SATELLITE RADIO WITH THE INTERNET

A clothing and food store in the United Kingdom has expanded its use of satellite radio to include an Internet connection, allowing customers to order food and clothing online while listening to music and news programs. This combination of technology has been proven to increase sales and customer satisfaction.

TELECENTRES

A local telecentre provides a variety of services to the community, including access to computer networks, telephones, and video conferencing facilities. The centre is open during the day and evening, and is staffed by trained operators. Telecentre personnel assist customers in using the facilities and provide information on a wide range of topics, including health, education, and employment.

VIDEO

The use of video in computer-accessible learning documents is increasing, as it allows for the integration of text, sound, graphics, and video. Video can provide simulations, tests, and other active learning tasks. Smallholders must be computer literate, or helped in using the technology. Computer access is required for learning, and smallholders must plan and manage their own learning.

WEB AND THE INTERNET

The use of the Internet for agricultural extension is increasing, as it allows for the exchange of information between smallholders and advisors. The Internet is an effective tool for providing information on a wide range of topics, including crop production, disease management, and market information.

OTHER USEFUL WEB SOURCES

Acra Institute, International Development Research Centre (IDRC), Canada.  http://www.idrc.ca

World Space Foundation, ALIN-EA.  http://www.isglink.org

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INTRODUCTION

Agriculture is not only a source of food and livelihoods, but also an essential source of employment and development. It is a key industry for many countries, especially in low-income or developing nations. Agricultural extension programmes are essential for providing the necessary support and guidance to smallholder farmers to enhance their productivity and profitability. These programmes are crucial in providing information, training, and support to smallholder farmers in rural and disadvantaged regions, and using technology to facilitate two-way information flow and learning by employing tools such as radio, television, videocassettes, VCDs, DVDs, and the Internet.

AGRICULTURE IS THE MAINSTAY OF MANY LOW-INCOME OR DEVELOPING NATIONS' ECONOMIES. THE SUCCESS OF ICT APPLICATIONS DEPENDS UPON THE APPROPRIATENESS OF THE LEARNING THEY PROVIDE.

DEVELOPING ICT


The success of ICT applications depends upon the appropriateness of the learning they provide.

ICT & AGRICULTURE

LEARNING ISSUES

Extension programmes and services should:

• Align with national policies, priorities and strategies.
• Facilitate access and contribute to the provision of learning opportunities for different target groups.
• Ensure the quality, reliability and accuracy of information and services provided.
• Ensure the learning and information are relevant, accessible and effective.
• Ensure the delivery and implementation of services are efficient and cost-effective.

ORGANISATIONAL ISSUES

Development of effective ICT-based programmes is characterized by:

• Government commitment and national and community policies promoting the development of ICT-based programmes.
• Strong leadership at the national and local level.
• Adequate funding and resources to support the development and implementation of ICT-based programmes.
• Adequate training and support for extension workers.
• Adequate technical and financial support for the implementation of ICT-based programmes.

WIRELESS TELECOMMUNICATIONS AND TOOLS

RURAL SMALLHOLDERS CAN VISUALLY RECORD AND COMMUNICATE PROBLEMS TO EXTENSION PROVIDERS, SUCH AS SPECIALISTS IN INTERNATIONAL, NATIONAL OR REGIONAL EXTENSION NETWORKS, AND HELP THEM OVERCOME THE SITUATION.

CONTENT ISSUES

Provision of:

• Learning needs, strategies, materials and interactions that will enable smallholders to add value to their produce and become more efficient and profitable.
• Facilitating two-way information flow and learning by employing tools such as radio, television, videocassettes, VCDs, DVDs, and the Internet.

TECHNOLOGICAL ISSUES

PRINT

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Electronic tools can be used to develop, manage and disseminate information, and can be used to facilitate and complement face-to-face training by providing the following benefits:

• Facilitating the learning process through a variety of media, including text, audio, video, and multimedia.
• Providing a flexible and interactive learning environment.
• Enabling learners to communicate and collaborate with each other.
• Enhancing the learning experience through the use of interactive tools, such as quizzes, simulations, and games.

ICT AND AGRICULTURE

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Combining ICT with new extension methods can place smallholders at the centre of development

LEARNING SYSTEMS

Extension programmes and services include:
- All information, research, inputs, and services targeted at and delivered to the community to participate in the process of extension.
- Governmental and non-governmental organisations, media organisations, and private sector organisations.
- Extensionists, researchers, and farmers, as well as the communities.
- All people, groups, and institutions engaged in the extension process.

WIRELESS TELECOMMUNICATIONS AND TOOLS

Mobile technology: This technology is seeing a phenomenal growth in many developing countries. Short Message Service (SMS) and cellular-enabled mobile telephones are now developing in many parts of Asia, Africa, and Latin America. They have a number of potential uses in agricultural development.

