SOURCES OF INFORMATION AND CONSTRAINTS IN DAIRY KNOWLEDGE INFORMATION SYSTEM (DKIS)

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Recently there has been lot of debate on why the technologies are not being adopted by farmer as expected. The reasons for this non-adoption was contributed to ignorance, farm level constraints and inappropriate technology . Analysis of this phenomena in the context of dairying using the Agricultural Knowledge and Information System approach, beyond the boundaries of conventional extension, in terms of linkages and information management revealed information stagnation as another important factor coming in the way of adoption. In this study, efforts were taken to understand how, when and where this information stagnation occurs. An urgency for research beyond the usual Research (generation)- Extension (dissemination)- farmer (utilization) model, which has long served as a basis for viewing the transfer of information in agriculture was felt, needed for this purpose. The earlier studies by Delman (1991) and Roling and Engel (1992) agreed that a system perspective was helpful to a study of information transfer in agriculture.

Hence, to define and organize research into these aspects of extension, the analysis of the Dairy Knowledge Information System was found necessary. However, due to the system perspectives of this study, neither information was treated as something produced by researchers and transferred through extensionists nor technology was treated like a commodity produced by researchers, delivered by extensionists and used by farmers. Here information is perceived as that entity which is on the "move" to reach the individuals to add to modify their knowledge. In a typical AKIS. The functions of information generation, dissemination and use could be carried out by one of the partners. Knowledge refers to the absorption, assimilation, understanding and appreciation of information.

METHODOLOGY

As the study was based on AKIS approach, researchers, extensionists, input suppliers, Marketing agencies and farmers from the villages around district Karnal were included. All of them were considered as main actors for the dairy knowledge information system.

The selection of researchers, extensionists, marketing agencies and input suppliers were done by stratification and further selection of respondents, based on purposive sampling. Selection of key informants who had good village wide knowledge was used as a way for checking representativeness of individual interviews carried out. Keeping the purpose as to maximized information, the sampling was terminted when no information was forthcoming from additional sampling. The discussions were kept open ended and the respondents were encouraged to speak on their own than being passive listeners to questions.

The PRA methods used in the present study included, review of secondary sources of information, direct observations, inteview and discussion with key informants, focus group discussions, matrix scoring and ranking, venn diagrams and mapping. Even though a checklist for gathering information was used, the sequencing of data collection and triangulations flow from various actors of DKIS like researchers, extensionsits, marketing

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agencies, input supplies were depicted on a venn diagram based on the experiences gained through PRA.

RESULTS AND DISCUSSION :

Source of Information and constraints in information flow-Farmer

The PRA revealed the sources of information on which farmers rely and were ranked according to their preference. Stockman of the village was found the most reliable source of information, followed by neighbourers, extension worker, input suppliers, marketing agent, and radio. Due to the frequent movement from village to city and due to his contact with extensionists as well as research institutes, stockman was found to be the most cosmopolitan person of the village, which perhaps would have elevated him to the most reliable source of information for the villagers. Veterinary Doctor was also reported as a very reliable source of information, but his frequency of visits was comparatively less. Once the information was acquired for confirmation and evaluation of it they were depending on neighbourers. In some cases neighbourers also acted as the initial source of information. The input suppliers and marketing agents who visited the village from outside were also assumed a cosmopolite source of information (Fig-1).

Fig. 1 Source of information for farmer

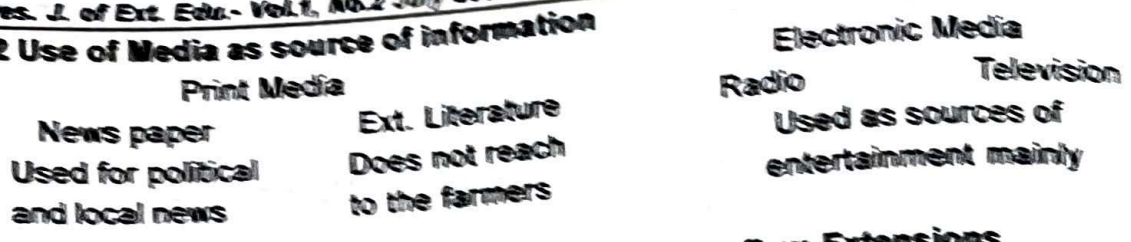
Source	Frequency	Reliability
Neighbour	****	***
Stochman	****	****
Input suppliers	*	**
Marketing agencies	*	**
Radio	*	**
Television	*	**
Print media	*	**

