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MANAGEMENT TRAINING AS A KEY TO SUSTAINABLE DEVELOPMENT IN AFRICA*

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Introduction

Human resource development has been recognized as an important component of donor aid contributions over the years. CIDA has raised human resource development (HRD) to one of the highest order priorities in Canada's new strategy for international development:

Development is about people. People are, in fact, not only the only most crucial resource, but the *raison d'etre* of development--both the means and end.

The purpose of this paper is to deal with two aspects of HRD within the framework of Canadian contributions to development in Africa. First, we deal with a specific form of HRD--management capability. The important role played by management in developing countries has only recently begun to receive the recognition that it deserves. Second, we will identify specific initiatives undertaken and experiences gained within the Faculty of Agriculture at the University of Manitoba in providing training services, particularly management training services, to developing country graduate students. We have experimented with and produced a program of management training which is unique in

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Canada and is being expanded to international locations. Third, in keeping with the theme of this Conference, and the thrust of development requirements, we will also address the issue of sustainability as it relates to management requirements.

Role of Management in Development

Many approaches to studying management exist. From an agri-business perspective, Downey and Erickson (1987) suggest that management is "...the art of successfully pursuing desired results with the resources available to the organization...". The following generic functions are commonly prescribed for management: planning, organizing, directing, co-ordinating and controlling.

Within the African context (and indeed other developing countries), attention has focused on the quality of public management and how to improve management. However, in addressing this problem, it has been apparent that both the nature of the problem and what needs to be done have not been clarified. The definition of management given above which focuses on the need for a clear definition of "desired results" is a start at the definition of the problem. In this regard, experience indicates a lack of clarity in defining country objectives for agriculture and in priorities setting among them.

In a similar context, Eicher (1989) notes that both the Bruntland Commission Report, Our Common Future, and the Technical Advisory Committee Report, Sustainable Agricultural Production neglect the issue of developing sustainable institutions. From a management perspective, sustainable agricultural development cannot be achieved without a set of objectives and priorities, and organizations capable of providing the remaining required management functions of: planning, directing, co-ordinating and controlling.

In this context, the Consultative Group on International Agricultural Research (CGIAR), an informal association of donors, and representatives of developing countries, which supports the 12 International Agricultural Research Centres (IARC's) created the International Service for National Agricultural Research Systems (ISNAR) in 1980 as the thirteenth Centre. ISNAR's mandate is to improve international agricultural research management capabilities. ISNAR's efforts are particularly geared toward strengthening national agricultural research systems in developing countries where it is widely agreed that organizational and managerial weaknesses are seriously holding back the productivity of research systems.

According to ISNAR (1987), a strong and productive national agricultural research system requires:

- a coherent research policy designed to meet national development goals;
- an organization compatible with the objectives and functions the government assigns to research;
- an integrated set of management processes allowing the system to effectively mobilize and use the required resources--manpower, investment, operating funds, and facilities; and
- the ability to communicate effectively with its clientele, its partners (the scientific community), and the countries' policy makers.

Research management is described by ISNAR as being a sufficiently complex and defined area of study to warrant being developed as a scientific discipline.

From the perspective of a project manager, the function of "controlling" involves the creation of an information system that monitors plans and processes to ensure that they are meeting predetermined goals and sounds a warning, when necessary, to signal the need for

remedial action. The United Nations' Administrative Committee, a co-ordination task force on rural development, has documented definitions and procedures for project managers in a joint World Bank, International Fund for Agriculture Development (IFAD), and FAO publication, Project Monitoring and Evaluation in Agriculture, 1987.

