CANADA

International Socioeconomic Information Sytems

An Evaluative Study of DEVSIS-Type Programs

Wilson O. Aiyepẹku

International Socioeconomic Information Systems:

An Evaluative Study of DEVSIS-Type Programs

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Dedicated to:

Professor (Chief) S. Olajuwon Olayide
who has helped me to realize the truth
in Edmund Burke's immortal words:

"All that is necessary for evil to triumph
is for good men to do nothing."

CONTENTS

PREFACE

For many the concept of DEVSIS (Development Sciences Information System) is not new. They are familiar with the preliminary work that was undertaken in the mid-70s to design an international information system for the development sciences. Various international agencies - the United Nations Educational, Scientific and Cultural Organization (Unesco); the United Nations Development Programme (UNDP); the United Nations Department of International Economic and Social Affairs (UN-DIESA); the Organization for Economic Cooperation and Development (OECD); the International Labour Organization (ILO); and the International Development Research Centre (IDRC) - came together to sponsor the establishment of a system that would help to meet the information needs of planners and decision-makers responsible for economic and social development. The illustrious roster of agencies was not surprizing, given that development had been identified as "one of the most important missions facing the world in the third quarter of the 20th century."

The DEVSIS model has been applied to information initiatives in many regions of the world, and IDRC feels a certain degree of pride in having been involved in the implementation of several socioeconomic information systems that have been based upon the DEVSIS design. It is true that DEVSIS is not a global system in the sense envisaged in the mid-70s, despite the fact that other global missions are successfully supported by global information systems; INIS (peaceful uses of atomic energy) and AGRIS (agricultural production). Upon reflection, however, one realizes that many aspects of the "development mission" are specific to particular geopolitical regions, and, hence, we have observed, with fascination and support, the manner in which regional and subregional information requirements have remoulded the original DEVSIS concept. We feel that the system is richer as a result.

The following study should be considered as a review of IDRC's involvement with DEVSIS-type information systems. The presence of Dr Wilson Aiyepẹku, as a Program Advisor, during his sabbatical year from the University of Ibadan, Nigeria, permitted us to obtain an in-depth review of our program in this area. This study began as a report that Dr Aiyepẹku prepared, for the Information Sciences Division of IDRC, of his evaluation and analysis of our socioeconomic information systems program. His report was read by several highly respected colleagues in the field, and all have agreed that the substance of the report should have a much wider distribution as it represents the first in-depth evaluation of DEVSIS-type information systems.

As a result, Dr Aiyepẹku was contracted to prepare the following study, heavily based upon his original report. Above and beyond the experience gained from his sabbatical year as Program Advisor in our Division, Dr Aiyepẹku is well suited to be the author of this publication. The DEVSIS program is not new to him for in 1979 he served as an IDRC consultant to participate in the Team of Experts that conducted the feasibility study on "DEVSIS - Africa - A Pan-African Documentation and Information System for Social and Economic Development." The recommendations of this study served as the basis for the creation of the Pan-African Documentation and Information System (PADIS) within the UN Economic Commission for Africa in Addis Ababa, Ethiopia.

Dr Aiyepẹku, who received his doctorate in library and information studies in 1973 from the University of Ibadan, changed his research interest from the field of bibliometrics to that of socioeconomic information systems in the mid-70s, when he was appointed the senior consultant to lead a research project to study the perception and utilization of information by Nigerian

federal civil servants. His study, funded by the National Library of Nigeria, is soon to be published; however, the results have been widely disseminated through leading journals in the fields of social science, information science, and public administration.

Because the following study is a first attempt to review IDRC's involvement with the establishment of socioeconomic information systems, based upon the DEVSIS model, we hope that it will serve as a mechanism for the exchange of ideas and opinions by those who are working in this field. We welcome questions and comments and look forward to continued dialogue with our colleagues on a subject that continues to be of extreme importance.

Martha B. Stone
Deputy Director
Information Sciences Division
IDRC

FOREWORD

My first contact with the International Development Research Centre (IDRC) was in July 1978 at a Unesco-sponsored seminar to discuss information flows to policymakers in Africa. I had been invited to present a paper at the seminar in my capacity as the leader of a research project to identify the perception and utilization of information by Nigerian civil servants. It happened that IDRC, in collaboration with the United Nations Economic Commission for Africa (ECA), was at that time putting together a team of consultants to carry out the feasibility study and design of an information system for socioeconomic development in Africa. IDRC offered me a consultancy on that team, and my association with the Centre has waxed stronger and stronger since then.

Soon afterward, IDRC offered me a Fellowship to spend my sabbatical year (1980/81) as Program Advisor in the Socio-Economic Systems Unit of its Information Sciences Division. Among other specifications in my contract, I was required to write a report reflecting on my experiences in the design, management, and evaluation of IDRC-funded development information systems during the year. The report (Aiyepeku 1981a) was formally presented to the Director of the Information Sciences Division, John E. Woolston, in August 1981 and IDRC promptly circulated it to several leading information specialists within and outside the Centre. Based on the comments it received, IDRC offered me another consultancy to prepare the report for publication. Specifically, the terms of the consultancy required me to travel from Ibadan to Ottawa to work at the IDRC head office; review the files of the Information Sciences Division related to its program in the Development Sciences Information System (DEVSIS); discuss with the staff of the Division current activities undertaken in this field; and update, revise, and edit my report entitled "Socio-Economic Development Information Systems: An Evaluative Report on a Program in the Information Sciences Division of IDRC" in preparation for final publication by the Centre. This book is the outcome of that consultancy.

Wilson O. Aiyepẹku

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7

ACKNOWLEDGMENTS

PART I

INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

Chapter 1 provides background information about the study: its objectives and organization and a resumé of the operational DEVSIS-type systems that have been evaluated.

The recommendations presented in Chapter 2 are derived from Chapters 3 through 7, which contain my evaluation of operational systems; Chapters 8 and 9 where proposed systems are discussed; and Chapters 10 and 11 where specific policy proposals are presented. These recommendations have been specifically addressed to IDRC for three reasons: (a) Among international development agencies, IDRC has perhaps the clearest mandate to relate information to the process of development in the Third World. (b) All aspects of the study that led to the publication of this book were funded by IDRC. It would appear inappropriate, indeed preposterous, therefore, to address recommendations emanating from such a study to any other agency. (c) DEVSIS is the brainchild of IDRC, which has committed, and continues to commit, more intellectual and financial resources to its applications and enhancements around the world than any other organization.

Consequently, any recommendation on DEVSIS that stands a chance of being implemented must have IDRC's active support. However, this observation must be viewed against the background of two cornerstones of IDRC's policy in supporting development research efforts in the Third World: that the initiative for development-oriented research must come from the developing countries themselves; and that other international development aid agencies be involved, whenever possible, as partners with IDRC, in funding development research in developing countries. Indeed, IDRC's decision to support a project is often contingent on the level as well as the value of support the project receives from other international agencies. Thus, it is expected that for several of the recommendations summarized in Chapter 2, IDRC's crucial role may well be to respond by initiating action rather than assuming full responsibility for implementation.

All the recommendations are specifically addressed to IDRC's Information Sciences Division except where otherwise stated.

Chapter 1

INTRODUCTION

1.1 Objectives and Organization of the Study

This study is designed to serve several purposes simultaneously. In view
of IDRC's substantial investments in DEVSIS-type systems all over the world,
it is hoped that the study will serve as a tool for policy decisions by the
management of the Centre's Information Sciences Division (IS).* It is hoped
also that it will serve as a reference book for program staff in the
Division's Socio-Economic Systems Unit and in the UN regional Economic
Commissions as they monitor and evaluate the specific systems covered by the
study. Like all tools, therefore, this study will be useful to the extent
that its target audiences find it relevant to their immediate and long-term
tasks and responsibilities. No information system is on trial and certainly
no individual who has had or now has any connections with the systems covered
is being "evaluated." The observations, analysis, and recommendations in this
book reflect the experience of an academic who has had the opportunity to
learn something about the design and management of operational information
systems for socioeconomic development. My learning experience has, naturally,
been influenced by my rather strong theoretical background in information
science. The result is a certain perception of systems performance that,
hopefully, will contain something useful to those who design, monitor, or
evaluate development information systems within and outside IDRC. It is also
hoped that the book will be useful for teachers and students alike in schools
of library studies and information science around the world.

Given the objectives defined above, it becomes clear why the study has
been organized to highlight my recommendations first before evaluating the
specific information systems, one at a time. Chapter 2 contains a summary of
all recommendations arranged in order of my priority. The priority reflects
both time and significance considerations and it is expected that IS
management and staff, as well as most of the target audiences identified for
the study, might wish to read this chapter and the entire Part I of the study
first before skimming through Chapters 3-11. In any event, it is my hope that
the main target audiences will read all sections of the book.

In Part II (Chapters 3-7), the characteristic features of each system are
described with a view to highlighting their objectives, achievements, and
major problems and suggested solutions. The policy recommendations proposed
for each system deal specifically with the system under review, although
elements of such recommendations may be found in other systems as well as in
Chapter 10.

An attempt has been made in Chapter 8 to draw readers' attention to
proposed DEVSIS-type and DEVSIS-related information systems. Although none of
them was operational at the time of writing, it is useful to monitor their
progress, as well as the progress of other development-related information
systems not reviewed in this study, during the coming years. The opportunity
was also taken in Chapter 9 to discuss basic principles of information systems
design as they apply to operational and, in particular, proposed systems.
This area is an obvious candidate for update and expansion in a future edition
of this book. Chapters 8 and 9 constitute Part III.

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* All acronyms and abbreviations used in this publication are listed in
Appendix D.

11

The policy proposals (Part IV) are divided into two sections: New
Program Directions (Chapter 10) and Toward Greater Program Effectiveness
(Chapter 11). These very important chapters could be regarded as the
"applied" section of the study where my observations, reflections, etc., in
dealing with the specific systems described in previous chapters are brought
to bear on the identification and description of new management and program
goals. Chapter 10 suggests new areas of activity that IDRC, alone or in
collaboration with other international development agencies, might wish to
initiate in the near future. Some of the proposed topics are considered more
urgent than others while several could, conceivably, be launched
simultaneously. Chapter 11 makes specific proposals about what IDRC (IS)
management and program staff might consider doing to promote greater
effectiveness of their programs in developing countries.

Throughout this study, the terms "development," "socioeconomic," and
"DEVSIS-type" are used interchangeably to qualify "information systems" or
"programs." This approach enables readers to retain their favourite
terminology while ensuring complete understanding about a common area of
concern. The common area of concern is the adoption or adaptation of the
DEVSIS Study recommendations in terms of subject scope, targeted audiences,
data definition and storage, and information retrieval. A "DEVSIS-related"
system, however, means, in this study, one whose subject scope falls within
that already identified for DEVSIS-type systems, but whose file structure and
information retrieval techniques, and in particular, its targeted audiences,
may be radically different from that of a DEVSIS-type system.

1.2 Operational DEVSIS-Type Systems

In 1975, six international organizations: Unesco, OECD, UNDP, ILO, IDRC,
and the former UN Department of Economic and Social Affairs, now UN-DIESA,
sponsored a feasibility study and design effort for a global information
system aimed at supporting persons involved in the economic and social aspects
of development. The proposed system was identified with the acronym DEVSIS
(Development Sciences Information System). This system was concerned
particularly with responding to the needs of government departments with
intersectoral and cross-sectoral responsibilities (Ministries of Planning and
Economic Development); Ministries with responsibilities for social services,
such as labour, education, and cultural affairs; development banks;
international and regional organizations involved in development programs; and
to those of the research community engaged in socioeconomic development
studies. The Report of the DEVSIS Study Team (1976a) addressed organizational
and financial questions, but it also outlined the technical procedures that
should be employed. A 10-page, question-and-answer folder (DEVSIS Study Team
1976b) published by IDRC summarizes the key items from the DEVSIS Study Team
Report.

DEVSIS, as a global system, has not been implemented. However, a number
of important regional and national systems have emerged over the years and, in
varying degrees, these systems have drawn on the DEVSIS Study Report in
defining their technical procedures and, in doing so, they have tested the
validity of what was recommended in 1975. Nonetheless, the Report, its
sponsors, and the development community as a whole can only benefit from
objective critiques of the declared objectives of DEVSIS and the achievements
of IDRC so far in funding DEVSIS-type systems. In this context, one notes
with satisfaction the extensive review of the Report by L.N.T. Mendis (Mendis
1980) of the Sri Lanka Development Planning Programme. Some of his ideas are
incorporated in Chapter 10 of this study. I shall merely enumerate, at this
point, the international DEVSIS-type systems that are currently in operation,
all of which have evolved with IDRC support. And although there is evidence
to suggest that national DEVSIS-type systems were started before and after the
DEVSIS Study Report, they will not feature in this review. In chronological
order, therefore, we have DEVSIS (Canada) Experimental, the United Nations
Development Information System (DIS), the Latin American Planning Information

Network (INFOPLAN), the Caribbean Information System for Economic and Social Planning (CARISPLAN), and the Pan-African Documentation and Information System (PADIS).

IDRC supports an in-house project, a DEVSIS (Canada) Experimental, which demonstrates, in addition to its responsibility to identify, process, and disseminate Canadian development literature, what can be achieved cooperatively by a number of countries submitting their national development literature worksheets in conformity with a standard format for central computer processing and output at IDRC's head office in Ottawa. Established in 1975, DEVSIS (Canada) Experimental has played, and continues to play, a significant role in the operationalization of DEVSIS methodologies, particularly in developing countries.

The Development Information System (DIS) at the Information Systems Unit (ISU) of the UN Department of International Economic and Social Affairs (UN-DIESA) continues to receive substantial technical assistance from IDRC. By virtue of its strategic location within the UN, DIS assumes a significance out of proportion to the current size of its operations. It started in 1978.

The antecedents of INFOPLAN, the system designed to collect, organize, and deliver relevant socioeconomic information to the planning community and development banks in Latin America, date back to 1974, thus preceding the publication of the DEVSIS Study Report. IDRC support to the host institution, CLADES, has continued uninterrupted since 1975, although the operational INFOPLAN was not launched until 1979.

CARISPLAN was designed as the Caribbean subregional node of INFOPLAN. Indeed, INFOPLAN and CARISPLAN were planned together but they have been separate projects with separate funding from IDRC. Phases I and II of CARISPLAN coincide with the same phases of INFOPLAN (1979-80 and 1981-82, respectively).

PADIS is the African counterpart of INFOPLAN and CARISPLAN. It is envisaged to have several components of which the first (PADIS-DEV) concentrates on the organization and provision of bibliographic information for socioeconomic development in the Africa Region of the UN. Launched in January 1980, it is the latest·of the operational, international DEVSIS-type systems.

Chapter 2

SUMMARY OF RECOMMENDATIONS

2.1 Operational DEVSIS-Type Systems

1. DEVSIS (Canada) Experimental

Three recommendations are proposed on the oldest international DEVSIS-type system as follows:

(a) That IDRC take steps to share the training component of the experiment, preferably with competent staff in other DEVSIS-type systems at the UN and the regional Economic Commissions. It is also recommended that this item be included on the agenda of any future meetings of existing and proposed DEVSIS-type systems.

(b) That IDRC appoint a consultant to evaluate the project focusing, in particular, on the use of the indexes published so far and the proportion of Canadian development literature captured.

(c) That the goal of the experimental component of the project be kept under constant review, and particularly so in view of the increasing cooperation among operational development information systems. It is further recommended that a decision be taken soon whether to continue the activity at IDRC (and for how long) or to transfer it to a Third World country with specific criteria and guarantees worked out for such a transfer, as well as a clear statement about the objectives to be achieved in the new host country for the DEVSIS Experiment.

A consultant could probably handle the second part of recommendation (c).

2. United Nations Development Information System (DIS)

It is recommended that to strengthen recent collaborative efforts by the regional Economic Commissions and ISU in promoting the cause of socioeconomic information systems, the Commissions are urged to take further appropriate affirmative action, through the UN General Assembly, to make ISU better prepared to evolve as "a hub" for development information systems within the UN. IDRC is urged to provide funds for any exploratory efforts - meetings, seminars, workshops, etc., - that might lead to the attainment of this goal.

3. Latin American Planning Information Network (INFOPLAN)

Three complementary recommendations are proposed for this system as follows:

(a) That a meeting of representatives of CEPAL/CLADES, Instituto Latinoamericano de Planificación Económica y Social (ILPES), Centro Latinoamericano de Demografía (CELADE), and the major regional centres of excellence for Latin American development literature and IDRC be convened to map a strategy for capturing the substantial amount of development information that is now not included in the INFOPLAN data base. IDRC is urged to provide funds for such a meeting and perhaps for a feasibility study as well before such a meeting is convened.

14

(b) That in countries where research in support of development planning is carried out in nongovernmental institutions, such institutions be considered as candidates for INFOPLAN's participating nodes, and that INFOPLAN and IDRC personnel get together to work out appropriate criteria for such an important policy decision.'

(c) That IDRC accord more recognition to research as an important activity at CLADES and that IDRC funding for INFOPLAN and other DEVSIS-type systems reflect such recognition.

4. Caribbean Information System for Economic and Social Planning (CARISPLAN)

In view of the strong mandate given the Caribbean Documentation Centre (CDC) by the Caribbean Development and Cooperation Committee (CDCC) to evolve a Caribbean Information System (CIS) for the subregion, particular care should be taken to delineate the boundaries of the development information component of CIS. In addition, it is recommended that areas where CIS could collaborate effectively and economically with existing systems, such as AGRIS, be identified and carefully negotiated.

5. Pan-African Documentation and Information System (PADIS)

Four proposals are put forward here:

(a) That IDRC, in collaboration with ECA, embark on a scheme to identify a few carefully selected countries in Africa and give them maximum technical and financial support as the cornerstones of the emerging PADIS network.

(b) That ECA, with IDRC, might wish to explore the possibilities of strengthening appropriate subregional centres in Africa to enable them play a key role in the PADIS network, either as an alternative to recommendation (a) in certain parts of the region or in addition to the country-specific efforts.

(c) That the management of PADIS seek every opportunity for cooperation and partnership with international agencies whose mandate and activities have involved them actively in building information infrastructures and systems in Africa.

(d) That PADIS take immediate action to evolve and rationalize a training policy that utilizes available human resources in information science in Africa to teach DEVSIS methodologies and applications at both subregional and national levels.

2.2 Proposed DEVSIS-Type and DEVSIS-Related Systems

Four exploratory recommendations are proposed:

(a) That as soon as the situation in the Economic Commission for Western Asia (ECWA) headquarters permits, IDRC explore ways and means to implement its offer of help in ECWA's proposal to establish a DEVSIS-Western Asia.

(b) That IDRC get involved in efforts to coordinate development (government) information systems in Southeast Asia (DEPLADIS) under the auspices of the Economic and Social Commission for Asia and the Pacific (ESCAP) and its Study Group on the Coordination of Government Information Systems.

(c) That if IDRC's support for ESCAP's proposal to launch a manually produced Development Planning Newsletter materialized, effective technical and political linkages be ensured between it and the Committee on Studies for Cooperation in Development's (CSCD) proposed computerized South Asia Socio-Economic Development Information Network (SASEDIN).

In any event, it is recommended that the implementation of a DEPLADIS be based on a clearer and scaled-down design documentation than was reviewed in writing Chapter 8 of this book.

(d) That IDRC promote a continuous dialogue between operational systems on the one hand and proposed DEVSIS-type and DEVSIS-related systems on the other to reduce probable areas of overlap and discourage unwarranted systems incompatibility.

2.3 New Program Directions

(a) That the establishment of a Postgraduate School of Information Science for English-speaking Africa be accorded the highest priority and urgency if DEVSIS-type projects in Africa are to have the expected impact on socioeconomic development efforts in the region. It was evident from the Centre's records examined on this subject that significant progress was being made in the direction of this recommendation.