APPLICATIONS

ICT and Agriculture

Commitment

Addressing smallholder-identified needs

- Facilitating any way possible that information should be drawn upon to meet specific goals, and in a cost-effective manner, and exchanged online through email or instant messaging, or by regular mail, enabling interactive and collaborative problem solving. Use of these smallholders see the relevance and benefits of new or different ways of doing things, and adopting, modifying or discarding experiences and ideas, and passing these on to other farming groups. Identifying and training local facilitators within communities can strengthen these processes.

Creating smallholder community networks

- Exploration: Is there an organisation with the capacity to generate and process this smallholders may try to protect themselves and their logical and other resources are sustainable and correctly deployed.

RADIO

Television, videocassette, VCD and DVD applications depend upon the appropriateness of the learning they provide.

TECHNOLOGICAL ISSUES

PRINT

Radio

Impact and potential

Development of effective ICT models is promoted in a way that:
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**INTRODUCTION**

Agricultural development requires income or development projects and reporting systems for the wellbeing of smallholders. Traditionally, agricultural extension services have been costly, ineffective and inflexible in their design and delivery. However, with the advent of information and communications technology (ICT), systems become more standardised and available.

ICT systems are being used for a variety of purposes, including training materials and services. Smallholders have limited time and concentration and will only use those materials and services they recognize as meeting their immediate needs. The success of ICT systems and applications depends upon the appropriateness of the learning they provide.

**DEVELOPING ICT**

The 2002-2009 Decade of Ruminant Animal Health and Disease Management Information and Communication Technologies (ICTs) Final Report (Jonas) gives the International Communication and Development (ICD) and International Livestock Research Institute (ILRI) the opportunity to reflect on the current state of the livestock disciplines.

The importance of ICT in Extension

- **Combing ICT with newer extension methods can place smallholders at the centre of development**

**ORGANISATIONAL ISSUES**

Development of effective ICT-based programmes is constrained by:

- **Who govern local circumstances and local smaller communities should be involved in the development of the system**

Costs of implementation: many technological and technical expectance.

- **Lend the key opportunities for adapting learner communications.**

Aimed at appropriately perceived and widely adapted by a range of participants, including farmers, extension workers, and other stakeholders involved.

- **The effectiveness of every ICT-based programme is limited:**

Incorporating local use of higher and lower tier technologies and their integration with other programmes, development, delivery, and implementation.

- **The success of programmes is not always straightforward:**

Incorporating community and institutional use of ICT programmes, and their integration with other programmes, development, delivery, and implementation.

- **The success of programmes is often limited:**

Incorporating community and institutional use of ICT programmes, and their integration with other programmes, development, delivery, and implementation.

- **The impact of programmes is in general perceived to be modest:**

Incorporating community and institutional use of ICT programmes, and their integration with other programmes, development, delivery, and implementation.

**CONTENT ISSUES**

Planning for ICT-based extension programmes:

- **Input-Output relationships:**

Using both input and output indicators to measure the success of ICT-based extension programmes.

- **Combining ICT with newer extension methods can place smallholders at the centre of development**

**SYSTEMS ISSUES**

Extension programmes and services should:

- **Provide smallholders with the ability to act as active participants in the production process**

- **Be appropriate to the technology, budget and time realistically available to programme providers, enablers and users.**

- **Be faster, cheaper and better than any conventional alternative.**

- **Be faster, cheaper and better than any conventional alternative.**

**WIRELESS TELECOMMUNICATIONS AND TOOLS**

Rural SMS technology is rapidly growing in many developing countries. Smallholder farmers can use SMS to access, access, and communicate information about their crops, livestock, and other needs. ICTs can be used to provide information and training materials, articulate their needs, provide information on which grade of particular commodities attracts the best prices? What form is the information in? For example, via a website, a telephone call centre or community blackboard?

**WHAT TO LEARN FROM JAPAN?**

Suzuki interviewed a Japanese farmer who was promoting radically different technologies for smallholder farmers in Japan. The farmer had found that smallholder farmers were more likely to adopt new technologies when they were pre-recorded or live and interactive (with smallholders calling in), rather than when they were pre-recorded or live and interactive (with smallholders calling in).

**AUDI-OVISUAL**

**VIDEO**

Television, videocassette, VCD and DVD are powerful tools for communicating with smallholders. They can provide information and training materials, articulate their needs, help extenders see the reasons for, and the benefits of, change. Extension work must focus on helping smallholder farmers face low or reducing crop yields and to develop new or improved farming systems.

**GROWTH ISSUES**

Combining ICT with newer extension methods can place smallholders at the centre of development.
USING INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) FOR AGRICULTURAL EXTENSION

WRITTEN AND RESEARCHED BY
Ali Mall, Research Officer, International Service for National Agricultural Research (ISNAR), Colombo, Sri Lanka

PRACTICAL EXAMPLES

RADIO

Radio is the most popular form of mass media and is widely used in developing countries, particularly in rural and remote areas. It is accessible to people of all ages and can reach large audiences simultaneously. Radio provides information, entertainment, and education to those who do not have access to television or the Internet. Radio programs can cover a wide range of topics, including news, weather, health, education, and community issues. They are often produced locally, which makes them relevant and relatable to the audience.

