

## Use of ICT by Farm Women: A Step Towards Empowerment

Sonali Sharma<sup>1</sup> and Snehlata Maheshwari<sup>2</sup>

1. Ph.D. Scholar, 2. Professor, Department of Home Science Extension and Communication Management,  
College of Home Science, MPUAT, Udaipur, Rajasthan

Corresponding author e-mail: [sonalicpsharma2010@gmail.com](mailto:sonalicpsharma2010@gmail.com)>

Paper Received on June 18, 2015, Accepted on July 12, 2015 and Published Online on August 10, 2015

### ABSTRACT

*There has been a lot of interest during the last decades in employing information and communication technologies (ICTs) for achieving development. While many of these initiatives have benefitted rural women by way of access to new information and new employment opportunities, women still face a number of constraints in accessing ICTs. This paper explores the constraints of women in agriculture and how ICTs sought out. This paper concludes that, while most of the ICT initiatives are disseminating new information and knowledge use for rural women, many are not able to make use of it, due to lack of access to complementary sources of support and services. There is immense potential for ICTs to create new employment opportunities for rural women and to contribute significant gains in efficiency and effectiveness in rural women enterprises. While ICTs can play an important role in empowering rural women, women's access and use of ICTs and empowerment clearly depends on the vision and operational agenda of the organizational agenda of the organization applying the ICTs. Therefore, strengthening the ICT initiatives can go a long way in empowering rural women.*

**Keywords:** Agriculture; Information and communication technology; Farm women; Women Empowerment;

Agriculture plays a very important role in rural and national development. There is a strong relationship between gender and agriculture. Women are twice as likely to be involved in agricultural related activity as men. Many women experience a life that is a complex web of multiple roles and multi task. This requires an average woman to conduct different roles at different times in a bid to fulfill her family needs. Women in the rural areas are extensively involved in serious farm operation and agricultural activities. Women make up over half the agricultural labour force yet they are frequently subject to discrimination. They play a vital but unrecognized and unsupported role in food production. Looking at the national average of women in the agricultural labour force, they vary but globally they have a principal role in agro business, food processing and consumer related activity. Women consists 60 – 80 per cent of labour in agriculture starting from production, processing and marketing of food. These women have been using and managing natural

resources, collecting food for their livelihoods etc. They assist on family farms and are farmers in their own rights. They face major challenges for enhancing production in a situation of dwindling natural resources necessary for production. These challenges can be addressed using information and communication technology.

Communication is indispensable for all endeavors to bring about a societal change. The emergence of information communication technology (ICT) has enabled to collaborate, interact and information in a fast pace which has brought a greater impact on society. The ICT is a diverse set of technological tools and resources to create, disseminate, store, bring value-addition and manage information.

ICTs do play an important role in disseminating a wide range of information and advice leading to knowledge and attitude change among rural communities. It is also supporting rural communities to acquire new skills and is also creating new employment

opportunities. This resulted in experimentation with various ICTs and its applications in areas such as agriculture, health, governance, financial services, education and employment. Many of these initiatives clearly reveal the huge potential of ICTs in improving efficiency and effectiveness of reaching rural communities with relevant information. Though these initiatives have also benefited rural women by way of access to new information and new employment opportunities, studies have shown that women still face a number of constraints in fully benefiting from the potential of ICTs. Further the continuing digital divide between urban and rural areas and between men and women currently constrain the realization of the full potential of ICTs reaching rural women. ICTs can be a powerful tool to empower women.

Women empowerment is a current global issue and discussion on women right is at the forefront of many formal and informal campaigns worldwide. The first state of women empowerment is women awakening to the facts of their existence. The concept of women empowerment throughout the world has its root in women's movement.

Empowerment is a process that enables women to gain access to and control of material – intellectual and human resources. Empowerment is the redistribution of power that challenges patriarchal ideology and male dominance.

*Problem faced by women in agriculture:* The major problems facing these women that are the lifeline of the society and who also spend 138 days in year in crop related activities against their men counterpart that spend 98 days in a year are the following:

i. *Access/weak extension services:* In most , agricultural extension services, which are central to economic development programs, are non-existence, weak or unsatisfactory. Unfortunately, even where extension services are available, the content and mode of service delivery are often insensitive to the needs of female farmers. It was observed that new technologies are usually introduced to help men. This gender inequity, coupled with poor extension packages, inadequate delivery approaches, and cultural and religious barriers, is further compounded by transportation and communication problems. Female extensionists work more effectively with female farmers.

