Information Sources used by Livestock Farmers in Iran

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Introduction

There has been growing global concern over the worsening problems of poverty, hunger and malnutrition in the world, particularly in developing countries during the past few decades. Since 1960, the total human population has increased by 75 percent, but in developing countries it has grown by 97 percent, compared to 28 percent in the industrialized world (Sansoucy, 1995a). One of the challenges facing the world over the next decades is preserving its natural resources while at the same time producing sufficient food to satisfy the demands of a growing human population. World population is expected to grow from 5.5 billion now to about eight billion in the year 2020. Specialists at the International Food Policy Research Institute (IFPRI) estimate that the current demand of 1.7 billion tons of cereals and 206 million tons of meat, may rise by the year 2020 to 2.5-2.8 billion tons of cereals and at least 275-310 million tons of meat (De Haan, et al., 1997). In spite of the huge progress achieved worldwide in food crop production, almost 800 million people in the developing world do not have enough to eat. If all the worlds' undernourished people were gathered together, the population of the continent of the hungry would dwarf that of every other continent except Asia (Sansoucy, 1995b, FAO, 1999).

Furthermore, at the current rate of population growth, the consumption of food and agricultural products during the second decade of the next century should be equivalent to that consumed over the last 10000 years. (Hammond and Leitch, 1995). Like other developing countries, Iran also experiences the same challenges. In Iran agriculture is a vital part of the economy and food security is a constitutional principle to which the entire country is committed

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(CAPES,1996; Shabanali Fami,2000). The agriculture sector in Iran secures 82 percent of the country's food requirements, 27 percent of the GDP, 24 percent of all employment opportunities, 35 percent of non-oil exports, and the provision of primary material for many industries (Rahimi-Soureh, 2004). Of different sub-sectors of agriculture, livestock production is one of the most important aspects. Livestock accounts for 25 percent of the value added production of the country's agriculture sector, although migratory tribes have maintained large herds of sheep and goats and small farms have produced both meat and milk, the higher demand for meat has prompted a move toward the widespread establishment of large-scale industrial livestock raising farms (CET, 2003 CET, 2004). Production capacity of animal production sector is 120 millions animal unit, 820 millions commercial poultry, 2.44 millions honey bee colonies, 598 dairy factories, 134 livestock slaughter-houses, 112 meat processing firms, and 214 feed manufacturers (Mirzaei, 2003). In terms of animal types, sheep and goat are the commonest livestock, but cattle, buffalo, camels, asses and mules are also kept, (Badripour, 2004).

During the past three years, the two ministries related to the agriculture sector have been merged into one, Ministry of Jihad for Agriculture, as determined in the Third National Socioeconomic and Cultural Development Plan (200-4). Hence at present, various organizations and departments are involved in livestock activities both through government and non-government agencies. The Ministry's Deputy of Livestock Affairs is the focal point for policymaking, planning and extension of service in the livestock sector. Several government firms are also active independent of the Deputy. However, provision of training and extension services is one of the main support policies of the governmental and non-governmental organizations with respect to livestock affairs (Rahimi-Soureh, 2004). In order to implement this support policy a thorough understanding of farmer's knowledge and needs is required. One of the important aspects in this area is to explore how livestock farmers access multiple sources of information and utilise them. Hence, the role of extension in this process needs to be analyzed.

Extension, in general terms, is a function that can be applied to various areas of society. Livestock production is one of the most important areas in

which extension can and should play a decisive role. The livestock development units are engaged in information exchange, especially for preventive animal health services. Extension methods can be employed to reach pastoralists and breeders (Rivera et al., 2001). Extension is an institution that facilitates the process of information exchange by different actors in Agricultural Knowledge and Information System (AKIS). Without appropriate access to information sources any improvement in livestock production unit cannot be imagined. Therefore, any extension research to find out different sources of information accessed and used by livestock farmers is a prerequisite to reorient extension policies towards livestock development. Each source of information may be more useful in one specific type of livestock production system.

In the study of utilization pattern of information sources by farmers, it is important to know how they obtain required information. In fact, it is evident that farmers obtain new information not only from the government agricultural extension services, but also from a rapidly growing range of information sources. Development in information and communication technologies has opened up many new opportunities to obtain information.

Keeping this in mind, the present study was conducted with the following objectives:

1. To study the extent of access of livestock farmers to different information sources
2. To study the extent of use of different information sources by livestock farmers
3. To study the relationship between characteristics of livestock farmers with their access to and use of different information sources.

