
[Table-2] gives an idea about the composition and strength of family for different size of holdings. The sample beneficiaries' respondent selected for study included the population of 473 comprising 75 families. Average family size ranged from 5.44 to 7.36 on different farm with an average of 6.30 in beneficiaries family. In non beneficiaries category highest family members were in large farm (6.96) whereas the lowest family members of 5.64 were recorded for small farm. Maximum number in case of large farmers is due to joint family system.

Table-2 *Total Family Members of Sample Farmers*

Category	Size Group	Total Family Members				Average Family Size
		M	F	C	Total	
Beneficiaries	Small	62 (45.58)	46 (33.82)	28 (20.58)	136 (100)	5.44
	Medium	72 (47.05)	48 (31.37)	33 (21.56)	153 (100)	6.12
	Large	85 (46.19)	57 (30.97)	42 (22.82)	184 (100)	7.36
	Overall	**219 (46.30)**	**151 (31.92)**	**103 (21.77)**	**473 (100)**	**6.30**
Non- Beneficiaries	Small	60 (42.55)	45 (31.91)	36 (25.53)	141 (100)	5.64
	Medium	77 (46.95)	53 (32.31)	34 (20.73)	164 (100)	6.65
	Large	84 (48.27)	60 (34.48)	30 (17.24)	174 (100)	6.96
	Overall	**221 (46.13)**	**158 (32.98)**	**100 (20.87)**	**479 (100)**	**6.38**

Age group:
The sample respondents were categorized in various age groups i.e. young (18-40), medium (40-60) and old (60 years and above) as shown in [Table-3]. A perusal of the table 5.18 indicates that majority of the farmers under both the categories belong to medium age group (44% and 52% in beneficiaries and non beneficiaries respectively). Young farmers were 33.33% under beneficiary category which is more than under non beneficiary category. Similarly, percentage of old respondents was higher (22.66%) under beneficiaries than non beneficiaries (16%).

Under beneficiaries category maximum young and old respondents (36 and 32 respectively) were observed for medium farm size while, respondents of medium age group were higher in small farm size followed by large farm size (52% and 48% respectively). On the other hand under non beneficiaries maximum young farmers were observed in under medium size holding (40%). Whereas, highest

Namdev Govind Prasad, Awasthi P.K., Khare Ajay and Raghuwanshi N. K.

number of farmers under medium age group was found in large farm size.

Caste Status:
Regarding caste, maximum sample respondents *viz;* 54.66 and 52 percent of beneficiary and non-beneficiary belonged to other backward caste (OBC) respectively. [Table-4]. The sample farmers belonged to scheduled caste (SC) accounted to be 20.0% for both beneficiary and non-beneficiary. In case of general caste, 25.33% and 28% were reported for beneficiary and non-beneficiary category respectively. OBC shared 56% amongst large holdings in beneficiary and non-beneficiary and small holding in beneficiary. The maximum number of farmers of general caste had the large holding (32% and 36% under beneficiary and non-beneficiary respectively). Maximum number of SC sample farmers was observed with small holding and minimum in large holding under non beneficiary.

Table-3 *Age group of sample farmer Unit in Number*

| Category | Size Group | Age (Year) | | | | | | Total |
		Young 18-40	%	Medium 40-60	%	Old >60	Age %	
Beneficiaries	Small	8	32	13	52	4	16	25
	Medium	9	36	8	32	8	32	25
	Large	8	32	12	48	5	20	25
	Overall	**25**	**33.33**	**33**	**44**	**17**	**22.66**	**75**
Non-Beneficiaries	Small	7	28	13	52	5	20	25
	Medium	10	40	11	44	4	16	25
	Large	7	28	15	60	3	12	25
	Overall	**24**	**32**	**39**	**52**	**12**	**16**	**75**

Table-4 *Caste status of sample farmer*

| Category | Size | Caste | | | | Total |
		General	OBC	SC	ST	
Beneficiaries	Small	5 (20)	14 (56)	6 (24)	0 (0)	25 (100)
	Medium	6 (24)	13 (52)	6 (24)	0 (0)	25 (100)
	Large	8 (32)	14 (56)	3 (12)	0 (0)	25 (100)
	Overall	**19 (25.33)**	**41 (54.66)**	**15 (20)**	**0 (0)**	**75 (100)**
Non- Beneficiaries	Small	4 (16)	12 (48)	9 (36)	0 (0)	25 (100)
	Medium	8 (32)	13 (52)	4 (16)	0 (0)	25 (100)
	Large	9 (36)	14 (56)	2 (8)	0 (0)	25 (100)
	Overall	**21 (28)**	**39 (52)**	**15 (20)**	**0 (0)**	**75 (100)**

Education Status:
It is important to know the education status of the respondents as the literacy help the farmers to get information regarding new technology and its adoption. It could be concluded from the [Table-5] that over all about one-third of selected farmers were illiterate irrespective of size of land holding in both the categories (29.33% and 36% under beneficiary and non beneficiary respectively). Among the literate respondent, majority was educated up to middle standard (26.66%) in case of beneficiary and up to primary (28%) in case of non beneficiary.