Hence, extension services need to train and recruit more women.

- ii. *Access/ non-adoption of new agricultural technologies:* Despite the technological advances in irrigation, crop varieties, agro forestry, and fertilizers, most technologies do not reach female farmers, as they receive no information about them. Most rural farmers are illiterate and poor and do not adopt new technologies because they lack knowledge and cash. Future growth must come from yield increases, achieved through the use of improved seeds and other planting materials and better agronomic practices and harvesting and processing techniques. Women's lack of involvement into technology design and implementation results in the appropriateness of new technologies and has created a new problem. This problem has resulted in having a reversed effect on their work load instead of providing them with the expected benefit.
- iii. *Restricted access to training and education:* Most rural women lack both the means and the opportunity to obtain a formal education because of their poor status. When training opportunities for rural agricultural producers arise, they mostly go to the men, who already have some formal education, despite the fact that it is more important to expand and enhance the production knowledge of the principal workers ie the women. Some women also opt out of training programs because of cultural, religious, or family pressures. These problems can be solved if these women receive proper training, their revenues will increase dramatically. Female farmers will have to be empowered to take more control and manage the farm. Women will need access to credit and training on new and appropriate technologies. Also, agricultural researchers should do more adaptive research to ensure that the new technologies are suitable for the female farmers' agro ecological zones and management constraints. It is observed that with the help of ICT tools, knowledge is acquired faster and is better incorporated in the field. With emailing and mobile phoning farmers can always sell their goods without having to go through the middle-men who take the biggest share of their profit. The women haven't this opportunity

since only a few have basic access to ICTs. With the training of the farm operations and implements they will perform better and this will help the overall development of farm families. The training shows that technology has helped in reducing the physiological cost of work, reducing heart rate and energy expenditure during the agricultural operations. This will increase output and will reduce postural discomfort. Since their credit are from self help groups, when these groups are organized, there is then the skill development training which help these farm women to set up different enterprises in Agriculture eg vegetable cultivation, door mat making, fish cultivation, agro processing etc. This will lead to confidence in them and also in decision making.

- iv. *Information needs of rural women:* The main problem of these women is integrating ICT in their daily activities. The main constraint is their not being mobile unlike the men because they are house-bound. Their access to ICT resources for their business opportunities is limited. For the women to get economic stability, they require the following: -
- a) *Education:* they need the minimum basic education which enables them to read and write
  - b) *Information to ensure food security* - Knowledge on how to improve seed selection, and their cultivation, irrigation and fallowing techniques and how to use appropriate techniques to harvest and conserve food crops.
  - c) *Knowledge of market/opportunities* - Ability to access the markets so as to sell their goods/products/services Proper assistant in effective usage of ICT. If this is done, ICT can empower them as individuals, and it will improve their chances of networking in agri-food business endeavours

*Use of ICT to meet the needs* - Traditional and modern ICTs can be used concurrently to speed up the circulation of information. It can be tools that assist them to optimize their production and marketing plans. To make effective use of scarce land by planting for market demand. Use of ICTs to promote the expansion of local markets, and provide direct access for women producers to international markets and productive resources. It

provides access to a range of information on likely markets planning, management techniques. It is a powerful tool in production and marketing system. It affords inexpensive access to vast amount of information and networks, access to market information and the ability to directly access lucrative markets. Telecentres have been established in villages where appropriate rural female farmers can tap these resources and access information using new ICTs, such as e-mail, the World Wide Web, electronic networks, teleconferencing, and distance-learning tools. Information can empower rural female farmers to participate in decision-making, exchange ideas with others in developed and developing countries, and improve the quality of life of the people. The internet, email and wireless mobile phone empower these women by offering access to services unavailable to them because of high cost in the rural areas. In Grameen phone ladies benefit four timely accesses to markets process for agricultural products or handicrafts.