Methodology

The study was conducted in Tafresh area of Iran by using Ex- Post- facto research design. Tafresh is a place where livestock production is a dominant activity practiced by many villages and is the main source of income for the rural population. In this study, two districts, six blocks (Taluk) and 30 villages were selected randomly. Two hundred and thirty livestock farmers comprising

of 126 from mixed farming units, 59 from grazing- based units and 45 from industrial or landless units were selected by adopting proportionate random sampling technique. The questionnaires were completed through interviews. Validity of the questionnaire was assessed through expert judgment. Reliability of the main body of the questionnaire was also computed by Cronbach α method. The coefficient of Cronbach ∝ for dependent variable was equal to 0.73 which is acceptable and appropriate for extension studies.

The collected data were carefully scrutinized and analyzed keeping in view the objectives of the study, using appropriate statistical methods and SPSS Win-10 software. In the present study, "access to information sources" is defined as availability of different information sources for the livestock farmers so that they can use them easily and with the help of their capabilities meet their information needs. "Use of information sources" is defined as the extent of utilization of information sources by livestock farmers to meet their professional information needs.

Results and discussion

1. The findings revealed that majority of the livestock farmers belonged to the middle age group,with above primary education and with family size of five members.

2. Use of mass media channels : Mass media provides the opportunity to contact large numbers of farmers quickly at extremely low cost per farmer (DAE, 1999). Mass media covered in this study are:

a. Printed media (Newspapers/Magazines)

Although different national and local newspapers and magazines are published across the country, the findings revealed that only about 23.9 % of livestock farmers had access to one or more newspapers and magazines. About 40% of these respondents received newspapers or magazines through County Office of Agriculture, 34% by purchasing, 16.4% through permanent subscription and 7.3% by borrowing from neighbors. Rural libraries did not play a major role in the distribution of newspapers or magazines among livestock farmers. According to the data presented in Table 1, 88.7% of livestock farmers

do not read any newspaper or magazine. It is because majority of them (76.1%) do not have access to these printed media and 13% of them cannot read newspapers or magazines due to some problems. A majority of the respondents had either no access to newspaper or magazine or did not read them due to the following problems: Illiteracy (63.4%), lack of time to read (27.4%), lack of appropriateness of the content, (6.8%), lack of interest to read (1.2%), cost of accessing (0.6%) and eye disease (0.6%). These results indicate that print media exposure and use is very low and not desirable.

Table 1. Usage of Mass Communication Channels and Information Sources by Livestock Farmers

Communication Channels and Information sources	Usage habit							
	Not at all		Very Rarely		Often		Regularly	
	F	%	F	%	F	%	F	%
1. Reading newspapers and magazines	204	88.7	6	2.7	10	4.3	10	4.3
2. Listening to radio								
General programs	69	30	17	7.4	66	28.7	78	33.9
Agricultural programs	105	45.7	49	21.3	50	21.7	26	11.3
Animal husbandry programs	104	45.2	45	19.6	53	23	28	12.2
Programs on natural Resource management (NRM)	140	60.9	43	18.7	32	13.9	15	6.5
3. Watching television								
General programs	16	7	15	6.4	82	35.7	117	50.9
Agricultural program	44	19.1	64	27.8	84	36.5	38	16.5
Animal husbandry program	43	18.7	63	27.4	82	35.7	42	18.3
Programs on NRM	81	35.2	63	27.4	64	27.8	22	9.6

F - Frequency

b. Radio

The data indicated that 81.3% of the respondents possessed radio. Average time of their access to the radio is about 18 years. Majority of them listened only to the news. About 45% did not listen to the agricultural and

animal husbandry programs and 60% did not listen to the programs related to natural resources management. This is because there is no regular programme on production- related issues on the radio, which makes it difficult to use it as an information source. Investigation showed that livestock farmer listening time to the radio was about two hours per day. The figures about news and agricultural programs were 57 minutes and 38 minutes per day, respectively. Livestock farmers who did not listen to the radio programs stated the following reasons: lack of time (46.8%), lack of access to the radio in their working place (34.3%), lack of interest in the radio programs (11%), untimely broadcasting of radio programs (6.3%) and lack of usefulness of the programs (1.6%).

c. Television

An examination of findings showed that 97.8% of the respondents possessed television and the average time of their access to the television was equal to 16 years. With an average of 3 hours watching TV, livestock farmers spent about 50 minutes/day to watch agricultural and animal husbandry programs. As seen in Table 1, 50.9% of the respondents regularly watched general programs like news, while the percentage of those who watched agricultural, animal husbandry and natural resources management programs was 16.5, 18.3 and 9.6 per cent respectively. About 6.1% of the respondents did not watch any TV program due to lack of access, time and interest.