Membership:
Data regarding the membership of respondent farmers have been given in [Table-6] which clearly indicates that the maximum beneficiary farmers having medium land holding were involved in Panchayat and Cooperative (56%) followed by non beneficiary farmers having large farm size (44%).Whereas, the involvement of non beneficiary farmers of small farm size was noticed very low (20%).

Table-5 *Education status of sample farmers*

Category	Size	Illiterate	Primary	Middle	High	Total
Beneficiaries	Small	9 (36)	7 (28)	4 (16)	5 (20)	25 (100)
	Medium	7 (28)	6 (24)	8 (32)	4 (16)	25 (100)
	Large	6 (24)	6 (24)	8 (32)	5 (20)	25 (100)
	Overall	**22 (29.33)**	**19 (25)**	**20 (26.66)**	**14 (18.66)**	**75 (100)**
Non- Beneficiaries	Small	11 (44)	6 (24)	4 (16)	4 (16)	25 (100)
	Medium	9 (36)	7 (28)	4 (16)	5 (20)	25 (100)
	Large	7 (28)	8 (32)	6 (24)	4 (16)	25 (100)
	Overall	**27 (36)**	**21 (28)**	**14 (18.66)**	**13 (17.33)**	**75 (100)**

Table-6 *Membership of Sample Farmers*

Category	Size	No. of Farmers	Membership	
			Cooperative	Panchayat
Beneficiaries	Small	25	3	7
	Medium	25	5	9
	Large	25	4	6
	Overall	75 (100)	12 (16)	22 (29.33)
Non- Beneficiaries	Small	25	1	4
	Medium	25	3	6
	Large	25	2	9
	Overall	75 (100)	6 (8)	19 (25.33)

Occupation:

The data was also collected for the involvement of sample farmers in secondary occupation (Kirana shop, general store, Pan masala shop, tailoring etc.) other than agriculture. Table shows that 56.66% non beneficiary farmers were engaged in secondary occupation in addition to agriculture, while, in case of beneficiary farmers this percentage was 37.33%. The number of beneficiary and non beneficiary farmers engaged in secondary occupation with small farm size was comparatively higher than other ones.

Table-7 *Occupation of sample farmers*

Category	Size	No. of Farmers	Occupation Secondary
Beneficiaries	Small	25	11
	Medium	25	8
	Large	25	9
	Overall	75 (100)	28 (37.33)
Non- Beneficiaries	Small	25	16
	Medium	25	12
	Large	25	10
	Overall	75 (100)	38 (50.66)

Land use pattern:

Data for land use pattern of sample farm has been depicted in [Table-8], which indicates that average size of holding was 1.52, 3.33, and 7.64 hectare for small, medium and large farmers respectively with an average size holding of 4.23 hectare for beneficiaries. In non beneficiaries sample farms average farm size was 4.19 hectare which ranged from 1.60 to 7.46 hectare. The maximum cultivated area of 185.53 ha was recorded for large farmers under beneficiary group followed by large farmers under non beneficiary (179.58 ha). The cultivated area for all the categories ranged between 35.52 ha to 185.53 ha under beneficiaries and 37.14 ha to 179.58 ha under non beneficiaries farmers. In beneficiaries 11.7 ha land was recorded as current fallow which was less than recorded for non beneficiaries (13.89 ha). Out of total area 96.31 % and 95.58% was available for cultivation under beneficiaries and non beneficiaries' farmers respectively. The percentage of net sown area to cultivated area ranged from 87.55% to 97.73%, although differences in net sown area to cultivated area for various categories were marginal. The net irrigated area was in between 79.47 % to 87.69 % of net sown area in beneficiaries farm and 68.71 5 to 80.28 % in non beneficiaries farm.