*Rural women utilizing ICTs and gaining:* Cecchini and Scott (2003) observed that ICT application can enhance poor people's opportunity by improving their access to markets, health and education. Furthermore, ICT can empower the poor by enhancing the use of government services and reducing risk by widening access to information. A study on "Issues and challenges of climate change for women farmers in the Caribbean" Tandon (2009) found that most of the respondents (76%) use a cell phone daily compared to 43 per cent whole use landlines daily, 62 per cent use a computer with internet connectivity on daily basis, however only 13 per cent use a social network or blog and no one had used e-conference facilities and 62 per cent use the Television and radio either daily or weekly. Ramakrishna (2012) in a study on "Television viewing behavior of rural women" found that majority of rural women (70%) had cable connection followed by DTH and doordarshan connection. Some rural women (2.67%) had no access to television. Respondents were more interested in entertainment programme and the majority of respondents (71.23%) had liking for popular serial followed by reality shows, music and films. Religious programme (37.90%), news (29.00%), agriculture (14.84%) and sports programme (2.74%) were also watched by them regularly. Entertaining features of television were most popular and majority of women were viewing daily for up-to one hour.

*Ways to change rural women's lives through ICTs:*  
In 2009 SOME organizations implement ICT projects to empower rural women. This is how they did it.

- i. *Confidence and happiness through income, Mikocheni Agricultural Research Institute (MARI), Tanzania* - Deep in Tanzania's mountainous region lives a woman named Flora Emilia. The mobile phone has helped her access the latest market prices, and therefore get better rates for her crops, rather than being taken advantage of by the middlemen, she can now contact buyers on her own and search for market prices in town. Owning her own phone means that she can do her work at the times that are most convenient for her. By being able to search market prices, she can now bargain and is looking into ways of increasing her crop production and expanding to different crop types. She also says "the love has increased in my house." This, in turn, has made space for more equality, respect and harmony in the household.
- ii. *Better fish conservation techniques lead to more business* - In Benin's rural fishing areas, women are the ones who purchase fish after it has been caught and turn it into various food products. AquaDeD has worked with poor rural women using ICTs to train them in an effort to help increase their incomes and improve their livelihoods. By using basic ICTs like video, television and mobile phones, the women were able to learn new conservation techniques (such as smoking the fish) and to use mobile phones to increase their market. [www.aquaded-ong.org](http://www.aquaded-ong.org)
3. *Defending women's needs in male-dominated farmers associations* - Thirty leaders from women farmer's organizations in the province of Sissili in Burkina Faso interacted with computers for the first time. They have acquired skills that will allow them to better manage their revenue generating activities (mostly small-scale farming) and learned to use tools that will help them to train other women. Thirty women leaders from farming organizations were trained in the use of computers in order to help them to manage their production. This new knowledge gave them more confidence and they now actively participate in meetings of large farmers federations.
- iv. *Mobile phones bring better farming techniques and better tools* SB Mathur Foundation, Cameroon - In Cameroon, the SB Mathur foundation works on the ground with rural communities and ICTs to promote sustainable agriculture and development. By providing women in the most remote areas with mobile phones and information files where there was no internet access, the women were able to search off-line content on farming techniques specific to their crops and conditions.
- v. *Women overcome fear of ICTs and break their silence* GRAFED, Democratic Republic of Congo (DRC) - GRAFED in the DRC created a network for rural women through the use of ICTs in order for them to exchange agricultural information as well as for women's advocacy. Despite low levels of education and literacy, women in the Uvira region of the Congo were trained on computers – internet, word processing and email – and were introduced to the idea of networking using ICTs
- vi. *Internet research brings solutions to crop diseases* IFDAP, Democratic Republic of Congo (DRC) - In the DRC's border region of Uvira, women's cassava root crops were being destroyed by pests. In order to help the women of this community increase their healthy crop production and agricultural knowledge, IFDAP trained them on internet research so they could learn about the diseases affecting their crops.
- vii. *ICTs help Dominican women farmers better run their cooperatives* Fundación Taigüey - Dominican Republic La Ciénaga is a small village in the Dominican Republic where 75% of the inhabitants live under the poverty line. With the support of Fundación Taigüey, women got together and set up an agro-processing cooperative. [www.taigüey.org](http://www.taigüey.org)
- viii. *High school drop-outs become employable through ICTs* Mekelle University, Ethiopia: Mekelle University went into northern Ethiopia's Tigray region, an area where many development initiatives do not make it, and trained twenty high school drop-out students – mostly female – on how to use information and communications technologies like the internet, mobile phones and

digital cameras. One participant was a deaf woman who was taught how to use a digital camera. This means she can now work. She, like her fellow trainees, now feels recognized in the community and empowered because “not hearing is no longer a reason for not working.” Though the internet remains slow and expensive for the rural communities, they were still able to launch a community knowledge management centre. [www.mu.edu.et](http://www.mu.edu.et)