(b) That IDRC reopen the whole question of numerical or nonbiblio-graphical information systems in close collaboration with the United Nations Research Institute for Social Development (UNRISD), Unesco, the UN Statistical Office, and other international agencies that have demonstrated interest in the subject. More specifically, it is recommended: that a competent information specialist, with a sufficiently strong background in social and economic statistics, be identified as a consultant to study the problem afresh; that the consultant work closely with a Program Officer in IS and report regularly to the Director of IS on the progress of the work; and that, simultaneously with the appointment of a consultant, efforts be set in motion to identify, with a view to appointing, a Program Officer with specific responsibility for numerical information as an important component of DEVSIS-type and other information systems funded by IDRC.

(c) That a prime objective of IDRC's policy on the Mini Integrated Set of Information Systems (MINISIS) should be collaboration with individuals and institutions in the Third World to develop appropriate software packages that can be run on hardware configurations already available in the Third World. This is considered a very important aspect of the technology-transfer process in North-South relations.

(d) That IDRC sponsor a meeting.of representatives of INFOPLAN, the OECD, Unesco, and other international agencies that might make useful contributions to a "Discussion Forum on DEVSIS File II" during the first quarter of 1983, or soon thereafter, where the scope and direction of a redefined DEVSIS File II would be discussed, taking into consideration the experiences of the Technical Co-operation Among Developing Countries program of the UNDP (TCDC)/Information Referral System (INRES) (of TCDC), International Referral System for Sources of Environmental Information (INFOTERRA), and similar referral systems.

(e) On research, three related recommendations are presented as follows: that IDRC identify "research" as a separate budget line item worthy of maximum support and encouragement (especially the study of information perception and utilization variables among different categories of users in developing countries, diagnostic surveys of information infrastructures for development, and the marketing of information products in developing countries); that IDRC identify research as one of the objectives of information systems funded by the Centre in developing countries, and encourage project personnel to undertake "derivative" research during the life of a project and to continue it after the termination of IDRC funding; and that IDRC collaborate with Unesco to ensure that the ongoing research at CLADES on information infrastructures in Latin American countries as a CLADES activity, and explore the possibilities of replicating the experiences of that activity in the other regional Economic Commissions: ECA, ECWA, and ESCAP.

2.4 Toward Greater Program Effectiveness

(a) That in addition to IDRC's already strong support for several national information efforts in the Third World, more of the Centre's resources normally committed to this type of project be directed toward identifying, with a view to supporting, national participating nodes simultaneously in countries with relatively strong, as well as those with very weak, information infrastructures in a manner designed to strengthen existing or planned regional systems.

(b) That in-project and postproject evaluations be broken down into manageable subcomponents: input processes, personnel, tools, output products, training (including seminars, workshops, etc.), services, etc., and that a set of sufficiently discriminating evaluation criteria be developed for each subcomponent. IDRC might wish to hire a consultant to implement this recommendation in addition to substantial progress being made in this area by its Office of Planning and Evaluation.

(c) On IS representation in Africa, the following proposal is presented: that IS appoint a Representative for East and Southern Africa as a matter of urgency, and that, in the interim, efforts be made to identify at least one information specialist who can handle IS business in Eastern and Southern Africa on a part-time basis or on contract. The same person might also be asked to assist with English-speaking West Africa.

It is reassuring to note that IDRC's 1983/84 Work Program and Budget contains a request to the Centre's President for IS representation in the Nairobi Office of the Centre.

(d) Two recommendations are proposed on IDRC's program of Fellowship Awards: that one Fellowship in Information Sciences be awarded every year to worthy Third World specialists, and that IS and the Fellowship Program work out appropriate criteria for selecting such Fellowship holders, bearing in mind such factors as research experience, area of specialization, position in host institution, expected function at IDRC, and status in the IS hierarchy.

17

PART II

OPERATIONAL DEVSIS-TYPE SYSTEMS

OPERATIONAL DEVSIS-TYPE SYSTEMS

A uniform format is adopted for each of the five chapters constituting this part of the study. The objective is not to provide a documentary account of each system, but rather to highlight their objectives and scope, major achievements, identify problems, and propose policy recommendations that could enhance system performance. It is assumed, of course, that readers who need additional information on any of the specific systems would contact either IDRC or the system concerned. (The full address of each system is provided in Appendix A.)

Thus, each chapter describes the background of the system: objectives and scope, commencement date, host institution, budget commitments to-date by IDRC, and the phases of the system's operations. The catalogue of achievements ranges over a number of topics not necessarily found in each system: output products, performance evaluation already carried out, coordination activities, research, and contributions to the maintenance of, or improvement to, important tools used in all DEVSIS-type systems, such as the OECD Macrothesaurus. Only major problems are discussed and every effort is made to present policy recommendations that would deal with immediate system problems as well as those that address overall DEVSIS objectives.

Chapter 3

UNITED NATIONS DEVELOPMENT INFORMATION SYSTEM (DIS)

3.1 Background

     Located in the UN Department of International Economic and Social Affairs
(UN-DIESA), DIS is the major activity of the Information Systems Unit (ISU) in
the same UN-DIESA. The Unit was established in March 1978 to provide improved
access to unpublished research, project reports and working papers prepared by
or for DIESA and the United Nations. In seeking to provide such access to UN
staff and members of national delegations, special attention was paid to four
areas that affect the economics of the system, namely: (a) compatibility with
international information systems relevant to the interests of users, (b) cost
of computer utilization, (c) appropriateness of the system in the
international development environment, and (d) application of readily
available system components that already had been proved efficient and
dependable.

     A decision was made to test the suitability of the MINISIS software
package for the system because of its flexibility and low cost. The OECD
Macrothesaurus and DEVSIS methodologies were adopted for bibliographic and
subject description to ensure compatibility with similar systems elsewhere.
The Franklin Institute in Philadelphia, USA, made computer time available to
ISU on an HP 3000 minicomputer, free of charge, for several months. IDRC
contributed to the experiment by giving the Franklin Institute a MINISIS
licence, by providing training, by helping in the creation of a data base, and
by releasing a member of staff of the Information Sciences Division for
short-term contracts with ISU.

     IDRC's financial support for Phase I of the project totaled CA$34 200 in
1980 for the lease-purchase and maintenance of an HP minicomputer series 30
and its installation within ISU. This became necessary when the Franklin
Institute announced that it could no longer make its own computer available
free of charge to ISU. Before then, the Unit had been funded from grants
totaling US$343 680 from the Swedish and Japanese governments. During the
2nd year (1981, Phase II) of IDRC funding for ISU, a total of CA$52 800 was
committed to continue the lease-purchase agreement for the minicomputer and to
organize a meeting of the people responsible for similar activities in the
regional Economic Commissions (INFOPLAN, CARISPLAN, and PADIS) to determine
how they might cooperate in the design and development of compatible data
and how development data could best be exchanged among them.

3.2 Achievements

     The report I was asked to prepare on the performance of DIS in August
1980, as well as the official report (Lancaster 1980) of the Unesco-appointed
consultant to evaluate DIS, agreed that the system has made remarkable
progress in very difficult circumstances. Since March 1979, some 3500 records
have been created in the data base. The system is used for demonstrations,
on-line information retrieval, and the generation of various forms of outputs
including specialized bibliographies, indexes, and the publication of
Development Information Abstracts. Many United Nations staff members and
visitors from foreign missions based in New York, as well as several

21

institutions throughout the world, have expressed interest in ISU's
Development Information System and have seen advantages in the use of
minicomputer-based systems for solving information problems, particularly in
developing countries. The Information Systems Unit is also involved in
cooperating with DIESA'S substantive Divisions in the area of information
analysis and dissemination. For example, ISU assisted the Population Division
in designing and implementing POPIN (Population Information Network) and
worked on the evaluation of INFOTERRA (International Referral System for
Sources of Environmental Information) for UNEP. ISU also participated in a
study team that formulated the DEVSIS Africa program (see Chapter 6) for the
Economic Commission for Africa. It works regularly with the Inter-
Organization Board for Information Systems and Related Activities (IOB), with
Unesco's General Information Programme, and the UN Centre for Human
Settlements. In 1981, ISU made copies of its data base available to ECA,
CEPAL, ECWA, and ICC. In exchange, a copy of the CEPAL data base has been
received by ISU.

One of the most far-reaching achievements of ISU was that during the 35th
Session of the UN General Assembly in the fall of 1980, four ISU staff
positions were approved for inclusion in the regular UN budget for 1980. This
decision was based on the favourable report of the Unesco-appointed consultant
referred to above. A decision to support the entire activities of the Unit
through the UN regular budget was taken at the 36th Session of the UN General
Assembly despite the somewhat negative report (Lancaster 1981) of the second
evaluation of ISU, this time under the aegis of IOB, in 1981. The leasing
arrangement made in 1980 between IDRC and the UN was such that, if the General
Assembly approved continuation of ISU's activities by absorbing all of its
budget into the regular budget of the UN, a portion of the money paid for
renting the computer would be deducted from its purchase price.

In June 1981, ISU hosted a meeting of the information units within the UN
regional Economic Commissions currently managing socioeconomic systems or
planning to do so. They included INFOPLAN and CARISPLAN operations of CEPAL,
PADIS of ECA, ECWA, and ESCAP. Emphasis was placed on interagency
cooperation, the establishment of more formal communication links, and the
promotion of the use of compatible methods to promote more efficient exchange
and dissemination of information. The resolutions passed at the meeting (see
Appendix C) indicate that a solid foundation for continuing cooperation and
coordination had been laid for the exchange of data bases among the UN
agencies and for maintenance of the Macrothesaurus. Moreover, at the meeting
it was agreed that ISU serve as the "clearinghouse" for these activities
(UN-DIESA/ISU 1981).

One of the recommendations of the New York meeting was the acceptance of
an IDRC offer to hold a workshop in Ottawa to produce a model data base
structure and a model manual for development information sytems. Two members
of the IDRC (IS) staff worked to produce the first draft of a document in the
fall of 1981, and it was reviewed at an international meeting held in Ottawa
and Mont Sainte Marie, Canada, in November 1981. The participants at the
meeting were drawn primarily from the UN regional Economic Commissions (Latin
America and the Caribbean, Asia and the Pacific, Western Asia, and Africa).
Many amendments were proposed to the specifics of the draft and suggestions to
expand certain areas were also made. Particpants also reaffirmed their
earlier recommendation that IDRC publish the product in the form of a "model
manual" and expressed their intention to be guided by it in the elaboration of
their own systems.

The document (Morin-Labatut and Sly 1982), which resulted from the
exercise, incorporated the recommendations of the November 1981 meeting and
should be viewed as the final report of that meeting. It should also be
regarded as the first major update of the technical recommendations made by
the DEVSIS Study Team in 1975. The document provides bibliographic descrip-
tion with a field-by-field definition, provides a model worksheet, a data-
definition table, and system requirements using CDS/ISIS or MINISIS. Two
companion volumes, to be published in 1983, will cover guidelines and
procedures for abstracting and appendixes for computerized authority files,
that is, institutions, corporate authors, etc.

Agreement among the regional Economic Commissions and UN-DIESA/ISU on common indexing tools is a major step in the direction of closer cooperation among DEVSIS-type systems globally. The decision to have ISU act as the clearinghouse for such activity must be seen as a small but important step at locating a DEVSIS "hub" within the UN headquarters in New York.

The response of IDRC to these significant developments at the United Nations has been most encouraging. A grant of CA$87 000 has just been approved to enable UN-DIESA/ISU: (a) to review and update the second edition of the Macrothesaurus; (b) to prepare the draft of a third edition (of the Macrothesaurus) and the necessary photocomposition tapes for printing; (c) using the ISU computer facilities, to process modifications and to diffuse them at regular intervals to users; and (d) to convene a meeting of technical experts from the regional Economic Commissions with a view to coordinating the management and maintenance of the Macrothesaurus.

Jean Viet, the consultant who prepared the 1978 edition of the Macrothesaurus, has again been identified to handle the updating exercise and there is every hope that a new edition of this valuable tool will soon be in the hands of users throughout the world, especially those involved in the operation of socioeconomic information systems.

3.3 Major Problem and Suggested Solution

The major problem of DIS, as I see it, is the inability of ISU thus far to function as it is capable of doing or even as it was originally intended by the UN authorities that established it. One of the three reasons for the establishment of ISU was to assist member states (of the UN) in identifying their information needs and establishing linkages with appropriate international information systems and services within the substantive areas of interest to DIESA.

Unfortunately, this objective is the most vague and elusive of the three, and it is, consequently, difficult to define precisely ISU's mandate in this area, although the spirit of the mandate does not seem to be in doubt. Because DIS is the major activity of ISU, it automatically means that the scope of DIS's operations remains equally vague and elusive in regard to the key function cited above. This point has been given due emphasis by Lancaster (1980, pp. 33-34) in his first evaluation of DIS, and he had the following to say on what the proper functions of ISU should be in the UN context, and expecially in relation to the regional Economic Commissions:

> ....the Unit could play an extremely important role within a network of development information services. Such a role could include such activities as maintenance of a common thesaurus, ensuring compatibility in software and record structure, and generally providing technical support and advice to other network members.
>
> Indeed, if this role is not assumed by some organization within the UN family, there exists a serious danger that the regional commissions and other bodies will go off in different directions in processing development related information and that, rather than having a single source for this information, it will be widely scattered throughout many different files. On the other hand, if one agency is designated as a kind of "hub" in a development information network, even if this "hub" has only advisory functions, a coordinated approach to the collection, organization and dissemination of development literature becomes possible. This could be achieved through the exchange of compatible data bases so that, in effect, the ISU and each of the regional commissions would have its own master data base incorporating the present ISU data base, the IDRC data base, the data bases of the regional commissions and, perhaps, data bases contributed by other international agencies

and national governments. An extremely valuable source of information would thus emerge and become widely accessible.

Were the mandate of the ISU expanded so that it became responsible for the compilation of such a master data base of development literature and for the provision of information services from this resource, it could become a highly valuable information unit within the UN family. To become, in effect, the "hub" of a development information network would not be difficult technically. IDRC has already offered its data base to DIESA and, presumably, there is no reason why ECLA, ECA and other regional commissions would not cooperate in a similar way.

Of course, if the present ISU were expanded to become the hub of such a network, this could be expected to lead to an increase in costs as well as an expansion in scope. However, since the Unit already exists, has equipment in place, has experience in the construction of a data base, and is now beginning to offer services, it seems reasonable to assume that a quantum jump in the scope and value of the data base could be achieved for a relatively marginal increase in annual operating costs. This is especially so since the IDRC and ECLA data bases are already in a machine-readable form compatible with DIS.

As was noted above while reviewing the achievements of DIS, there are now positive indications that ISU is, indeed, in the process of proceeding along the lines suggested in Lancaster's (1980) first evaluation report.

3.4 Recommendation

It is recommended that, to strengthen recent collaborative efforts by the regional Economic Commisions and ISU in promoting the cause of socioeconomic information systems, the Commissions take further appropriate affirmative action, through the UN General Assembly, to make ISU better prepared to evolve as "a hub" for development information systems within the UN. IDRC is urged to provide funds for any exploratory efforts - meetings, seminars, workshops, etc., - that might lead to the attainment of this goal.

Chapter 4

LATIN AMERICAN PLANNING INFORMATION NETWORK (INFOPLAN)

4.1 Background

In 1975, IDRC approved a grant of CA$187 100 to CEPAL to enable CLADES to begin to develop a regional program. That project had two objectives: the production of a directory of information facilities in the region and the production of a retrospective bibliography on regional economic integration. The project was organized in such a way as to involve national institutions and regional integration agencies in the work of the program.

By 1978, when CLADES approached IDRC for another grant, the Instituto Latinoamericano de Planificación Económica y Social (ILPES) had come into the picture. ILPES was created in 1962 to provide the countries of the region with services to strengthen their planning operations. ILPES' basic responsibility is to provide training and advisory services at the request of the governments concerned with planning. ILPES is guided by a Technical Committee, comprising representatives of government ministries responsible for planning, which reviews and approves its program of work. The Director of ILPES is responsible to the Executive Secretary of CEPAL. In April 1977, the first Conference of Ministers and Heads of Planning of Latin America agreed to establish the System of Coordination and Cooperation among Planning Bodies of Latin America to promote joint actions and to further the exchange of national experience in economic and social planning. The ILPES Technical Committee met in April 1978 and requested ILPES to set up the mechanisms necessary to ensure the widest possible dissemination of planning studies and research, and to establish a register of information on the results of the work of the planning bodies.

Thus, the 1978 approach to IDRC by CLADES for assistance in developing the design for a Latin American Planning Information Network (INFOPLAN) was to be jointly executed by CLADES and ILPES. The proposal was supported by a clear mandate from Ministries of Planning in the region and its execution was expected to be facilitated by ILPES' close links with planning officials.

The specific objectives of the project were: (a) to produce, with the participation of specialists from national Ministries of Planning, a draft design for the information system (i) taking into account the methodologies recommended by the DEVSIS study to the extent that these were compatible with the needs of the region, and (ii) incorporating the experience of CELADE in the operation of DOCPAL, particularly the possible use of the same formats, computer programs, and indexing techniques that had already proved satisfactory; (b) to provide for the review of that draft by Latin American officials from planning agencies; (c) to prepare a pilot program that would include the participation of 10 Latin American countries to demonstrate the operation of the system; (d) to present the results of the pilot program to senior representatives from national planning agencies with a view to adoption of the system; and (e) to provide advisory and training services to planning bodies participating in the pilot program.

The Centro Latinoamericano de Demografía (CELADE), which was carrying out a population information program (DOCPAL) under another grant from IDRC, joined CLADES and ILPES to coordinate the project. This was because CELADE had gained valuable expertise in computerized bibliographic operations.

Consequently, a committee chaired by the Director of CLADES, with representatives from CEPAL, ILPES, and CELADE, coordinated the project.

IDRC approved a total of CA$280 900 for the first phase (1979/80) of the project. The project is now in a 2-year second phase (1981/82) for which IDRC has approved a total of CA$513 890, commencing 1 January 1981.

The principal objectives of Phase II of INFOPLAN are to enable CLADES, in cooperation with ILPES, to complete the design of INFOPLAN, to make it fully operational, and to consolidate the system and services through a systematic process of decentralization at subregional and national levels, extend participation in INFOPLAN to more countries in Latin America, and strengthen the capabilities of the countries already participating to do so more effectively. Specifically, Phase II was designed to: (a) establish the Central American and South American subregional nodes to participate in the system, (b) coordinate the technical processes and the training and advisory services at the subregional and national levels, (c) cooperate and interface with other regional information systems with a similar subject scope to ensure compatibility and eliminate needless duplication, (d) experiment with the building of a nonbibliographic data file (DEVSIS File II concept) to provide information of interest to development planners, (e) provide information services to planners and related public servants in the region, and (f) produce four issues of Planindex, that is, Volume 2 nos. 1 and 2, 1981 and Volume 3 nos. 1 and 2, 1982.

4.2 Achievements

The specific objectives identified for the 1975 grant were achieved, that is, the production of a directory of information facilities in the region and the production of a retrospective bibliography on regional economic integration. In addition, IDRC's grant also facilitated discussion of, and the exchange of experience about, information problems and solutions at the national and regional levels. CEPAL has implemented the Integrated Set of Information Systems (ISIS) software package, built a growing data base of CEPAL documents and publications, coordinated the preparation of the Spanish version of the revised OECD Macrothesaurus and undertaken a number of training programs in the region.

All of the broad and specific objectives of Phase I of INFOPLAN have been achieved. A "Draft Design and Strategy for INFOPLAN Development" was produced spelling out the structural and functional components of INFOPLAN (CEPAL/CLADES 1980). This design was reviewed and endorsed by the Technical Committee of ILPES in February 1980 and recommended for approval to the ILPES Meeting of Planning Ministers.