Table-8 *Land use pattern of sample respondents (2011)*   **(Area in ha)**

Category	Size Group	Cultivated Area (in ha)	Current Fallow Land	Total Area	Avg. size land holding	Net sown area	% NSA to TCA	Irrigated area	% Irr. Area to NSA
Beneficiaries	Small	35.52	2.4	37.92	1.52	1.36	89.66	1.09	80.15
	Medium	84.37	3.85	88.22	3.53	3.25	92.10	2.85	87.69
	Large	185.53	5.45	190.98	7.64	7.16	93.73	5.69	79.47
	Overall	305.42	11.7	317.12	4.23	3.92	91.83	3.21	82.44
Non- Beneficiaries	Small	37.14	2.9	40.04	1.60	1.42	88.66	1.14	80.28
	Medium	83.85	4.1	87.95	3.52	3.26	92.67	2.24	68.71
	Large	179.58	6.89	186.47	7.46	6.53	87.55	4.8	73.51
	Overall	300.57	13.89	314.46	4.19	3.74	89.63	2.73	74.17

Cropping pattern followed by sample respondents:

The cropping pattern followed by sample farmers has been given in [Table-9]. It could be concluded from the table that farmers prefer kharif crops than rabi crops. During kharif the maximum area was occupied by soybean irrespective of the categories, whereas in rabi season wheat and gram were the main crops occupying almost equal area. A relatively higher cropping intensity was observed on medium farms of both the categories (195 %) followed by large farms.

Table-9 *Cropping pattern followed by sample respondents*

Category	Size Group	Kharif				Rabi				Grand Total	Cropping Intensity
		Soybean	Paddy	Other	Total	Wheat	Gram	Other	Total		
Beneficiaries	Small	0.9	0.3	0.16	1.36	0.62	0.4	0.2	1.22	2.58	189.71
	Medium	1.82	1.25	0.18	3.25	1.2	1.6	0.3	3.1	6.35	195.38
	Large	3.5	1.89	1.77	7.16	2.98	2.39	1.4	6.67	13.83	193.16
	Overall	2.07	1.15	0.70	3.92	1.60	1.46	0.63	3.66	7.59	192.75
Non- Beneficiaries	Small	0.89	0.31	0.22	1.42	0.42	0.59	0.18	1.19	2.61	183.80
	Medium	2.1	0.9	0.26	3.26	1.5	1.35	0.25	3.1	6.36	195.09
	Large	3.2	2.6	0.73	6.53	2.28	2.1	1.2	5.58	12.11	185.45
	Overall	2.06	1.27	0.40	3.74	1.40	1.35	0.54	3.29	7.03	188.11

Area under soybean of sample farmers:

It could be concluded from the data given in [Table-10] that almost 50 % cultivated area has been put under soybean crop by all the size groups under both the categories. It is due to the fact that farmers grow this crop for sale purpose. The

maximum area under soybean was noticed for small size groups under both the categories (59.21 % & 59.66 % for beneficiaries and non beneficiaries respectively). On large farms less area was found under soybean in both the categories.

Expected and actual yield of soybean crop:
It is evident from the data presented in [Table-11] that expected and actual yield of soybean on sample farms that expected yield levels were higher than the actual

yield received irrespective of size groups and categories on sample farms. The maximum difference in actual and expected yield was noted on large farms (580 Kg/ha) followed by medium farm (550 Kg/ha) for beneficiaries category. On the other hand the lowest yield gap of 150 Kg/ha was recorded on medium farms followed by large farms for non beneficiaries. The actual yield ranged from 1820 Kg/ha to 1950 Kg/ha, with highest on medium farms and lowest on large farms in beneficiaries. In case of non beneficiaries' actual yield ranged between 1450 Kg/ha to 1650 Kg/ha with highest on medium farms and lowest on small farms.

Table-10 *Area under soybean of sample farmers*

Category	Size Group	Net Sown Area	soybean	% area under soybean
Beneficiaries	Small	1.36	0.9	66.18
	Medium	3.25	1.82	56.00
	Large	7.16	3.5	48.88
	Overall	3.92	6.22	52.89
Non- Beneficiaries	Small	1.42	0.89	62.68
	Medium	3.26	2.1	64.42
	Large	6.53	3.2	49.00
	Overall	3.74	6.19	55.17

Table-11 *Expected and actual yield of soybean crop on size of sample farmers* **(Yield Kg/ha)**

Category	Size	Farmers		Yield		Difference between 1 & 2	Difference between 1 & 3
		Actual yield (1)	expected yield (2)	Max. (3)	Mini. (4)		
Beneficiaries	Small	1880	2400	2050	1480	520	170
	Medium	1950	2500	2110	1550	550	160
	Large	1820	2400	2050	1610	580	230
Non- Beneficiaries	Small	1450	1850	1750	1540	400	300
	Medium	1650	1800	1700	1640	150	50
	Large	1510	1700	1650	1475	190	140

