IMPORTANCE OF AGRICULTURAL INFORMATION

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ABSTRACT

An overview is given of the importance of agricultural information to policy makers and other professionals with the ultimate objective of upgrading technical skills in the rural agriculture sector by providing them with appropriate authoritative information technical and educational materials. The dissemination of such development information through mass media e.g. radio, television and audio-visual aids is also outlined.

The repackaging of scientific information, development, preparation, production and distribution of wide ranging agricultural publications to different levels of agriculturists throughout Papua New Guinea has been well established in DAL but has been declining since 1997 and is currently moribund. There is an urgent need to fund and staff this sector to prevent its collapse. There is tremendous scope for information Servicing, information Transfer, Data Management and Computer Software Information packages and nurture the knowledge sector in PNG by our information professionals teaming up with advanced electronic information sources in Australia & USA.

INTRODUCTION

In his book entitled "The Third Wave", Toffler (1980) divided human history into three major eras or waves. The First wave, from 8000 B.C. to 1750 A.D., was called the agricultural revolution, and was based on farming as the world's primary occupation. In the second wave, from 1750 to 1995, the rise of industrial civilization and the industrial revolution, manufacturing became the principal vocation and the developed world was engaged in or moving towards mass production. The third wave, which began in the mid-1950s, is sometimes referred to as the information age or information revolution and is based on the delivery of services. Here it is pertinent to note form the above scheme that human society was profoundly transformed with each wave and the transition from one wave to the next was seldom easy. Some of the more important features of the information age may be summarised as follows:-

1. **The prized commodity** - information, whether verbal, written or electronically organized, is to-day world's most valuable commodity. Without accurate information, researchers, technologiests, media experts and extension specialists would become incapacitated. All enlightened policy makers now recognized that sound, scientific information must be brought to bear on all public policy issues.

2. **Access to information** - agricultural scientists and farmers in the developed world can have immediate access to scientific and technical information not readily or easily available in most developing countries. For example, CSIRO administrators have been concerned by the decreasing number of research journals available in CSIRO and Australian libraries. But it has been too costly to increase subscriptions. In August 1999, the CSIRO Library Network launched the Electronic Journal Collection giving staff across the country an instant link over 1,800 titles. Electronic journals are much cheaper and at a reasonable cost CSIRO has been able to

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vastly increase their holdings and access for their professionals.

3. **Value of information** - the value of information lies in the fact that knowledge can be used either to guide correct & informed decision making as well as encouraging the introduction of more productive agricultural technologies. (Hua, 1994). For example, the web offers American farmers a way of becoming connected to other points in farming activities. A number of websites have sprung up to provide them with news, agronomic advice and risk management tools, and web-based exchanges, such as Farms. Com, allow them to bid for things like pesticides and fertilizers, and in turn find buyers for their products. Many American farmers now believe that their most valuable harvest may be the data they log in the computer from the land. Using a new software called "percision agriculture" they can link yields in different parts of their fields to particular soil features.

4. **Recent advances in information sector** - tremendous advances have occurred in the fields of information and communication technology. These are, as indicated earlier, already providing, at least in the developed world, easy and complete access to the latest information from across the full range of scientific disciplines. This means that vast quantity of relevant information is available to the professionals almost instantly. Actually researchers such as those in Genomics (the Science of determining the sequences of DNA letter's in an organism's chromosome) cannot function without instant access to day to day development in their disciplines. This is because they need to know whether or not the sequences developed by them have already been discovered. For this purpose, in Australia, all journals are loaded on a CSIRO web server, meaning instant access to scientific information from work, home and even when travelling. All journals in the collections are available as pdf files, whch means they look like their printed counterparts.

5. **Information and communication** - Attempting to absorb vast quantities of relevant information available, however, has been compared to "trying to drink from a fire hose". Acutally many people believe that, "We are drowning in information, while starving for Wisdom" (Wilson 1998). And the problem promises to become more severe. Clearly, making information readily available is not the same as communicating. And it is communication among professionals, both within and across areas of specialization, that is needed. Synthesis of information is greatly needed to enhance scientific progress, to facilitate learning, and to ensure the efficient application of new knowledge to the solution of practical problems. For this purpose publication outlets i.e. Scientific journals which provide outlets for topical synthesis that have passed the rigorous of peer review are essential. PNG does have three reputable Agricultural journals and two of these are currently in dire financial straits.