A pilot network program was launched with the active participation of Brazil, Colombia, Costa Rica, Guatemala, Peru, and Venezuela. The pilot program has produced the following results: (a) Planindex, the biannual, computer-produced bibliographic index of abstracts of socioeconomic planning information in Latin America, produced two isssues (Vol. 1 nos. 1 and 2) containing a total of 842 pages; (b) a new worksheet, prepared in collaboration with DOCPAL and the CEPAL library; and (c) a manual for abstracting and indexing socioeconomic planning literature.

The results were presented to the Third Conference of Ministers and Heads of Planning in Latin America at a meeting in Guatemala in November 1980. The approval of these results by the Conference signaled the formal adoption of INFOPLAN by member states of CEPAL.

Twenty-eight documentalists and economists participated in a 2-week training workshop from 14 July to 1 August 1980 in Santiago, Chile, to prepare them for effective participation in INFOPLAN. Representatives from Brazil, Colombia, Costa Rica, Chile, Guatemala, Mexico, Peru, and Venezuela

participated in the workshop. Relevant regional and international
organizations in Latin America, such as the Central American Bank for Economic
Integration, the Consejo Superior Universitario Centroamericano (CSUCA), and
DOCPAL, as well as the Mexico and Port-of-Spain offices of CEPAL, were also
represented. Two types of advisory services were offered during Phase I of
the project. CLADES staff provided on-the-spot advice to subregional and
national participating centres during their field trips. Direct invitations
were also sent to, and accepted by, CLADES to provide advisory services on
specific planning information problems.

    According to the report (CEPAL/CLADES 1982) of the 1st year (January to
December 1981) of INFOPLAN Phase II, considerable progress has been recorded.
Certain technical changes were introduced in the characteristics of the input
sheets for the INFOPLAN data base. This move was designed to harmonize the
input sheets for CLADES, DOCPAL, and CEPAL library operations. The result was
being tested and would eventually be distributed to all INFOPLAN participating
centres. Simultaneously, action was initiated to standardize the selection of
planning literature for entry into the system.

    An experiment was initiated to create a National Planning Information
Network (NAPLAN) involving national focal points for INFOPLAN outside the
Ministries of Planning. The idea was to broaden national participation in
INFOPLAN without necessarily going through government agencies in Latin
America, a procedure that has given Phase I of INFOPLAN considerable
difficulties. Ecuador, Panama, Uruguay, and Paraguay have reportedly featured
in the experiment, with varying degrees of success.

    Efforts to create a Central American subregional node of INFOPLAN have
progressed rather slowly. A document addressing this subject was reportedly
submitted to the authorities of the CEPAL/Mexico office which is,
understandably, interested in carrying out the project in close collaboration
with, and with substantial help from, CEPAL. Equally understandably, CEPAL
appears unwilling to commit funds for a new project until it could be
reasonably sure of sustaining such activity. Nevertheless, INFOPLAN has
managed to hold a 3-day technical meeting in Panama at which Costa Rica,
Guatemala, Honduras, and Panama were represented. The purpose of the meeting
was to discuss the modalities of a possible Central American subregional
component of INFOPLAN.

    During 1981, a total of eight technical trips were made by INFOPLAN
personnel in Santiago to Brazil, Colombia, Costa Rica, Ecuador, Guatemala,
Honduras, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela aimed
essentially at locating new NAPLAN centres or strengthening old focal points.
Two seminars also took place in Ecuador and Panama in 1981 during the
launching of NAPLAN centres. A seminar was held in Santiago from 11 to 29 May
1981 to enable participants to acquire the necessary techniques for processing
planning information and to enable them to participate effectively in
cooperative activities involving information units responsible for
socioeconomic planning in Latin America. A total of 22 participants attended,
representing Bolivia, Brazil, Costa Rica, Guatemala, Honduras, Panama,
Paraguay, Peru, Uruguay, and Venezuela. Observers also attended from CEPAL
and other UN agencies in the region.

    Attempts have been made to initiate action on the creation of the
necessary mechanisms to feed the INFOPLAN data base with information produced
by regional and international organizations, other than CEPAL, ILPES, and
CELADE. Toward this objective, CLADES prepared a small project proposal for
the Inter-American Development Bank (IDB) to carry out joint abstracting
services with CEPAL/CLADES to feed the planning data base in Santiago with
information on some of the planning information generated by IDB. CLADES was
still waiting for the reaction of IDB as at the time of writing this book.

    Volume 2 no. 1 of Planindex, with 340 entries, has been published; Volume
2 no. 2 with 350 entiries was published mid-1982. It is also important to
note INFOPLAN's efforts to distribute the indexing tool more effectively in
the region.

Finally, a very important seminar on methodologies for evaluating information infrastructures and related experiences in Latin America was jointly organized by CLADES and Unesco in September/October, 1981. The report (CEPAL/CLADES 1981a) of the seminar clearly indicates the active role of INFOPLAN personnel in the successful outcome of a major research effort in information science in Latin America. That seminar was based on an earlier publication in Spanish (CEPAL/CLADES 1981b) and as a result of the seminar, efforts are now under way to translate the book into the official languages of the UN to facilitate a wider dissemination of its contents.

4.3 Major Problems and Suggested Solutions

The three problems to be addressed in Latin America are: (a) the scope of INFOPLAN in the context of the DEVSIS concept, (b) the question of private institutions that are the centres of excellence for development information in the region, and (c) the nonrecognition by IDRC of important research activities going on in CLADES.

There is a conceptual and operational gap in CLADES between the "development community" (the target audience of a DEVSIS-type system) and the "planning community," which is the target audience for INFOPLAN. The scope of INFOPLAN in Santiago is significantly narrower than, say, that of DEVSIS-Africa (see Chapter 6). In particular, the technical aspects of major development literatures are routinely excluded from INFOPLAN data bases on the assumption that they are of no interest to planners. For example, only about 15% of the transport literature handled by CLADES is entered in INFOPLAN files. The result is that there are major aspects of Latin American development information that are not being picked up by INFOPLAN or, indeed, by any other Latin American system. No decision has as yet been taken by CLADES about what to do with this substantial body of development literature. In addition, there are several regional centres of excellence for the production of development literature on Latin America that are located outside CEPAL, and it would appear that CLADES has a very tenuous mandate to "coordinate" the information activities of these centres.

Indeed, the major problem of CLADES, and consequently INFOPLAN in this regard, is the absence of a mandate to identify, organize, and disseminate the Latin American socioeconomic information for the benefit of policymakers in the region. Therefore, any extensions of the scope of INFOPLAN by INFOPLAN personnel beyond the "planning literature" as pragmatically but narrowly defined for the requirements of ILPES, have appeared rather arbitrary and uncoordinated. There has to be a deliberate and systematic strategy to expand the scope of INFOPLAN (or any other system in the region) to approximate the scope defined in the DEVSIS Study Report. What I recommend is an early meeting of representatives of CEPAL, CLADES, ILPES, and CELADE and the centres of excellence for development information in Latin America, with financial support from IDRC, to work out a strategy that would ensure that all of Latin American development information is indeed effectively managed to address Latin American development issues. It is noteworthy that a similar meeting is envisaged, with participants from CLADES, CLAD, and ICAP, to identify areas of responsibility and possible overlap in the field of public administration information.

As noted earlier, important research activities on information infrastructures and the parameters of systems design and evaluation in Latin America have been going on for years at CLADES. IDRC is clearly aware of these activities, but it has, so far, not set aside funds to support them. The suggestion is not that every INFOPLAN or CLADES activity has to receive IDRC's financial support, but rather to suggest that IDRC's lack of support for these efforts is already having a demoralizing effect on the researchers and CLADES. They wonder, and I believe quite logically, why they have to convince the IDRC of the value of their research, especially research that addresses such basic development issues as information infrastructures and the delineation of systems performance criteria.

A final problem relates to the status of national participating centres. One of the specific objectives of INFOPLAN Phase II is "to establish the Central American and South American subregional nodes of INFOPLAN and bring in more countries within the subregions to participate in the system." Without specifically saying so, the nodes were expected to be government institutions, preferably Ministries of Planning in the respective countries. That is precisely where INFOPLAN is faced with certain problems. The specific problems may be enumerated as follows:

(a) Latin America has witnessed frequent and sudden changes of government functionaries, which often means that control of Ministries of Planning changes hands frequently thereby making it difficult, if not impossible, to develop systematic nodes for a regional system in such Ministries;

(b) In the same countries where the problem described in (a) exists, the teaching of social science disciplines has been banned in universities. Thus, universitities are not available as alternative focal points for INFOPLAN activities; and

(c) Partly as a result of (a) and (b), national documentation centres for socioeconomic planning literatures tend to be found in private rather than in government institutions. For example, the national documentation centre in Paraguay is at the Instituto Paraguayo de Estudios Sociologicos, a private institution.

How does INFOPLAN reconcile these conflicting interests? Perhaps the only solution is to allow INFOPLAN to deal with development-oriented institutions outside government establishments as long as certain guarantees can be worked into such an arrangement. As indicated earlier in this chapter, an experiment has been initiated by the creation of NAPLANs in the region. It is too early to assess the impact of this experiment on the effectiveness of INFOPLAN at the national level. However, if the experiment is successful, it will undoubtedly enhance the decentralization objectives of INFOPLAN Phase II.

4.4 Recommendations

(a) That a meeting of representatives of CEPAL, CELADE, CLADES, ILPES, the major regional centres of excellence for Latin American development literature, and IDRC be convened to map a strategy for capturing the substantial amount of development literature that is not now included in INFOPLAN data bases. IDRC is urged to provide funds for such a meeting and perhaps for a feasibility study as well before such a meeting is convened.

(b) That in countries where research in support of development planning is carried out in nongovernmental institutions, such institutions be considered as candidates for INFOPLAN's participating nodes, and that INFOPLAN and IDRC personnel get together to work out appropriate criteria for such an important policy decision.

(c) That IDRC accord more recognition to research as an important activity at CLADES and that IDRC funding of INFOPLAN and other DEVSIS-type systems reflect such recognition.

Chapter 5

CARIBBEAN INFORMATION SYSTEM FOR ECONOMIC
AND SOCIAL PLANNING (CARISPLAN)

5.1 Background

CARISPLAN is the only subregional (Caribbean) subsystem of INFOPLAN so
far, although another subsystem is under active consideration for Central
America. The host institution is the CEPAL office in Port-of-Spain, Trinidad
and Tobago, and the mandate for CARISPLAN was given by the Caribbean
Development and Cooperation Committee (CDCC).

The CDCC was established as a permanent subsidiary body of CEPAL at the
16th session of CEPAL in Port-of-Spain in May 1975. The programs mandated by
CDCC and carried out by CEPAL's Port-of-Spain office are the only ones in the
information field that embrace the governments of English-, French-, and
Spanish-speaking countries. These programs involve the Bahamas, Barbados,
Belize, Republic of Cuba, Dominica, Dominican Republic, Grenada, Guyana,
Haiti, Jamaica, the Netherlands Antilles, St. Lucia, St. Vincent, Suriname,
Trinidad and Tobago, and the West Indies Associated States (Antigua,
Montserrat, St. Kitts-Nevis).

At the first meeting of CDCC, held in Havana in 1975, member states
expressed the belief that the rate of economic and social development in the
subregion had been slowed by poor availability and use of information. They
recognized that the absence of mechanisms for the effective dissemination and
exchange of information generated in the Caribbean, and the resulting
underutilization of Caribbean expertise, had hindered the development of
effective programs of cooperation. The Havana meeting gave a mandate to
expedite the process of the exchange of information and to eliminate
deficiencies in the collection and dissemination of information about the
subregion. This mandate has been reinforced at subsequent CDCC meetings
(CDCC 1980). As a result, the CEPAL Port-of-Spain office established the
Caribbean Documentation Centre (CDC).

The CDC was established in 1977 with two general objectives: (a) to
support the priority development and cooperation programs established by CDCC
and (b) to promote and facilitate the optimum utilization of the information
resources produced within and outside the subregion. Specifically, it aims to
(a) provide national planners and policymakers, research centres specializing
in Caribbean problems, and international organizations assisting in Caribbean
development activities with pertinent, accurate, and up-to-date information in
areas where there are regional cooperation programs; (b) promote the
coordination and integration of national information systems in the Caribbean;
and (c) facilitate the flow of information among the Caribbean countries and
between them and regional and international programs.

IDRC's total grants to CARISPLAN during its first phase (1979-80)
amounted to CA$146 465. Under Phase II (1981-82) of the system, a total of
CA$456 707 has been committed.

The specific objectives of CARISPLAN Phase I were: (a) to strengthen
national information centres in the Caribbean in the field of economic and
social planning, secure compatibility among the various national information
centres, and establish mechanisms for the flow of information among them and

30

between national centres and CDC; (b) promote the use of information by the Caribbean economic and social planning community; and (c) prepare one bibliography of documents produced by CDCC, and prepare a second bibliography of documents produced both by CDCC and the national institutions in Caribbean countries.

The objectives of Phase II were to consolidate the information activities of the countries already participating in the system, extend participation to all countries in the Caribbean, and lay the groundwork for computerized information processing at the CDC office in Port-of-Spain. Specifically, Phase II was designed to: (a) produce eight issues of CARISPLAN Abstracts, that is, nos. 3 through 10 of the quarterly indexing tool; (b) provide a question-and-answer information service to users of planning information in the Caribbean community; (c) provide a document delivery service to back up the question-and-answer service; (d) strengthen the capabilities of the national participating centres and extend participation in the system to all Caribbean countries; (e) intensify training and advisory services in the subregion, especially at the national level; and (f) conduct a feasibility survey for computerized processing and retrieval of planning information in the Caribbean.

5.2 Achievements

The achievements of CARISPLAN have been very impressive during the first phase of its operations. Fourteen countries have been identified as national focal points for the system: Antigua, Barbados, Belize, Cuba, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts-Nevis, St. Vincent, Suriname, and Trinidad and Tobago. Out of these, six were already submitting worksheets for the CARISPLAN data base by December 1980 (CEPAL 1981). These are: Antigua, Barbados, Cuba, Guyana, Haiti, and Trinidad and Tobago.

CDC has produced manuals, in concert with the coordinating focal point of INFOPLAN in Santiago, to facilitate the standardization of material input to the CARISPLAN data base by the participating national centres. These are: (a) a Manual of Indexing Procedures (CDCC/CIS 1980a), (b) a Manual of Abstracting Procedures (CDCC/CIS 1980b), and (c) a Manual for the Use of the Bibliographic Record Card (CDCC/CIS 1980c). In addition, the first two issues of CARISPLAN Abstracts were published by December 1980. The first was a 190-page bibliographic index of documents produced by CDCC; the second was a 316-page index of documents produced by both the CDCC Secretariat and by the six national participating centres contributing worksheets to the CARISPLAN data base. The third issue, covering the same areas as the second issue, was published early in 1981.

The Documentalist/Trainer has visited every national focal point once and has visited several of them two or three times. Training and advisory services have been provided and continue to be provided in each participating centre, and detailed country reports have been prepared for each centre. The Project Director continues to hold consultative and policy meetings with the authorities of the member states of CDCC aimed at extending and strengthening participation in the system. The publication of CARISPLAN Abstracts, nos. 1 and 2, and the visits of the Project Director and the Documentalist/Trainer have combined to generate an increasing flow of requests for planning information by the member states of CDCC and for a document delivery service to back up the question-and-answer information service that the present resources of CDC cannot cope with. The modalities for effectively addressing this important service need are contained in the objectives of Phase II of the project as summarized above.

Two training workshops have been conducted. The first, from 28 May to 8 June 1979, brought together 10 participants from Antigua, Barbados, Cuba, Dominican Republic, Dominica, Grenada, Guyana, Haiti, Jamaica, and St. Kitts-

Nevis. Three representatives from CARICOM, the Ministry of Finance (Planning and Development) of Trinidad and Tobago, and CDC also attended several sessions of the workshop. Fifteen participated in the second workshop from 24 November to 5 December 1980 (CDCC/CEPAL 1981). Representatives came from the Bahamas, Belize, Jamaica, Montserrat, St. Kitts-Nevis, St. Vincent, Suriname, and from Trinidad and Tobago. Participants also came from CARICOM; the University of the West Indies (Mona and St. Augustine Campuses); and from CEPAL (CLADES) in Santiago. Both workshops have successfully inculcated CARISPLAN procedures and DEVSIS methodologies in all member states of CDCC.

Significant achievements have also been reported during the first year (January-December 1981) of Phase II of the project (CDCC/CIS 1982a). Computer output for three issues of CARISPLAN Abstracts (nos. 3-5) were prepared and nos. 3 and 4 have already been distributed to Caribbean libraries, planners, researchers, and other users of the system's services. In addition, CDC continues to prepare retrospective bibliographies in priority areas of economic and social development for the Caribbean subregion. It published and disseminated one bibliography on energy, and another on Grenada to mark the CDCC VI Session held in that country. It included abstracts from sections of data bases at CDC, CLADES, UNBIS, UNIDO, UN-DIESA/ISU, ILO, and IDRC. The bimonthly Current Awareness Bulletin has continued to list recent acquisitions, references to documents not held by CDC but relevant to the CDCC work program, documents recently produced by the ECLA office for the Caribbean, and a list of publishers (and their addresses) of documents cited in the Bulletin from whom published items may be obtained.

Technical assistance was provided to Grenada, St.Vincent, and Montserrat to strengthen their capabilities to participate more effectively in CARISPLAN. The nature of the assistance was as follows:

- Establishment of mechanisms for channeling unpublished documents from the points of production or receipt in various ministries to CDC;

- Determination of suitable procedures for organizing all types of doucuments received;

- Preparation of worksheets for CARISPLAN Abstracts;

- Development of mechanisms for the provision of services to users, for example, expanding user profiles, establishing a format and a methodology for the preparation of a current awareness bulletin;

- User education meetings to promote the use of information and to explain the role and functions of a country's information unit in the context of CIS; and

- Assistance in the drafting of proposals to international development donor agencies for assistance in developing national documentation centres.

In addition, a CDC librarian was assigned to Grenada's National Information and Documentation Centre for 3 weeks. Missions were made to Guyana and Suriname with a view to holding national workshops designed to extend participation in the system. By the end of 1981, 92 information units were providing inputs to CARISPLAN Abstracts.

Training and advisory services constituted a key component of CDC work in 1981. A Regional Workshop on the Methodology for an Inventory of Development Information Units (CDCC/CIS 1982b) was held in Barbados from 19-23 October 1981. The workshop had three objectives: (a) to transfer the techniques and skills required for the design and operation of data bases for socioeconomic development; (b) to review the results of the CLADES-sponsored Inventory of Information Units in the Caribbean (which exercise involved Trinidad and Tobago, Barbados, Jamaica, and the Dominican Republic) as a basis for a wider application of the findings in the subregion; and (c) to help participants in the design of work programs required to undertake similar surveys in their own countries, under the auspices of CARISPLAN and CIS.

Participants from the following countries attended the workshop: Antigua, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Jamaica, Montserrat, the Netherlands Antilles, St. Lucia, St. Vincent, Suriname, and Trinidad and Tobago. The Caribbean Community Secretariat and the Caribbean Development Bank were also represented.