Interest in this area at the University of Manitoba has developed in response to a short paper prepared by Dr. D.R. Campbell in 1985, "Matching Education of Third World Students in Canada With Needs in the Third World," in which he identified the gap between Third World needs and education provided to students in countries like Canada and the United States. It is widely recognized that most graduates take up management positions within a few years of returning to their home countries. However, their overseas training is far removed from the managerial problems that the graduates are likely to encounter upon their return. Kerrigan and Luke (1987) point out that even in instances where management training is provided, it is often irrelevant, overly theoretical, outdated, or far removed from the managerial problems in developing countries. Similar observations have been made by Kiggundu et al (1983), who note the following:

1. Training is too often dominated by "imported" curricula using foreign material. Management theory developed in an industrialized country setting is often irrelevant or inadequate in Third World settings (Kiggundu et al. 1983, Kiggundu; 1988a).

2. Training generally does not focus on the relevant roles and functions of the development administration, but tends to focus on the more traditional roles of public administration (Brinkerhoff and Klaus, 1985).

Campbell identified two changes in Canadian education of Third World students aimed at closing the gap identified above:

1. Short programs of management/administration training for almost all donor supported students working at Canadian universities.
2. Financial support to all graduate theses to relate to the student's country of origin.

Recognition of the need to provide this form of HRD has led to a series of Management Training Workshops at the University of Manitoba and a proposal for a Centre of Excellence to expand on this concept into research, graduate training, and in-country workshops. These programs are described in more detail in the next section.

Management Training at the University of Manitoba/ Management Workshops

Although the problem of HRD has been well researched, there is little evidence of concrete measures aimed at dealing with the problem. In direct response to this, the Department of Agricultural Economics and Farm Management, University of Manitoba, has sought to address this issue in a variety of specific ways. In collaboration with CIDA, the Department of Agricultural Economics and Farm Management undertook a pilot management skills workshop for Zambian graduate students during the summer of 1987. The pilot project was judged to be highly successful and with some adjustments to include research specific issues, a similar workshop sponsored by IDRC was conducted from July 21 to August 5, 1988 for African graduate students. A third workshop, sponsored by IDRC, will be held from July 20 to August 5, 1989 and will focus on the topic of research management. The workshop material is designed to be highly relevant to the African milieu by using speakers with considerable experience in that continent.

The objectives of the Research Management Skills Workshop are:

1. To provide African students at an advanced stage in their graduate programs in Canada an overview of skills and knowledge useful in management, particularly in the African environment;
2. To provide the students exposure to the framework, principles and requirements of research management;
3. To provide the students an opportunity to improve and practice communication, presentation, and group dynamic skills which are an integral part of effective management;
4. To foster communication among African students in Canada as a means of sharing their experiences and assessing the applicability of management concepts in resolving the problems of their home countries.

The workshop is made up of three related but separate modules, with each module reasonably self-contained in terms of subject matter. The modular approach facilitates greater flexibility in developing and using management information packages on each of the distinct areas and allows different aspects of management to be highlighted depending on the group attending.

The first module, *The Role of Micro-Computers in Research Management*, includes the following topics:

1. terminology;
2. micro-computer components;
3. manual functions;
4. operating systems;
5. word processing;

6. menu versus keys;
7. spreadsheet introduction and use;
8. research applications (Lotus 1-2-3, M-Stat, databases);
9. purchase of microcomputers and supporting software.

This module is presented by the Solomon Sinclair Farm Management Institute which is developing software in financial management and expert systems. The purpose of this module is to acquaint students with computers, and their use, and with available software; although they receive hands on experience, the purpose is not to teach them to use computers.

Particular attention is paid to ways in which computers can be used to develop and improve management information which is essential for all aspects of economic management. In most developing countries, the problems of planning without facts have been well documented. All the major management functions of planning, coordination, monitoring and evaluation of projects necessitate the processing of large quantities of data. These tasks are greatly assisted by recent advances in microcomputers and software technology which has made available relatively inexpensive, portable, flexible and "user-friendly" micro-computers which are suitable for work in rural areas and for middle and junior managers with no special computer programming skills. The World Bank (1983), for instance, reports that in countries like Kenya, Nigeria, Zambia, and Zimbabwe, microcomputers are now handling data from farm management surveys to annual budgeting processes. In every case, microcomputers have been found useful in improving management through improved management information. Selection of hardware and software which is appropriate to the managerial task is critical to successful use of computers. The computer module provides that information.

