

# KNOWLEDGE GAP OF FEMALE FARMERS IN MANAGEMENT OF SMALL RUMINANTS

\*Aqeela Saghir, \*\*Khalid Mahmood Ch., Sher Muhammad,  
<sup>1</sup>\*\*\*Hafeez-ur-Rehman

\*(Corresponding Author: [aqelasaghir@uaf.edu.pk](mailto:aqelasaghir@uaf.edu.pk))

Institute of Agri. Extension & Rural Development, Univ. of Agri. Faisalabad. Pakistan.

Contact no. 00923336889265

\*\*Email address: [khalidch\\_uaf@gmail.com](mailto:khalidch_uaf@gmail.com)

<sup>1</sup>Department of Anthropology, , Quaid-i-Azam University, Islamabad

\*\*\*Email: [hafeezanthro1952@gmail.com](mailto:hafeezanthro1952@gmail.com)

## ABSTRACT:

### Introduction:

Small ruminants' (sheep and goat) play a vital role in the economy of Pakistan. It is considered a secured source of income for small and poor female farmers. It's by products are multipurpose and also utilized in different sectors. Female farmers' participation in small ruminant's management is not only old but also higher as compared to men. However, they are compelled to rely on indigenous knowledge due to poor access to information and communication technology (ICTs). This knowledge gap creates a huge production difference as compared to potential ones.

### Methods:

The present study was conducted in Okara District. Through a multistage sample technique a sample of 324 respondents (female livestock farmers) was selected purposively. They were interviewed through a well-structured interview schedule. The data collected, were processed through a computer software, i.e. Statistical Package for Social Sciences (SPSS).

### Results:

Analysis of data shows that more than one third of the respondents were primary pass. Regarding access to ICTs one third (33.3%) of the respondents had an access to TV. It was found that there is more knowledge gap of farm females in calf care sector due to unawareness and less education rate leads to unawareness and ultimately less production so female farmers need technical knowledge to bridge this knowledge gap and fruiting to more milk and meat production.

**KEY WORDS:** Knowledge, gap, female, farmers, small ruminants

## INTRODUCTION:

Small ruminant's constitute a vital part of the livestock sector and make a significant contribution towards the economy of Pakistan. It is a value-added profession by adding 55.1% of its share in agriculture value added GDP. The annual growth of this sector was 3.7% (1). Small ruminant production is very ancient, equipped with a lot of benefits to mankind such as food, fabrication, shelter and transportation. It's by products are also exported to earn foreign exchange (2&3). They are also important in producing milk and meat. Their role in poverty alleviation through provision of protein to poor farm families is really admirable. In hilly areas commonly small ruminants' are reared. Recently about 822 thousand tons milk was produced by goat and 38 thousand tons by sheep. In mutton production sector 643 thousand tons of meat is participated by small ruminants (4).

The important sheep breeds are Buchi, Cholistani, Damani, Kachhi, Kaghani, Sipli, Lohi, Poonchi, Balkhi, Balochi, Harnai, and Michni (5). In Pakistan most of the sheep are reared for mutton and wool production whereas, some breeds are reared for milk production. The important goat breeds are Beetal, Kajli, Dera Din Panah, Kamori, Kooti, Buchi and Baltistani (6,7&8). Female farmers have been playing a conspicuous role in small ruminant production. They actively participate in all the activities of farm management, including fodder cutting and its offering to animals, cleaning of shed, bathing, medication and care of animals, milk and milk processing. All these activities take more than 8 hrs. daily (9,10,11). However, female farmers have a meager role in the breeding and marketing of animals and their by-products due

to social barriers. Mostly female farmers keep only a few animals at domestic level (12 &13). In spite all these efforts farm females have less knowledge regarding recent innovations and recommended farm management practices. Information and communication technologies (ICTs) are playing their role worldwide in narrowing the communication gap. Although ICTs are serving their best in transferring the information from technocrats to farming community, but female farmers have less access to these sources due to poverty and unawareness about the significance of these sources. Poor access to ICTs is a dilemma in creating a knowledge and resultant production gap in small ruminants (14). In the present study it has been tried to probe out the knowledge gap of female farmers in small ruminant production. The research study was conducted under the following objectives: 1) to know the educational level of respondents 2) to identify the availability of ICTs and its contribution in small ruminants' production 3) to recognize the knowledge gap in small ruminants' production practices.