THE THIRD WORLD SITUATION

The development of new information & technologies using computers, satellite communications and CD-ROM, etc has made information processing and dissemination easier, faster and more efficient. However, a group study on new technologies relevant to developing countries has observed as follows:-

> "The introduction of computers and the application of classical computing techniques, while benefiting the modern sector in urban areas, has had little or no impact on the traditional sector of developing countries, especially in rural areas (Seshagiri, 1983)".

The above statement, almost two decades later, still holds true for Papua New Guinea. A part of the problem, as noted by Hua (1994), may be that the policy makers at times find it difficult to understand **the fuss that is being made on information needs as they have other more important priorities, for example, feeding**

the poor and providing health services to the needy. They totally forgot the fact that by meeting the information needs of scientists and farmers they are boosting agricultural productivity thereby reducing poverty.

INFORMATION POLICY

The following considerations as detailed previously (Erai & Kumar 1994) need to be re-emphasized in revitalising the Agricultural Information Sector in PNG:-

1. Assist in the upgrading of the technical skills necessary for the transformation of rural agriculture and livestock sector.

2. Strengthen the delivery of technical extension services by providing them with authoritative information, technical and educational materials. All information needs repackaging for comprehension at the farmer level.

3. Disseminate Agricultural Information to diverse audience.

4. Development, preparation, production and distribution of wide ranging agricultural publications to different strata of Agricultural professionals.

5. Obtain and provide, to researchers, extensionists and other interested agriculturists results of relevant studies conducted elsewhere in the world.

STRATEGIES

The Agricultural Information Programmes would need to be developed to focus on three strata of our society:-

1. Rural Agriculture and Livestock sector composed mainly of smallholders and evolution of an information base for development and planning at village level;

2. Agricultural Extensionists and general public;

3. Agricultural researchers and other professionals.

With a view to implement the policies and strategies outlined above it is proposed that the following units of DAL be strengthened by infusion of more staff and providing finances for their operations.

A. NATIONAL CARIS CENTRE AND CENTRAL LIBRARY

CARIS (Current Agriculture Research Information Systems) deals with information on agriculture research projects currently being carried out in an international co-operative network composed of national, regional and international centres, with the co-ordinating centre located at FAO Headquarters in Rome.

CARIS is a source of information to researchers, planners, managers or administrators, policy and decision makers, production and development specialists. CARIS covers the whole range of research in agriculture and related fields. CARIS in PNG was established in 1987 at the Department of Agriculture and Livestock Headquarters at Konedobu. In 1990, CARIS produced the first directory of Current Agricultural Research in PNG. Fiscal constraints have however, slowed down and frequently stopped these operations. CARIS and AGRIS operations must be greatly strengthened and scattered information units in DAL such as PNGRIS, Marketing, Rural Statistics, etc brought under one umbrella. They would provide information servicing, information transfer, data management and computer software packages. Their operations would benefit greatly by teaming up with electronic sources in Australia and USA.

The Central Library for DAL, located at Konedobu, was established in early 1960s and serves all the agricultural institutions in Papua New Guinea. The main functions of the library is to co-ordinate and provide various library services. It has over

20,000 volumes, most print materials and 500 periodical titles the number of which on current subscription has unfortunately been steadily declining, due to insufficient budgetary allocations, and currently stands at zero.

Today Agricultural professionals in DAL and thereof have no access to recent advances in various facets of the vast agriicultural enterprise in other parts of the world. DAL could consider - subscription to Electronic Journals, along the pattern of CSIRO (vide supra). But this means investment in costly electronic hardware and software and, if past experience is any guide, no funds would be available for maintenance and recurrent expenses. The running and maintenance of electronic facilities is a costly undertaking and these costs continue to rise every year.

B. AUDIO-VISUAL TOOLS

Video programmes can greatly assist the extensionists by showing farmers how exactly to do something or what a crop/livestock looks like or should look like. It doesn't require a high standard of literacy and combines words, pictures and music.

A person typically retains about 10% of the information he reads, a full 20% of what he hears, but 80% of what he see, hears and discusses. This is the potential of visual and audio visual screening as a teaching tool. And if "hands on" practice or demonstrations is included, a person's retention-level can rise to a high 90%.

Some twenty-two (22) films produced by the DAL Audio-Visual Unit in English, Pidgin and Motu using hired equipment have proved highly popular. Obviously the use of audio-visual tools as an aid to extensionists should be emphasized and strengthened. But since 1996 no new video-films on Agricultural subjects have been produced. Financial constraints have limited further progress in this field.