The second module, *General Principles and Practices of Management in the African Setting*, included the following topics:

1. planning, priority setting, and budgeting;
2. management in the African setting;
3. personnel management and development;
4. personnel management and motivation;
5. financial management concepts and measuring performance;
7. benefit-cost case study; and
8. women in African development.

This module treats management within a general public administration and sociopolitical framework. The need for this treatment has been well researched by Kiggundu (1988a; 1988b) who points out that various aspects of the sociopolitical context of management in Africa contribute to the enactment of the general and specific task environment that African managers, both in the public and private sectors, must deal with in the performance of their strategic and operational tasks.

In Africa government is the most dominant factor in the management of organization/environment relationships. Its pervasiveness in directing resources through regulation, control, ownership, and management of nearly all major institutions of the economy undermines the contribution of private initiative. In most cases, government is overburdened with the task of managing institutions. And quite often, political pressures override economic considerations. Furthermore, governments lack the expertise to formulate coherent national development plans while frequent presidential decrees which fail to match objectives with available resources only worsen the problem. This lack of expertise also has adverse

implications for these governments' capacity to negotiate with international agencies, thus leading to less than optimum benefits from international ventures. Therefore an understanding of the political, administration, and bureaucratic process is an essential and relevant component of management training.

Against this broad background, module II emphasizes the need for management priorities in a general country policy setting and the importance of donor priorities. In particular, deficiencies in country financial management continues to be a major constraint to increasing donor assistance in many developing countries. A broad perspective is placed on evaluation techniques such as benefit-cost analysis. Conceptually, it should be possible to link project benefits and costs to changes in country-level GNP. Project benefits and costs in turn are viewed as being built up from sectoral level establishment financial flow data. In addition, developed country business financial statements and analysis techniques are applicable to African parastatals. This year, students will be exposed in detail to the issue of sustainability. Women in development and environment are discussed as cross-sectoral issues.

Personnel management is a central issue of concern to African students. First, they are interested in the best means of achieving change as new elite members returning to their home country. The reverence for elders is viewed as being a major constraint to change in African systems. Second, options concerning the links between government, private sector and political staff are discussed. Hiring policies and bases for advancement are also discussed.

Module III deals with *Requirements for Effective Research Management*. It shifts attention from the general principles of management to the more specific issue of developing sustainable institutions for African agricultural development by focusing on research. Research is considered to be one of the core institutions that form the basis for improving African

agricultural development. Research is a major governmental activity receiving increasing support from both government and donor agencies. However, in recent years, there has been a dramatic squeeze on funding, due to the deteriorating debt position of many African countries, leading to demands for increased productivity from investment in research. In turn, productive research requires an integrated set of management processes allowing the system to effectively mobilize and use the required resources--in particular manpower.

Hence, Module III proposes that research be considered as a manageable activity which can be evaluated in terms of its contributions to the strategic goals and objectives of a country. This perspective is discussed but not widely accepted by Canadian Faculties of Agriculture. The topics covered in this Module are consistent with the above and include:

1. technology transfer and extension;
2. research monitoring, evaluation, performance, and control;
3. task assignment and personnel management;
4. research milieu in Africa;
5. food security;
6. research methodology;
7. funding agencies such as the International Development Research Centre; and
8. marketing research.

