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Constraints faced by the stakeholders and suggestion given by them to overcome constraints in agricultural innovation system

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Abstract
Generating and applying new knowledge is important for all enterprises, including farming. New knowledge enhances the productivity, competitiveness, and sustainability in farming, but it is not widely adopted. In this situation, one has to search new ways and means. Limitations of NARS and AKIS have provided the reasons for Agricultural Innovation System (AIS) in India. AIS help to understand how the process of agricultural innovation takes place and how its relevance and quality can be enhanced. The transfer of technology is an important role played by the stakeholders through informal meetings in their villages with friends or neighbours twice to thrice in a week, where they exchange the information. Media has also played an important role in creating awareness among the stakeholders and the people. It was worked independently with professional interest. Various stakeholders play different roles that may broadly classified as facilitator, communicator, collaborator coordinator, knowledge source, networking policy formulator and implementer in AIS. The present study was conducted in all six districts (Banaskantha, Patan, Sabarkantha, Gandhinagar, Mehsana and Aravalli) of North Gujarat region. Form each district, 5 researchers, 5 extensionist, 5 in-charge of NGOs, 5 manager of private agencies, 10 owner of agro-service providers and 10 progressive farmers were selected. In all, 30 researchers, 30 extensionist, 30 in-charge of NGOs, 30 managers of private agencies, 60 owner of agro-service providers and 60 progressive farmers were selected. This way, 240 stakeholders were included in the study. Ex-post facto research design was followed for carrying out the study. The foremost of all constraints of each type of stakeholder were narrated, out of them the limited access to finance for high-tech research was reported by the researchers (73.33%), poor participation of farmers in extension activities was reported by the extensionists (76.66%), not aware of advance/improved technology was reported by the in-charge of NGOs (80.00%), difficult to pursue the advance technological information was reported by the managers of private agencies (86.66%), absence of government assistance was reported by the agro service providers (76.66%) and farmers getting less price of product as compare to MSP was reported by the progressive farmers (81.66%). Researchers offered the suggestion against their foremost constraint was high-tech research fund should be separately allotted (76.66%), the extensionists (73.33%) offered the suggestion was activities should be organized at leisure time of farmers, the in-charge of NGOs (70.00%) offered the suggestion was project based MoUs should be made with sponsors, the managers of private agencies (73.33%) offered the suggestion was subject specialists should be hired, the agro-service providers (80.00%) offered the suggestion was integrated training programme should be organized at regular interval and the progressive farmers (81.66%) offered the suggestion was provision of remunerative price for farm produce.

Keywords: Constraints, suggestions, stakeholders, agricultural innovation system

Introduction

Change is the core of development. The world is changing fast and so are its needs. With the change in context of agricultural development, the approaches to innovation have also been changed. During 1980s, the concept of the National Agricultural Research System (NARS) was developed to guide investments in agricultural development. It is focused on strengthening research supply by providing infrastructure, capacity, management and policy support at the national level. In present scenario NARS has limitations to respond the rapid changing in market conditions especially, to supply emerging and high-value niche markets.

It is realized that research is not only means of generating or gaining access to knowledge. Hence, the concept of Agricultural Knowledge and Information System (AKIS) become popular. The AKIS recognizes the multiple sources of knowledge that contributes to agricultural innovation and gives attention to develop channels of communication. It clearly recognizes that education improves the ability of farmers to engage in innovation processes,

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but the AKIS is also suffering from some shortcomings such as the focus is restricted to actors, processes in the rural environment, limited attention to the role of input and output markets, private sector and the enabling policy environment. However, the AIS is more holistic approach for planning, knowledge, production and use. Overall, these three systems are interlinked; NARS focuses on the generation of knowledge, AKIS on the generation and diffusion of knowledge and AIS on the generation, diffusion and application of knowledge (Roseboom, 2015) [4]. The World Bank (2012) indicated as a network of organisations, enterprises and individuals focused on bringing new products, processes and forms of organisation into economic use, together with the institutions and policies that affect their behaviour and performance. Strengthen research systems may increase the supply of new knowledge and new technologies, but they may not necessarily improve the capacity for innovation throughout the agricultural sector. The study was undertaken with the following specific objectives.

Objectives
- To know the constraints faced by the stakeholders in Agricultural Innovation System.
- To seek the suggestion from the stakeholders to overcome the existing constraints faced by them in Agricultural Innovation System.

Methodology
This section describes the approaches and methods employed for data collection and analysis. The first sub-section of this chapter presents the description of the study area. Then the details of methodology used to conduct the overall study were discussed in subsequent sub-sections. The present study was conducted in all six districts (Banaskantha, Patan, Sabarkantha, Gandhinagar, Mehsana and Aravalli) of North Gujarat region. These districts were under Sardarkrushinagar Dantiwada Agricultural University Jurisdiction. The state and national level Line Departments, Research Stations, NGOs and Private stakeholders have been exploring extension activities to farming community which enhancing the Agricultural sector in these districts.