- ix. *From shea butter producers to businesswomen Kalang ICT Centre, Ghana* - women involved in agro-processing activities could not attend most trainings because of their busy schedules. The fact that they were in groups made their husbands more supportive, which was key to the success of the initiative. Women were then trained on how to use computers.

*Factors that hamper women uptake of ICTs: Meenambigati and Ravichandran (2004)* reported the major constraints experienced by farm women in utilizing the media (Radio and Television) programme were lack of adequate time (74.17%), affecting studies of children (30%), lack of adequate awareness about media programme and less understandability of subject matter (25.83%), not able to take notes (25.80%) in case of farm broadcast alone. Further in case of Television affecting studies of children (64.70%), lack of location specific, need based and interesting farm programme (61.77%), lack of adequate time (58.33%) and unsuitability of time of farm telecast (31.67%) were the major constraints experienced by farm women. In completeness of message was experienced only in case of television alone. *Amotaa (2005)* concluded that man rural areas of developing countries had no access to the basic tele communication services that support key ICTs like the telephones and internet. Major constraints faced by as reported *Arokoyo and Orokoyo (2005)* the constraints severely restricts the use of ICTs in agricultural extension are poor ICT infrastructure, erratic power supply, high illiteracy among information users (farmers) and low computer literacy of information providers. *Vijayaragavam (2006)* concluded that the major constraints in internet use were poor connectivity, inadequate infrastructure facilities and lack of qualified professionals to develop educational materials. A study on “Television viewing behavior of rural women”

Indian Res. J. Ext. Edu. 15 (3), September, 2015

*Ramakrishna (2012)* found that major constraints experienced by rural women in television viewing as affecting studies of children (64.89%), lack of adequate time (56.00%), tiredness due to work load (24.44%), gender biasness (20.89%), technical problems (2.89%), low economic status (2.67%) illiteracy and low educational qualification (2.44%).

- Cultural attitudes discriminate against women’s access to technology and technology education. What would a woman farmer want with a computer?
- Compared to men, rural women are less likely to own communication assets, such as a radio or mobile phone.
- Rural women are less likely to allocate their income to use in public communications facilities, except when they need to communicate with family or to arrange for income transfers.
- Rural women are often reluctant to visit cyber café’s or public internet centers, which are often excludes girls and women.
- Rural women’s multiple roles and heavy domestic responsibilities limit the time they can allocate to learning and using ICTs, until and unless they realize the potential information benefits (time saving elements) of using these technologies. (*world Bank, 2008*)

## CONCLUSION

Governments and the telecommunications sector do not prioritize infrastructure in rural areas because the population is generally poor and dispersed. However, for women living in rural areas, access to ICTs means first overcoming multiple barriers relating not only to their location, but also their gender. Women play a central role in the agricultural economy, which means that their hours of work are long, leaving little time for learning how to use new technologies. Women cannot migrate as easily as men to towns and cities where training in new technologies is more available. Apart from agricultural production, women rather than men have the added responsibilities of caring for children and the elderly. In many communities cultural attitudes disallow women from visiting public access points, often because they are frequented by men or because women are not allowed out of their homes without being accompanied

by men. In most rural communities, women have far less political and economic power than their male counterparts. The various components of ICTs – the software, the keyboards, the information online and the training materials – are not available in local languages. And most aspects of new technologies are not culturally intuitive. Even radio (and increasingly the mobile phone), perhaps the most ubiquitous communications devices in many rural areas, are often not accessible to women. Development programmes aimed at agriculture and food security realised long ago that to centralize ICTs adds tremendous potential for improving rural livelihoods. They further recognised that a gender-sensitive

approach to the design and implementation of initiatives is fundamental to their success. The lives of rural women and men can improve through access to technologies. By demonstrating in tangible ways women's huge contribution to agriculture and household income and the positive increase in livelihoods, gender relations are improved and women's role in communities more valued. Human intermediation is critical and the success of ICTs and women empowerment is anecdotal. To fully understand the developmental and empowerment implications of ICTs, further research is required. ICTs is a long process but it will definitely empower the women.