National workshops on techniques for effective participation in the Caribbean Information System (CIS) were conducted in Barbados, Guyana, and Jamaica. Typical programs included presentations on CIS, the theoretical and practical aspects of indexing and abstracting, introduction to computerized information systems, and practical sessions on indexing and abstracting for inputs to CARISPLAN Abstracts. Participants at these workshops were drawn from government departments and university libraries. A workshop to provide basic techniques in library organization and services to library assistants and executive officers from ministries and government departments in St. Vincent and the Montserrat Public Library was conducted for 10 participants. These paraprofessionals were being prepared for service in their National Focal Points of INFOPLAN. As a follow-up to the regional workshop held in Trinidad and Tobago from 24 November to 5 December 1980, individual training sessions in indexing and abstracting were held for eight participants from libraries in Trinidad and Tobago that have collections relevant to CARISPLAN.

Finally, two consultants who were contracted by IDRC to conduct a feasibility study of computerizing the processing and retrieval of information in CDC presented their report in November 1981. The consultants concluded that there were no feasible, immediate solutions to CDC's problems in this area and recommended a phased approach as follows:

Stage 1: Improvement of the current processing arrangements with CEPAL, Santiago.

Stage 2: Data entry in Port-of-Spain with continuation of data processing in Santiago. Agreement between CDC and CEPAL on a card image batch input format, and the use of ECLA Port-of-Spain's TRS-80-II to prepare CDC's input. This could be listed and corrected on the same TRS-80-II and the records representing an entire issue of CARISPLAN Abstracts sent to Santiago, preferably on a tape prepared from the TRS-80-II diskettes.

Stage 3: Recruitment of a programmer/analyst for ECLA Port-of-Spain and the installation of ISIS in Port-of-Spain, or the conclusion of a satisfactory cooperative agreement for the use of the Caribbean Development Bank's computer facilities.

CEPAL, Santiago, expects that by the end of INFOPLAN Phase II (December 1982), Stages I and II of the recommendations would have been implemented and a new project could be developed based on a long-term program to computerize the information services of CDC.

5.3 Major Problem and Suggested Solution

Unlike CLADES in Santiago, CDC has a strong and clear mandate to develop a Caribbean Information System that is hospitable to all types of information. Ironically, this strong mandate appears to be the source of potential danger to the CDC management. Limited resources could easily become dissipated in building Caribbean information infrastructures that are not, strictly speaking, development oriented. In particular, the distinction between CARISPLAN and a CIS could become blurred thereby leading to avoidable confusion in the minds of the growing number of users of CARISPLAN services. Steps must be taken to prevent such an occurrence, and this concern is the focus of my only recommendation on CARISPLAN.

CARISPLAN also has other problems, such as getting worksheets processed in Santiago, insufficient support services at ECLA Port-of-Spain, coping with

three working languages (English, French, and Spanish), and dealing with small island countries scattered over a wide geographical area. CDC and CARISPLAN project leaders seem to be coping admirably with these challenges and it is expected that the Phase II objectives will be fully achieved.

5.4 Recommendation

In view of the strong mandate given CDC by CDCC to evolve a Caribbean Information System (CIS) for the subregion, particular care should be taken to delineate the boundaries of the development information component of CIS. In addition, it is recommended that areas where a CIS could collaborate effectively and economically with existing systems, such as AGRIS, should be identified and carefully negotiated.

Chapter 6

PAN-AFRICAN DOCUMENTATION AND INFORMATION SYSTEM (PADIS)

6.1 Background

    PADIS is the latest and biggest (both in terms of IDRC's single financial
commitment and in the scope of the system) of all the operational systems
covered by this study. Phase I of PADIS (PADIS-DEV, January 1980 - December
1981) corresponds to the mission and objectives of a DEVSIS-type system. This
chapter deals only with that phase, although references will be made, whenever
appropriate, to the other phases of PADIS. Plans have also reached an
advanced stage to launch Phase II of PADIS-DEV, and references will be made to
it later in the chapter.

    African states have long recognized that information is a resource that,
when organized and used in the proper manner, contributes substantially to
socioeconomic development. Through resolutions and other affirmative actions,
African Heads of State and their Ministers have recognized that a rational
approach to development cannot be formulated unless relevant information is
considered during the planning and programing stages. Reliable projections,
based on accurate knowledge of the past, form the basis for planning future
courses of action. African states have recognized for some time, however,
that the situation with regard to documentation and information about
socioeconomic development in Africa is far from satisfactory. Many countries
do not have mechanisms for keeping track of the published and unpublished
information generated in the context of the activities of their planners,
economists, scientists, and other individuals who have responsibility for
implementing national development plans. They often lack organized access to
the relevant information produced by bilateral and multilaterial aid
agencies. Consequently, these countries often continue their planning and
programing in ignorance of vital facts that have been documented.

    In January 1979, a team of experts was assembled to review the
documentation and information situation in Africa and make recommendations to
ECA on how a socioeconomic information program for the region could be
implemented. The team sought inputs from representatives of many African
countries and submitted its final report to ECA on 1 June 1979 (ECA 1979). It
recommended action over a 10-year period at the national, subregional, and
regional levels, which would result in the creation, under the aegis of the
ECA in Addis Ababa, Ethiopia, of a cooperative, decentralized system to be
called PADIS whose first phase would be DEVSIS-Africa. DEVSIS-Africa would
address the mission of social and economic development in Africa. It would be
the catalyst for improving the capabilities of African countries to handle
socioeconomic development information and for promoting the maximum use of
such information, whether generated in or outside the region. It would help
African states to identify and collect information and process it for
dissemination to planners, decision-makers, and researchers involved in the
development process. It would promote information-sharing through the
establishment of national and subregional nodes that would work as partners in
a cooperative system, with its coordinating centre in Addis Ababa. A
14-page booklet describes the origins; scope; objectives; financial,
personnel, and material resources; and organization and management of PADIS
(ECA/PADIS 1981a).

    But, before it could help in the establishment of the national and
subregional partners, ECA itself would have to build an information program.

Only then would it be in a position to provide training in those areas of information processing (particularly documentation processing and computer applications) that are essential to the successful operation of the system. It would, then, be a model and a resource centre for participating centres in member states. The team, therefore, made proposals and gave advice on the reorganization of the ECA units concerned with information activities during Phase I of the project to enable ECA to fulfill its role as a coordinator of the system.

The long-term goals of DEVSIS-Africa are: (a) the establishment of a cooperative, decentralized system that would ensure access to both published and unpublished documents produced in Africa on questions relating to economic and social development; (b) provision of information services to organizations, institutions, and individuals in African countries working on economic and social problems; (c) strengthening the national information infrastructures of ECA member states to enable them to participate fully in the system by contributing information to it and receiving services from it; and (d) involvement, as participating centres in the system, of other regional and subregional organizations working in the development field in Africa. The immediate objectives of Phase I were: (a) creation of a PADIS Coordinating Centre within ECA by the restructuring of appropriate existing units and the establishment and staffing of new units; (b) development and execution of training programs for the information personnel at ECA and its member states and for users of the system; (c) building of a demonstration data base containing references to information on African economic and social development; (d) production of an experimental issue of Devindex Africa comprising about 1000 documents identified by ECA and representatives of member states and taken through a DEVSIS processing cycle, to be followed soon thereafter with a regular, quarterly publication containing references as they are reported; and (e) development and promotion of the system's services at national, subregional, and regional levels. Phase I also called for the establishment of a printing unit and a microfiche laboratory that would print four issues of Devindex Africa and produce microfiche copies of documents respectively in response to requests from system users.

IDRC approved a total of CA$500 000 for Phase I of PADIS and gave the MINISIS software package free of charge. It is worth noting that in addition to the large financial outlay by ECA, several other international development aid agencies - UNDP, ADB, and Unesco - also pledged and contributed substantial sums of money and material to the execution of PADIS Phase I programs.

Negotiations have reached an advanced stage for a further IDRC grant of about CA$408 000 for Phase II of PADIS-DEVSIS. IDRC expects to support the activities of a PADIS-DEVSIS Phase II over a 2-year period in three broad areas:

(a) An intensive training program developed by a Training Coordinator: A Training Coordinator will be appointed to work under the general policy direction of the PADIS Project Leader. Priorities will be established as to where training should take place, at what level (national, subregional, or regional), who should be trained, and what courses should be taught. The capability to carry out these tasks is not yet available in the PADIS-DEVSIS program, and it is generally understood that, without this capability, the long-term objectives of the PADIS program cannot be realized.

(b) Printing of Devindex Africa: During the 2-year period covered by IDRC's grant, PADIS will be expected to publish eight issues of the bibliography. With the gradual participation of national centres in the system, it is expected that future issues of Devindex Africa will include inputs at the subregional and national levels. Until photocomposition facilities are available that can be readily used by the Central Coordinating Office of PADIS, it is expected that an arrangement can be maintained whereby the final stage of processing the output tapes can be done in Canada.

(c) Training at three basic levels: (i) Intensive training courses and workshops developed by the Training Coordinator are expected to be given.

These training programs can be of varying duration at the national and subregional levels. The Central Coordinating Office of PADIS appears now physically prepared to serve as an effective training centre, and it is expected that over the 2-year period of the IDRC grant, at least four courses/workshops will be held at the PADIS headquarters in Addis Ababa. (ii) Advisory services, provided by the Training Coordinator and other PADIS technical staff, are envisaged to advise information specialists at the national level about how their socioeconomic information systems can be implemented and how linkages will be structured in the PADIS network at all geographic, mission, and subject levels. The most effective methods for utilizing the services of the system will also be presented. This form of training is expected to take place outside Addis Ababa, normally in the country where a national focal point is being developed. (iii) It now seems evident that the decision to identify the location of subregional nodes in the PADIS-DEVSIS network is based mainly on availability of adequate information infrastructures and not necessarily on political considerations. On this basis, it is highly probable that Zimbabwe will soon be identified as the Southern African regional node of PADIS by the Southern African states themselves.

It is expected that within the 2-years covered by the IDRC grant, a second subregional node will be identified. To aid this process, the grant stipulates that one subregional seminar will be held at which information specialists from the subregion will be invited to learn the technical aspects of PADIS-DEV as well as to identify the information needs and services that the regional system is expected to provide in the subregion.

6.2 Achievements

For a system that was launched barely over a year ago, it might seem premature to talk of "achievements." Perhaps the biggest achievement of all is the fact that the system has taken off - no small achievement, considering that about 20 unsuccessful attempts had been made in over a decade to launch a DEVSIS-type information system for the whole of Africa. Yet, PADIS can boast of a number of achievements that are truly outstanding in the difficult circumstances of Africa.

The PADIS Central Coordinating Office (PADIS/CCO) began operation in September 1980 and currently has a staff of 28, wholly financed by the regular budget of ECA. The position of Technical Advisor, originally funded by IDRC as part of the Centre's commitment to Phase I, is now being financed, effective January 1982, by the regular budget of ECA. PADIS/CCO comprises a Secretariat; a Computerized Documentation Section, which is responsible for analyzing documents using DEVSIS methodologies; a Computer Operations Section using an HP 3000 computer donated by UNDP, and a MINISIS software package provided by IDRC; and a Reprography, Printing, and Maintenance Section. It is important to emphasize that the establishment of PADIS/CCO has had a major impact on ECA's in-house information activities. For example, the coordination of all divisional information programs (manual or computerized) within ECA is seen by the ECA management as the responsibility of PADIS/CCO.

Due to technical difficulties experienced earlier by PADIS, it was necessary for IDRC professional staff to go to Addis Ababa to train ECA indexers and abstractors in bibliographic control and analysis. As a result of this assistance and the hard work of the ECA indexers, over 2000 documents concerning African economic and social development have been analyzed, entered into the computer, and are now available for local retrieval. Five output cycles have been completed and the quality of the data base is high.

In October 1981, the first issue of Devindex Africa (ECA 1981) was published; the second issue (ECA 1982a) appeared in June 1982; the Third (ECA 1982b) and fourth (ECA 1982c) issues in November 1982. Additional issues are expected to be published before the expiration of Phase I. Each contains

information on about 400 documents. However, due to the lack of photocomposition facilities in Addis Ababa, it was necessary for ECA to send its computer output tapes to Canada for the final step of printing the bibliography. This was accomplished using Canadian commercial facilities, with the cooperation of IDRC's Communications Division. The targeted objective to produce an experimental edition of Devindex Africa containing information on approximately 1000 documents would seem to have been fulfilled, both in terms of the quantity and in the importance of the documents indexed.

The training programs developed for PADIS/CCO staff and personnel were extensive, and the expenditure of resources in this activity has been considerable. For example, a total of 6 months of course training was provided to 12 individuals in the Computer Operations Section. They were trained in such areas as general programing and systems analysis, operation and routine maintenance of the HP 3000 minicomputer, and in the use of the MINISIS software. More than 3 months of intensive training was given in indexing, abstracting, and document analysis to six staff in the Computerized Documentation Section. In addition, 50 ECA personnel received training and orientation courses that lasted nearly 2 months on the components and characteristics of PADIS-DEVSIS and on how to utilize the services provided by the system.

The second part of the training component of Phase I concerned training at the level of the member states of ECA. This objective has not been realized for a number of reasons that will be reviewed in the next section of this chapter. Two training seminars were organized: one at the subregional level in Southern Africa (Zimbabwe), and the other at the national level in Guinée-Conakry. Although they could be considered successful in certain other respects, it was clear that much more intensive training was required at the subregional and national levels if the PADIS program will be fully utilized by the development community it wishes to serve in Africa. Perhaps the greatest advantage of these first training seminars was that they illustrated the enormity of the challenges facing PADIS during Phase II of the program.

Undoubtedly the greatest success achieved in Phase I of PADIS was the promotion of the program at the political level among the member states of ECA. To a large extent, this could be attributed to the dynamic personality of the Project Leader, Dr J. Quirino-Lanhounmey. The political will for PADIS to exist has been evident by the unanimous support given by the Council of African Ministers responsible for socioeconomic development at its successive annual meetings. More specifically, nine countries have already declared their intention to proceed with the development of their national documentation and information centres that will function as national focal points in PADIS-DEV. These countries are: Algeria, Benin, Egypt, Ethiopia, Guinée-Conakry, Nigeria, Sudan, Tunisia, and Zimbabwe. Among these countries, Guinée-Conakry has taken a step further by approaching IDRC directly for funds to develop a DEVSIS-Guinée program as a focal point for the PADIS-DEV network. IDRC funds of about CA$246 000 have already been committed to this project over a 3-year period. This major development could be regarded as an important spin-off from the consultative meetings between IDRC and PADIS staff. The declarations by the nine African countries cited above were further strengthened at the PADIS Inter-Governmental Meeting of African Computer, Documentation and Information Scientists held in Salisbury, Zimbabwe, from 19-23 October 1981 (ECA/PADIS 1982).

An important UN Inter-Agency Technical Experts Working Group (Meeting) on Compatibility with PADIS, jointly financed by ECA and IDRC, was held in Addis Ababa in April 1981. The objective was to bring together representatives of 14 agencies involved in international cooperative information systems - CAFRAD, CEPAL, FAO, IDRC, ILO, RESADOC, RIPS, TCDC/UNDP, UNCHS, UN-DIESA, UNDP, UNEP, Unesco, and WHO - to discuss how their activites would interface with PADIS. The report of the meeting demonstrated a strong desire by all 14 agencies to share their experiences and some of their resources with the burgeoning PADIS network (ECA/PADIS 1981b). It will be interesting to see how these pledges are translated into concrete action during the coming crucial years of PADIS.

6.3 Major Problems and Suggested Solutions

Africa is clearly the most difficult region in the world in which to launch a successful information system at the level and scale specified in the design documents of PADIS-DEV. The major problems relate to the acute shortage of qualified information personnel in Africa, the very weak or nonexistent infrastructures for information in many African countries, and the consequent need for IDRC to engage in costly and time-consuming, trouble-shooting activities to keep PADIS on the rails.

Elsewhere (Chapter 10) I have made a strong, even passionate, case for IDRC support to establish a Postgraduate School of Information Science to serve English-speaking Africa. Training at the lower level is certainly needed as well, but it is training at the leadership level of information science where the need becomes critical to ensure the realization of the short- and long-term objectives of PADIS. The key position of Chief of the Computerized Documentation Section of PADIS is still vacant after more than a year. Highly qualified indexers were not available; existing staff have had to be recruited and trained on the job, mainly by IDRC personnel. Computer programmers and systems analysts are difficult enough to find in sufficient numbers anywhere; they are almost nonexistent in Addis Ababa. The difficult period that Ethiopia is passing through has certainly not helped to attract qualified Africans to PADIS, but the basic problem remains that there are far too few of them. And unless something is done quickly about this situation, PADIS simply cannot succeed in the identified time frame, especially at the decentralization stage.

The team of experts that put together the PADIS design compiled an indicative Table of National Documentation, Information and Training Institutions in Africa (ECA 1979, pp. 176-178). While 38 and 31 of the 50 countries covered had national archives and national libraries, respectively, only 14, 5, and 7 had national documentation centres, UNISIST focal points, and librarianship/information science schools, respectively. Thus, whereas the idea of a "library" is relatively well-known, an "information/ documentation centre" is relatively unknown in many African countries. There is only one school of information science (serving French-speaking Africa). Many countries have no computers of any type and most of those that do hardly ever use them for information processing.

Multinational Planning and Operational Centres (MULPOCs), a major focus of ECA activities and PADIS, are only a little better in these respects. The negative impact of weak or nonexistent information infrastructures at national and subregional levels would be particularly serious during Phase II of PADIS when national and subregional participating centres are expected to be established to contribute worksheets or even magnetic tapes to the PADIS Coordinating Office in Addis Ababa. The African situation provides an excellent example of the need for IDRC to shift its emphasis from supporting regional to national development information systems. Unless most African countries are given substantial technical and financial assistance from Addis Ababa or IDRC, they certainly will never be in a position to participate meaningfully and effectively in the PADIS network.

6.4 Major Concerns to Watch

There are three developments at PADIS that I believe should be closely monitored because they are capable of diverting scarce resources from the clear and worthwhile objectives identified in the system design. One concerns what I consider to be an unhealthy, early orientation toward heavy telecommunications; the other is an increasing tendency to rely heavily on the information resources of industrialized countries. Third, there is a noticeable tendency in PADIS to view international agencies that have been active in building vital African information infrastructures with a certain measure of suspicion. I shall illustrate these concerns.

Since the launching of PADIS in 1980, both the scale and the budget of a system that was designed to start slowly and build up vital experience and resources to expand effectively, have been blown up almost beyond recognition. Instead of a 10-year budget estimated at US$10 million, several PADIS documents now show that these estimates have been raised to US$160 million! Most of this staggering figure will involve the purchase and installation of heavy telecommunications equipment, especially earth satellites. If and when this equipment is in place, they will be processing and retrieving, not information generated within Africa, but information pertaining to the development issues of industrialized countries. ESRIN in particular has featured very prominently as one whose data bases would be easily accessed through the proposed PADIS network of satellites.

I believe this is an unnecessary and largely diversionary development at this very early stage in the life of PADIS. What Africa needs now is to build its information resources from the bottom up, not the other way round. And, to underscore my concern, I shall merely quote the comments of an internationally well-known information scientist in his private response to a book review in the February 1981 issue of The Journal of Information Science:

> Unfortunately, it is not only European consultants who imagine that information problems can be resolved by permitting developing countries to access ORBIT, DIALOG, EURONET and ESRIN. Often the information scientists of the Third World also see this as a quick fix for their problems. It is only when they do have access to these systems that they discover that the data-bases are very weak in their coverage of the information generated within the developing countries. What may very well be the most relevant and useful information to them just is not there.

Finally, PADIS will have to watch a growing tendency to be unduly suspicious of the intentions of international agencies that have valuable experience and resources to offer in the realization of PADIS objectives. For example, the First UN Inter-Agency Meeting cited earlier on had no mandate to make any resolutions whatsoever to PADIS authorities, not even on a date for the Second Meeting. The report of that meeting, to my mind, is not in the best traditions of interagency cooperation. Africa can use all the help it can get, and the recent CEPAL/CLADES - Unesco/PGI accord in Santiago on an important system activity in Latin America suggests the kind of fruitful collaboration that PADIS should endeavour to emulate (CEPAL/CLADES 1981a).