## MATERIALS AND METHODS:

The present study was designed to analyze the knowledge gap of farm females in small ruminant production. Okara district was selected for the study, which consists of three tehsils i.e. Okara, Depalpur, and Renalakhurd that comprise 89 rural union councils (RUCs). Multi-stage random and purposive sampling techniques were used. A sample of 30% rural union councils from each tehsil was drawn at random. One village from each union council was selected randomly. Twelve respondents (female small ruminants' farmers) were

selected through purposive sampling based on their involvement in farm production operations. The data were collected through pre-tested and validated interview schedule and were analyzed using Statistical Package for Social Sciences (SPSS). The knowledge gap of female farmers regarding various production practices was calculated through getting their awareness about different production practices then frequency tables were drawn. Now the gap was calculated by taking the standard parameter of recommended production practices and a difference was calculated among the two i.e. standard and observed. For this purpose five different categories, i.e. very high, high, medium, low, and very low were made by drawing lines at natural cut-off points (15). Accordingly the production practices were placed under different categories. The production practices were placed according to their subsequent position showing their knowledge gap.

## RESULTS:

### 1.1 Education:

Education is a vital tool for positive change in the behavior of an individual. It involves mental development which leads towards human development. It was reported by (16) that higher the level of education of farmers', better will be the output in terms of changed behavior. Lack of awareness of livestock innovations among female farmers may be attributed to lack of education on their part (17) which in turn plays a role in the adoption of modern livestock techniques by female farmers. Educated females are more inclined to utilize ROICTs as compared to illiterate females (18). The data regarding education of the respondents are presented in Chart 1.1.

### 1.2 Availability of ICTs

ICTs played a crucial role in broad spectrum over the globe through doing a prismatic work in various disciplines of life. ICTs also brought a drastic change in agriculture and small ruminants' sectors. Progressive farmers consult these interventions to adopt agricultural innovations to enhance their yield (19&20). In the present study, respondents were inquired about availability of ICTs. The data regarding this aspect are presented in Chart 1.2.

### 1.3 Knowledge Gap in Small Ruminants' Production

Knowledge gap is a difference between the actual and should be in the line of awareness. Female farmers need knowledge in the field of small ruminant's production which has been estimated from Table I.1 that shows there is a varied knowledge gap in different areas of production.

## DISCUSSION:

It is evident from fig.1.1 that both the illiterate and literate female farmers participated in small ruminants production activities. More than one-fifth of the respondents were illiterate, whereas more than one-third of the respondents had education up to primary and less than one-third had education up to middle. Only one-tenth of the respondents were matriculated, respectively. These findings are more or less in consonance with those of (21) who found that about literate and illiterate respondents participated in the study.

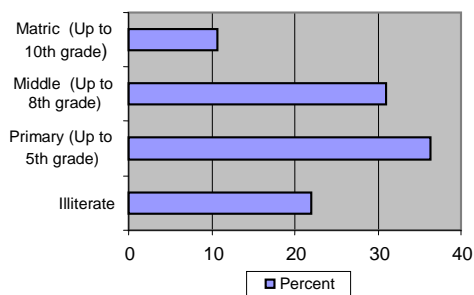
Figure 1.2 indicates that regarding ROICT (Really Old ICTs/print media) only a few of the respondents had

availability of newspapers, magazines and books. While one-third had to some access to TV and about one-seventh of the respondents had availability of telephone and radio, respectively. In case of MICTs (modern ICTs) about one-fifth of the respondents had availability of mobile phone for getting knowledge about small ruminants'. None of the respondents had access to internet. Thus, present study findings are in consonance with those of (22,23 & 24) who mentioned that TV stood first in providing information source to get agricultural information followed by radio. Data showed a clear picture about respondent's position in the context of possession of various ICTs that leads to knowledge gap.