In all module presentations, the case study approach is emphasized. Case studies utilize the information provided in the modules in a cumulative fashion and are designed to reinforce learning. The first two case studies were written, with direction from the Workshop Steering Committee, by E.K. Mupondwa, (a Ph.D. student in Agricultural Economics and Farm Management who participated in the Workshop in 1987) and were based on problems

and situations considered likely to be faced by the students upon return to their homes. The first case study assignment involved a major national agricultural research priority and preparation of a five-year research plan. The second case required preparation of a comprehensive proposal and research management plan for the research project identified in Case 1. The third case assignment prepared was a capital investment analysis, including a discounted cash flow analysis using Lotus 1-2-3 spreadsheet software. In addition to these formal case studies, the participants are required to work on less formal, in-class case studies related to financial and personnel management problems, and to priorities setting. Some of the participants are required to present a summary of their own research projects as a contribution to their team efforts.

General reference material is also made available to participants and seminar discussion leaders, including student profiles, reference material and summary of important socio-economic data for the various home countries of the student participants. Participants in 1988 were from the following countries: Botswana, Burkina Faso, Ethiopia, Kenya, Lesotho, Nigeria, Tanzania, Zambia, and Zaire. Nine were in M.Sc. programs and eight in Ph.D. programs. The participants represented diverse disciplines including agricultural sciences, economics, education, geology, social work, and urban planning.

Prior to the course, the participants are allocated to team groups. Team leaders are designated to organize a team response in developing the two case studies which were assessed by the group on a competitive basis at the end of the workshop. The "best" case study presented is selected on a self-assessment basis by the participants. Teams' evaluation is considered as an essential component of the management training process. In this regard, teams evaluate each other's performance and a winner is decided by the course-coordinators

based on the score sheets. The group experience, role playing, and competition between teams are considered to be a very important part of the course.

The general feeling of individuals involved in the Workshops to date has been extremely positive whether the involvement was as a student, organizer or lecturer. Based on our response to evaluation results for the past two years specific improvements continue to be made in the course. The prior success has resulted in an exceptional response of over 250 applicants for the 25 places in the 1989 course. In addition, Faculty of Agriculture staff and students have requested that a research management course be added to the Faculty of Agriculture graduate program. A course based on the Workshop format will be offered in 1990 in the University of Manitoba graduate program. During January 1989, the computer module was offered to graduate students at the University of Manitoba.

Continuing Development of Research Management Education and Training

The Faculty of Agriculture, University of Manitoba has had a continuing involvement in African agricultural development projects including the University of Zambia, and wheat development projects in several countries including Kenya, Tanzania and Zambia. The need for materials development in agro-economic development education and training has been highlighted by our Workshop and other groups such as ISNAR and the World Bank. In addition, there is a need to deliver research management course modules in Africa and other developing countries. In response to these needs the Department of Agricultural Economics has proposed a CIDA Centre of Excellence for this focus. Also, a proposal to AUCC for developing research management workshops and graduate education in China is being

developed to complement ongoing linkage projects with universities in Wuhan, Yangling, Shanghai and Chengdu.

The Workshops have been extremely successful and have been judged by the participants and observers as highly relevant to the development process. This initiative and other training and research programs in the Department of Agricultural Economics and Farm Management provide a unique opportunity to build on current expertise and programs to establish a CIDA Centre of Excellence. In particular, the management focus should be extended to M.Sc. and Ph.D. programs, be reflected in research undertakings, and the Workshops would make a significant contribution to developing-country problems if they were taken to people in management positions in Third World countries. The major area of emphasis will be agricultural development, but Centre expertise will include resources, the environment, women in development, public sector and research management, management of higher education and private sector training.

The primary objective of the CIDA Centre of Excellence for Agro-Economic Development Education and Training is to increase management knowledge and expertise in developing countries for government planners, project staff, administrations in higher education and business entrepreneurs. This objective is supportive of CIDA's basic objective of improving Canada's efforts of aid delivery through human resource development and for achieving more sustainable economic development. A secondary objective is to foster achievement of the primary objective by developing a national and international information and communication network through linkages with other Faculties of Agriculture in Canada, ISNAR, the World Bank, and the World Resources Institute, the International Research

Centres, and the proposed International Trade and Crop Technology Centre and Institute for Sustainable Development recently proposed for Winnipeg.

