



Overview of ICT in Agricultural Development of Balochistan Province of Pakistan

¹Amjad Ali, ¹Jaffar Ali, ²Qamar Raza, ³Shagufta Fahmid, ⁴Nida Ali, ⁵Arsalan Raza, ⁶Syed Zulfiqar Ali and ⁶Muhammad Basharat

¹Department of Agricultural Extension, Balochistan Agriculture College, Quetta, Pakistan

²Department of Statistics, Balochistan Agriculture College, Quetta, Pakistan

³Department of Chemistry, Sardar Bahadur Khan Women's University, Quetta, Pakistan

⁴Department of Zoology, Sardar Bahadur Khan Women's University, Quetta, Pakistan

⁵Department of Agricultural Economics, Balochistan Agriculture College, Quetta, Pakistan

⁶Department of Plant Pathology, Balochistan Agriculture College, Quetta, Pakistan

*Corresponding author: jaffaraj2010@yahoo.com

Abstract

Balochistan is the largest province of Pakistan but it is lagging far behind the rest of other provinces of Pakistan in all socioeconomic indicators. The highest incidence of poverty is in the province where 52% of total households while 72% of the rural households live below the poverty line. The economy of Balochistan is dominated by agriculture including livestock and fisheries accounts 54% of provincial GDP and employs 65% of the labour force but the yield per acre obtained at farmer's field is low than obtained at research stations. It means that the available technologies, if properly communicated to and adopted by the farmers, have the potential to enhance agriculture production manifold. Information and Communication Technology (ICT) is rapidly growing as most important tool for agriculture development which helps extension workers and researchers to adopt improved agricultural practices and disseminate them to farmers. With the help of ICT tools, farmers can get timely, up-to-date, relevant and accurate technical information and advice. However, in Balochistan, majority of rural people still lack of basic communication infrastructure in accessing crucial information in order to make timely decisions. Studies show that farmers in Balochistan obtained agricultural information through old ICTs (Radio & Television). Lack of mobile coverage and internet facility in the remote areas, illiteracy, lack of knowledge about use of ICTs and poor economic condition are the main reasons for non-adoption of ICTs by the farmers. For the improvement of ICTs in the province, ICT literacy programs should be launched among the farmers to highlight the benefits of ICT for increasing their income and eventually improving their living standards.

Keywords: Agricultural extension, information communication technology, Balochistan.

Introduction

Balochistan is the largest province of Pakistan in size but smallest in population. The Province covers 34.7 million hectares, almost 44% of the country's land area (Javaid & Jahangir, 2015), constituting about 5% of the total country's population while literacy rate is 46% in the province (male 65%, female 23%) (Samee *et al.*, 2015). Balochistan is lagging far behind the rest

of other provinces of Pakistan in all socioeconomic indicators (Muhammad & Farooq, 2008). The highest incidence of poverty is in the province where 52% of total households while 72% of the rural households live below the poverty line (SDPI, 2012 and Samee *et al.*, 2015).

The economic development of Balochistan has always been a great challenge for the nation. The vastness of the area, which is mostly mountainous, remote and inaccessible, with a very thin population, has created hurdles in its development and progress. The 6.51 million population of Balochistan is thinly spread over a vast area of 347190 sq. kilometers, which constitute a very low population density of 18.8 persons per square kilometer (Population Census Organization, 2008 and Muhammad & Farooq, 2008). Low population density, widely scattered population and predominantly rural nature of life, with grinding poverty, are the major obstacles in the economic development of Balochistan. To remove these obstacles we require huge investment at initial stages to develop basic infrastructure and provide basic services to the people to raise their living standard (Muhammad & Farooq, 2008).

Economy of Balochistan

The economy of Balochistan is dominated by agriculture including livestock and fisheries. It accounts 54% of provincial GDP and employs 65% of the labour force. Of the total agricultural GDP, livestock, fruits, field crops, vegetables and fisheries contribute 40, 30, 17, 12 and 1% respectively. About 72% of the rural population is attached to agriculture, forestry, fishing and cattle rearing (Samee *et al.*, 2015). In spite of great importance of agriculture in the province, the yield per acre obtained at farmer's field is low than obtained at research stations. It means that the available technologies, if properly communicated to and adopted by the farmers, have the potential to enhance agriculture production manifold (Aziz *et al.*, 2015; Manandhar, 1990; Muhammad *et al.*, 2004).

Importance of agricultural extension and ICT

Agricultural extension is essentially a message delivery system organized to convey the latest findings of agricultural research to farmers. Effective communication is therefore, the prime requirement in extension work (Hussain *et al.*, 1997 and Memon *et al.*, 2014). The extension agencies/organizations are constantly using a variety of communication channels involving individual, group and mass methods/media. In the present era of science and technology, the individual and group extension methods have limited scope. They cannot meet the information needs of the masses at large (Muhammad *et al.*, 2004).