Adoption index of technology on size of sample farmers in soybean crop:
Technological adoption index was calculated to examine the impact of NAIS in soybean crop as given in [Table-12]. A perusal of data presented in table indicates that at the overall level adoption index was up to the extent of 68.67 % and 66.33 % for beneficiaries and non beneficiary's farmers respectively suggesting marginal difference in the adoption of recommended improved technology. It is found that

60 % small and large farmers adopted the technology at high level whereas, 60 % farmers of medium size group adopted the technology at moderate level in case of beneficiaries. Amongst non beneficiaries 56 % farmers of medium size group adopted the technology at high level while moderate adoption was observed by 60 % farmers of large size group. None of the farmers were reported for adoption of technology at low rate.

Table-12 *Adoption index of technology on size of sample farmers in soybean crop*
(Unit: Number)

Category	Size Group	Low (Up to 33%)	Moderate (33 to 66 %)	High (Above 66 %)	Adoption index (%)
Beneficiaries	Small	0	10 (40)	15 (60)	69
	Medium	0	15 (60)	10 (40)	66
	Large	0	10 (40)	15 (60)	71
	Overall	0	35 (46.67)	40 (53.43)	68.67
Non- Beneficiaries	Small	0	13 (52)	12 (48)	68
	Medium	0	11 (44)	14 (56)	65
	Large	0	15 (60)	10 (40)	66
	Overall	0	39 (52)	36 (48)	66.33

*Figure within parenthesis indicate percentage to total farmers selected under respective group

Cost structure of soybean production on sample farmers:
Cost structure of soybean production of the sample respondents has been depicted in [Table-13]. It is obvious that increase in production involves some additional cost either in the form of input or in the form of cultural operation. Efficient utilization of resources also enhances the productivity. Thus, adoption of improved technology increases the cost of production up to some extent. It is clear from the table that cost of cultivation has increased considerably in all group sizes of beneficiary farmers. On an average the cost of cultivation of beneficiary farmer was ₹ 33191/- as compared to non beneficiary farmers (₹ 28967/-). Increase in cost of cultivation is due to additional expenditure on improved seed,

fertilizer, irrigation, plant protection measures and premium.

Net income and income stabilization due to NAIS from Soybean production on size of sample:
[Table-14] suggests that overall 3.4 qt more yield was found for beneficiary's farmer than non beneficiaries farmers. The maximum yield of 19.5 q and 16.0 q was noted under medium size group of beneficiaries and non beneficiaries' farmers respectively. Similarly, maximum gross income was also found for medium size holding followed by small size holding under both the categories. An increase was observed for total cost with increase in land holding irrespective of

the category. Overall more cost of ₹ 3667/- was noticed for beneficiary farmers as compared to non beneficiaries. It is obvious from the table that net income decreased with increase in size of holding in both beneficiaries and non-beneficiaries categories. The maximum net income of ₹ 26842/- was reported for small size holding under beneficiaries. On the other hand the lowest net income of ₹ 11100/- was noted for large size holding under non beneficiaries. Likewise

benefit cost ratio also exhibited the same trend as of net income. The maximum and minimum benefit cost ratio of 1.94 and 1.53 was noted for small and large farmers in beneficiaries. In case of non beneficiaries it was again highest for small size group (1.86) followed by medium (1.66) and lowest for large size group (1.34).

Table-13 *Total cost structure of soybean production on sample farmers*

(₹ /ha)

Particulars	Beneficiaries				Non-Beneficiaries			
	small	medium	large	average	small	medium	large	average
total operational cost	22000	25500	26500	24667	18600	21500	23500	21200
fixed cost	7000	7700	9200	7967	6900	7500	8900	7767
total cost	29000	33200	35700	32633	25500	29000	32400	28967
premium	558	558	558	558	0	0	0	0
total cost+ premium	29558	33758	36258	33191	25500	29000	32400	28967

Table-14 *Net income and income stabilization due to NAIS from soybean production on size of sample*