6.5 Recommendations

(a) I strongly recommend that IDRC embark on a scheme to identify a few carefully selected countries and subregions in Africa and give them maximum support as the cornerstones of the PADIS network. This, of course, would be done in full cooperation with ECA and PADIS authorities in Addis Ababa. In West Africa, Nigeria would seem an obvious candidate, not only because of her relatively well-endowed human and material resources but, in particular, because of the considerable investments that the country has made to define a national information policy and to launch a Nigerian Information and Documentation Centre (NIDOC) as the national focal point for PADIS. Nigeria is the headquarters of the Economic Community of West African States (ECOWAS) as well as one of the important members of the West African MULPOC of ECA, whose headquarters is in Niamey, Niger Republic. The demonstration and multiplier effects of a strong PADIS presence in Nigeria could help to determine the fate of PADIS, not only in West Africa but throughout the continent. Similar criteria could be used as guidelines to identify at least two additional countries, one in East and Southern Africa and the other in North Africa.

Simultaneously, one or two developing countries, whose infrastructural and personnel problems are particularly acute, should be identified for

maximum technical and financial support by ECA and IDRC to enable them participate meaningfully in the PADIS network.

(b) Should it become difficult or impossible to identify individual countries in Eastern, Southern, or Northern Africa in a manner recommended in (a) above, ECA might wish to explore the possibilities of strengthening appropriate subregional nodes identified by member states in the subregions themselves, to enable them play the key role they were designed to play in the PADIS network.

Although these two complementary recommendations are made specifically in regard to Africa, a similar situation to Africa's probably exists in Latin America and the Caribbean, and similar recommendations might well be appropriate for this region. However, I have refrained from making such recommendations because I simply do not have sufficient firsthand knowledge about the region to make any specific proposals under the aegis of INFOPLAN. Moreover, INFOPLAN does not enjoy the continent-wide mandate that PADIS has to develop and coordinate all socioeconomic information services in its area of jurisdiction.

(c) That PADIS take immediate action to evolve and rationalize a Training Policy that utilizes available human resources in information science in Africa to teach DEVSIS methodologies and applications at both subregional and national levels.

(d) That the management of PADIS seek every opportunity for cooperation and partnership with international agencies whose mandate and activities have involved them actively in building information infrastructures and systems in Africa.

Chapter 7

DEVSIS (CANADA) EXPERIMENTAL

7.1 Background

In 1975, even before the DEVSIS Study Team had completed its work, an experimental DEVSIS project, with an approved budget of CA$37 900 for 2 years, began at IDRC with the collection of Canadian development literature on the Third World. More specifically, the project would provide: (a) experience in implementing DEVSIS at the national level; (b) the opportunity to test DEVSIS worksheets, manuals, and authority lists as they were issued; (c) a tool for the Canadian development community to increase awareness and make available the work of their colleagues; (d) a way to draw Canadian work to the attention of the world development community; and (e) a concrete example of the sort of printed output that DEVSIS was expected to yield. This would be helpful to colleagues in other countries who had the responsibility to weigh the costs of implementing DEVSIS against the expected benefits and marshal support for DEVSIS implementation.

7.2 Achievements

Canadian contributions to the literature of Third World development were indexed using the OECD Macrothesaurus (OECD 1978) and the first two issues of Devindex Canada (1975 and 1976) (Morin-Labatut 1976, 1977) were produced manually. When MINISIS became operational at IDRC, however, the DEVSIS operation was computerized, following the UNISIST Guidelines for Machine-Readable Bibliographic Description, and a worksheet was designed.

The German Foundation for International Development (DSE) joined the experiment in 1977 and the first computer-produced Devindex (1977) (Morin-Labatut 1978) reflected a broader coverage of development literature than the first two issues. This edition was typeset via photocomposition and published in 1979. The main concerns at that time were to resolve problems in processing data using MINISIS and to develop simple indexing tools following UNISIST guidelines. DEVSIS staff also participated actively in the preparation of the second edition of the OECD Macrothesaurus, which had been identified as the indexing tool for DEVSIS. In 1978, DEVSIS staff also helped UN-DIESA begin its own DEVSIS-type system at the ISU by setting up its data base and providing basic training. In Asia the DEVSIS Experimental team helped two national DEVSIS projects that resulted in the production of Phildev (Technology Resource Centre 1978) and Devindex Pakistan (PIDE 1978) covering the development literature of the Philippines and Pakistani for 1975 and 1976, respectively. Devindex Pakistan 1977-1979 is being published, and the processing of the 1979 edition is in progress. CENDIT prepared worksheets for the 1980 edition of Devindex India, but the processing of the worksheets for this publication, as well as for Devindex Australia 1980, was done in Ottawa. A retrospective Devindex Bangladesh 1971-1981 was published recently. Although there was no direct input from the Devsis (Canada) Experimental Staff, it is evident that a significant proportion of entries were taken from IDRC's Devindexes 1975-80.

In 1979, documentalists from Tunisia, the Philippines, and Indonesia visited IDRC and were trained in DEVSIS methodology. The fourth issue of

Devindex (1978) (Morin-Labatut 1980) included records from the Soviet Union, Indonesia, Morocco, and the Netherlands, in addition to Canada and West Germany, which had contributed to the 1977 edition. Thailand produced an issue of Devindex (NIDA 1979) written entirely in Thai in 1979. Devindex 1979 (Morin-Labatut and Fitzpatrick 1981) was published in 1981 and the 1980 edition (IDRC 1982a) appeared in early 1982. Devindex 1981 (IDRC 1982b) contains inputs from the Soviet Union, the Netherlands, Sri Lanka, Morocco, German Federal Republic, Bangladesh, and India and was published in November of 1982, and the 1982 edition is expected to be published in March 1983.

India, Sri Lanka, Bangladesh, and Tunisia joined the experiment in 1980. Tunisia processed the first issue of Tundev (Institut d'Economie Quantitative 1980) on an HP computer located in the Documentation Centre at the Ministry of Agriculture in Tunis while the other countries started to produce worksheets. The DEVSIS team in Ottawa provided technical assistance and training to two DEVSIS-type systems in Africa: RESADOC and PADIS. In the context of these African projects, a new data-base structure was defined and tested, with corresponding manuals and worksheets. These tools are simpler than those originally developed for DEVSIS and have received very favourable comments from PADIS and RESADOC as well as from the national DEVSIS efforts in India, Sri Lanka, and Bangladesh. It is generally believed that these indexing tools are simpler to use and more effective than the previous ones.

In 1981, a DEVSIS workshop was held in Ottawa for participants from Bangladesh, India, Pakistan, and Sri Lanka. National Devindexes were produced for Bangladesh and Sri Lanka at the workshop. In June 1981 the Ottawa DEVSIS team also participated in a Technical Experts Group Meeting on Indexing Tools for Information Systems, organized by the UN-DIESA/ISU in New York for the regional Economic Commissions to discuss the exchange of development information and cooperation in the use and maintenance of indexing tools. A follow-up meeting was convened in Ottawa in November 1981 to set a basic format for bibliographic description and for computer processing of development information, using either the ISIS or the MINISIS software package. Although the achievements of this meeting have been reviewed in Chapter 3, it is necessary to emphasize that all of the long and painstaking work to produce the manual requested at that meeting was done in the IDRC unit (Morin-Labatut and Sly 1982). When, as expected, the manual is adopted by all existing and proposed DEVSIS-type systems, it would mark a major turning point in the progress of DEVSIS as a global system.

7.3 Major Problems and Suggested Solutions

In an experiment, problems would normally be expected. But the experiment can only make progress if the problems are identified and appropriate solutions are found to move the experiment toward a predetermined goal. The DEVSIS (Canada) Experimental project has had both technical and policy problems in its operations, and, I believe, may be suffering from a not-too-clear definition of the goal of the experiment.

One of its major tools, the UNISIST Guidelines for Machine-Readable Bibliographic Description, is unnecessarily complicated. It has been subjected to rigorous tests by both the DEVSIS team in Ottawa and the Technical Services staff of the IDRC library. Members of the DEVSIS team were convinced that the entire concept of "bibliographic levels" was difficult to apply in data processing, storage, and retrieval. Indeed, they believe that input and processing are unduly complicated by this concept. The PADIS/RESADOC model allows a "conversion" to the UNISIST structure by ISOCONV (a MINISIS function), but stores the data in a simpler way by using a set of fields for the document being described, a second set for the "source" document, and a field containing codes for the bibliographic level(s) relating to the particular record. There are indications that major modifications to the UNISIST Guidelines have been or are being carried out in other DEVSIS-type systems elsewhere. Fortunately, DEVSIS (Canada) Experimental will be

switching over to a new data base structure as defined in the Manual for the Preparation of Records in Development Information Systems, which is being compiled under the auspices of UN-DIESA/ISU in New York and the regional Economic Comissions in Africa, Asia and the Pacific, and Latin America and the Caribbean (see Chapter 3).

One obvious proposal to deal with this problem is to allow staff of the DEVSIS (Canada) Experimental project to be represented at future meetings of UNISIST and the UNISIST International Centre for Bibliographic Descriptions (UNIBID). One or two current or former staff of IDRC may have attended meetings of both bodies in the past, but no direct links have been established between them and the important work being done by the project staff in Ottawa. Consequently, there is little or no feedback to UNISIST or UNIBID of the major technical changes to the Guidelines by IDRC.

A second suggestion might be to constitute an Ad Hoc Technical Committee to work out solutions to problems of technical compability among DEVSIS-type and DEVSIS-related systems, within and outside the UN. One of the recommendations of the Technical Experts Group Meetings on Common Indexing Tools for Development Information Systems in New York and Ottawa called for the launching of a DEVSIS Newsletter to address, among other objectives, the important technical problems raised in this chapter. The implementation of such a recommendation would be a significant step in the direction suggested in this paragraph.

IDRC would also have to address three related policy issues regarding the nature and future of the DEVSIS (Canada) Experimental project. These are: the training component of the experiment, evaluation of the outputs, and a clear definition of the goal of the experiment.

Training: The DEVSIS Project Manager's job involves a great deal of training and trouble-shooting in the Third World as the record of achievements described above clearly indicates. This activity and, indeed, the entire experiment, has been brought about because of the historical fact that DEVSIS has not evolved (as planned) as a global, decentralized system. IDRC has, therefore, found itself playing several DEVSIS roles that it would not have played were a DEVSIS Coordinating Centre to be operative in New York. But, the current heavy training burden of the DEVSIS Manager could be shared. Because agreement has been reached on the technical structure of DEVSIS-type worksheets and other working tools among the regional Economic Commissions, the UN-DIESA, and IDRC, I would suggest that a common training package should also be adopted so that DEVSIS training can be done by more people without starting from scratch every time. I believe this would be a welcome development to the regional Economic Commissions and particularly to IDRC.

Evaluation: Two annual issues of Devindex Canada and five issues of Devindex are the physical products of the project, so far. I believe that it would help IDRC to have some idea of the extent of use of these products, within and outside Canada. Moreover, because the project started to identify Canadian contributions to Third World development literature, it is most important that IDRC and the rest of the world have a good idea of the proportion of this output that is captured in the published indexes. IDRC would need a competent consultant who is thoroughly familiar with the concept and applications of DEVSIS to do the job.

Goal of the Experiment: When the DEVSIS Experiment started in 1975, the expectation must have been to terminate it as soon as the DEVSIS Central Unit proposed in the design became operational. More than 7 years later with no DEVSIS Central Unit (and with the growing feeling that one may, in fact, not be necessary), IDRC should now seriously ponder the future of the experiment. If it decides to continue it, certain procedures and practices would have to be rationalized in the light of that decision. For example, what criteria should be adopted for accepting national inputs from countries participating in the experiment? If a decision were taken to discontinue the experiment, which (international) institution would take over from IDRC? Should it be transferred to a Third World country? These and other issues might constitute

part of the terms of reference that could be drawn up for a consultant hired
to evaluate the project as suggested above.

7.4 Recommendations

On the basis of the problems identified in this chapter and the
suggested solutions to them, I present the following recommendations for the
consideration of IDRC:

(a) Steps should be taken to share the training component of the DEVSIS
(Canada) Experiment, preferably with competent staff in other DEVSIS-type
systems at the UN and the regional Economic Commissions. Such resource
sharing could conceivably and profitably be extended to other areas, such as
network management, computer applications, research methodology, systems
evaluation, and the organization of seminars, workshops, etc. It would seem
appropriate to include these items on the agenda of any future meetings of
technical staff in existing and proposed DEVSIS-type systems.

(b) IDRC should appoint a consultant to evaluate the project focusing, in
particular, on the use of the indexes published so far and the proportion of
Canadian development literature on the Third World captured by the indexes.

(c) The goal of the project should be defined in the context of
post-DEVSIS Study realities, whether to continue it at IDRC (and for how long)
or to transfer it to a Third World country with specific criteria worked out
for such a transfer and the objectives to be attained in the new host
country. A consultant could also handle this as part of his or her terms of
reference.

PART III

PROPOSED DEVSIS-TYPE AND DEVSIS-RELATED SYSTEMS
AND CONSIDERATIONS IN THE DESIGN OF NEW SYSTEMS

PROPOSED DEVSIS-TYPE AND DEVSIS-RELATED SYSTEMS
AND CONSIDERATIONS IN THE DESIGN OF NEW SYSTEMS

This part of the study consists of two chapters (8 and 9) where proposed DEVSIS-type and DEVSIS-related systems are reviewed, and considerations in the design of new systems are discussed. Although the focus of this book is on operational systems, it is clear that such systems share boundaries with DEVSIS-related as well as with non-DEVSIS-type systems. Asia is the only Third World continent without, as yet, a regional DEVSIS-type program. But that does not mean the area has no DEVSIS-type systems; indeed, what it lacks at the regional level would seem to have been largely compensated for by vigorous activities at the national level that, of course, are not reviewed in this study. In a sense, therefore, the national efforts in Asia complement the regional efforts currently under way in the region and, as was suggested in Chapters 4 to 6, it would appear that this complement is a source of strength to the cause of DEVSIS. There are two regional Economic Commissions in Asia: the Economic Commission for Western Asia (ECWA) and the Economic and Social Commission for Asia and the Pacific (ESCAP). The progress made in regard to proposals in the area is reviewed in the first two sections of the Chapter 8. The successful launching of both programs would complete the picture of regional DEVSIS-type systems in the Third World.

Sections 8.3 to 8.5 describe the backgrounds and assess the prospects of three proposed international systems whose subject scope and spatial coverage overlap with those of operational DEVSIS-type systems. It is important, however, to bear in mind the scope note provided in Chapter 1 regarding "DEVSIS-type" and "DEVSIS-related" systems. All of the three proposed systems are "DEVSIS-related" because their subjects overlap, to a considerable extent, with "DEVSIS-type" systems, but their data structures and, in particular, their targeted user audiences, are radically different from those of "DEVSIS-type" systems. Proposed systems that are specifically subject-oriented, such as ILIS (Labour), HIS (Health), and HABITAT (Human Settlements), have been excluded, even when their subject scope falls within that identified for DEVSIS-type systems.

Finally, in Chapter 9, a discussion of considerations in the establishment of new systems is presented. It is written in the belief that the lessons we learn from operational systems must be allowed to guide us in the design and management of new ones. Consequently, while the discussion applies primarily to DEVSIS-type and DEVSIS-related programs, it is hoped that it will be found useful by readers who are interested in other types of information systems.

Chapter 8

PROPOSED DEVSIS-TYPE AND DEVSIS-RELATED SYSTEMS

8.1 DEVSIS-Western Asia

The Economic Commission for Western Asia (ECWA) comprises the following countries: Bahrain, Democratic Republic of Yemen, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates, and Yemen Arab Republic. In June 1980, the Executive Secretary of ECWA sent a proposal to IDRC authorities for technical and financial assistance in the establishment of an Arab Regional Documentation Centre for Economic and Social Sciences (ARDCES) or DEVSIS-Western Asia. This proposal was based on two consultants' reports on the feasibility of ARDCES, one by an Arab expert (Hilmi 1978) and the other by a Unesco appointee (Vasarhelyi 1980). These studies constituted the basis for a formal project proposal presented to IDRC in 1982 to establish DEVSIS-Western Asia (ECWA 1980).

It would appear that IDRC authorities are committed in principle to: (a) provide technical and training support for the establishment of a DEVSIS-Western Asia; (b) provide computer software; (c) consider (giving) financial support; (d) participate in the then proposed meeting of ECWA's Directors of Centres and projects, presumably to discuss the proposed DEVSIS-Western Asia project; and (e) work with ECWA's Technical Advisor on the project, whenever one is appointed.

ECWA has carried out country surveys of information and documentation facilities in Arab countries (ECWA 1977). Although these surveys are science- and technology-oriented, they do contain valuable material on information infrastructures in the region. It is also clear that the proposed DEVSIS-Western Asia would be based on the DEVSIS Study Team recommendations and that it would draw heavily on the DEVSIS-Africa design model.

IDRC has been unable to take any action on ECWA's proposal because of the continuing tension in Beirut, which was the headquarters of ECWA until it was moved to Baghdad in June 1982. And because of the war going on between Iran and Iraq, it may not be possible for IDRC program staff to make the necessary visit to ECWA until the hostilities cease. Whenever such a visit materialized, more would have to be known about the extent and level of ECWA's commitment to the establishment of a DEVSIS-Western Asia. For example: (a) Has either of the two feasibility reports sent to Ottawa been approved by the ECWA authorities? (b) What financial resources are being committed to the proposal by ECWA itself? What are the indications that such local resources will continue to be committed to the project? (c) Has a Technical Advisor to the project been appointed? What are the incumbant's responsibilities and authority in the ECWA hierarchy and if already appointed what are his or her ideas about the two feasibility reports that would constitute the basis of the proposed system?

In addition, the two studies as well as the project proposal would require substantial appraisal by IDRC program staff. For example, it does not appear very convincing to draw so heavily on the DEVSIS-Africa design model as Vasarhelyi's study has done, while Hilmi's study is vague in many crucial areas of systems design. At this stage, one can only hope that the situation in Baghdad and the Middle East generally will soon permit IDRC and ECWA to collaborate on a DEVSIS-type project in a major area of the Third World.

8.2 DEVSIS-Type Activities in ESCAP Member States

Several references have already been made in this study to IDRC's support of the intensive DEVSIS-type activities in Southeast Asia at the national level: Pakistan, Thailand, and the Philippines have produced national Devindexes; national Devindexes were produced for Bangladesh and Sri Lanka during a 1981 DEVSIS workshop in Ottawa for participants from both countries; while India and Indonesia seem close to producing their own national Devindexes; and the intellectual contributions of Sri Lanka to the conceptual framework of DEVSIS were cited in the introductory chapter.

These essentially national efforts are indicative of a strong commitment to the cause of DEVSIS at the most crucial level for the success of a regional DEVSIS program. It was pointed out earlier in the study that the acid test for a country's commitment to a regional agency is the amount of financial backing it provides for that agency. Given the considerable resources (financial, material, and personnel) already committed to these national efforts in Southeast Asia, it should not be too difficult to coordinate them into a regional network. This approach to network development poses its own problems, but, of course, they are not insurmountable and the hope is that they will be tackled in a manner that will enable existing regional DEVSIS-type systems to learn something from the example of Southeast Asia.