Information and Communication Technology (ICT) is rapidly growing as most important tool for rural development in third world countries where most of the people are adopting these technologies for agriculture and education development (Grimes, 1992 and Chhachhar *et al.*, 2013). ICT in the revival of social organizations can give a new impetus to the social organizations and productive activity of agriculture which, if nurtured effectively, could become transformational factors. The 'knowledge' itself will become a technology for overall agricultural development. Agricultural extension, in the current scenario of a rapidly changing world, has been recognized as an essential mechanism for delivering knowledge/information and advice as an input for modern farming (Jones, 1997 and Meera *et al.*, 2004). However it has to escape from the narrow mindset of transferring technology packages to transferring knowledge or information packages. If this can be achieved, with the help of ICT, extension will become more diversified, more knowledge-intensive, and more demand driven, and thus more effective in meeting farmers' information needs. ICT has many potential applications in agricultural extension (Zijp, 1994 and Meera *et al.*, 2004). It can bring new information services to rural areas where farmers, as users, will have much greater control than before over current information channels. Access to such new information sources is a crucial requirement for the sustainable development of the farming systems (Merra *et al.*, 2004).

ICT help extension workers and researchers to adopt improved agricultural practices and disseminate them to farmers (Chavula, 2014). It can help farmers improve rural livelihoods and the quality of life by making informed decisions. By using ICT tools, farmers can get timely, up-to-date, relevant and accurate technical information and advice. These tools can effectively answer farmers' abundant information needs. Farmers can locally share relevant information, knowledge and experiences with each other. Moreover, timely information on weather forecasts would help them prevent crop losses and cope with major crop failures as weather forecasts are more reliable nowadays due to technical sophistication. Also farmers can get information on the location of profitable agricultural markets, enquiring about who is paying the highest price and even contact with their potential buyer to sell their produce online (Azeem & Ali, 2015).

Since the coming of the era of information and technology, ICT has played a great role in Pakistan.

Agriculture just like other sector has benefitted from ICT revolution and the latest innovation in ICT has expanded the development of agriculture sector in different form. However, in Balochistan, majority of rural people still lack of basic communication infrastructure in accessing crucial information in order to make timely decisions. Studies show that farmers in Balochistan obtained agricultural information through old ICTs (Radio & Television) rather than new ICTs (Computer, Internet etc.). Siddiqui (2006) conducted study “analysis of communication interventions of extension field staff in apple growing areas of Balochistan” and reported that nearly about half (48.2%) of the respondents got information from radio and 38.9% of the respondents received information from printed materials while only 38.1% of the respondents reported television as their source of information. Memon (2014) described that major sources of information in the study area were radio, television, newspapers, extension bulletin, posters and extension worker. Another study “an analysis public and private extension services in Balochistan province of Pakistan” conducted by Mengal (2015) and reported that the neighboring farmers were the main source of information as perceived by the farmer respondents. He further revealed that neighboring farmers, private extension field staff and public extension field staff were ranked 1st, 2nd and 3rd respectively while, agriculture literature and agriculture programs on television were ranked 6th and 7th respectively regarding effectiveness of various sources of information. According to Rubina (2009), print media and radio were the sources of information as reported by 40.83 and 8.33% of the respondents while 32.50% of the respondents watching television occasionally. It is clearly indicated that farmers in Balochistan province received information from old ICT tools due to poor and undeveloped ICTs infrastructure in the province.

Obstacles in adoption of new ICT tools

The farmers of the Balochistan province are facing many obstacles in adopting new ICT tools, few of them are given below:

1. Topography of the province is vast with very scant population which has made the service provision difficult and costly.
2. Most of the area has no mobile coverage.
3. No internet facility is available in remote areas of Balochistan.
4. Illiteracy.
5. Language barriers.
6. Lack of knowledge about use of ICTs.

References

7. Lack of training.
8. Shortage of power supply.
9. Poor economic condition.
10. No web sites of Department of Agricultural Extension.
11. Lack of help line centers.
12. Unavailability of toll free number.

Suggestions for improvement of ICTs services

Keeping in view the above obstacles, following are the recommendation/suggestions for improvement of ICTs services in Balochistan:

1. Short message service (SMS) in local language should be used to provide information about market rates of agricultural products; recommended chemicals for insect/pest control; health/vaccination service reminder; weather forecasts and employment opportunities etc.
2. ICT literacy programs should be launched among the farmers to highlight the benefits of ICT for increasing their income and eventually improving their living standards. For this purpose trainings should be organized to ensure that the users exert minimum effort to utilize ICTs for improving their livelihoods.
3. ICT centers should be established at tehsil level to allow farmers easy access to computers, printing and fax facilities.
4. Interactive website could be designed thereby allowing the farmers to share their issues online and obtain solutions from experts.
5. Capacity building for the ICT center organizers should be conducted to facilitate successful assistance to the rural population.
6. 24 Hours helpline access be extended to the farming community organized by provincial Agriculture Department.
7. A toll free number should be available for the growers of province for their immediate queries.
8. Farmers are to be registered at tehsil level for better access to ICTs facilities.