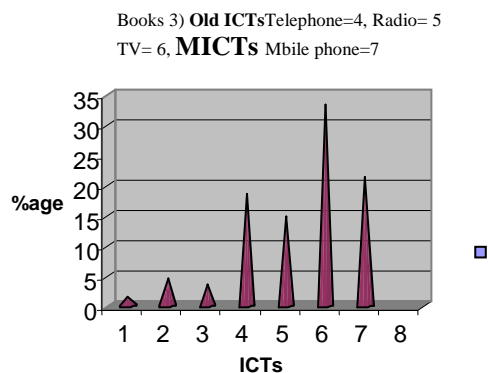
The data given in Table I show the knowledge gap of farm females, data were cut on the basis of natural classification and divided into five categories i.e. very high, high, medium, low and very low. The very high knowledge gap was found in cutting of horn & naval cord, disinfection of naval cord, and vaccination against pneumonia & mastitis. There was high gap in areas i.e. dipping/drenching against external/internal parasites, vaccination against enterotoxemia, FMD & HS, kids' feeding before the placenta expulsion of the mother, artificial insemination, culling due to non-production and grazing. However, medium knowledge gap was found in cemented house and domestic mixture. Regarding wanda, khal, stall feeding and distance of shed from dung heap there was low gap. Very low knowledge gap was uncovered in ventilation/lighting of the shed and table salt. It is clearly indicated that knowledge gap is indicated in calf care and treatment/ vaccination against diseases. The present study show some consonance with those of (25 & 26) who reported that farm females are deficient of knowledge on various sectors of small ruminant's management such as treatment of animals and vaccination against diseases like FMD (Foot and Mouth Disease), black quarter, and HS (Hemorrhagic Septicemia).

The data given in Table II depict that vaccination is at the top (mean=1.60) in getting small ruminant's knowledge through OICTs with its subsequent practice of deworming/external parasite, shed cleaning, milk management, artificial insemination, marketing, calf/kid management and balance ration who got from 2<sup>nd</sup> to 7<sup>th</sup> positions consecutively with mean=1.54, 1.53, 1.51, 1.44, and 1.39, respectively. The present results show some consonance with those of (27&28) who reported that farm women are knowledge deficient, especially in vaccination, and deworming/external parasite control. They rely less on OICTs due to traditional attitudes and less education.

The data presented in Table III show the relationship drawn through chi-square test between education and availability of ICTs that education has highly positive significant relation with possession of ROICTs, OICTs and modern ICTs. Farm female can purchase the ICTs based on their sources of income and recognition of ICTs. With the increase in education availability of ICTs will be increased due to a higher awareness level and source of income. It is evident from the data that educated farmers had more access to sources of information. Their education realized them the importance of information sources.



**Chart 1.1** Distribution of the respondents according to their education level



**Chart 1.2** Distribution of respondents according to availability of ICTs

**Table I** Distribution of the respondents according to their knowledge gap in various production practices of small ruminants’.

Very High	High	Medium	Low	Very Low
Cutting of naval cord	Dipping against external parasite	Cemented house		
Cutting of horns	Vaccination against Enterotoxemia		Wanda	Lighting of the shed
Disinfection of naval cord	Kid feeding before placenta expulsion of the mother		Khal	Ventilation of the shed
Vaccination against pneumonia	Artificial insemination		Stall feeding	Table salt (Sodium Chloride
Vaccination against mastitis	Vaccination against FMD	Domestic mixture	Distance of shed from dung heap	
	Culling due to Non-production			
	Vaccination against HS			
	Drenching against internal parasite			
	Grazing			

**Table II** Distribution of the respondents according to their response of various livestock production practices and OICTs as their source of information

Production Practices	Mean	WS	Rank Order
Vaccination	1.60	379	1
Deworming/External parasite	1.54	370	2
Shed cleaning	1.53	368	3
Milk management	1.53	368	3
Silage/Hay making	1.53	361	3
Artificial insemination	1.51	365	4
Marketing	1.51	360	4
Calf/kid management	1.44	344	5
Balance ration	1.39	334	6