These objectives will be accomplished through a combination of activities--study programs by M.Sc., Ph.D., and technical agricultural students at the University of Manitoba which have a management focus, workshops conducted in-country for middle-management participants and a small research program tailored to support the management focus of the educational programs. An essential feature of the Centre will be its co-ordinating or linkage role in relation to other programs within the University as well as groups outside the University. Some of the major linkage relationships are identified in Figure 1.

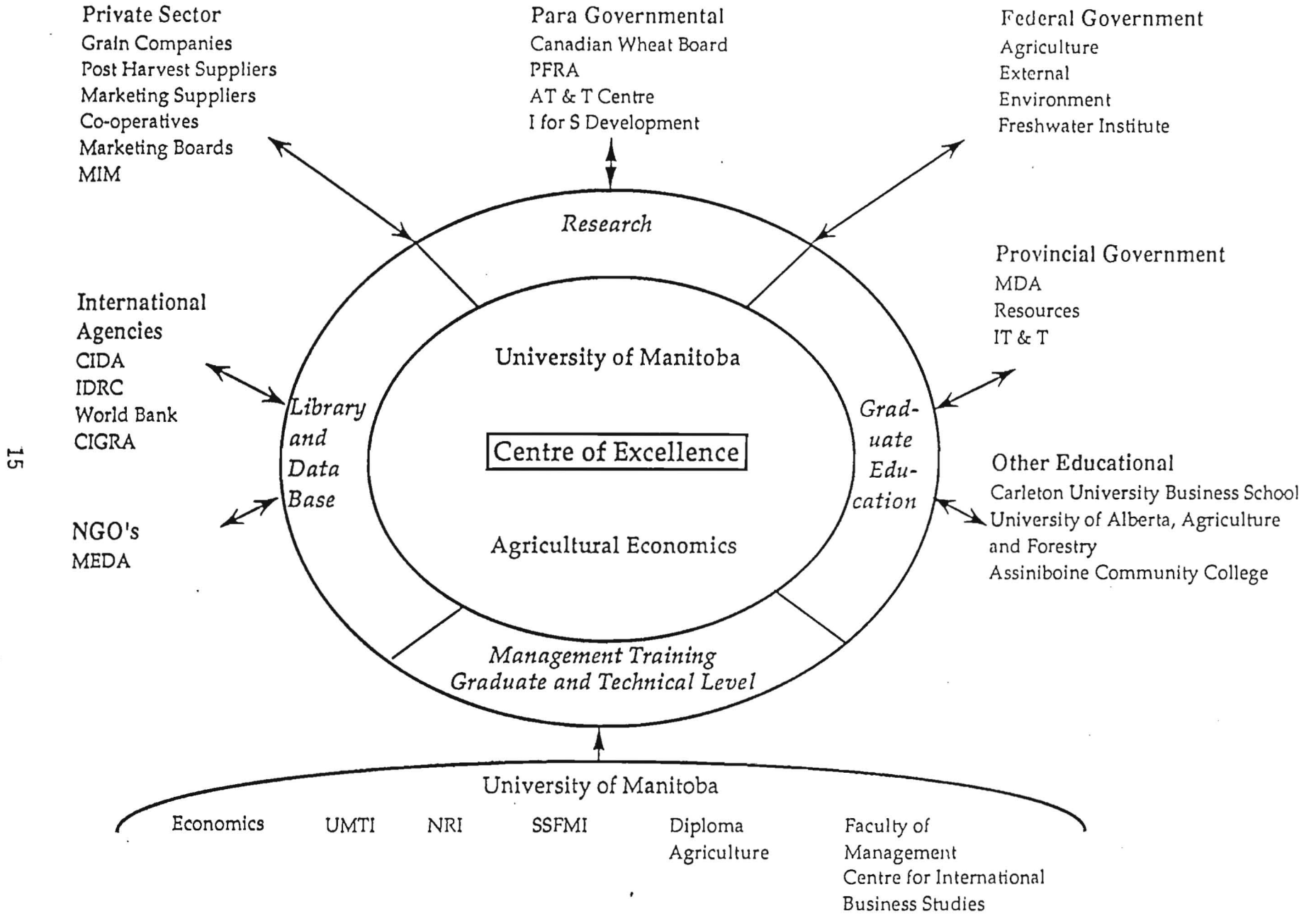
Research Management and Sustainable Food Production Systems