PRACTICAL EXAMPLES

THE TELECENTRES

Telecentres are community-based centers that provide access to information and communication technologies (ICTs) to people in rural and remote areas. They are typically equipped with computers, printers, scanners, digital cameras, and other equipment to enable people to access the Internet, communicate, and access digital content. Telecentres are designed to support local communities, small businesses, and entrepreneurs by providing access to information and services that are not available in the local community.

PRACTICAL EXAMPLES

THE TELEPHONE

Telephones are communication devices that allow two people to speak to each other over a distance. They are commonly used for personal and business communication. Telephones are also used to provide emergency services, such as police and fire departments. They are an essential tool for communication in rural and remote areas, where other forms of communication may not be available.

PRACTICAL EXAMPLES

THE INTERNET

The Internet is a global network of interconnected computer networks that provide access to a vast amount of information and communication services. It enables people to communicate, share information, and access services from anywhere in the world. The Internet is an essential tool for communication in rural and remote areas, where other forms of communication may not be available.

PRACTICAL EXAMPLES

THE TELEPHONY/CALL-UP

The Telephony/Call-Up (T/CU) is a communication system that provides access to information and communication services in rural and remote areas. It is a mobile network that provides access to a range of services, including mobile telephony, internet access, and other services. It is an essential tool for communication in rural and remote areas, where other forms of communication may not be available.
A TOPICAL, START-UP GUIDE TO DISTANCE EDUCATION PRACTICE AND DELIVERY

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Written and researched by
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Colin Latchem, Distance Education Consultant, Australia

KNOWLEDGE SERIES

Using Information and Communication Technologies for Agricultural Extension

USING INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) FOR AGRICULTURAL EXTENSION

About the Authors

Colin Latchem, Distance Education Consultant, Australia.

This publication is one of a series on the use of Information and Communication Technologies (ICT) in various fields of development. The series is designed for a broad audience including policymakers, practitioners, trainers, researchers and others interested in the role of ICT in development.

The Knowledge Oasis is a topical, start-up guide to distance education practice and delivery. New titles are published each year.

USING ICT FOR AGRICULTURAL EXTENSION


Transforming Conventional Extension to Farmer-to-Farmer Extension: Computer-mediated communication (CMC) and other uses of information and communication technologies in extension. Canadian Council for Agricultural Technology Transfer, Agriculture and Agri-Food Canada. 154 pp.

An overview of the use of information and communication technologies (ICT) in the agricultural extension sector. The aim of this paper is to provide a snapshot of the current state of ICT use in extension and to highlight some of the key issues that confront extension workers.

Computer and Internet Based
Internet delivery is fast and inexpensive, giving the right perspective and information. Connecting a rich visual and textual output and allowing for instant feedback and interaction.

SATELITE RADIO WITH THE INTERNET

Satellite radio is used to provide Web-based information for smallholders in Ethiopia, Kenya, and Tanzania.

TELEPHONY

Telephone — An easy, tried and tested medium for providing information on practices in the field; research findings; technology transfer methods and support skills; training materials; statistics and other data; a discussion area; and access to other agricultural sites.

RADIO WITH THE INTERNET

Radio is an effective medium for providing Web-based information for smallholders in Ethiopia, Kenya, and Tanzania.

MULTIPLE TECHNOLOGIES

Making the most of multiple technologies — multimedia, combining text, sound, graphics and video, can provide considerably cheaper to consider multiple options. To do this requires planning, coordination, and some investment. However, it is often possible to take advantage of existing technology and to create new opportunities.

PRACTICAL EXAMPLES

RADIO

Satellite radio is used to provide Web-based information for smallholders in Ethiopia, Kenya, and Tanzania.

COMPUTER AND INTERNET-BASED

Internet delivery is fast and inexpensive, giving the right perspective and information. Connecting a rich visual and textual output and allowing for instant feedback and interaction.

WEB AND THE INTERNET

New technologies are changing the way smallholders access and use information. The Internet is a rich source of information on a wide range of topics.

REMOTE DELIVERY

Remote delivery is fast and inexpensive, giving the right perspective and information. Connecting a rich visual and textual output and allowing for instant feedback and interaction.

FURTHER READING


Transforming Conventional Extension to Farmer-to-Farmer Extension: Computer-mediated communication (CMC) and other uses of information and communication technologies in extension. Canadian Council for Agricultural Technology Transfer, Agriculture and Agri-Food Canada. 154 pp.

An overview of the use of information and communication technologies (ICT) in the agricultural extension sector. The aim of this paper is to provide a snapshot of the current state of ICT use in extension and to highlight some of the key issues that confront extension workers.