**Table III. Relationship between education and availability of ICTs**

ICTs	Education
<b>ROICTs (Really Old ICTs)</b>	
Newspaper	$\chi^2=10.16, P=.000, \gamma=0.090$
Magazine	$\chi^2=12.62, P=.002, \gamma=0.096$
Books	$\chi^2=34.68, P=.000, \gamma=0.65$
<b>OICTs (Old ICTs)</b>	
Telephone	$\chi^2=26.34, P=.000, \gamma=0.244$
Radio	$\chi^2=1.08, P=.058, \gamma=0.024$
TV	$\chi^2=25.72, P=.000, \gamma=0.57$
<b>MICTs</b>	
Mobile phone	$\chi^2=0.162, P=.005, \gamma=-0.046$

If  $P > 0.05$  NS,  $< 0.05$  \*,  $< 0.01$  \*\*

### CONCLUSIONS:

This study demonstrates that both illiterate and literate female farmers participated in small ruminant's production activities. In fact, illiterate females were highly involved in small ruminants' management practices. Only one fifth of the respondents had availability of mobile phone for getting small ruminants' knowledge. No one had an access to internet. TV and radio considered the main sources in transformation of information. However, due to lack of latest knowledge or innovative techniques knowledge gap found in watering, calf care and treatment/ vaccination against diseases among the female farmers. They were deficient in recent technical knowledge of small ruminants' production due to meager use of ICTs. However, they suggested to government to provide small loans to purchase animals and their accessories. They further requested to government to control prices of farm inputs and arrange regular training programs for female farmers to bridge this knowledge gap.

### REFERENCES:

- 1&4 Govt. of Pakistan, (2013). Economic Survey, Economic Advisor's Wing, Finance Division, Islamabad. Pakistan.
- 2 The Nation, (2007). Business News: Revolutionary plan for dairy, livestock, Daily News paper The Nation, Feb 02-2007.p.5
- 3 Jamali., K. (2009). The role of rural women in agriculture and it's allied fields: A Case Study of Pakistan, *European Journal of Social Sciences*, 7(3): 71-78.
- 5 Tariq, M.M., M. A. Bajwa, K. Javed, A. Waheed, M. A. Awan, M. Rafeeq, N. Rashid and M. Shafee. (2013). Identification of environmental factors affecting pre-weaning Performance of Mongali sheep of Balochistan, *The J. Anim. & Plant Sci.*, 23(2): 340-344.
- 6 Bilal, M.Q. (2006). Raising Sheep and Goats, *Zari Digest*, Univ. of Agric., Faisalabad. Pakistan.
- 7 Khan, B.B. 2008. Health and Husbandry of Dairy