Form each district, 5 researchers, 5 extensionist, 5 in-charge of NGOs, 5 manager of private agencies, 10 owner of agro-service providers and 10 progressive farmers were selected. In all, 30 researchers, 30 extensionist, 30 in-charge of NGOs, 30 managers of private agencies, 60 owner of agro-service providers and 60 progressive farmers were selected. Weightage of proportion given according to population, looking to the higher population of the owner of agro-service providers and progressive farmer's weightage of proportion given higher to them. This way, 240 stakeholders were included in the study.

Result and Discussion
Constraint means something which restricts or controls to perform some action. Each stakeholder might have experienced certain constraints in AIS. The information in regards was collected by using open ended question. The stakeholder-wise constraint was classified, summed up the responses, converted into percentage and ranked. For most three constraints were narrated under each head of AIS in descending order and presented in table 1.

Table 1: Distribution of the stakeholders according to constraints experienced

Sr. No.		Constraints	f	%	Rank
(a)		**Researchers (n = 30)**			
	1	Limited access to funding for high-tech research	22	73.33	I
	2	Inadequate connections to line departments	18	60.00	II
	3	Complex administrative procedure	14	46.66	III
(b)		**Extensionists (n = 30)**			
	1	Poor participation of farmers in extension activities	23	76.66	I
	2	Higher workload due to non-mandatory activities	20	66.66	II
	3	Lack of innovation oriented of training	18	60.00	III
(c)		**In-charge of NGOs (n = 30)**			
	1	Not aware of advance/improved technology	24	80.00	I
	2	Poor collaboration with government	21	70.000	II
	3	Poor financial status	19	63.33	III
(d)		**Managers of private agencies (n = 30)**			
	1	Difficult to pursue the advance technological information	26	86.66	I
	2	Market competition	22	73.33	II
	3	Targets restricts the work progress	18	60.00	III
(e)		**Owner of agro-service provider (n = 60)**			
	1	Absence of government assistance	46	76.66	I
	2	Inadequate training for the input dealers	38	63.33	II
	3	Short supply of inputs in critical time	35	58.33	III
(f)		**Progressive farmers (n = 60)**			
	1	Farmers getting less price of product as compare to MSP	49	81.66	I
	2	Improved/latest farm equipment are expensive	41	68.33	II
	3	Lack of location specific scientific technology	37	61.66	III

The information about constraints experienced by the researchers of AIS is presented in table 1. The majority of the researchers gave first rank to the limited access to funding for high-tech research (73.33%)followed by 60.00% of them assigned ranked second to inadequate connections to line departments and 46.66% of them had gave third rank to complex administrative procedure.

Same table shows that majority (76.66%) of the extensionists ranked first constraint to poor participation of farmers in extension activities followed by 66.66% of them gave second

rank to higher workload due to non-mandatory activities and 60.00% of them ranked third to lack of innovation oriented of training.

Table also depicted that majority (80.00%) of the in-charge of NGOs considered major constraint *viz.,* not aware of advance/improved technology followed by 70.00 and 63.33% of them gave second and third ranks to poor collaboration with Govt. and poor financial status, respectively.

Further, table indicates that majority (86.66%) of the managers of private agencies gave first rank too difficult to pursue the advance technological information followed by market competition (73.33%) and targets restricts the work progress (60.00%) were ranked second and third, respectively.

Furthermore, table shows that majority (76.66%) of the owner of agro service providers considered as constraint on absence of government assistance ranked first followed by 63.33 and 58.33% of them experienced inadequate training for the input dealers and short supply of input in critical time as second and third ranks, respectively.

In case of progressive farmers, majority (81.66%) of them gave first rank to the constraint namely farmers getting less price of product as compared to MSP followed by 68.33% of them gave second rank to improved/latest farm equipment are expensive and 61.66% of them gave third rank to lack of location specific scientific technology.

Suggestions from the stakeholders to overcome the existing constraints faced by them in Agricultural Innovation System

The suggestion refers as an opinion about constraints which can be using as solution to overcome or to minimize them. In order to develop a fool proof extension strategy, it is very essential to seek the opinions of stakeholders. The constraints faced by them may be sometimes imaginary and sometimes due to lack of co-ordination at different levels. Hence in this study, all the stakeholders were requested to offer their valued suggestions to eliminate their narrated constraints. The suggestion on each constraint were classified, summed-up, converted into percentage and ranked. These were ordered in descending and presented in table 2.

