

**RESEARCH ARTICLE :**

# Effectiveness of NAIP in augmenting the farmers' adoption regarding irrigation water management interventions for wheat cultivation in Banswara district

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**SUMMARY :** The present research paper is based on the formative evaluation of NAIP with special reference to irrigation water management in wheat cultivation in Banswara district of Southern Rajasthan. The consortia project of NAIP was executed disadvantaged NAIP in four tribal districts namely, Udaipur, Banswara, Dungarpur and Sirohi. Banswara district was selected for the investigation based on maximum households covered under the project. In Banswara district there are four Panchayat Samities viz., Talwara, Ghatol, Garhi and Kushalgarh. Talwara Panchayat Samiti was selected for the study. One Panchayat Samiti viz., Talwara was selected for the study. In Talwara Panchayat Samiti four Gram Panchayat viz., Talwara, Ghatol, Garhi and Kushalgarh were taken as such, for the present study and considered as beneficiaries. For the comparison between beneficiaries and non-beneficiaries farmers four Gram Panchayat were considered for the sample study. This sample of 19 beneficiaries each from every beneficiary village and similar size of sample of non-beneficiaries (19) from each of the non-beneficiary villages constituted total size of sample *i.e.* 152. Alarming findings indicated that almost similar number of beneficiaries (Bs) and non-beneficiaries (NBs) fell under higher level of adoption about irrigation water management (IWM) in wheat. Adverse impact of NAIP with regards to IWM interventions introduced was noticed since, beneficiaries respondents 50 (65.79 %) expressed slightly higher adoption of IWM as compared with those of non-beneficiaries 42 (55.27 %). Data also show that 16 (21.06 %) beneficiaries and 30 (39.47 %) non-beneficiaries belonged to medium level of adoption of IWM. Furthermore, that is booting, tillering and milking stages at first priority (MPS 85.65 %) followed by irrigation in crop at CRI stage (tillering and flowering stages) ranked as second (MPS 82.15). At the same time it was also observed that out of seven intervention of IWM, the beneficiaries farmers visualized comparatively more adoption of IWM sub intervention viz., irrigation after 21 days of sowing, irrigation at CRI and flowering stages and providing at least 450-650mm irrigation water in wheat crop.

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## **BACKGROUND AND OBJECTIVES**

The prestigious and ambitious agricultural research project, National Agricultural Innovation Project (NAIP), which focuses on innovations in agricultural technology, was launched in the country in July, 2006. It has facilitated, accelerated and sustainable transformation of the Indian agriculture, so it supports poverty alleviation and income generation.

The total budget of NAIP was of US \$ 250 million. The World Bank has funded US \$ 200 million as credit, mostly interest free and a part with negligible interest, and US \$ 50 million was borne by the Government of India. The recently concluded National Agricultural Technology Project (NATP) led by the ICAR, aimed to implement the shared understanding of the Government of India and the World Bank on technology-led - pro - poor growth, and it facilitated the public sector reform process for accelerating the flow of agricultural technologies. A key lesson from the NATP was that deliberate investments in partnership building and shared governance are required to speed up technology adaptation and dissemination. Various Agricultural Universities in India have been provided with sufficient fund by the ICAR to implement different programmes for increasing income and nutrition through adoption of economically viable integrated farming systems. Under the component 3 of NAIP, Maharana Pratap University of Agriculture and Technology, Udaipur was also sanctioned a consortia project entitled "Livelihood and nutritional security of tribal dominated areas through integrated farming system and technology modules". Good efforts under the project were made to replace local seeds of wheat with high yielding varieties, along with important interventions, such as integrated nutrient management (INM), integrated pest management (IPM) and integrated water management (IWM). No evaluation study in the operational area of the project so far has been conducted regarding the response of farmers about IWM interventions in wheat under NAIP. With this background, present study was conducted with the objective "effectiveness of NAIP in augmenting the farmers' adoption regarding irrigation water management interventions for wheat cultivation in Banswara district".

## **RESOURCES AND METHODS**

The present investigation was conducted in Talwara

Panchayat Samiti of Banswara district of southern Rajasthan, with the specific objective to evaluate the NAIP with special reference to adoption of farmers about IWM interventions in wheat cultivation. It was performed based on comparison of beneficiaries with those of non-beneficiaries with regard to their adoption of IWM in wheat cultivation.

Out of total 52 Gram Panchayat under Talwara Panchayat Samiti, four Gram Panchayats *viz.*, Masotiya, Devlia, Sageta and Jhalo ka Gada (Nokla) were covered under NAIP. Therefore, as such, these four Gram Panchayats were included in the present investigation.

Two sets of villages were selected for the study. These were (a) beneficiary villages and (b) non-beneficiary villages. Headquarters (villages) of Gram Panchayat were treated to be sample villages for the study. Hence, Masotiya, Devlia, Sageta and Jhalo ka Gada (Nokla) were the villages where from required sample size of respondents (beneficiaries) was drawn. Since the adoption of IWM interventions in wheat crop had to be compared between beneficiaries and non – beneficiaries of NAIP, a controlled sample of villages was also drawn. Therefore, four villages nearer to the beneficiary villages were selected; where from non – beneficiary farmers were interviewed. Seventy six beneficiaries and non-beneficiaries (19 from each village) were selected for the present study. Total size of sample was of 152 respondents, combining beneficiaries and non – beneficiaries. Relevant data were collected from the selected respondents with the help of self constructed interview schedule. Face -to -face interview technique was employed for collecting the data from the respondents. Thereafter, data were analyzed and results were interpreted in the light of the objective the of study.