The most appropriate body to initiate coordination in Southeast Asia is ESCAP. Membership of ESCAP comprises Afghanistan, Bangladesh, Bhutan, Burma, Cambodia, Hong Kong, India, Indonesia, Laos, Malaysia, Nepal, Pakistan, Papua New Guinea, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, and Vietnam. The ESCAP library uses the OECD Macrothesaurus for document entry and input into a computer file and the Commission was represented at the Technical Experts Group Meetings on Indexing Tools for Information Systems in June and November 1981 that brought together the information specialists of all four regional Economic Commissions in the Third World that already operate DEVSIS-type programs or are about to do so. A strong source of hope for a regional coordinated system in Southeast Asia, however, is to be found in the activities of ESCAP itself. Such activities have been in two discernible directions: the coordination of government information systems and preliminary efforts aimed at launching a DEVSIS-type system for South Asia.

ESCAP has set up a Study Group on the Coordination of Government Information Systems. Two sessions of the Study Group have been held in ESCAP's Bangkok headquarters in 1979 and 1981, respectively, and it is already evident that ESCAP member states attach equal·importance to quantitative and bibliographic development information. Paragraph 62 of the proceedings of the Second Session of the Study Group (ESCAP 1980, p. 15) is reproduced below because it shows clearly the nature of ESCAP's priorities as well as the possible direction of its action in the coming years:

> The Group stressed the need for a regional programme in
> information which has as its objective the improved organization and
> management of government information systems in member countries to
> facilitate administrative operations, development planning and
> decision-making. It felt that a concerted effort at both the
> regional and the national levels was urgently needed to provide for:
> (a) The establishment of the necessary coordinating mechanisms for
> information systems; (b) The introduction of the required concepts,
> definitions, standards and technologies for the collection,
> organization, processing and retrieval of data; (c) The improved
> supply of data needed by planners through data banks or similar
> mechanisms.

IDRC will probably be asked to become involved in these regional coordination efforts, especially as several international development aid agencies and professional bodies are already active in the area. For example, the Data for the Development International Association helped to organize the second session of the Study Group and to design a government data network

methodology that was endorsed at the first session of the Study Group. The United Nations Fund for Population Activities provided an advisor on data preparation and processing of censuses and surveys, while the Governments of Japan, the Federal Republic of Germany, France, and the Netherlands have donated material and expert services to various aspects of ESCAP's information program. There does seem to be room for fruitful collaboration on this subject between IDRC and one or more of these countries and agencies that have established their credentials in the area.

It is the second type of information effort in the region, however, that will most probably lead to an early DEVSIS-South Asia.

The Committee on Studies for Cooperation in Development (CSCD) was set up by development research institutes in South Asia. It comprises, among others, Bangladesh, India, the Maldives, Nepal, Pakistan, and Sri Lanka, with its Secretariat at the Marga Institute in Colombo, Sri Lanka. The first meeting of the Committee, held in Colombo in September 1978, drew up a 4-year program of action; at its fifth meeting in New Delhi in October 1980, CSCD endorsed a proposal for a regional information and documentation program relating to economic and social development in the countries of Bangladesh, India, Nepal, Pakistan, and Sri Lanka. A subcommittee, which met on 19 January 1981, determined that it would be desirable to organize a consultative workshop to explore the requirements and mechanisms for setting up such a regional cooperative program.

Unesco became interested in the outcome of the proposed workshop as an avenue for charting its future plans and activities in South Asia and agreed to contribute half of the cost while IDRC provided the other half. The Unesco Regional Office in New Delhi sent a representative and IDRC was represented by an Associate Director. The CSCD member participants came from the Bangladesh Institute of Development Studies (BIDS), the Indian Council of World Affairs (ICWA), the Nepal Centre for Economic Development and Administration (CEDA), the Pakistan Institute of Development Economics (PIDE), the National Planning Agency of the Maldives, and the Marga Institute. Representatives of ESCAP and the Asian Pacific Development Centre were also present. The workshop was held at the Marga Institute, Colombo, Sri Lanka, from 7 to 12 June 1982.

To focus discussions at the workshop, the Marga Institute had prepared a background paper (Marga Institute 1982) that addressed such fundamental design issues as: the need for an information system for socioeconomic development linking CSCD member states, the targeted users of the system, definition of scope, nature of information flows among participants and stucture of the network, technical processes, and the expected services from the system. Country papers on the state of socioeconomic information in Bangladesh, India, Nepal, Pakistan, and Sri Lanka were presented in addition to a review paper on Information Needs of the Region and the CSCD Programme (Gunewardena 1982) as well as a brief account of CENDIT's documentation activities.

The workshop constituted a Working Group comprising a representative from each of the five CSCD member states that had been identified to launch the proposed system. A statement (CSCD 1982) from the Group elaborated on the working paper prepared by the Marga Institute (1982) and made specific recommendations to the workshop's plenary session on the adoption of the DEVSIS Study specifications about: objectives, categories of users, scope of the data base, types of materials to be included and the system's working language, the rationale for limiting initial participation in the system to five member states of CSCD, mandate for the system, structure of the network and a suggested name and acronym, indexing tools, functions of the network's coordinating centre, and expected financial sources for the project.

These recommendations were endorsed by the full plenary session of the workshop and they constitute the basis of ongoing negotiations between CSCD and IDRC for probable IDRC funding of a substantial part of the proposed network. The acronym SASEDIN has been tentatively adopted by CSCD for the proposed South Asia Socio-Economic Development Information Network and the Marga Institute had been unaminously chosen at the workshop as the host

institution for SASEDIN. The SASEDIN Coordinating Centre was also given a temporary name: South Asia Socio-Economic Development Information Centre, with the acronym SASEDIC. Both names are part of a series of issues being negotiated between IDRC and CSCD and might lead to the adoption of new names and acronyms. There are also moves to publish the background papers presented at the workshop, the country-specific papers, and the recommendations of the working group.

Finally, in this section of the chapter, it is appropriate to mention the efforts of ECSAP to launch an umbrella socioeconomic information system for all member states of ESCAP. A consultant was appointed who visited Bangladesh, Burma, India, Indonesia, Malaysia, Philippines, Singapore, Sri Lanka, and Thailand before submitting a report on his feasibility study of a Development Planning Documents Information System, subsequently given the acronym DEPLADIS (Seshagiri 1981). Among other things, the report recommended DEVSIS methodologies in technical processes and stressed the crucial necessity for cooperation between DEPLADIS and some 250 operational or near-operational UN development-oriented information systems that he identified and described in a comprehensive annex based on a UN directory (IOB 1980).

Meanwhile, ESCAP has decided to set aside the long-term recommendations of the feasibility study and embarked instead on launching "a current awareness information service on planning" in the form of a Development Planning Newsletter. In a proposal to IDRC to provide funds for the activity, the objectives of the Newsletter were described as follows (ESCAP 1982):

.....to provide development planners, policy-makers, researchers, and other interested parties, both inside and outside the region, with regular access to information on recent developments in the field of development planning in the ESCAP region. The Newsletter will provide readers with a quick and reasonably comprehensive source of information on current events in the field of development planning in the form of journalistic articles emphasizing the dissemination rather than the analysis of information.

Development economists would be employed, part-time, in the countries covered by the project to carry out the task of repackaging the information that would be announced in the proposed Newsletter. Formal cooperative links were being worked out with CSCD member states that, as was demonstrated above, had shown a long-standing interest in the subject.

Representatives of ESCAP attended the two Technical Experts Group Meetings on Common Indexing Tools in New York and Ottawa in June and November 1981, respectively, and took the opportunities to communicate ESCAP's information activities to an important UN interagency audience.

The reported links being worked out between the Newsletter project and CSCD are particularly significant. One of the options before the CSCD Workshop Plenary Session on the modalities for a SASEDIN was the possibility of using the considerable computer facilities at ESCAP Secretariat for the technical processes of an operational SASEDIN. Indeed, CSCD has already approved an organizational structure for a SASEDIN that would allow ESCAP to get their South Asian literature reported to a SASEDIN data base. The hope was expressed that ESCAP would also reciprocate by making their documents accessible to a SASEDIN. Clearly, the emergence of strong collaborative links between ESCAP's Development Planning Newsletter and CSCD's proposed SASEDIN can only lead to improved information services for the development community in ESCAP member states.

8.3 Development Information Network (DEVNET)

The name of this proposed program would seem to suggest that it is a DEVSIS-type proposal. In point of fact, all discussions of its subject scope,

data definition, and targeted audience so far indicate that it is DEVSIS-related only in terms of its focus on developing countries and the proposed use of computers and telecommunications equipment.

UNDP's plan to launch DEVNET (formerly DIN) owes its origins to declarations, through Unesco, in support of a New International Information Order that would ensure an equitable share by Third World countries of the Western-dominated news media. More recently, UNDP has traced the idea of a DEVNET to the Buenos Aires Plan of Action for Promoting and Implementing Technical Cooperation Among Developing Countries that, inter alia, had the objective:

> ...to increase and improve communications among developing
> countries, leading to a greater awareness of common problems and
> wider access to available knowledge and experience as well as the
> creation of new knowledge in tackling problems of development.

In June 1979, UNDP contracted with the Inter-Press Service of Rome to undertake a multiregional study to demonstrate the feasibility of linking up to 60 developing countries in all regions via satellite or terrestrially. The Inter-Press Service was apparently chosen for the task because it uses a network of full duplex satellite channels and telegraph subcircuits, and is recognized by Unesco as one of the two international networks for development news information exchange on the Third World. The Inter-Press Service was given the following terms of reference: to develop proposals (a) for a network service linking developing countries with access to satellite transmission channels or with terrestrial links within their subregion to a country having access to satellites, and (b) for the electronic telecommunications linkages, redistribution mechanisms, and equipment installations needed for regional clusters and interregional centres, as well as the staffing and medium- and long-term financial requirements for setting up the network.

The Inter-Press Service report (UNDP 1980) prepared by H. Jaworski, President of the Centre for Research on Development and Participation, Lima, Peru, called for "a new flow of a computer-operated 'South-South' network, providing a full horizontal exchange of mutually supportive development information between developing countries."

The Communications for Development Foundation (CODEV) in Italy has also demonstrated considerable interest in the same project. It apparently financed a report (CODEV 1982) on the proposed Network that it submitted to UNDP as a major effort in South-South cooperation, estimated its dollar value as 50 or 60 million, and indicated that the Government of Italy would be inclined to provide some funds to support the project.

It is now clear that DEVNET would be mostly concerned with providing cheap telecommunications for news and, perhaps, other messages as well, among developing countries. However, serious problems are yet to be resolved in the definition of content, technical processing of messages, financial arrangements, administrative structure and scale of operations, infrastructual facilities, and training requirements. If DEVNET materialized, it could, presumably, transmit bibliographical and statistical information units as well. Of particular interest to the subject of this study would be DEVNET's hardware components. For it is clear that computers and data-processing and telecommunications equipment will feature prominently in DEVNET -- infrastructures that are increasingly important variables in the successful operation of bibliographic information networks, such as PADIS and INFOPLAN, that are spread over vast areas.

8.4 Information Systems in Public Administration

Any attempt to address information issues in administration will problably have to resolve, first of all, the question of status: is it a

"discipline" or a "mission"? The answer seems to be that administration is both. As a discipline, it falls outside the scope of this study. But as a mission, its information support can, and I believe should, be considered in the context of mission-oriented systems such as AGRIS, INIS, and DEVSIS. There is a mission involved in the sense that any information system will be aimed at improving the quality of administration in all types of institutions although in so doing the information system will be primarily capturing knowledge from a single discipline.

J.E. Woolston (Woolston 1982) presented a paper at an Expert Group Meeting on the Establishment of an Information Network in Public Administration and Finance, held in Alcalà de Henares, Spain, in December 1981. Because the report of that meeting had not been published at the time of writing, I have taken the liberty to draw heavily on Woolston's paper for the ideas expressed in parts of this section and Chapter 9 of this study.

Many different institutions, particularly those in developing countries, have expressed the need for improved information services in the administrative sciences. For example:

(a) The Centre africain de formation et de recherches administratives pour le développement (CAFRAD), responding to the needs of its member states, began several years ago to study the possibilities of creating an African Integrated Network of Administrative Information (AINAI). The detailed design and eventual operation of AINAI has been stalled because of staff changes and lack of resources in CAFRAD, but it remains an important component of the institution's future plans.

(b) The Centro Latinoamericano de Administración para el Desarrollo (CLAD) and the Instituto Centroamericano de Administración Pública (ICAP) have also perceived a need to design information systems in their future programs. The two institutions have recently come together to discuss how they may cooperate to the advantage of the Latin American constituencies that they seek to serve.

(c) The International Institute for Administrative Sciences (IIAS) has recently restructured its organization to give more prominence to the information function, to devote more resources to the building of an information system, and to apply a computer for information processing.

But these represent only the tip of the iceberg. Many other initiatives for improved information systems also seek to serve the administrative function, at least in part. This function figures prominently in the scope of the system that is known either as PADIS-DEV or DEVSIS-Africa; much the same could be said for INFOPLAN, the parallel system for Latin America. Sectoral information systems also seek to capture information relevant for administration within the sector. AGRIS, which is managed by FAO, has a component of its subject scope devoted to "administration and legislation." INIS, which is managed by the International Atomic Energy Agency, has components of its subject scope devoted to "nuclear law" and "organization and administration of nuclear activities." It is now widely accepted that "management" is a key factor in determining the success of any corporate human endeavour, and that any information service that is to be effective in promoting such endeavours cannot confine itself to the merely technical.

The Alcalà de Henares meeting was the first attempt to address the issue under the auspices of the Development Administration Division (DAD) of the UN Department of Technical Cooperation for Development (UN-DTCD). A great deal of ground was covered at the meeting by the presentation of a total of 25 papers comprising four technical papers, three working papers, and 18 participant papers as well as the two reports by the English-Speaking and Multi-Lingual Groups. If an administrative sciences information system materializes as a result of these efforts, it would most probably be managed by DAD.

8.5 International Data Base for Non-Aligned Countries (IDNAC)

The political mandates given for the regional development information
systems in Africa (PADIS), Latin America (INFOPLAN), and the Caribbean
(CARISPLAN) have been reviewed in Chapters 4 to 6 of this study. However,
these systems were not designed to address the collective development
information problems of the Third World. It would appear that the need for
such a system constitutes the basis of efforts currently under way to
implement an International Data Base for Non-Aligned Countries (IDNAC).
However, there are important antecedents to the idea of an IDNAC.

The Non-Aligned Movement or the Group of 77 (whose membership is actually
over 120) comprises virtually all developing countries. This group has used
the meetings of several UN agencies to press its demands for a more equitable
share of the world's information resources. The demand for a New
International (Press) Information Order was cited in Section 8.3 of this
chapter. The UN Information Referral System for Technical Cooperation among
Developing Countries (INRES) was designed and implemented by UNDP in response
to decisions on TCDC adopted at the 18th, 19th, 20th, and 21st sessions of the
UNDP Governing Council. Published evidence (Dragic 1980) indicates that INRES
is fulfilling the objectives for which it was designed. For example, the
second edition of the system's Directory of Services for Technical Cooperation
among Developing Countries published in 1978 listed 1300 registered
organizations, 89 participating countries, and a considerable increase over
the 1977 edition in the registration of information sources supplied by
organizations of the UN system.

The United Nations Conference on Science and Technology for Development
(UNCSTD), held in Vienna in August 1979, was a continuation of the series of
UN conferences held during the 1970's on specific development issues and as a
part of the North-South dialogue over the establishment of a New International
Economic Order (NIEO). The 1979 session of UNCSTD will probably be best
remembered by developing countries for passing a resolution (subsequently
approved by the UN General Assembly) to set up a Global Information Network
(GIN) to facilitate the process of scientific, technological, and
socioeconomic information transfer to developing countries. The design
specifications of GIN are rather ambitious and appear unlikely to be
implemented in the near future, especially because it would require major
financial and technical commitments by industrialized countries who are most
unhappy with its design specifications. Instead of a GIN, Sardar (1981)
proposed a Third World Information Network (TWIN), based on Arab hardware
resources in the Middle East, which he believes has a better chance of being
implemented than a GIN. It is interesting to note, as quoted below, that the
objectives of Sardar's TWIN are identical to those already identified for
AGRIS and DEVSIS (Sardar 1981, p. 59):

> Although TWIN would store information generated largely by the
> developing countries, it would also provide a means of access to
> relevant scientific and technical information generated in the
> industrialized nations and would be capable of connecting with
> other, already existing networks.

The idea of a TWIN, like the proposed GIN before it, is at least for the
time being, destined to be a paper proposal. Consequently, IDNAC appears to
be the only proposal for a possible Third World information system that is
receiving any kind of attention at the moment.

Unesco is on record as having provided the US$100 000 for the design of
IDNAC, but that appears to be all that has been done to date. The Non-Aligned
Movement has not named a Secretariat, although Sri Lanka has demonstrated some
interest in the implementation of the IDNAC design. The design specifications
raise several crucial questions that will have to be resolved before IDNAC
would stand a chance of being successfully implemented. For example:

(a) Is there the political will by member states of the Non-Aligned
Countries (NAC) to make the necessary huge financial investments being

recommended? NAC is a highly heterogeneous and very loosely defined
Movement. Its membership ranges from very rich countries (such as Saudi
Arabia and Kuwait) to depressingly poor ones. One does not see much common
ground for these countries in terms of the allocation of resources for IDNAC.

(b) The report does not sufficiently assess the possible impact of an
operational IDNAC on potential and actual national and regional information
systems. My belief is that lasting results would be achieved by building from
the bottom up, rather than the other way round as the IDNAC design seems to be
recommending.

(c) Why is there such a heavy dependence on existing data bases for
IDNAC to function?

(d) How will documents identified through searching IDNAC data bases be
delivered to users, especially as foreign-based data bases would be used so
heavily?

(e) Will IDNAC be located in Colombo, Sri Lanka? Will Colombo become
the headquarters of the NAC? The question of the rationale for location will
loom large when individual member states decide whether or not to put their
money in IDNAC.

(f) The proposal appears far too technology-oriented. And, to that
extent, it seems unrealistic (premature) in the context of most (if not all)
African countries. I would imagine that the situation could not be very much
different in Latin America and much of Asia either.

These questions can, of course, be resolved through negotiation and
further research. If IDNAC materialized, it could play a significant role in
promoting the cause of DEVSIS. There is no reason, for example, why the
DEVSIS Coordinating Centre cannot be located in the host institution of
IDNAC. Indeed, it would be a logical development because a global DEVSIS was
designed to address the collective development information problems of the
Third World. It would be fruitful to explore this distinct possibility as the
scope and other aspects of IDNAC are elaborated in the coming years.

Chapter 9

CONSIDERATIONS IN THE DESIGN OF NEW SYSTEMS

9.1 Fundamental Principles

The specific systems reviewed in this chapter are highly selective, as
the IOB directory (IOB 1980) alone suggests. Both discipline- and mission-
oriented information systems, as well as systems that bridge the two types,
will continue to be designed at institutional, national, regional, and global
levels. The purpose of the final section of this chapter is to focus on
issues that, I believe, cut across information systems design of all types and
at all levels, although my primary concern is with development-oriented
systems.

Many of us in the profession of information science are concerned about
the intersection of mission-oriented and discipline-oriented systems. By
their very nature, they cannot be mutually exclusive and there is a danger of
duplication of work, the same units of information being processed in both a
discipline-oriented system and in one or more mission-oriented systems. Can
the world afford such duplication of efforts?

The intersection of information systems is a reflection of the
intersection of communities. If administrators are working in the field of
agriculture, they belong both to the community of administrators and to the
community of individuals who are seeking to improve the quality and
quantity of food supplies. One of their functions at the intersection of
these two communities is to promote the flow of experience between them.
They will often find that they must present their experience, perhaps with
different emphases, to different groups of people: sometimes they will be
attending meetings of administrators and sometimes they will be attending
meetings with people who are not primarily administrators but who are
working in the same economic sector. So, even at the level of day-to-day
contacts, there is a need to present a particular type of information in
different forms to different groups of people, and some such duplication
must also be accepted if the world is to enjoy an optimum set of
information services. Our task is to ensure that the duplication is only
that which is necessary. If information systems are constructed according
to international standards, and thus achieve a sufficient degree of
compatibility, there can be intersystem cooperation to capture the data
that are to be recorded. If the cooperation is successful, the act of
capturing data for one system can also result in its delivery to such other
systems to which it is relevant.

