Information And Communication Technology Trends And Tools In Research And Development: Some Philippine Insights

Antonio O. Ogbinar, Ph.D.

Don Mariano Marcos Memorial State University
Bacnotan, La Union, Philippines

Abstract

In the Philippines, the value of information and communication as indispensable tools to link Science and Technology with its intended clientele is recognized. Results of Research and Development (R & D) are useless without proper dissemination and adoption. To enhance adoption and application, however, purposive and effective communication tools and strategies must be utilized. As such, the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD) and the National Agriculture Resources Research and Development continue to develop mechanisms and strategies in enhancing technology management, promotion and commercialization.

With the advent of E-commerce, tremendous opportunities are being provided for. In communication, the convergence of previously differentiated technological sectors (telecommunications, informatics or computer and information processing, and data and image transfer technology and interactive multi-media) provide us with the methods and media to a message faster, better and easier understood. This refocusing of communication trends and tools may be applied to the grassroots or to the local level to facilitate information sharing and access to information and knowledge, and catalyze participatory communication process.

With these as a backdrop, it is the objective of this paper to share some insights, information and local experiences regarding how information and communication tools and trends are used in bringing about a more effective transfer of science and technology. Specifically, this paper focuses on: (a) enhancing research utilization through *information, education and communication* (IEC), and (b) other technology promotion strategies and modalities employed by PCARRD.

Keywords: Information and communication technology; science and technology; technology utilization; information, education and communication; research and development

Antonio O. Ogbinar: Information And Communication Technology Trends And Tools In Research And Development: Some Philippine Insights

Introduction

As spelled out in the Philippine Long-Term Higher Education Development Plan 2001-2010, the closing years of the 20th century was characterized by "knowledge explosion, scientific breakthroughs, technological advancement, particularly in information and communication, and rapid technology diffusion."

For one, this could be evident in the research and development efforts and strides made by R & D organizations in the Philippines. For instance, the Ilocos Agriculture Resources Research and Development Consortium (ILARRDEC), one of 14 consortia organized by PCARRD, has to date produced significant technologies which are now being adopted locally and hailed in other ASEAN countries. These include, among others, the following: (a) lowland potato production technology, (b) improved modified Ilocos cook stove, (c) low volume sprayer nozzle, (d) strategy for developing sericulture communities, (e) mungbean production technology, (f) agroforestry farming technology for hillyland development, (g) package of technology on tobacco production and off-season tomato, (h) neem derivatives as seed protectant against *Bruchids*, (i) *Jathropa curcas L*. against cotton pests, (j) *kawayan* technology, (k) multi-crop solar dryer, (l) gibberellic acid in garlic production, and (m) indigo as green manure.

But the question remains. To what extent are our scientific discoveries, research results and technological advancements reaching and making an impact in the lives of the greater majority of our people?

It is, therefore, imperative to study and take a look at some strategies, mechanisms and modalities on how we fast track the promotion, dissemination and utilization of research results.

Enhancing Research Utilization Through Information, Education and Communication (IEC)

PCARRD recognizes the important role communication plays in hastening the dissemination of research information to its various types of clientele. In view of this, the Council taps the services of each of the 14 consortia for effective technology transfer activities in the region through its communication arm, the Regional Applied Communication Offices (RACOs) to which I belong.

Information, Education and Information (IEC), a major concern of RACOs, has been long tested as a tool for technology promotion. IEC activities involve needs assessment, design, production, and dissemination of IEC materials in forms appropriate for identified clients, and technology promotion in print, radio, television formats. It also involves interpersonal approaches such as information caravan and technology exhibits.

IEC as a communication and an educational process can help accomplish the following:

1. It creates awareness on the existence of a particular research. Without IEC, how ill people know?
2. It does the social groundwork by mentally and emotionally preparing the beneficiaries in evaluating and finally adopting the technology. Sowing new ideas will require preparation similar to that when we plant corn or rice.
3. It generates support, allies and additional resources. Through networking and alliance building, resources from other sectors can be tapped for doing research and disseminating its results.
4. It neutralizes resistance or opposition. With proactive information dissemination, questions, doubts and issues are clarified beforehand and resistance is minimized.
5. It opens and provides access to new opportunities for improving life. Information that we see and hear about latest inventions or technologies (e.g. washing machines, thresher, electric cutter) give us access to these things.
6. It provides more basis for decision-making. Alternatives and options expand as we gain more information about things.
7. It reinforces desired behaviors. Words have the power to provide psychological and emotional satisfaction. Words can encourage and reward good works as well as sanction undesirable behaviors.
8. It provides avenues through which feedback are solicited to further improve the technology and make research more relevant.

In the words of Torres, IEC's power lies in "its ability to socially transform people from being apathetic to being concerned; from being dogmatic to being broad-minded; from being obnoxiously critical to being supportive; and from being careless to being mindful; from being too negative to being positive. All these are characters are deemed necessary for successful and effective research utilization."