**** = Above 75%, *** = 50-75%, ** = 25-50% * = Below 25%

Extensionists who now and then visited villages were viewed by them as outsiders in need of fulfilling their official requirement related to transfer of technology. However, they were considered respectful because of their educational status and the inputs and subsidies they provided as a part of extension work. During the PRA farmers revealed many of their experiences which proved that some of the practices recommended by extensionsists were not fruitful and were unsuccessful in farm conditions. It was assumed that such instances perhaps would have eroded their faith in the extensionists.

It was disappointing to note that mass media played only a marginal role as source of information. Agriculture related programmes of All India Radio were occasionally heard by them. But TV was used mainly for entertainment purposes only. Printed media were not at all used by farmers as a source of information. Dairy Samachar, which is an extension publication of NDRI, meant to be read by dairy farmers were not reaching them. Farmers were if tge opinion that if any extension publication useful to them was available in the villages, they would have taken initiative to read and understand them. Farmers expressed that if a few copies of any such publications were sent to the village, at least some of the literate persons during their leisure time would have read and subsequently the information would have got disseminated (Fig.2).

Fig. 2 Use of Media as source of information



Source of information and constraints in information flow-Extensions

The main source of information for extensionists regarding the dairy farmers was stockmen. Stockmen were taking up the problems and news related to dairying from the villagers to the extensionists. Thus, the extensionists especially of State Departments were aware of the dairying practices and problems of farmers. But, it was noted that the information moved in this line was mainly restricted to problems related to reproduction, health and breeding. Neither the extensionists nor the stockmen were concerned about the holistic approach to dairying, where feeding and management were equally important as breeding and disease control.

Extensionists were often hearing about new technologies through Radio and TV. Sometiems they read about them in the newspapers too. But hardly any leaflet or pamphlet released by Research Institutes for extension personnel was reaching them. However, NDRI extension scientists were reading printed media like Dairy Samachar and Extension Literature produced by other research Institutes. It was surprising to note that the District Animal Husbandry Officers of Karnal DKIS were not receiving copies of Dairy Samachar- an extension publication of NDRI. However, it was understood that Dairy Samachar was sent to Deputy Director, Animal Husbandry Department but was never disseminated down-stream (Fig.3).

Fig. 3 Source of information for extensionists

Source	Frequency	Reliability
Stockman	****	***
Radio	***	****
Televison	****	****
Print media #	**	****
Research Institute	*	****
Farmers	****	****
Marketing agencies	***	**
Input suppliers	***	**

**** = Above 75% *** = 50-75% ** = 25-50% * = Below 25%

(#= Non availability of extension literature reduced the frequency)

Source of information and constraints in information flow-Researchers

During discussion with researchers it was observed that they were totally alienated from extensionists as well as farmers except a few researchers who were concerned with JVLP (Institure Village Linkage Programme), or FSR (Farming System Research). The main priority for selection of research problems was the mandate of the institute reflected in the practical utility of research project. Though researchers always claimed practical utility of their research project, it remained limited to academic interest only.

None of the researchers was giving importance to the indigenous technologies (IT).

There was no mechanism for researchers to be knowledgeable about IT and build upon their research on it. Farmers or extensionists had no role in setting research agenda or in priortization of research problems. There was no joint problem diagnosis with extensionists or farmers. No source was available for researchers to have information on farmer's problems and whaty they pereived the researcher to do for them. Few researchers were interested in farm related programmes of TV and Radio. However, they found reading newspaper articles related to dairying (Fig.4).