C. RADIO COMMUNICATIONS

DAL has provided ideas, informations and staff for the formulation and production, of National Broadcasting Corporation's agricultural radio programmes. These send out simple messages on practical agriculture that can be understood even by someone who cannot read and write. The messages are received quickly, and absorbed over long distances by large groups of our people. The development of above programmes is only possible if the staff have the backing of a well run and up-to-date agricultural library with latest books, journals, research reports, handbooks, encyclopaedias, bibliographies, literature guides, directories, reviews and other publications. This, as indicated above, is presently not the case. These still popular and eagerly sought after radio programmes, in face of financial constraints, have now more or less ceased altogether. No serious attempt has been made to develop home grown agricultural programmes, not even backyard gardening information for featureing on EMTV.

D. PUBLICATIONS

These are the single most important sources of information by which research-extension-farmer linkage in agricultural sector is maintained. For the continuity of publications, the system must ensure regular publication of results. The publications from DAL publication unit address various strata of our society and are intended for didiman, didimeri, teachers, farmers, general public, extensionists, research workers, project co-ordinators, national and international organizations, experts and consultants, scientists, technologists and other professonals in schools, colleges and universities throughout Papua New Guinea. They fall into the following catagories:-

1. Extension Publications

DAL publishes a wide range of Extension Bulletins, Farming Notes, Rural Development Handbooks, Village Talks, Field Pocket Books, DAL Posters, Discussion Papers, Agricul-

ture in Economy Series and Agriculture Booklets. Also produced are extension materials such as videos, films and audio-tapes on agricultural topics and developments.

DAL produces and publish the only extension journal of developing South Pacific nations viz. HARVEST which is a widely distributed and eargerly sought after journal.

2. **Rural Newsletter**

The widely read Agricultural Newsletter, Didiman has been hailed as the best Rural Newsletter in PNG and needs to be strengthened. Currently it has ceased publication altogether due to staffing and fiscal constraints.

3. **Scientific Publications**

DAL publishes specialist scientific bulletins, technical reports, research bulletins and PNG Journal of Agriculture, Forestry and Fisheries which is the only Agricultural Journal being regularly published from the developing Pacific Island nations. This scientific journal published since 1935 has had standards and presentation which earned it an international recognition. It is a national heritage publishing articles based on research in PNG and the Pacific Island nations.

The above wide range of agricultural extension and scientific publications aimed at different levels of audience are prepared by DAL staff specializing in writing, editing, designing, typesetting. They, as recently as 1996, were distributing 10,000 publications and over 50 titles each year throughout PNG. A Reader and Listener survey in 1993 showed that there is demand for more publications to be distributed to more centres.

Current state of DAL Publications

As the former Chief Publication Officer of DAL, it is sad for me to observe that since 1997 there has been a steady and unacceptable decline in the fortunes of DAL Publication and Printing Unit. Two highly experienced national editors have left the unit and no new replacement have still been appointed. The computers for Harvest and PNGJAFF purchased in 1994, though now working erratically, have not been replaced. Telephone & fax bills are seldom paid regularly resulting in long cut offs. The printing machines have not been serviced regularly. The trust account of the unit which received "outside job money" and was used for bringing out various DAL publications, has been taken away from the unit resulting in its irregular functioning. It is no longer a scientific business enterprise it used to be from 1993-1997. It is in the interest of Agriculturists of all strata in PNG to see that the unit is revitalized by funding it normally and returning to its Trust Account for efficient day to day operations.

E. KNOWLEDGE SECTOR

According to a February 1993 issue of the Economist the fastest growing part of all rich countries is neither manufacturing nor traditional services but the "knowledge sector". The magazine noted that over half of all workers in rich countries are currently employed in the production, storage, retrieval or distribution of knowledge. New journals are being established at the rate of one day in the industrialized world. We are therefore often hood-winked by people who discourage us either from starting new journals in the world or revitalising old ones on the pretext that there are enough journals already and it is in a scientist's interest to publish in a Western Journal.

We need to wrench ourselves from the above legacy, by strengthening the old journals and establishing new high-level scientific journals worthy of the best papers from anywhere else in the world. The stocks-in-trade of scientific journals are ideas, high standard of published papers and regularity of their appearance, and we must therefore be in the market-place for journals if we are to be competing participants in this trade. Unless we are prepared to invest in the "knowledge sector' now we would find it very

difficult to catch up with the brain power of our competitors, in the 21st century. The information sector requires adequate funding and staffing. It cannot function on the wings of hopes, prayers & grandiose statements.

We must remember that knowledge can be converted into income & jobs. The role of Government is to:

a) encourage entreprenurship;
b) encourage can-do-community.

The Government has a responsibility to ensure competitiveness by creating:

a) low tax environment;
b) low inflation regime.

The above policies would generate investment both domestically and from abroad.

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