d. Books

The respondents did not have appropriate access to agricultural and animal husbandry books. The findings indicated that only 32.2% of them had agricultural and animal husbandry books at home with an average period of 5 years. Out of the total respondents, only 33.9% said that they sometimes read books related to their professions. They mostly borrowed these books from their relatives, friends or rural libraries. The average duration of reading books was about 6.6 hours per month. The reasons for not reading technical books were mentioned by the respondents as follows: illiteracy (47.3%), lack of time (28.2%), lack of access to technical books (12%), non-availability of useful books (7.2%), difficulty of reading scientific books (2.6%) and lack of interest (2.6%).

e. Rural Libraries

The study revealed that only 14.8% of the respondents were members of rural libraries, though the average establishment of rural libraries in the residential areas of the respondents is about 2.5 years. A majority of livestock farmers (95%) borrowed books from rural libraries to a limited extent. They opined the following reasons for that: Illiteracy (34.2%), lack of time to study books (29.6%), lack of access to library as they spent much of their time in pastures (20.4%), lack of availability of appropriate books on Animal Husbandry in rural libraries (9.2%), lack of felt need to read technical books (3.6%) and lack of interest in reading books (3%).

f. Video

According to the findings, 16.5% of the respondents had V.H.S at home, out of which only 8.3% used V.H.S to watch educational films related to animal husbandry and agriculture. They opined that the following problems limit their use of V.H.S to improve their technical skills in animal husbandry viz.,: lack of access to the system (47.4%), lack of availability of appropriate educational cassettes (19.4%), lack of interest (7.2%), lack of time (6.2%), lack of awareness about the V.H.S cassette distributing centers (5.7%) and lack of knowledge to use a V.H.S (4.2%).

g. Telephone

Findings with reference to the respondents' access to telephone revealed that only 54% of them accessed telephone at home. About 55% of the livestock farmers reported that they have no access to telephone in their villages. About 4% of them used neighbors' or neighboring villages phones.

Approximately 76% of them used telephone to solve their job related problems 1-3 times per month. Those who did not use telephone to solve their technical problems in animal husbandry gave the following reasons: lack of responsive veterinarians to solve the problems of livestock farmers through phone (31.6%), lack of belief in the use of the telephone as a means of solving livestock farmers' problems (26.3%), lack of attention to the telephone demands

of livestock farmers (15.8%) by government veterinarians, lack of felt need (10.6%), lack of knowledge of the phone numbers of informant technicians or livestock farmers (10.5%) and illiteracy (5.3%).

h. Personal contact with Resource Persons

According to the results obtained, 94.8% of the respondents were in contact with the extension workers, agricultural officers, local informant livestock farmers and vet-pharmacy technicians. The overall data indicates that the respondents had more contact with veterinary doctors, vet technicians, vet pharmacy technicians, local informant livestock farmers, state and local extension workers, respectively. It is interesting to know that 50% and 30% of livestock farmers did not have any contact with local and state extension workers, respectively. This is an indication of poor performance of the extension system to animal husbandry development in the area of the study. About 31% of the respondents were in contact with local informant livestock farmers at least once a month to share their knowledge experiences.

i. Extension participation

About 60.9% of the respondent participated in different extension programs. Most extension participation modes were seen in short- term training courses, film shows and tours, while the least extension participation modes occurred in long- term training programs and exhibition visits.

The low extent of extension participation in the latter may be due to the venue for conducting these programs which is far away from their working places. These programs are mainly conducted at county centers that are far from villages.

j. Relationship between selected characteristics of livestock farmers with their access to and use of different information sources

A glance at Table 2 indicates that there were significant and positive relationships between age, industrial livestock farming experience, livestock possession, livestock fatalities, access to mass media channels, use of individual information sources and use of group information sources with access of the

respondents to individual communication channels. The respondents' access to group communication channels exhibited significant and positive relationships with only three variables: age, literacy level and the respondent's use of individual information sources. These results show that the respondent's level of literacy had significant relationship with their access to mass and individual communication channels, while their access to group communication channels like extension participation was not influenced by their literacy level, but more likely by their free time to participate in group programs.

Positive and significant relationships between access to individual communication channels with industrial livestock farming, livestock possession and the rate of livestock fatalities which are mostly the characteristics of industrial livestock production system showed that in such a system, advisory extension system might be more efficient and effective. In other words, industrial

Table 2 Relationship between selected characteristics of livestock farmers with their access to communication channels and use of different information sources

Selected characteristics	Access to communication channels			Use of information sources		
	Individual	Group	Mass	Total	Mass	Total
Literacy level	0.31**	—	0.28**	0.24**	0.18**	0.19**
Age	—	—	0.14*	—	—	—
Family size	—	—	—	—	0.16*	0.16*
Traditional livestock farming experience	—	—	—	—	0.14*	0.14*
Industrial livestock farming experience	0.15*	—	—	—	—	—
Animal possession (Animal unit)	0.15*	—	—	0.16*	—	—
Animal fatalities (animal unit)	0.15*	—	—	—	—	—
Access to mass communication channels	0.28**	—	—	—	—	—
Use of individual information sources	0.24**	—	0.12*	0.20**	—	—
Use of group information sources	0.20**	0.36**	—	0.17**	—	—
Use of mass information sources	—	—	—	—	—	0.99*

* Significant at 5 percent level ** Significant at 1 percent level

livestock farmers are able to get their needed information through individual communication channels such as books and individual extension contact with resource persons.