Other Technology Promotion Strategies

Aside from IEC, the other major information and technology modalities being employed by PCARRD are the *Farmers' Information Technology Service* (FITS), the *Farmer Scientist Bureau* (FSB) and the *Information and Communication Technology* (ICT).

What is FITS? This is a delivery system that provides information services on agriculture, forestry and natural resources and market linkages particularly to farmers, processors, traders and entrepreneurs who are not easily and commonly reached by extension services. Several one-stop information shops of technologies have been established in various provinces in the country. Technology shoppers can benefit from this one-stop shopping spree in terms of increased easy access to a wide range of information services; improved linkages among R & D institutions and researchers; and better management and use of agricultural and natural resources in the region.

What is FSB? Popularly known as "*Magsasaka-Siyentista*", this features the big role of model or star farmers as facilitator, enabler and conduit of technological information for other farmers. The model farmers also serve as a researcher, a trainer, speaker in farmers' fora, and evaluator during scientific symposia. Already, most provinces in the country have its own farmer-scientist.

What is ICT? This is a potent tool to facilitate information flow as well as enable quick response to information needs of various clients. Information can be retrieved quickly and information exchange becomes faster and more accessible.

Although ICT is now gaining headway in the different regions of the country, Mamon said that "efforts of integrating this in the grassroots imply hard work. For one, there is a need to educate the farmers about ICT. Connectivity, technology, policy, people participation, and global trending are the key factors that would have to be considered in order for ICT to gain entry into the lifestyle of grassroots."

During the recent 2001 National Convention of Regional Applied Communication Officers which I attended at the Visayas State College of Agriculture, Baybay, Leyte, Philippines, Frias of PCARRD said that for ICT programs to gain foothold in the regions, he strongly recommended the installation of ICT equipment and facilities like desktop publishing, digital video, multi-media, convergence of telephones, television, Internet, and the electronic library.

This means that meeting the demands and challenges of ICT in the country has just begun. As Philippine President Gloria Macapagal-Arroyo put it, we need to enhance our competitive edge not only in building our physical structure for wider access and greater affordability and in enhancing the policy and legislative environment, but more so in enhancing our ICT human resource development.

Conclusion

Technology and information transfer and commercialization is a long, complex and difficult task.

As such, there is a need to continuously keep ourselves abreast with the latest information and communication technology (ICT) trends and tools to facilitate faster access to information. There is also a need to enhance our knowledge and skills on the use of ICT in IEC-based agricultural development and on the use of alternative learning systems and strategies in ICT and IEC for community development. And these can best be achieved through education.

As Bill Gates, the Microsoft genius, said: ***"Information technology makes many things possible, but it is only education that makes things happen."***

References

ALABASTRO, ESTRELLA F. 2001. Keynote speech at the 2001 RACO National Convention, April 25-27, 2001, Visayas State College of Agriculture, Baybay, Leyte, Philippines.

DAR, WILLIAM D. 1996. "PCARRD's 26th Year: Sustaining Economic Growth and Ensuring Food Security." A paper presented at PCARRD's 24th Anniversary, November 8, 1996, PCARRD, Los Baños, Laguna, Philippines.

FRIAS, CESAR. 2001. "Digital Communication." A paper presented at the 2001 RACO National Convention, April 25-27, 2001, Visayas State College of Agriculture, Baybay, Leyte, Philippines.

LLEMIT, NORMA V. 2001. "A proposed systematic approach to RACO Implementation: IEC Documentation and Reporting." A paper presented at the 2001 RACO National Convention, April 25-27, 2001, Visayas State College of Agriculture, Baybay, Leyte, Philippines.

MAMON, CYNTHIA R. 2001. "The Philippines as Knowledge Center in Asia by the First Decade of the 21st Century." A paper presented at the 2001 RACO National Convention, April 25-27, 2001, Visayas State College of Agriculture, Baybay, Leyte, Philippines.

TORRES, CLEOFE S. 1994. "Enhancing Research Management and Utilization Through Information, Education and Communication." A paper presented at the Fourth National Convention of the Philippine Association of Research Managers, May 26-27, 1994, IRRI, Los Baños, Laguna, Philippines.

ILARRDEC Brochure. Information Bulletin Series No. 97-001. Mariano Marcos State University, Batac, Ilocos Norte, Philippines.

"Jumpstarting Economic Recovery and Growth Through Information and Communication Technology (ICT)." An article published at DEVPULSE, A Development Advocacy Factsheet. March 31, 2001. Vol. VII, No. 5, National Economic and Development Authority, Philippines.

2001 RACO National Convention souvenir program. April 25-27, 2001. Visayas State College of Agriculture, Baybay, Leyte, Philippines.

Long-Term Philippine Higher Education Development Plan 2001-2010.

Managing Regional R & D Consortium: A Manual of Operations. 1996. Book Series No. 159. PCARRD, DOST, Los Baños, Laguna, Philippines.