We are a long way yet from having a complete set of development-oriented
systems, hence new initiatives are welcome in the administrative sciences, for
the Group of 77, etc. Nevertheless, care must be taken to ensure that any new
information system does not become so broad in its subject coverage as to
result in unnecessary duplication with the operational discipline- or mission-
oriented services. Its subject scope must be so clearly and precisely defined
that the people who provide input to the information system will not be
tempted to include a great variety of information of peripheral interest.
Often, the best information systems are those that provide comprehensive
coverage of a tightly defined subject or mission; the less effective
information systems are usually those that provide spotty coverage of a
loosely defined subject scope.

9.2 Structural Parameters

If we look at the experience of international organizations in developing information systems and services, I think we can draw the following conclusions: (a) If the subject is a minor one and can be comprehensively covered by capturing a few hundred or a few thousand information units per year, a centralized activity is likely to be the more effective and economical. A small number of full-time personnel, with good knowlege of the subject, can be kept working full time and can establish necessary links into a specialized community of information producers and users, which community is itself not too numerous, even though it may be widely spread geographically. (b) If the subject is a broad one and can be covered comprehensively only by the collection of tens of thousands of information units per year, then a decentralized solution is more effective and economical. The size of the operation justifies the cost of a management and coordinating unit, but the work of collection and distribution is carried out by cooperating institutions, either regional or national, that can get closer to the producers and users of information in their respective geopolitical communities.

Decentralization promotes equity. It makes the system more responsive to the aspirations of the developing countries, as expressed in the Declaration on a New International Economic Order. The decentralization of input and output is a real decentralization of decision-making. There is a built-in multiplier effect in that each partner, in return for reporting the information from his or her own territory, receives information from the territories of all the other partners. The cooperating institutions in the developing countries are introduced to modern technologies for information processing, and training to implement these technologies becomes more sharply focused because it is immediately applied in day-to-day operations of input and output. Decentralization forces the system designers to overcome the problems of delivering output without requiring payments in hard currencies. Decentralization forces the system designers to find speedy delivery mechanisms that will ensure that clients are not penalized because of their geographical remoteness from a centre of activity. Finally, decentralization forces the establishment of management mechanisms that give a voice to cooperating institutions in all parts of the world. Both AGRIS and INIS have demonstrated the tremendous advantages of decentralized systems.

As has been previously mentioned, the design of a new system should be based upon a clear and precise definition of its subject scope. The process of defining the subject scope involves consultation with existing systems in related fields to ensure that any overlap is indeed necessary and to eliminate any that is not necessary. The temptation to define a single system that will meet all information needs must be resisted. To come back to the individuals who are administrators in the field of agriculture, they must be ready to go to at least two systems to meet their information needs – one in the field of administration and one in the field of agriculture. They must understand that to expect to get all their information from a single system would, if logically extended, be tantamount to demanding that all the world's information be obtainable from a single system – a concept that has repeatedly been shown to be utopian.

Once a subject scope has been elaborated, setting the technical parameters of a new information system, or set of systems would be much easier today than it was 10 years ago. The activities of Unesco's UNISIST program, together with those of ISO, have put in place a set of guidelines and standards (Vajda 1980) that should be followed to maximize compatibility with other systems and thus reduce or eliminate the need for different systems to duplicate each other's work in the capture of information for their files.

The experience of AGRIS and INIS has demonstrated that the contents of even massive files can be effectively and quite rapidly disseminated throughout the world without requiring payments in hard currencies. Users of the system can have the choice of acquiring copies of the file, either in

58

printed form for manual searching or on magnetic tape for computer searching. The delivery of magnetic tape by air freight to remote locations for mounting in local computers still has many advantages. Placing the file in a large central computer to which users connect by telecommunications has some benefit in industrialized countries where the telecommunications are well developed and not particularly expensive. But long-distance telecommunications are expensive for developing countries, even when they are available, and such a solution does nothing to ameliorate the condition of dependency in which many of the developing countries are already placed with regard to information access. By having copies of the file in local computers, which may in fact be relatively inexpensive mini- or microcomputers, the developing countries have the opportunity to acquire skills in information processing and to exploit the system according to their own locally defined requirements.

In setting technical parameters for any new system or systems, it will be important to ensure that the computer software needed for data entry and retrieval is software that is itself available to all countries, is properly maintained by its source, and is available without charge or for payments in local currencies. Unesco's CDS/ISIS and IDRC's MINISIS meet these conditions.

True compatibility with other related systems also requires compatibility of the indexing vocabulary that is used. The designers of any new system should seek to achieve this end and, in their approach to the choice of an indexing vocabulary, should study the possibility of staying within the family of thesauri that are based on the Macrothesaurus (Viet 1978).

Information systems are of limited use if they merely provide a record of what exists, however well this record may be constructed and however easy retrieval may be, the system should also provide a mechanism for the delivery of the original documents to users who identify these after consulting the data base. INIS has provided an effective document-delivery service based on microfiches of all those documents that are reported to its file and that are not commercially published and thus potentially available through the networks for interlibrary loans. The INIS microfiche service represents an experience that could well be emulated by other information systems.

9.3 Concluding Remarks

But, in concluding, it is also necessary to address the question of organization and finance. Money is needed to establish a new information system and, indeed, it would seem irresponsible to announce ambitious plans if money is not assured. For, particularly in the international environment, an announcement tends to preempt the field and causes other institutions to hold back in developing what they might otherwise have started. That is counter productive if the announcement is not followed by the application of money to the necessary work.

Depending on the degrees of sophistication of the records and of the salaries of the staff, it will cost from about $40 to about $120 to place a single record in a data base that is internationally available. So if we assume an accumulation of information units within the defined subject scope at a rate of 40 000/year, we shall need a budget of from $1.5 million to $5 million/year. This is true whether we are talking about a single global system or a linked set of regional systems. Clearly the budget is sensitive to the number of items being identified per year, and a good estimate of this must be made in the planning stage. The assumption made in this chapter is that the number is in the tens of thousands, thus calling for a decentralized operation. If the figure is really much less, the cost could be roughly in proportion, but then a different, more centralized organization would be required to effect the scaling down.

On the basis of the main assumption of this chapter, therefore, it would be necessary to find a set of institutions ready to cooperate in the

development of a new system. This set may be composed of national institutions - each responsible for gathering and reporting relevant information produced within its national territory and delivering the reports to a regional or global processing centre. This is essentially the AGRIS-INIS-DEVSIS formula, which also sees the return of copies of the total merged file to each participant so that it can be exploited for the benefit of local users. Alternatively, either permanently or for a temporary phase, the set of cooperating institutions may be regional or subregional bodies. This may require less effort to initiate but, of course, it is also much less effective in implanting the service at the national level.

The institution at the focus, be it regional or global, needs to have facilities for the processing of the information records received from the participants, for the training of these participants, for the maintenance of standards and tools (e.g., the thesaurus), for effective promotion of the system, and for managing relations with other systems. Could that central focus be in a UN agency? Costs in a UN agency are high; typically the salaries, even of people employed in operations, e.g., documentalists and computer programmers, are higher in UN organizations than in nongovernmental international or regional organizations, and much higher than those in most national organizations.

It is effective to fly a UN flag on an activity that is to be based on international cooperation, provided that flag does not cost too much. Because if it does cost too much, the member states will not authorize the necessary funding. The designers of any new system should explore alternatives for the management of any new activities, including the possibility of having these activities funded by the UN but with the operations contracted out to appropriate organizations where costs are lower.

Finally, it is remarkable to note how relevant Chapter 6 of the DEVSIS Study Team (1976a) Report is today, as it was in 1976, to the discussion of this chapter. The recommendations apply, to DEVSIS-type, DEVSIS-related, and non-DEVSIS-type systems and they are worth a closer examination today in the context of operational or planned information systems of all types. We should be moving in the direction of delineating the attributes of information systems design, irrespective of type or level. I have initiated such a move in respect of socioeconomic information systems (Aiyepęku, in press).

PART IV

POLICY PROPOSALS

POLICY PROPOSALS

After 12 years in business, and with an impressive catalogue of achievements (IDRC/IS 1980), I believe the Information Sciences Division of IDRC is in a strong position technically and financially to start considering new program directions. Five selected areas are discussed in Chapter 10 because they appear to me to be the most important and urgent in regard to DEVSIS-type systems. Several of them will, undoubtedly, be relevant to non-DEVSIS-type programs in the Division but, of course, this has not been explored. Other less important, less urgent areas have already been highlighted in Chapters 3-7 dealing with specific, operational systems. Similarly, in Chapter 11, recommendations are proposed in regard to several Centre activities and policies in the belief that, if implemented, they could contribute significantly toward greater program effectiveness, both in the Division and in the developing countries benefiting from IDRC support in information science.

Chapter 10

NEW PROGRAM DIRECTIONS

10.1 Training

    It soon became evident after my arrival at IDRC in August 1980 that
training would be one of the key elements in the effectiveness of programs
funded by IDRC in Africa. I learned, rather quickly, that it was not IDRC's
policy to support formal training per se and that IS in particular has
generally supported formal training leading to the award of diplomas only when
such training was specifically linked to projects funded by IDRC. An
important exception to that policy was an IS proposal to the IDRC Board of
Governors, several years ago, to fund the establishment, in the Philippines,
of a postgraduate school of information science for Southeast Asia. The
proposal was rejected by the Board, apparently because IDRC's policymakers
were still not convinced that that was the right way to go in "assisting the
developing regions to build up their research capabilities, the innovative
skills and the institutions required to solve their problems" (Canada, Federal
Government 1970).

    In mid-1979, the then Office of the Vice-President, Planning (OVPP)
proposed to the Management Committee of IDRC that an assessment of the
effectiveness and appropriateness of Centre-funded training be initiated. The
result was the Training Policy Study (IDRC 1981) written by a four-man Study
Team, prepared by OVPP, circulated widely within the Centre, and finally
presented to the Board of Governors for approval in March 1981.

    Before the Study Team completed its work, I had given the matter
considerable thought and had addressed a memorandum (Aiyepeku 1980a) to the
Director of Information Sciences on the subject as I saw it in regard to the
effectiveness of DEVSIS-type projects in Africa. My views and the Study
Team's recommendations were identical on most of the key issues, for example:

    ...that the Centre should take a longer-term perspective and
    finance specific training projects in areas of critical shortage
    within the Centre's program areas. In supporting such projects,
    emphasis should be given to the utilization and strengthening or
    development of a training capability in the Third World;

    ...that the Centre give priority to placing trainees in training
    institutions in their own country or elsewhere in the Third World
    ... (and) build up training capabilities of LDC institutions to
    provide adequate facilities for Third World trainees.

    However, I disagree with the Team on the question of PhD training.
Whereas the Team recommends that support for PhD training be given only in
exceptional circumstances, I have argued, and still strongly maintain, that
the PhD degree, and not the MA degree, must be seen as the logical goal of
beneficiaries from the Third World who seriously wish to "build up their
research capabilities, the innovative skills and the institutions required to
solve the problems of developing regions" (Canada, Federal Government 1970) as
specified in the IDRC Act. Although preference must necessarily be given to
MA programs whenever postgraduate training is considered, it should be
recognized that the PhD degree is the minimum qualification all over the world
for a meaningful research career in scientific and technological disciplines,

including information science, whether or not the research is development oriented.

The response of the IS management to my proposal that IDRC help develop a program to provide formal training of African information scientists at the MA level has been very positive and most encouraging. References to this proposal and to training generally are contained in the Division's Three-Year Budget Forecast (1982-83 to 1984-85) (IDRC/IS 1981a) as well as in the 1981-82 Program of Work and Budget (IDRC/IS 1981b). Specific follow-up activities have been initiated, all of which point to "Training" probably becoming a separate budget line item in the Division's programs within a year or two. This is my recommendation. It would be a new and most far-reaching development, not only in terms of DEVSIS-type programs, but in regard to all IS programs in Africa in particular and the Third World generally.

It is impossible to overemphasize the crucial significance of giving IDRC's support to the formal training of African information specialists in Africa. On the basis of my close knowledge of, and association with, the African situation, I can state most emphatically that unless the indigenous training of African information scientists is accorded top priority now by IDRC, the Centre's substantial investments in the establishment of all types of information systems in Africa (and not just DEVSIS-type systems) will come to naught. The acute shortage of information specialists in Africa does not exist in Latin America or Asia, each of which has a solid corps of indigenous specialists to draw upon in the management of their systems. In addition, both Latin America and Asia have a good number of schools of information science capable of producing the quality and quantity of specialists needed at the moment. On the contrary, Africa has only one school of information science serving the French-speaking parts of the continent where information systems are relatively less developed. The situation demands immediate attention by the IDRC authorities; formal training to produce African information scientists in particular, and Third World information scientists generally, stands head and shoulders above all other proposals in this study as the number one priority area for new program directions at IDRC.

10.2 Numerical Information Systems

DEVSIS is essentially a bibliographic system with clear-cut parameters for indexing and retrieval of documents, reports, books, maps, atlases, and computer-readable data as well as audiovisual reproductions of these bibliographic items (DEVSIS Study Team 1976a). And although "information and data" were specified in the scope notes (p.181), no definition of "data" was offered and the subject of possible "data elements" in a DEVSIS file was certainly not explored. Consequently, applications of the DEVSIS study recommendations in the design and implementation of national and regional systems have restricted coverage to bibliographic information, although statistical tables contained in documents can also be retrieved, irrespective of the subject orientation of such documents.

But, there have been strong and persistent demands from the Third World that development information systems should include, not exclude, numerical information. During data collection for the design of PADIS, policymakers all over Africa expressed a strong desire to have access to numerical as well as bibliographic information as a necessary prerequisite to meaningful development planning. In at least three instances, powerful arms of African governments preferred to have assistance in the establishment of numerical, rather than bibliographic, information systems. Each of the systems covered by this study, with the understandable exception of the Development Information System (DIS) in New York (Chapter 3), has plans to launch "numerical information" or "statistical information" or "data bank" components in the near future. In two cases (PADIS and CARISPLAN), the responsible political authorities have imposed the numerical component on the systems. Thus, numerical components are being, or will be, tagged onto existing

socioeconomic information systems without much planning. IDRC may, therefore, soon be forced to deal with existing systems whose energies and resources are increasingly directed toward numerical rather than bibliographic information. The implications of such a development would seem obvious in terms of IDRC's continued interests in the intellectual content and practical applications of the DEVSIS study, not to mention IDRC's interests as the major funding agency for DEVSIS-type systems in developing countries.

Fortunately, IS has long recognized the need to develop a capability to design, implement, and monitor numerical information systems, either independently or as key components of socioeconomic systems. A consultant had been identified in 1976 and given the following terms of reference, among others:

- to travel to European and North American organizations with expertise in the field of statistics (e.g., World Bank, UN Statistical Office, ILO, etc.) to analyze their past, present, and forthcoming programs of assistance in developing countries;

- to travel to three-to-six developing countries in Asia, Africa, or Latin America to analyze their existing data-gathering procedures and systems, their technical, organizational, and institutional strucuture, and their present and future needs for statistical data services to support development policymaking and planning; and

- to prepare a report on his findings with recommendations for future action by the Centre to assist the developing countries in the field of statistics and data services.

Unfortunately, the consultant produced a report that was difficult if not impossible to use as the basis for action by IDRC and it would seem that IS has since dropped the idea of numerical information systems from its programs.

It is my conviction that the subject is too important and too pervasive in all DEVSIS-type systems to be shelved much longer. The Three-Year Budget Forecast (IDRC/IS 1981a) has been carefully noncommittal regarding what IS might wish to tackle in the area of "nonbibliographic" systems. Perhaps this is a wise strategy, if only to avoid making promises that might be un- attainable due to circumstances beyond the control of IDRC. However, matters are moving inexorably in developing countries that could force IDRC to commit resources one way or another by having to deal with de facto numerical systems as part of existing or planned DEVSIS-type systems. Before this happens, I urge IDRC to consider one broad, and three specific, recommendations in dealing with the subject assuming, of course, that IDRC is convinced that this is a very important development issue right now in the Third World:

(a) that IDRC reopen the whole question of numerical information systems (or development statistics) in close collaboration with the United Nations Research Institute for Social Development (UNRISD), the UN Statistical Office, Unesco, and other international agencies that have demonstrated interest in the subject;

(b) that a competent information scientist, with a sufficiently strong background in social and economic statistics, be identified as a consultant to study the subject of numerical information systems afresh, with particular emphasis on the identification of scope and a definitive program of action by IDRC;

(c) that the consultant work closely with a Program Officer in IS and report regularly to the Director of IS on the progress of the work; and

(d) that, assuming IDRC accepts the principle of initiating a program in numerical information systems, efforts be set in motion immediately to identify, with a view to appointing, a Program Officer with specific responsibility for numerical information as an important component of DEVSIS-type systems and other types of systems supported by IDRC.

10.3 <u>DEVSIS File II</u>

Chapters 18 and 19 of the DEVSIS Study Team's Report (DEVSIS Study Team 1976a) were devoted to the technical aspects of the Referral File (File II) of DEVSIS, while Annexes 14 and 15 describe its data elements as well as the standards and models considered in the design of File II. The major difference between the main file, File I, and File II of DEVSIS is that:

Whereas FILE I is designed primarily to record information that is central to the questions of economic and social development, FILE II must respond to those information requirements of the community that go beyond the central issues of socio-economic development but nevertheless have a bearing on the aims and objectives of the development community... For the most part this information is not being originated by the development community. It may be sectoral, even technological; it may have been prepared for other purposes and by other mission- or discipline-oriented communities... What the referral file has to record are the means for gaining access to these existing sources of bibliographic and factual information, as well as to institutional information (e.g. libraries) active primarily but not exclusively within the development community (p. 85).

Thus, as specified in Chapter 8 of the Report (DEVSIS Study Team 1976a), File II will be:

A data file on specialized sources and services available in the world dealing with topics related to socio-economic development (e.g. statistical services, information services in particular sectors, project registers, on-going research registers, commodity supply/demand data, indexes of equipment, manufacturers, etc.). This file will be constructed to facilitate <u>referral</u> of inquiries to appropriate other sources and services (p. 44).

The principal product would be:

<u>Devprofile</u>, an indexed publication, re-issued in a new edition every four months and containing updated statements about all the information services identified in FILE II. This service will be useful to all those participating centres and other institutions that do not have the computing facilities to search the magnetic tape version of FILE II (p. 45).

The DEVSIS Study Team was "acutely aware of the fact that it has been able to advance the design of FILE I to a considerably greater extent than it has been able to advance the design of FILE II" (p. 90). As a result, it proposed "that a professional specialist be recruited to work full-time on the design and testing of FILE II from the start of the proposed program" (p. 90) as well as "on the elaboration of the systems to be employed" (p. 137).

This proposal has not been taken up, mainly because no Central Unit for a global DEVSIS has emerged as outlined in the design specifications. However, there have been tremendous interests in DEVSIS File II among the staff of regional DEVSIS-type systems in developing countries as well as among international agencies concerned with information for development. The objectives of a DEVSIS File II have been partially achieved as a result of the creation of INFOTERRA and TCDC/INRES data bases. But efforts at elaboration continue at both regional and United Nations levels. In particular, INFOPLAN has included the elaboration of DEVSIS File II for Latin America as one of the objectives of a 2-year Phase II of the system's life, which started in January 1981. In discussions with INFOPLAN staff in Santiago, I came away with the clear conviction that considerable work is being done to build a Latin American File II data base. Moreover, INFOPLAN staff are convinced that a DEVSIS File II would greatly enhance the utilization of products from File I. They also reported that a high proportion of the requests received from the

Latin American File II data base. Moreover, INFOPLAN staff are convinced that a DEVSIS File II would greatly enhance the utilization of products from File I. They also reported that a high proportion of the requests received from the Latin American planning community comprises the type that could only be provided from a DEVSIS File II data base. The Organisation for Economic Cooperation and Development (OECD) and Unesco have been developing specific ideas on the elaboration and enhancement of DEVSIS File II.