## **OBSERVATIONS AND ANALYSIS**

To determine the level of adoption of IWM, the respondents were classified into three groups, *viz.*, high, medium and low based on MPS.

Table 1 shows that majority of the respondents 50 (65.79 %) expressed slightly higher adoption of IWM as compared with those of non- beneficiaries 42 (55.27 %). Data also show that 16 (21.05 %) beneficiaries and 30 (39.47 %) non-beneficiaries belonged to medium level of adoption of IWM. These findings are contradictory with the findings of Kumawat (2008); Nandawana (2004) and Vashishtha (2007).

**Table 1 : Distribution of the respondents according to their level of adoption regarding irrigation water management practices of wheat****(n =152)**

Sr. No.	Adoption level	Beneficiaries (n <sub>1</sub> )	Non-beneficiaries (n <sub>2</sub> )	Total
1.	Low (MPS upto 33)	10 (13.16)	4 (5.26)	14 (9.21)
2.	Medium (MPS 34-66)	16 (21.05)	30 (39.47)	46 (30.26)
3.	High (MPS above 66)	50 (65.79)	42 (55.27)	92 (60.53)
	Total	76 (100)	76 (100)	152 (100)

MPS=Mean per cent score, figures within the parentheses are percentage to the total,  $n=n_1 + n_2$ ,  $n_1$ =Size of sample for beneficiaries,  $n_2$ = Size of sample for non- beneficiaries

**Table 2 : Aspects wise adoption of the respondents regarding IWM practices of wheat****(n =152)**

Sr. No.	Aspect	Beneficiaries (n <sub>1</sub> )		Non-beneficiaries (n <sub>2</sub> )		Total	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	5-6 irrigations for HYVs	80.20	IV	81.40	III	80.80	IV
2.	Irrigation after 21days of sowing, at CRI stage	81.30	III	70.50	VI	75.90	V
3.	Irrigating the field CRI and flowering stages if two irrigations accessed	77.20	VI	69.40	VII	73.30	VI
4.	Irrigating the field at CRI, tillering and flowering stages if only three irrigations are available	79.00	V	85.30	II	82.15	II
5.	Irrigation of crop at CRI, booting, tillering, and milking stages, if it is to be irrigated four times	85.10	II	86.20	I	85.65	I
6.	Providing at least 450-650mm irrigation water	87.00	I	75.40	IV	81.20	III
7.	Sprinkler drip as scientific method of irrigation	70.10	VII	72.30	V	71.20	VII

MPS= Mean per cent score,  $n=n_1 + n_2$ ,  $n_1$ =Size of sample for beneficiaries,  $n_2$ = Size of sample for non- beneficiaries

It is concluded that the level of adoption about IWM interventions of wheat were discouraging because non-beneficiaries were also observed possessing considerable level of adoption of IWM interventions alongside the beneficiaries.

In line with the results, it is recommended that project's personnel should rethink in the matter, and also see that what should be done in this direction for boosting the adoption level of IWM interventions in wheat among beneficiaries and what the results of the study speak. More attention and sincere efforts are needed with the beneficiaries for augmenting the adoption level of IWM.

It is shocking for every citizen of India and especially for agricultural scientist that having being starving for irrigation water management and integrated watershed management even not a single hectare of land has been added under irrigated area in last 10 years. These are the ideas expressed during the projections made in the parliament for next 12<sup>th</sup> five year plan.

Therefore, IWM is a crucial area in agriculture to be address. IWM is an important intervention included under, NAIP and as such has been incorporated under investigation.

The results of IWM have been incorporated in Table 2. It was observed that beneficiaries (Bs) as well as non-beneficiaries (NBs) farmers adopted the recommendation of irrigation at different critical stages that is booting, tillering and milking stages at first priority (MPS 85.65 %) followed by irrigation in crop at CRI stage ( tillering and flowering stages) ranked as second (MPS 82.15). At the same time it was also observed that out of seven intervention of IWM, the beneficiaries farmers visualized comparatively more adoption of IWM sub intervention *viz.*, irrigation after 21 days of sowing, irrigation at CRI and flowering stages and providing at least 450-650 mm irrigation water in wheat crop.

It is concluded that IWM cannot be referred as positive impact of NAIP. It is so because NBs also expressed noticeable adoption about these interventions alongside the Bs. It may be due the reason that besides NAIP, other agencies were working in the study area and both the farmers benefited with regarded to IWM, but Bs is slightly ahead. Looking to the findings of IWM intervention, it is recommended that the project needs to exert more for boosting the adoption of IWM interventions wherever it is discouraging.

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## REFERENCES

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**Kumawat, S.R.** (2008). Impact of frontline demonstration on adoption of improved castor production technology. *Rajasthan J. Extn. Edu.*, **16** : 143-147.

**Nandawana, S.K.** (2004). Problems and prospects of soyabean [*Glycine max* (L.)] cultivation technology in Chittorgarh district (Rajasthan). M.Sc. (Ag.) Thesis. Maharana Pratap University of Agriculture and Technology, Udaipur, RAJASTHAN (INDIA).

**Vashishtha, U.** (2007). Farmers' response towards pigeonpea (*Cajanus cajan* L.) cultivation in tribal area of Udaipur district of Rajasthan. M. Sc. (Ag.) Thesis. Maharana Pratap University of Agriculture and Technology, Udaipur, RAJASTHAN (INDIA).

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