- Animals, 1st edition, T.M. Printers Faisalabad, Pakistan.pp-28-55
- 8 Pan, C., W. Jia, X. Wu, H. Zhao, S. Liu, C. Lei, X. Lan and H. Chen. (2013). DNA methylation profile of DNA methyltransferase 3b (dnmt3b) gene and its influence on growth traits in goat, *The Journal of Animal & Plant Sciences*, 23(2): 380-387.
- 9 IFAD, (2007). Women livestock management in the third world: A Focus on Technical Annual Report of IFAD. Rome, Italy online available on "http://www.ifad.org"
- 10 Amin, H., T. Ali, M. Ahmad, M.I. Zafar (2009). Capabilities and competencies of Pakistani rural women in performing house hold and agricultural tasks: a case study in tehsil Faisalabad. *Pakistan. J. Agri. Sci.*, 46(1):58-63 [online] <http://www.jar.com.pk/admin/upload/pdf>
- 11&24 Nosheen, F., M. Ahmad, M. Ishaque, (2010). Identification and Analysis of the problems of gender mainstreaming involvement in agricultural decision making and extension work: A case study of District Chakwal, *The JAPS*, 20(4): 293-296 [online] <http://www.thejaps.org.pk>
- 12 Hossain, M.M and S.N. Mishra. (2002). Studies on Involvement of Women in Agriculture and Allied Activities in Kalahandi District of Orissa. *MANAGE Extension Review Vol. III (1)*. National Institute of Agricultural Extension Management. Ragendranagar, Hyderabad, India. Jan-June :88-96.
- 13 FAO, (2005). Gender and ICTs, inter agency network on women and gender equality, Fact Sheet prepared for WSIS Tunis 2005. [Online] HYPERLINK "http://www.fao.org"
- 14 Ratnam, B.V, P.K. Ready and G.S. Reddy. (2006). ESagu: An IT based Personalized Agri-Extension Systems Prototype Analysis of 51 Farmer's Case Studies, *IJED using ICT-2 (1)*. [online] <http://ijedict.dec.uwi.edu/printarticle.php?id=168andlayout=htm>
- 15 Muhammad, S. (1994). An Effective Communication Model for the Acceptance of New Agricultural Technology by Farmers in the Punjab, Pakistan. Ph.D. Thesis, Univ. of Reading, UK.
- 16 Rehman, F., S. Muhammad, I. Ashraf, & S. Hassan, (2011). Factors affecting the effectiveness of print media in the dissemination of agricultural information, *Sarhad J. of Agric.*, 27(01):119-124 [online] <http://www.aup.edu.pk/images/Dairy-Science-Park/Proceedings-IW-DSP-2011.pdf>
- 17 Baser, J. (2006). Making a literature search and review: In doing action research: a guide for school support staff, Taylor, C., M. Wilkie and J. Baser (Eds.). Published by Paul Chapman Publishing, London. 16-28. Sage, India.
- 18 Arshad, S., S. Mohammad, M. A. Randhawa, I. Ashraf, and K.M. Chaudhry (2010). Rural Women's involvement in Decision Making Regarding

- Livestock Management, *Pak., J. of Agric., Sci.* 47(02), 1-4, 162-165.
- 19 Mejiuni, O and Obilade, O. (2006). The Dialectics of Poverty, Educational Opportunities, and ICTs, Chapter 9; Widening Access to Education as Social Justice, 139–148. A. Oduaran and H.S. Bhola (eds.) Springer Printers, Netherlands.
- 20 Sasidhar, P V K and V.P. Sharma, (2006). Cyber Livestock Outreach Services in India: a model framework, *Livestock Research for Rural Development* 18 (1).[online] <http://www.lrrd.com>
- 21 Nazir, S., Khan, I.A., Shahbaz, B., and Anjum, F., (2013). Rural women’s participation and constraints in agricultural activities: a case study of district Nankana Sahib, Punjab, *Pak. J. Agri. Sci.*,50(2): 317-322
- 22 Odame, H. H. and J. Atibila. (2003). A case study for the CTA ICT Observatory: ICTs-transforming agricultural extension? Linking agricultural research and rural radio in Africa: new opportunities for communicating innovation and experiences from northern, Ghana.
- 23 Irfan, M., S.Muhammad, G.A. Khan, and M. Asif, (2006). Role of mass media in the dissemination of Agricultural technology among farmers, *Int. Agri. Biol.*, 8. (03): 417-419.
- 25 Rezvanfar,A., H Moradnezhai and M Vahedi. (n.d.). Information needs of farm women related to dairy farming and home management in Ilam state of Iran, Department of Agricultural Extension and Education, Faculty of Agricultural Economics and Development, Agriculture and Natural Resources Campus, University Of Tehran, Karaj-Iran.
- 26 Vein, T.W.S.V. (n.d.) General Aspect of Small Ruminant Health: Management, Technology and Extension, Food and Agriculture Organization, Rome.
- 27 Rezanfar, A.( 2005). Communication and socio-personnel factors influencing adoption of dairy farming technologies amongst livestock farmers in Iran. *African J. of Livestock Ext.* (04): 2007.
- 28 Habtemariam, K., W. Ayalew, H. Gabriel and G. Meskel. (2003). Enhancing the role of livestock production in improving nutritional status of farming families: Lessons from a dairy goat development study in Eastern Ethiopia, *Livestock Research for Rural Development* 15(6). [online] [www.lrrd.org/lrrd15/6/cont156.htm](http://www.lrrd.org/lrrd15/6/cont156.htm)