Fig. 4 Source of information for researcher

Source	Frequency	Reliability
Farmers	*	**
Extensionist	*	**
Marketing agencies	*	*
Input suppliers	*	*
Radio	*	***
Televison	*	***
Print media #	***	****
Research Institute	****	****

**** = Above 75% *** = 50-75% ** = 25-50% * = Below 25%

It was noted during the study that no structural mechanism existed for the coordination of research and extension. The only venue where researchers and extensionists discussed the research problems was during Staff Research Council (SRC) meetings. Even in meetings research and extension were treated as separate entities. Extension Scientists were not involved in any of the technology generating research programmes of the Institute. Even in programmes like Institute Village Linkage Programme (JVLP) where extension had a major role to play, were mainly handled by subject matter specialists, giving least importance to the extension aspects of such programme as analysed from the NDRI Annual Report (1997). The recent approach of linking extension scientist with the research and technology development programme of each discipline of NDRI was observed as a right step to overcome the constraints in information flow between extensionists and researchers.

During the present study it was noted that NDRI being an apex body of dairying in India was not having any functional linkages with Departments of Animal Husbandry/ Dairying. No dialogue existed between NDRI and these departments except and Annual Dairy Husbandary Officer's Workshop where a little opportunity for interaction of extensionists and state government dairy officials and scientists of NDRI existed. A close study of this workshop and the activities followed thereafter, revealed that steps taken up to fulfil the deliberations of the workshop were not upto the mark.

Source of Information and Constraints in Information :

Flow-Marketing Agents and Input Suppliers

Various input and marketing agencies were found working in the selected villages. Main among them were HAFED (The Haryana State Co-operative Supply and Marketing Federation), KRIBCO (Krishak Bharti Co-operative Ltd.), IFFCO (Indian Farmers Fertilizer Co-operative Ltd.) and HSDC (Haryana Seed Development Corporation). Among these only HAFED was found dealing with Dairying mainly in feeding aspects. Rest of the agencies were having main concern with Agriculture. They had some involvement in supply of fodder

seeds and fertilizers. However, they were having good linkages with the villagers becuase of the group meetings, mela and campaign they organized. Their linkages with extensionists and researchers were found very weak especially related to extension aspects. Apart from these, milk vendors (marketing agents of milk) and medical agents were also having close linkages with farmers and extensionists. In many instances they were found giving advice on recent technologies and on ways of achieving high milk production.

In some of the villages, it was observed that certain private agents were bringing semen and doing Artificial Insemination (A.I.) for the animals and needed farmers and they were charging any amount from Rs. 25/- to Rs. 50/- or sometimes even Rs. 100/- for a single. A.I. It was also seen that the straws were not kept in proper frozen conditions and led to more cases of repeat breeding. Such information distortion eventually will end up in undesirable breeds and breeding problems. However, it was noticed that no measures has been taken up by the state departments or any other actors of Karnal DKIS to have a check on such activities and insert quality control measures of A.I. by private agencies.

The above example which emerged out of the present PRA exercises emphasized the need not only for different links for different types of technology (Agudelo and Kaimowiz, 1989) but for involving various mechanisms and actors for different technologies and also for the same technology over time. During the inception of A.I. only government agencies were involved in implementing the programme. But over time it is being done by private agencies as observed in the present study. In such instances, it was found essential to train the concerned actors on proper information management related to adoption of practices so that distortions could be avoided.

CONCLUSION

The present study clearly shows the stagnation of information at the level of all the actors of the Dairy Knowledge Information System. Lack of institutionalization of links between different actors was found as one the main reasons for poor information management. The interfaces between each of the systems' major actors were dominated by conflicting domains, heterphylly gaps and ineffective linkage mechanisms. Faulty interfaces led to failure to transform knowledge and information appropriately and hence to a system that could not operate synergrically. Therefore there is an urgent need for a comprehensive policy for information management and institutionalization of information flow among all the actors especially farmers, field level extension workers and scientists.

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