

**RESEARCH ARTICLE :**

# Impact of national innovations on climate resilient agriculture (NICRA) project on beneficiaries

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**SUMMARY :** The present study, impact of national innovations on climate resilient agriculture (NICRA) project on beneficiaries, was conducted in Takali (bk.) village of Nandgaon (Kh.) taluka of Amravati district with sample size of 80 beneficiaries. The data was collected by personal interview method with the help of structured interview schedule. The findings of the study revealed that, the majority 36.25 per cent of beneficiaries were having high school level of education (Soni *et al.*, 2012), large proportion 43.75 per cent of the beneficiaries were possessed small size land holding 1.01 to 2.0 ha (Bhandari, 2014), 65 per cent beneficiaries had medium farming experience between 14 to 35 years, majority 90.00 per cent were having medium level of family income upto Rs. 1/- to Rs. 2,69,666/- (Soni *et al.*, 2012). Large proportion of beneficiaries 47.50 per cent had medium social participation (Bhandari, 2014), majority 62.50 per cent medium extension contact, large beneficiaries 52.50 per cent used medium sources of information, majority 83.75 per cent beneficiaries had medium risk orientation and 52.50 per cent beneficiaries had medium knowledge about NICRA. As regard the dependent variable, majority 85.00 per cent of the beneficiaries had medium impact of NICRA (Pise *et al.*, 2018). From correlation analysis the level of significance was tested at 0.01 and 0.05 level of significance and revealed that, all variables *i.e.* education, land holding, farming experience, annual income, social participation, extension contact, sources of information, risk orientation and knowledge about NICRA, were significant at 0.01 level of significance and no variable had shown non-significant relationship with impact.

**KEY WORDS :**

NICRA,  
Climate change,  
Impact

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## **BACKGROUND AND OBJECTIVES**

### **Impact of climate change on agriculture:**

The united nations framework convention on climate change (UNFCCC) described change of climate to be attributed directly or indirectly to human activities that alters the composition of global atmosphere and which in addition to natural climate variability

observed over comparable time period. The change may be in the form of magnitude or variability of a single or multiple weather variables or weather phenomena. Climate and agriculture are interrelated processes; both take place on a global scale. Global warming is projected to have significant impact on conditions of affecting agriculture, including temperature, precipitation and glacial run-off.

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Rising carbon dioxide levels would also have effects both detrimental and beneficial, on crop yields. The overall effect of climate change on agriculture will depend on the balance of these effects. India is a predominantly agriculture-oriented economy, as 52 per cent of the population directly depends on agriculture either as farmers or agricultural labourers and their concentration is higher at 76 per cent in the villages. Variation in climate will have a direct impact on the majority of the livelihood of the people. Food production in India is sensitive to climate change like variations in temperature and monsoon rainfall. Rise in temperature has a direct impact on the *Rabi* crop and every 10°C rise will reduce wheat production by 4 to 5 Million Tones. Every small change in temperature and rainfall has significant effect on the quality and quantity of fruits, vegetables, tea, coffee, basmati rice and aromatic and medicinal plants.

#### National innovations on climate resilient agriculture (NICRA):

National innovations on climate resilient agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in February, 2011 with an outlay of Rs. 650 crores during XI plan. The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management. The project consists of four components *viz.*, strategic research, technology demonstration, capacity building and sponsored/competitive grants. The project was launched on 2<sup>nd</sup> February 2011. In present study, we studied the Impact and relationship of NICRA project on profile of beneficiaries and constraints faced by them.

#### RESOURCES AND METHODS

Amravati district was purposively selected for the study. The beneficiaries of NICRA from Takali (Bk.)

Village are interviewed personally. Total 80 beneficiaries were selected for the research work. The interview schedule was constructed by formulating relevant questions in accordance with objectives of the study. The schedule include questions pertaining to education, land holding, farming experience, annual income, social participation, extension contact, sources of information, risk orientation and knowledge about NICRA. The information was collected with the help of personal interview method and responses were considered for the purpose of present study. Mean, SD and co-efficient of correlation methods were used for the analysis of the data.

#### OBSERVATIONS AND ANALYSIS

It was observed from the Table 1 that, (85.00 %) of beneficiaries of NICRA had medium level of overall impact of NICRA followed by (13.75 %) had high and (1.25 %) had low level of overall impact of NICRA on the beneficiaries of NICRA. These findings are similar with the findings of Ahire and Kapse (2017).