Conclusion

Keeping in view the above facts, it is concluded that poor infrastructure of ICTs is prevailed in the province especially in the rural areas. Majority of the farmers obtained agricultural information from old ICT tools due to poor and undeveloped ICTs infrastructure in the province.

- Azeem, M. I and Ali, S. ICT for sustainable agriculture. Published in Dawn, Economic & Business, February 9th, 2015.
- Aziz R., B. N. Siddiqui, A. Ali, J. Ali, Q. Raza. 2015. Farmer's perception regarding "Haryali" and "Kisan Time" programmes telecast by PTV. Acad. J. Agric. Res. 3(11): 308-311.
- Aziz, R. 2009. Role of television in the dissemination of agricultural technologies among the farmers of Nasirabad, Balochistan. M. Sc. (Hons.) Agric. Thesis, Balochistan Agriculture College, Quetta (Published Thesis).
- Chavula, H. K. 2014. The role of ICTs in agricultural production in Africa. J. Dev. Agric. Econ. 6 (7): 279-289.
- Chhachhar, A. R., H. B. Makhijani, G. M. Khushk and Z. A. Maher. 2013. Information and Communication Technologies for Rural Development in Developing countries. Journal of American Science. 9(9): 83-88.
- Grimes, S. 1992. Exploiting information and communication technologies for rural development. Journal of Rural Studies, 8 (3), 269-278.
- Hussain, M. Mass Media. In: R. A. Memon, E. Bashir, Eds. Extension Methods (3rd Ed.). National Book Foundation, Islamabad 1997; pp. 208-261.
- Javid, U. and J. Jhangir. 2015. Balochistan: A key factor in global politics. A research Journal of South Asian Studies. 3 (2): 91-105.
- Jones, G. E. 1997. 'The history, development and the future of agricultural extension' in B. E. Swanson, R. P. Bentz and A. J. Sofranko (1997) Improving agricultural extension – a reference manual. Rome: FAO.
- Manandhar, M. K. 1990. Communication behavior of extension workers, Paper presented in extension research workshop. LAC, Pokhara, Nepal.
- Meera, S. N., A. Jhamtani, D. U. M. Rao. 2004. Information and communication technology in agricultural development: A comparative analysis of three projects from India. AGREN, Network Paper, No. 135. ODI, UK.
- Memon, I., K. N. Panhwar, R. A. Chandio, A. L. Bhutto and A. A. Khooharo. 2014. Role of Mass Media in Dissemination of Agricultural Technology among the Farmers of Jaffarabad District of Balochistan. Journal of Basic & Applied Sciences, 10: 525-531.
- Mengal, A. A. 2015. An analysis of public and private agricultural extension services in Balochistan province of Pakistan. Ph.D. Agric. Ext. Thesis, Sindh Agriculture University, Tandojam.
- Muhammad, J and S. U. Farooq. 2008. The Role of Public Sector in the Economic Development of Balochistan. The Dialogue, 3 (4): 472-494.
- Muhammad, S., S. A. Butt, I. Ashraf. 2004. Role of television in agricultural technology transfer. Pak. J. Agri. Sci. 41(3-4): 158-161.
- Population Census Organization, "Provincial Census Report 1998", Balochistan.
- Samee, D., F. Nosheen, H. N. Khan, I. A. Khowaja, K. Jamali, P. I. Paracha, S. Akhtar, Z. Batool and Z. Khanum. 2015. Women in agriculture in Pakistan. Food and Agriculture Organization of the United Nations, Islamabad.
- SDPI, 2012. Clustered Deprivation; District profile of poverty in Pakistan. Sustainable Development Policy Institute.
- Siddiqui, B. N. 2006. Analysis of communication interventions of extension field staff in apple growing areas of Balochistan. Ph.D. Agric. Ext. Thesis, University of Agriculture, Faisalabad (Published Thesis).
- Zijp, W. 1994. Improving the transfer and use of agricultural information – a guide to Information Technology. Washington DC: World Bank.

Access this Article in Online



Website:
www.ijarbs.com

Subject:
**Agriculture
Sciences**

**Quick Response
Code**

How to cite this article:

Amjad Ali, Jaffar Ali, Qamar Raza, Shagufta Fahmid, Nida Ali, Arsalan Raza, Syed Zulfiqar Ali and Muhammad Basharat. (2016). Overview of ICT in Agricultural Development of Balochistan Province of Pakistan . Int. J. Adv. Res. Biol. Sci. 3(7): 122-125.