## REFERENCES

- Anotaya (2005). ICT and agricultural extension emergency issue in Trans in confereing agricultural technology in developing countries. In SF Adedoyin (Ed) Agril. Ext. in Nigeria, Adedoyinerin (Ed). agricultural extension society of Nigeria
- Arokoya, T. (2005). ICTs application in Agril. Ext. service delivery. *Journal of agricultural extension in Nigeria*, **21** : 245 – 251
- Blumberg, R. L.( 1992). African women in agriculture: farmers, students, extension agents, chiefs. Winrock International Institute for Agricultural Development, Morrilton, AR, USA. Development Studies Paper. 43 pp.
- Cecchini, S and Scott, C. (2003). Can ICT application contribute to poverty reduction? Rural India. *A J. of Info. Tech. for Development*, **10** (2): 73 – 84
- Dunn, K. (1995). The busiest people in the world. *Ceres*, **27**(4), 48-50
- GenARDIS (2002 - 2010). Small grants that made big changes for women in agriculture Published by APC 2010 *GenARDIS*, <http://genardis.apcwomen.org/en>, [https://www.apc.org/en/system/files/Genardis\\_EN.pdf](https://www.apc.org/en/system/files/Genardis_EN.pdf)
- GrameenPhone , [www.grameenpphone.com](http://www.grameenpphone.com) <http://www.ifuw.org/wp-content/uploads/2014/01/jain.pdf>
- Hilda Munyua (2000) Application of ICTs in Africa's Agricultural Sector: A Gender Perspective: Gender and the Information [http://www.idrc.ca/en/ev-32947-201-1-DO\\_TOPIC.html](http://www.idrc.ca/en/ev-32947-201-1-DO_TOPIC.html)
- IFAD (International Fund for Agricultural Development) (1989). Women: the roots of rural development. IFAD, Rome, Italy, 22pp.
- International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, **2** (6) : January 2013 58
- Jennifer Radloff. Is a communications and women's rights activist based in Cape Town, South Africa. She has worked for APC for ten years coordinating the APC-Africa-Women network. She manages the GenARDIS project for APC.
- Meena, J. and Seetharaman, R.N. (2004). Cable television viewing behavior of farmers and farm women. *IJEE*, **40** : 49 – 55
- Monica. N. Agu (2013). Department of Computer Science, University of Nigeria, Nsukka, Nigeria.
- Ramakrishan H. (2012) Television viewing behavior of rural women. *Global research analysis*, **1**: 35 – 36 on 15 may 2014.
- Rasheed Sulaiman V, N. J Kalaivani and Nimisha Mittal CRISP Working Paper 2011-001 ICTs and Empowerment of Indian Rural Women What can we learn from on-going initiatives? *Centre for Research on Innovation and Science Policy (CRISP)*, Hyderabad, India <http://www.crispindia.org/docs/4%20crisp%20working%20paper-icts%20and%20empowerment%20of%20women.pdf>
- Verma, S. 2013 "Status and prospectus of application of Information and communication technology (ICT) in agriculture through extension functionaries in Udaipur district. M.sc, thesis submitted to MPUAT.
- Vijayaragavan, K. 2006." Experiences of computer assisted and programmed Instructor (CAI) : Implication for agriculture Extension International conference on social science perspectives in agriculture research and Development, New Delhi: 218
- Tandon, N 2009: Issues and challenges of climate change for women farmers in the Caribbean: The potential of ICT, Networked Intelligence for development 21 – 21. [www.Network-edintelligence.com](http://www.Network-edintelligence.com) on Jan, 15 2014.
- U. Arabi and L.Radhakrishnan Empowerment of women through entrepreneurship –, Chapter 22 Empowerment of women through ICT : Barriers in developing countries