In keeping with the theme of this Conference, it is necessary to briefly address the issue of sustainability. The concept of sustainability is an illusive one, its meaning often shifting depending on the context and purpose. It is important to be clear about what we mean when we talk about sustainability. Since our experience to date with management training has been in the research area, we will restrict our comments here to sustainability as it relates to research management requirements.

Sustainability is used in the present context to refer to the need to develop institutions within which African agricultural development can be nurtured, realized and maintained. Particular attention is focused on the challenges that developing countries face in developing sustainable food production institutions. ISNAR, for example, notes that the pressures on developing countries to develop their agricultural sectors are expected to increase dramatically in coming decades. A dynamic agricultural sector is central to social and economic growth in most developing countries--and technological progress is the key to African development.

Figure 1

Centre of Excellence: Functions/Linkages



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Source: Dr. J.A. MacMillan and Dr. R.M.A. Loyns

Agreement appears to be general that efficient functioning of farm markets and market oriented international agricultural trade is essential to sustainable food production systems.

The evolution of our approach to research management training sponsored by IDRC is outlined above. It is important to note the importance placed on research management by IDRC and their definition of research management (see G.R. Bourrier's (1988) Workshop presentation). According to M.S. Swaminathan the former Director General of the International Rice Research Institute (IRRI) research management is defined as follows:

The establishment of organizational objectives, the permanent monitoring of their validity, the identification and creation of opportunities for their achievement, and the anticipation of problems associated with their definition and solutions...(all) carried out through planning, organizing, directing, monitoring and controlling decisions."

The International Development Research Centre (IDRC) has adapted that definition to express more clearly the organization's perception of the various elements involved in managing a research enterprise. IDRC has observed that a research management training model based on relatively well endowed developing country institutions with reasonably static core budgets is not appropriate for developing country institutions faced with scarce, human and financial resources and at the same time being dependent on the erratic largesse of external donor agencies.

Although realistic about the complexity of the issue, IDRC has made efforts to come to grips with research management and administration issues. In total, 20 activities by IDRC totalling \$850,000 have been funded to address a wide range of research management problems ranging from the development of training manuals for administrators to the development of a project planning, monitoring and control manual for project leaders, to the University of Manitoba workshop directed to prospective managers of research. Most research

managers do not have an opportunity to acquire management training and thus they must learn on the job. Indeed, they learn from their mistakes, or those of others. They have a need for exposure to the broad principles of management, as well as to tools, materials and methods which will facilitate their tasks. There is a need for continual enhancement by additional workshops and seminars in the development of managers' careers.

According to Hopper, (1987) "...management is a crucially important factor in any discussion of sustained projects..." and "that project implementation staff cannot quarrel with the recent Project Implementation Report Conclusion that found quality project management a central need to ensuring sustained results." In addition, Hopper describes the enormous difficulties in assessing successful management and successful completion of projects "...it seems to me that the 'gut' feel of whether anything was in fact sustained is our most reliable indicator." He makes specific reference to the management context for: Awassi sheep breeding in Lebanon, the South Asia success in increasing output of wheat and rice, the early 1950's rural development experience in India, cotton production in the Sudan, cassava production in Guyana, integrated area production efforts in India, and project management problems in Nepal. Hopper also notes that, "If project management is a vital factor in increasing sustainability, then we must ask tough questions about our assumption that each of our client nations has this capability and, if they fail the quiz, we must ask even harder questions about how we can build such capacity as a pre-condition for lending. I suggest we are not doing this adequately."