#### Relational analysis:

It can be observed from Table 2 that, all the independent variables *viz.*, education, land holding, farming experience, annual income, social participation, extension contact, sources of information, risk orientation and knowledge about NICRA were positively and significantly correlated with impact of NICRA at 0.01 level of probability. The similar results were reported by, Pise *et al.* (2018).

It means that, project implemented in this village is doing very well and changes occurred by implementing this project are positive and necessary.

#### Constraints:

It can be observed from Table 3 that, majority 56.25 per cent of the beneficiaries reported that, lack of availability of implements for intercropping. 51.25 per

Sr. No.	Category	Beneficiaries	
		Frequency	Percentage
1.	Low ( Upto 7937)	01	1.25
2.	Medium (7938 to 64124)	68	85.00
3.	High (Above 64124 )	11	13.75
	Total	80	100.00

cent of the beneficiaries reported that, lack of non-availability of skilled labour for intercropping system. 65.00 per cent of the beneficiaries reported that, lack of availability of seeds in local market. 55.00 per cent of the beneficiaries reported that, cost of preparation of farm pond is high and 62.50 per cent of the beneficiaries

reported that, lack of provision of poly sheet in the farm pond as their major constraints. 63.75 per cent of the beneficiaries reported that, construction of well recharge is costly, 40.00 per cent of the beneficiaries reported that, maintenance is high due to siltation and 30.00 per cent of the beneficiaries reported that, lack of knowledge about

**Table 2 : Relationship between profile of beneficiaries with impact of NICRA on beneficiaries**

Sr. No.	Independent variables	'r' values
1.	Education	0.2967**
2.	Land holding	0.5524**
3.	Farming experience	0.3248**
4.	Annual income	0.6186**
5.	Social participation	0.3739**
6.	Extension contact	0.3155**
7.	Source of information	0.3602**
8.	Risk orientation	0.3245**
9.	Knowledge about NICRA	0.3042**

\*\* indicate significance of value at P=0.01

**Table 3: Constraints faced by beneficiaries under NICRA project**

Sr. No.	Constraints	F	%
<b>Inter cropping system (Soybean + Tur)</b>			
1	Lack of knowledge about implements used in inter crop	27	33.75
2.	Lack of availability of implements for inter crop	45	56.25
3.	Non-availability of skilled labour for inter cropping system	41	51.25
4.	Non-availability of short duration variety of pigeonpea	25	31.25
<b>Cultivation of AKW-1071 variety of wheat</b>			
5.	Lack of availability of seed in local market	52	65.00
6.	Poor quality of chapatti making	18	22.5
<b>Farm pond</b>			
7.	Cost of preparation of farm pond is high	44	55.00
8.	Lack of technical knowledge about selection of sites for farm pond	39	48.75
9.	Lack of provision of poly sheet in the farm pond	50	62.50
<b>Recharging of well</b>			
10.	Construction of well recharge is costly	51	63.75
11.	Lack of knowledge about selection of sites	24	30.00
12.	Maintenance is high due to high siltation	32	40.00
<b>Crop change – orange cultivation</b>			
13.	Lack of knowledge about cultivation practices	57	71.25
14.	High initial cost required for drip	43	53.75
15.	Highly critical crop for pest and diseases	37	46.25
<b>Custom hiring centre</b>			
16.	Due to limited number of implements could not get in time due to high demand	56	70.00
17.	Lack of well feelings among farmers to maintain the custom hiring center	34	42.50

selection of sites. 71.25 per cent of the beneficiaries reported that, lack of knowledge about cultivation practices and 53.75 per cent of the beneficiaries reported that, high initial cost required for drip as their major constraints. 70.00 per cent of the beneficiaries reported that, due to limited number of implements required could not get in time.

### Conclusion :

From above observation it is concluded that, majority of the beneficiaries had medium impact of NICRA and very low per cent of beneficiaries had low impact of NICRA. It can conclude that, because of implementation of NICRA project changes like education facility, social participation, expenditure pattern, housing pattern, increased employment, occupation, material possession, increased annual saving, increased land possession, changes in cropping pattern, increased income, increase in productivity of beneficiaries occurred.

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