Table 2: Distribution of the stakeholders according to suggestions given by them to overcome the existing constraints faced by them in AIS

Sr. No.		Suggestions	*f*	%	Rank
(a)		**Researchers (n = 30)**			
	1	High-tech research fund should be separately allotted	23	76.66	I
	2	Linkage should be strengthened	19	63.33	II
	3	Simplification in administrative procedures	12	40.00	III
(b)		**Extensionists (n = 30)**			
	1	Activities should be organized at leisure time of farmers	22	73.33	I
	2	Reducing the workload with proper planning	18	60.00	II
	3	Refresher training should be organized on regular base	15	50.00	III
(c)		**In-charge of NGOs (n = 30)**			
	1	Project based MoUs should be made with sponsors	21	70.00	I
	2	Collaboration should be made with AUs	19	63.33	II
	3	Regular project-based reporting should be prepared	15	50.00	III
(d)		**Managers of private agencies (n = 30)**			
	1	Subject specialists should be hired	22	73.33	I
	2	Alternative markets should be search	19	63.33	II
	3	Advance skilled men power should be appointed	15	50.00	III
(e)		**Owner of agro-service provider (n = 60)**			
	1	Integrated training programme should be organized at regular interval	48	80.00	I
	2	Good quality inputs should be provided with affordable price	37	61.66	II
	3	Support should be provided to input dealers by government	28	46.66	III
(f)		**Progressive farmers (n = 60)**			
	1	Provision of remunerative price for farm produce	49	81.66	I
	2	Timely supply of required inputs to farmers through government agencies at affordable price	41	68.33	II
	3	Location/crop-based technologies should be developed	34	56.66	III

The information about suggestions offered by the stakeholders in context to constraints is shown in table 5.19. The majority (76.66%) of the researchers offered their suggestion and gave first rank to the suggestion; high-tech research fund should be separately allotted followed by 63.33% offered second rank to linkage should be strengthened and 40.00% offered third rank to the suggestion *viz.,* simplification in administrative procedures.

Same table indicates that majority (73.33%) of the extensionists offered their suggestion and gave first rank to activities should be organized at leisure time of farmers followed by 60.00% offered second rank to reducing the workload with proper planning and 50.00% assigned third rank to refresher training should be organized on regular base.

Same table also shows that majority (70.00%) of the in-charge of NGOs offered their suggestion and gave first rank to project based MoUs should be made with sponsors followed by 63.33% offered second rank to collaboration should be made with AUs and 50.00% offered third rank to regular project-based reporting should be prepare.

Further, table indicates that majority (73.33%) of the managers of private agencies offered their suggestion and gave first rank to subject specialists should be hired, followed by 63.33% offered second rank to alternative markets should be search and 50.00% offered third rank to advance skilled men power should be appointed.

Furthermore, table indicates that majority (80.00%) of the owner of agro service providers offered their suggestion and gave first rank to integrated training programme should be organized at regular interval, followed by 61.66% offered second rank to good quality inputs should be provided with affordable price and 46.66% offered third rank to support

should be provided to input dealers by government.

The majority (81.66%) of the progressive farmers offered their suggestion and gave first rank to provision of remunerative price for farm produce, followed by 68.33% offered second rank to timely supply of require inputs to farmers through government agencies at affordable price and 56.66% offered third rank to location/crop-based technologies should be developed.

Conclusion

From the above discussion it can be concluded that the limited access to finance for high-tech research was reported by majority researchers, poor participation of farmers in extension activities was reported by majority extensionists, not aware of advance / improved technology was reported by maximum In-charge of NGOs, difficult to pursue the advance technological information was reported by the manager of private agencies, absence of government assistance was reported by the agro service providers and farmers getting less price of product as compared to MSP was reported by the progressive farmers. Suggestions to overcome the constraints were: high-tech research fund should be separately allotted by researcher, the extensionists offered the suggestion viz., activities should be organized at leisure time of farmers, the In-charge of NGOs offered the suggestion namely project based MoUs should be made with sponsors, the manager of private agencies offered the suggestion viz., subject specialists should be hired, the agro-service providers offered the suggestion that integrated training programme should be organized at regular interval and the progressive farmers offered the suggestion on provision of remunerative price for farm produce.

References

1. Kadam MS. A study on expert system working at KVKs in Gujarat State. M.Sc. (Agri.) Thesis (Unpublished). Navsari Agricultural University, Navsari; c2010.
2. Ometesho KF, Ogunlade IO, Muhammad L. Assessment of access to information and communication technology among agricultural extension officers in Kwara State, Nigeria. Asian Economic and Social Society. 2012;2(2):220-225.
3. Patel PK. Role performance of KVK scientists in Gujarat state. M.Sc. (Agri.) Thesis (Unpublished), Sardarkrushinagar Dantiwada Agricultural University, Dantiwada; c2019.
4. Roseboom J. Supranational collaboration in agricultural research in sub-Saharan Africa. International Food Policy Research Institute (IFPRI); Forum for Agricultural Research in Africa (FARA); c2015.
5. Shelake PS, Chikhale NJ, Deshmukh AN, Bhosale SR. Training need of agricultural input dealers for transfer of technology. Agriculture Update. 2015;10(2):105-108.
6. Sinha M, Oladele I. Management of collaboration for agricultural innovation systems: a case of constraints among stakeholders in the Northwest Provenance, South Africa. Problems and Perspectives in Management. 2016;14(1):16-22.
7. Thiyagarajan M. Impact analysis of System of Rice Intensification (SRI) among the paddy farmers of Coimbatore District. M.Sc. (Agri.) Thesis (Unpublished). Tamil Nadu Agricultural University, Coimbatore; c2011.
8. World Bank. Agricultural Innovation Systems: An Investment Source Book. Washington, World Bank; c2012. p. 660.