In conclusion, many acknowledged experts in international agricultural development (GIGAR, ISNAR, IDRC, World Bank, UN, FAO, etc.) have identified research management as a critical factor in developing sustainable food production systems. Success with

agricultural development programs in the University of Manitoba Faculty of Agriculture and with research management workshops for African graduate students would indicate that a small positive contribution to improving the management factor and hence sustainable food production systems in Africa is being made. Moreover, it is our view that additional resources allocated to management training in the context of sustainable agricultural development would have a substantial pay-off.

REFERENCES

- Bourrier, G.R. (1988). "Training in Research Management." In Proceedings of the IDRC Research Management Skills Workshop for African Graduate Students. Edited by R.M.A. Loyns, J.A. MacMillan, and E.K. Mupondwa, Department of Agricultural Economics and Farm Management, University of Manitoba, Winnipeg, Manitoba, July 21 - August 5.
- Brinkerhoff, D., and R. Klaus (1985). "Managerial Roles for the Social Development Manager," Public Administration and Development, Vol. 5, No. 2, p. 146.
- Campbell, D.R. (1985). "Matching Education of Third World Students in Canada With Needs in the Third World."
- Casley, D.J., and K. Kumar (1987). Project Monitoring and Evaluation in Agriculture. A Joint Study by the World Bank, IFAD, and FAO. The John Hopkins University Press, Baltimore.
- Canadian International Development Agency (1987). Sharing, Our Future. Canadian International Development Agency, Department of External Affairs, Ottawa, p. 37.
- Downey, W.D., and S.P. Erickson (1987). Agribusiness Management. 2nd Edition. McGraw-Hill, Inc., p. 25.
- Eicher, C.K. (1989). Sustainable Institutions for African Agricultural Development. Working Paper No. 19, International Service for National Agricultural Research, The Hague.
- Hopper, W.D. (1987). "Sustainability, Policies, Natural Resources, and Institutions." In Proceedings of the Seventh Agriculture Sector Symposium. Edited by T.J. Davis and I.A. Schirmer. The World Bank, Washington, DC, p. 9.
- ISNAR (1987). Working to Strengthen National Agricultural Research Systems: ISNAR and Its Strategy. The Hague, Netherlands, June, p. 8.
- Kerrigan, J.E., and J.S. Luke (1987). Management Training Strategies for Developing Countries. Boulder and London: Lynne Rienner Publishers.
- Kiggundu, M.N., J.J. Jorgensen, and T. Hafsi (1983). "Administrative Theory and Practice in Developing Countries: A Synthesis." Administrative Science Quarterly. 28:66-84.
- Kiggudu, M.N. (1988a). "Africa." In R. North (editor), Comparative Management: A Regional View. Cambridge, Mass: Ballinger Publishing Company.

Kiggudu, M.N. (1988b). "Management in the African Setting." In Proceedings of the IDRC Research Management Skills Workshop for African Graduate Students. Edited by R.M.A. Loyns, J.A. MacMillan, and E.K. Mupondwa, Department of Agricultural Economics and Farm Management, University of Manitoba, Winnipeg, Manitoba, July 21 - August 5.

Swaminathan, M.S. (1983). "Critical Elements in Managing Science and Technology for Development." In Proceedings of the Panel of Specialists of the United Nations Advisory Committee on Science and Technology for Development. January 8-11.

TAC (1988). Sustainable Agricultural Production: Implications for International Agricultural Research. Rome: TAC (Technical Advisory Committee) Secretariat, FAO (UN Food and Agriculture Organization).

World Bank (1983). World Development Report 1986. Oxford University Press, Washington, D.C.

World Bank (1985). Agricultural Research and Extension: An Evaluation of the World Bank's Experience. Washington, D.C., p. 8.

World Commission on Environment and Development (1987). Our Common Future. Oxford and New York: Oxford University Press.