There was no significant relationship between the respondent's access to mass communication channels and their use of these channels. This means access to mass media is not enough to make use of their advantages by livestock farmers. Low use of mass media in spite of favorable access might be due to lack of time or the multi- functional nature of these media. Significant and negative relationship between the respondent's use of mass information sources with family size and traditional livestock farming experience may have many reasons. In a big family, there are diverse demands for using mass media like TV, which in turn limits the head of the family to use the same media. In addition, it seems that the nature of mass media programs or content is not fully compatible with the needs and problems of traditional livestock production units.

Table 3 gives the results of stepwise regression analysis, projecting all the relevant steps involved. As seen, the predictive power increases with the inclusion of each variable in the successive steps until a particular step when R^2 value starts decreasing. In this analysis, step number six was considered as the last step since as much as 37 percent of the variation in the access of livestock farmers to different information sources was explained by six variables, viz., literacy level, age, industrial livestock farming experience, application of improved livestock management practices, use of group information source and irrigated landholding. However, literacy level and age emerged as the most important factors explaining by themselves 31% of the variation in the dependent variable. The "F" value shows that the models at each step were statistically significant. This shows that livestock farmers with higher level of literacy and age pay more attention to the importance of access to information sources than others. The relationship between industrial livestock farming experience and application of improved livestock management practices with access to different information sources indicate that industrial livestock production units are more information-intensive and the extension system

Table 3 Stepwise regression analysis of independent variables with the access of livestock farmers to different information sources

Steps included	Variables	Variables entered	Value of R^2 (Adj.)	Percentage of explained variation	Increase in percentage of explained variation	"F" value
1	X1	Literacy level	0.16	16	16	40.53**
2	X2	Age	0.31	31	15	44.03**
3	X3	Industrial livestock	0.33	33	2	7.41**
4	X4	Farming experience	0.35	35	2	6.81**
5	X5	Application management practices	0.36	36	1	5.1**
6	X6	Use of group information sources Irrigated landholding	0.37	37	1	3.9*

* Significant at 5 percent level ** Significant at 1 percent level

The regression equation is:

$$Y = -19.23 + 11.4\ X_1\ 0.73\ X_2 + 0.97\ X_3 + 0.26\ X_4 + 0.66\ X_5 + 0.43\ X_6$$

should take these points into consideration while formulating policies, strategies and programs. One of the points drawn out of these findings is that the respondent's use of information depends on their resource base and the place livestock farming occupies in their livelihood strategies.

Conclusion

There are many challenges in different livestock production systems that can be addressed by appropriate access to and use of information sources. The findings revealed that different livestock farmers do not have the same access to different information sources. Their use of these resources may be limited by many constraints.

It is notable that mass media plays a meager role in the provision of

information needed by livestock farmers in order to tackle the problems of low access to and use of printed media. Extension system should take appropriate measures, out of which the following are strongly recommended: providing printed media and distributing them in rural areas with more accurate and informative animal husbandry and agricultural information, inviting and supporting journalists to play a greater role in extension events, facilitating the process of distant contact and relationship with local papers by extension officials, and improving the content of local printed media in terms of the needs and problems of livestock farmers. In the case of radio and television, the points which should be taken into consideration include: timely broadcasting, farmers participation in program production, enhancing the role of provincial broadcasting stations to provide location- specific programs.

However it should be noted that farmer- to- farmer exchange of information was highly credible and used sources for information acquisition, because it is easy to access and communication is cost- effective. Personal contact with veterinarian was also an important source of information. The livestock farmers mentioned that it was very difficult to access veterinarians and reflects their willingness to pay the cost of travel or sending someone to treat their animals if such services are provided by the government.

Considering the rest of the findings, the following recommendations can be made: improving the intermediate role of rural libraries to link livestock farmers to more credible sources of information, providing the livestock farmers with more appropriate technical books and publications, preparing, reproducing and distributing more video films related to livestock production in different systems, and establishing a livestock telephone advisory center in the area to provide timely advice and information to the producers.

Overall impressions of livestock farmers indicate that availability and access to information sources does not guarantee that their information needs are adequately met. It seems that access to alternative sources of advice and information is more appropriate and relevant to the respondent diverse conditions.

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