Particulars	beneficiaries (1)				non beneficiaries (2)				difference between 1&2			
	Small	Medium	Large	Overall	Small	Medium	Large	Overall	Small	Medium	Large	Overall
Yield(qt)	14.8	15	14.2	14.67	12.6	12.9	11.3	12.27	2.2	2.1	2.9	2.4
Price/qt	3000	3000	3000	3000.00	3000	3000	3000	3000.00	0	0	0	0
Gross income	44400	45000	42600	44000.00	37800	38700	33900	36800.00	6600	6300	8700	7200
Total cost	29000	33200	35700	32633.33	25500	29000	32400	28966.67	3500	4200	3300	3667
Net income									0	0	0	0
I.Over-operational cost	22400	19500	16100	19333.33	19200	17200	10400	15600.00	3200	2300	5700	3733
II. Total cost	15400	11800	6900	11366.67	12300	9700	1500	7833.33	3100	2100	5400	3533
III. Total cost + premium	14842	11242	6342	10808.67	12300	9700	1500	7833.33	2542	1542	4842	2975
Net income	14842	11242	6342	10809.00	12300	9700	1500	7833.33	2542	1542	4842	2976
Benefited cost ratio	1.53	1.36	1.19	1.35	1.48	1.33	1.05	1.29	0.01	0.06	0.2	0.06

Farmer's awareness about crop insurance scheme:

Probit regression was performed to identify the factors, which affect awareness of farmers about crop insurance scheme. Coefficient estimates of the probit model were presented in [Table-15]. Analysis indicates that social participation and training to the farmers were significantly affects the farmer's awareness about crop insurance scheme/product. Thus social participation of farmers in different meetings of self help groups, co-operative credit society and participation in different training programmes increased the chances of farmer's awareness about the crop insurance scheme. Therefore, farmers who participated in different social activities along with training are more aware about different crop insurance scheme or products than those who do not have interest in different social activities. Although farming experience of the farmer does not affect significantly to the farmers awareness but its negative sign in coefficient estimates indicates that more experienced farmer do not have awareness about this scheme. It is also inferred from the probit regression analysis that education and news are not so effective to create awareness about crop insurance scheme/product.

Table-15 *Estimate of probit regression model of farmers awareness about crop insurance*

Dependent variable: Awareness   Number of Observations: 150

Variable	Coefficient of estimates	P value
intercept	-1.0992	0.1014
education	0.152	0.3502
exp	-0.0062	0.82
soc participation	0.4601	0.083*
news	0.3094	0.3671
training	0.831	0.0202**
Log likelihood function	-99.4	

* And ** stars indicates 10 % and 5 % significant level respectively

Tobit regression on factors influencing the premium paid:

The Tobit regression analysis was performed to know the factors, which affect the premium paid by the farmers. Coefficient estimates for different factors are given in table 5.31. Regression analysis indicates that gross cropped area, farmer's

annual income from agriculture, number of earning members in the family, and affordability of farmers to pay premium were found to be significantly influencing the total premium paid by the farmers. Diversification index influenced the premium paid by the farmers negatively.

Table-16 *Result of Tobit Regression on factors influencing the premium paid*
Dependent variable: total premium paid   Number of Observations: 75

Variable	Coefficient of estimates	P value
intercept	-132.20	0.4365
FSIZE	-100.42	0.7626
GCA	149.43	0.006*
IRRN	-3.69	0.1551
AGINCOME	11.13	0.0212**
OINCOME	3.02	0.649
RISK	-49.43	0.7583
CREDIT	-43.32	0.8596
OWN	-168.09	0.2649
EARNMEMB	195.41	0.0156**
SATISFN	176.22	0.2432
AFFORD	181.30	0.028**
D-INDEX	-529.32	0.008*
SIGMA	614.60	<.0001

* And ** stars indicates 10 % and 5 % significant level respectively

Conflict of Interest: None declared

References

[1] Abbaspour (1996) *World Agricultural Economics And Rural Society Abstracts*, 38 (8), 486.

[2] Awasthi P.K., Atkare P. and Shrivastava A. (1987) *Agricultural Situation in India*, 42 (7), 611-614.

[3] Barry K.G., Vandeveer M.L. and Deal J.L. (2004) *American Journal of Agricultural Economics*, 86 (4), 1058-1077.

[4] Handrakanth C. and Rebello N.S.P., (1980) *Financing Agriculture*, 4, 25-48.

[5]   Dhar Hatai Lakshmi (2012) *Journal of Global Communication,* 5(2), pp.181-185.

[6]   Khonarkar M.R. (1995) *Thesis Abstract*, 21, 8.

[7]   Mani K., Chandrasekaran M. and Selvanayaki S. (2012) *Agricultural Economics Research Review*, 25(2), p 279.

[8]   Mahajan S.S. and Bobade Amol H. (2012) *BUDDHIK*, 3, 1-15.