It would appear logical, therefore, that IDRC fund a meeting of representatives from INFOPLAN, the OECD, and Unesco and other international organizations that might make useful contributions to a "Discussion Forum" on DEVSIS File II. The purpose would be the sharing of experiences and, in particular, the drawing up of a definitive program of action and funding for the elaboration of all the data elements of DEVSIS File II. I believe that this proposal deserves urgent action by IDRC so that a meeting could be convened during the second quarter of 1983, at the latest.

The proposed meeting would also be the appropriate forum to consider a possible expansion of the scope of File II. For example, could File II accommodate a global review (data base) of experience gained by international development aid agencies active in designing, monitoring, and evaluating information systems in developing countries? I am aware that this very important subject has been given active consideration by the IS management; it is just possible that participants at the proposed meeting will consider it an appropriate candidate for inclusion in a redefined DEVSIS File II.

A second example of topics that could be explored at the proposed meeting is the possibility of creating a referral data base on statistical (numerical) information sources as a component of DEVSIS File II. Such a referral file might prove very useful in linking existing statistical units to DEVSIS File I facilities and services if only as a stopgap until numerical systems for socioeconomic development evolve.

10.4 Research

Unlike the other three program divisions of IDRC, the Information Sciences Division has, over the years, concentrated its efforts on the application of existing knowledge to development activities in the Third World rather than the production of new knowledge for development. Consequently, 95% of its annual budget is normally committed to the design, establishment, maintenance, and evaluation of information systems and specialized information analysis centres. But, that does not mean IS never sponsors research in information science. On the contrary, one of the most outstanding success stories of IS was the in-house research that led to the development of the MINISIS software package that has brought considerable prestige to IDRC. Research has continued in this area as the Future Systems Unit of the Computer Science Group of IS continues to work on producing a package that would accept non-Roman character sets. A specific research project, mainly in the application of computers to development efforts, is also being funded by IDRC in Kenya. And it must be appreciated that considerable research goes into the numerous feasibility studies that IDRC has sponsored as the basis for the design and establishment of existing or planned information systems.

Nevertheless, the clear impression at IS is that the Division is not in business for research in information science. It soon becomes obvious, even to the casual observer, that virtually all efforts are concentrated on the structuring and elaboration of the input and processing aspects of information systems, but very little on the output side beyond the production of bibliographic and indexing tools. Research is not considered a vital component of operational systems; indeed, it is never mentioned in the detailed and careful documentation that spells out the objectives of IDRC-sponsored systems in developing countries. I submit that this position is no longer tenable.

One could categorize three broad types of research in information science. There is the conceptual, theoretical research that aims to identify fundamental principles of information science. A good example is the four-part series published recently in the Journal of Information Science (Brookes 1981). One would not expect IDRC to put its money into this type of research even though it might have far-reaching development implications.

A second-order type of research is what I call "derivative research" in the sense that research derives from a close study of actual information systems and the research is usually designed to solve specific problems that have been identified in the operation of such systems. For example, DEVSIS-type systems always aim to generate physical products, such as indexing or abstracting services: Planindex, CARISPLAN Abstracts, Development Information Abstracts, and Devindex Africa are examples of such products that derive from specific systems funded by IDRC. The assumption is that these products are used by the targeted development communities. With the exception of Development Information Abstracts, we really have no idea whether or not these tools are in fact being used by their target audiences. It is fairly obvious, therefore, that such feedback studies would greatly improve the quality and relevance of bibliographic tools and systems if the studies were built into systems design documentation.

Another example of the second-order type of research is the study of user needs and behaviour as a continuous exercise. Feasibility studies funded by IDRC cover substantial grounds in this area but, of course, these are before the establishment of information systems. Once a system becomes operational, there is no requirement, on the part of project staff, to monitor user needs and behaviour with a view to generating the kind of data needed to take practical management decisions that could lead to improvements in the system. This type of research is going on at the moment in CLADES, not as part of INFOPLAN, but because an individual believes in its importance and relevance in the development context of Latin America. It is my considered opinion that such efforts deserve the active encouragement and support of IDRC.

A third and final example of the second-order type of research conerns the taxonomic enumeration and standardization of development information variables. I had the privilege to lead a team of Nigerian researchers that investigated the processes of information dissemination to, and its utilization by, policymakers in Nigeria from 1977 to 1980. The results of the study have been written (Aiyepeku 1980b) and aspects of it are being disseminated through lectures and publications in administration and information science journals. This effort was funded entirely by the Federal Government of Nigeria in recognition of the need to understand better the environment of information utilization or nonutilization by members of an important development community in Nigeria. The 270-odd information perception and utilization variables that were identified and described in the study have, thus, constituted a vital reservoir of knowledge for anyone who would conduct a follow-up study or launch any sectoral or mission-oriented information system in Nigeria.

It was with the greatest thrill, therefore, that I reviewed a similar effort at CLADES during a visit to CEPAL/CLADES in June 1981. For years, CLADES has been doing research to identify, on a nation-by-nation basis, the elements of the infrastructures for development information systems in Latin America and the Caribbean, with a view to standardization to facilitate the design and evaluation of development information systems in the region. Thus, the significance of the research is both methlological and practical. The Spanish-language publication of the results of the research so far (CEPAL/CLADES 1981b) is destined to be translated quickly into at least the offical languages of the United Nations. Little wonder that Unesco has taken such keen interests in the project and has cosponsored, with CEPAL, a seminar to review achievements and to plan future action. The recommendations of the seminar (CEPAL/CLADES 1981a) clearly indicate that a solid foundation had been laid for a much-needed type of applied research in Latin America and that, with Unesco support, the future of this activity is guaranteed.

I dwell on these examples because I believe IDRC must keep development research in information science in a proper perspective. I remain convinced that IDRC would not wish to be excluded from these exciting research initiatives coming from developing countries, not only because they have such obvious practical implications, but, in particular, because they help build up the indigenous research capabilities in these regions in a unique and truly dynamic manner.

Finally, there is a third type of "research" that I call "adaptive research" and that, strictly speaking, does not qualify as complete research. Project staff in developing countries often have to adapt system tools to local needs that tend to change more rapidly than in developed countries. Changes in the DEVSIS categories have been widely reported by INFOPLAN, CARISPLAN, and PADIS personnel. The OECD Macrothesaurus has witnessed numerous and important additions, modifications, and deletions that are purely of local interests. It is important that projects be encouraged to continue such exercises. These activities certainly require considerable thinking and sober reflections and it would be expected that anyone who went through that process fairly often would be more amenable to the rigorous discipline imposed by the first- and second-order types of research described above.

On the basis of the discussion in this section of the study, therefore, I put forward the following proposals:

(a) That IDRC (IS) identify research as a separate budget line item worthy of maximum support and encouragement, especially the study of information perception and utilization variables among different categories of users in developing countries; diagnostic surveys of information infrastructures for development; and the marketing of information products in developing countries.

(b) That IDRC (IS) identify research as one of the objectives of information systems funded by IDRC in developing countries, and encourage project personnel to undertake "derivative" research during the life of a project and to continue it after the termination of IDRC funding.

(c) That IDRC collaborate with Unesco to ensure that the ongoing research at CLADES on information infrastructures in Latin America continues as a CLADES activity, and that IDRC explore the possibilities of replicating the experiences of that activity in the other regional Economic Commissions, ECA, ECWA, and ESCAP.

10.5 Computer Software and Technology Transfer

Electronic data processing has contributed greatly to rapid advances in the input/output operations of information systems in recent times. In all the systems covered by this study, this means computer application to data entry and retrieval. Consequently, one of the most urgent problems confronting IS in 1975 was how to develop an interactive software package that could be run on a minicomputer rather than on a main-frame computer that would be too expensive for information systems to be established in developing countries. After intensive research, a solution to the problem was found in the MINISIS software package - an interactive minicomputer system based on ISIS (Integrated Set of Information Systems), which had been developed by ILO and run on the Hewlett Packard 3000 series of minicomputers (Daneliuk 1978). IDRC has since given MINISIS, free of charge, to UN-DIESA/ISU in New York and to PADIS in Addis Ababa while a modified version of ISIS continues to be used for INFOPLAN operations in Santiago. Fortunately, ISIS and MINISIS have a very high degree of functional compatibility as Valantin's (1981) study has demonstrated. Altogether, there were 50 MINISIS installations in both developing and industrialized countries throughout the world at the time this report was prepared and IDRC has continued to give MINISIS, free of charge, to nonprofit organizations, mostly in developing countries. The Future Systems

Unit of the Computer Sciences Section of IS makes enhancements to the MINISIS package and develops major components, such as a module to assist users with the production of a thesaurus for use in searching, and an SDI package. A MINISIS Newsletter keeps users of the software abreast of maintenance and enhancement news.

The software solutions provided by MINISIS can only be temporary in an area of rapid technological advances where the obsolescence rate is high. Conscious of this fact, IS is planning to develop an information management package, compatible with MINISIS and ISIS, that will run on microcomputers. Work has already started to make MINISIS accommodate non-Roman character sets in response to urgent and persistent demands from a vast area of the Third World. The success of these efforts will definitely have a major, positive impact on the performance of existing development systems and those yet to be established.

However, it is my considered opinion, as well as the opinion of most project staff in the systems covered by this study, that MINISIS now or in the future will not address the long-term interests of developing countries. What developing countries need most is the transfer of the software development expertise that is so evidently available at IDRC to individuals, institutions, countries, and regions in developing countries as a vital component of the North-South technology transfer process. It is remarkable that a similar view was expressed at a recent PADIS Inter-Governmental Meeting of African Computer, Documentation and Information Scientists held in Salisbury, Zimbabwe (ECA/PADIS 1982). One could conceptualize at least four levels of such transfer processes that would involve personnel from industrialized and developing countries:

(a) Data base exchange. IDRC could invest money and time to develop the necessary conversion software package to link tapes from two or more different computers using different software packages. For example, a package that translates tapes from HP to IBM computers once and for all and can be made available to interested users, mainly in developing countries, now seems largely feasible. Perhaps the tapes of other types of computer used extensively in developing countries could also be brought into the picture;

(b) Modifications to existing software packages in developing countries to make them more responsive to the specific and various needs of users in developing countries;

(c) Development of new computer hardware, using existing modules and chips in combinations that are sensitive to local needs and limitations in developing countries; and

(d) Collaboration with individuals and institutions in developing countries to develop appropriate software packages that can be run on hardware configurations already available in those countries.

Of the four levels, only level (c) can be dismissed as outside the mandate of IDRC, while level (d) appears to have the greatest potential for meaningful and lasting technology transfer to developing countries. In this context, it must be borne in mind that a growing number of developing countries are rapidly building up their own hardware/computer technological base. In Latin America, Brazil has created such a base and it is the only country on the continent that has evolved a national informatics (computer) policy. In Asia, India has done something similar and would seem particularly eager to benefit from IDRC's considerable expertise in developing an appropriate software package that can be run on its locally manufactured computers for information processing. I, therefore, strongly urge that IDRC's computer policy, derived from the expertise gained in developing MINISIS, should have level (d) above as a prime objective.

It is reassuring to note that IS management appears very sympathetic to the idea of collaborating with developing-country individuals and institutions to develop appropriate software packages that can be run on non-HP computers

manufactured, assembled, or otherwise made available in developing countries. If such sympathy gets translated into concrete projects funded by IDRC, it would undoubtedly be a most significant step forward for the cause of information science in developing countries specifically, and for better North-South relations generally.

Chapter 11

TOWARD GREATER PROGRAM EFFECTIVENESS

11.1 National Information Systems

     Through IDRC funding, one subregional and two regional systems are now
operational in two of the Third World's three continents. Although Asia has
as yet no regional system for socioeconomic development, there are positive
indicators that it might have at least one, most probably two, in the near
future. One regional system (INFOPLAN) and a subregional system (CARISPLAN)
have both entered Phase II of their operational life. The design documents
for both systems and for PADIS call for strong national participating centres
to ensure their success.

     Two types of national efforts in systems development are usually given
IDRC support: (a) the "national miniprojects," each typically involving only
a few ten thousand dollars, and (b) the "national infrastructures" development
efforts that are much larger in terms of scope and financial commitments.
IDRC currently supports only four national information infrastructures
development efforts in Bolivia, Jamaica, and Morocco and recently Barbados.
The main reason why so few have been supported is that the criteria for
support have been necessarily very stringent, with the result that only few of
the national proposals submitted to IDRC in this category qualify. But, even
if the criteria were relaxed to enable more national programs to qualify for
IDRC support, only a small fraction of potential beneficiaries would qualify
because of limited funds available to support this very expensive type of
national information effort. No major change in IDRC policy is expected or
recommended in this area. However, IDRC is urged to increase substantially
the number of "national miniprojects" it supports to enable specific countries
to participate effectively in regional systems (such as PADIS), or in
subregional systems (such as CARISPLAN). It is reassuring to note that IDRC's
commitment is already strongly evident in this direction. Thus, in a way, my
recommendation may sound like "preaching to the converted." The emphasis,
however, is on the words "increase substantially," and IDRC has the requisite
experience and expertise to translate this recomendation into effective
programs, perhaps in collaboration with other international agencies,
especially Unesco, that have been active in this area.

     It must be realized that the degree of a developing country's commitment
to a regional agency is a function of the perceived or real (tangible) returns
to that country from the operations of the agency. Political commitment is
the first step and it is relatively easy to take that first step. The acid
test of "commitment," however, is the degree of financial backing for a
political commitment. "Tangible returns" to a country from a regional agency
are often measured in terms of: (a) the number and relative seniority of a
country's citizens employed by the agency, (b) the number of agency facilities
located in the country, and (c) the measurable services provided by the agency
in the country. If a country were to decide, rightly or wrongly, that it is
not getting equitable returns from a regional agency, it might withdraw
support for the agency - a move that could precipitate the collapse of the
agency, especially if the withdrawing country is sufficiently powerful to
launch a competing system.

     Nobody expects this to happen in Africa, Latin America, or the Caribbean
subregion, but it remains a distinct possibility. And to reduce the chances

of its happening, I believe IDRC has a responsibility to insure its vital and substantial investments in the creation and sustenance of development information systems in these regions by supporting a larger number of national efforts simultaneously with support for the existing regional systems. The selection criteria are already available at IDRC; the recommendation here is that IDRC resources be committed to supporting more national participating centres that would strengthen existing regional systems funded by IDRC. The result can only be of mutual benefits to the regional and national systems and to IDRC as well. It is also firmly in accordance with the conceptual framework of DEVSIS as a decentralized system.

11.2 Evolving Evaluation Criteria for Operational Systems

IDRC is unique among the major international development aid agencies because the Act setting up the Centre specifically recognized the vital role of information services in the development process. Consequently, IS has been one of the four program Divisions of the Centre since its inception. Again, unlike many similar agencies, IDRC does not provide a form that applicants for Centre funds have to complete pro forma. This policy enables IDRC to consider each proposal entirely on its inherent or potential merits, rather than on how satisfactorily a form has been completed.

There is little doubt, however, that each program division has a set of written or unwritten criteria for reviewing project proposals submitted to it for possible funding. Reference has already been made in this chapter to the stiff criteria that IS has had to adopt over the years in deciding which national information infrastructures development programs it would recommend for IDRC support. Similar criteria have also been developed for other levels and types of systems and Specialized Information Analysis Centres (SIACs).

What has not been so clearly developed is a set of criteria for (a) monitoring the progress of IS projects funded by IDRC and, in particular, for (b) evaluating the success or failure of such projects after the termination of IDRC funding. Recent efforts to improve Project Completion Reports that program officers have to write are a step in the right direction, but they are not enough. The main problem has to do with the fact that "success" and "failure" (and particularly "success") are comparatively much more difficult to measure objectively in information science than in, say, the agricultural and health sciences. But it is not impossible, and the results of such an exercise could be extremely valuable in the hands of both the management and program officers of IS.

I suggest that project and postproject evaluations be broken down into manageable subcomponents - input processes; personnel; tools; output products; training, including seminars, workshops, etc.; and services, etc. - and that a set of sufficiently discriminating evaluation criteria be developed for each subcomponent. Obviously, this subject cannot be elaborated in the context of this study, but it would seem sufficiently important to warrant the appointment of a consultant who fully understands the inner workings of IDRC to handle the job. As part of my duties during my Fellowship year at IDRC (1980/81 academic year), Martha Stone asked me to develop a set of criteria for evaluating IS workshops sponsored by IDRC. This came after Martha and I had jointly participated as resource personnel in a 2-week workshop on "Techniques for Effective Participation in the Caribbean Information System - Planning (CARISPLAN)." My paper (Aiyepeku 1981a) has since been widely circulated within the Division and constitutes one of the inputs to efforts currently under way at the Centre's Office of Planning and Evaluation to evolve a comprehensive set of guidelines for evaluating IDRC-funded projects. Such criteria, when developed, would have to be regularly updated in a manner similar to the taxonomy of development information variables discussed in Chapter 10 under Research.

11.3 IDRC (IS) Representation in Africa

With its head office in Ottawa, IDRC has regional offices in Africa (Dakar and Nairobi), Asia (Singapore), Latin America (Bogota), and the Middle East (Cairo). However, IS is not represented in all of those offices. Moreover, the experiences, circumstances and functions of the IS regional representatives vary significantly and it is my view that the nonrepresentation of IS (in Nairobi and Cairo) as well as the various functions, circumstances and experiences of incumbents where there are representatives (in Dakar, Singapore, and Bogota) combine to ensure that IS programs would always be more effective in certain parts of developing countries than in others.

Asia is fortunate to have one of the most experienced hands in IS to handle its affairs. He has been assigned a full-time Program Officer, too, and under Phase C of Ottawa's decentralization of functions to the regional offices, it means Singapore will be taking more and more administrative decisions without reference to Ottawa. Latin America, too, has an experienced information scientist to handle its information science matters although he is relatively new at IDRC. English is the lingua-franca in virtually all the Asian countries that the Asian representative of IS has to deal with. Similarly, Spanish is the official language everywhere in Latin America except Brazil. On the contrary, IS representation in Africa is the most difficult and weakest at the moment, for a number of reasons.

Africa has the least number of qualified information scientists who can cope with the very heavy responsibilities demanded of an IS regional representative. Yet, IS has managed to put in IDRC's Dakar office one of the very best of whom Africa can boast. Unfortunately, his difficult tasks are compounded by historical and cultural circumstances beyond his control. Africa South of the Sahara has inherited a colonial polarization of anglophone and francophone Africa, with very little contacts between the two blocks. The result is that the West African representative of IS in Dakar is perceived as the representative of French-speaking West Africa even through he has done everything possible to be seen as the IS representative for both English-speaking and French-speaking West Africa. On top of this is the situation whereby countries in the vast area of English-speaking Eastern and Southern Africa have to deal directly with Ottawa on information science projects.

My recommendations in this regard are simple and fairly obvious: (a) that IS appoint a representative for East and Southern Africa as a matter of urgency, and (b) that, in the interim, efforts be made to identify at least one information scientist who can handle IS business in Eastern and Southern Africa on a part-time basis or on contract. The same person might also be asked to assist with English-speaking West Africa.

The management of IS has already made specific recommendations to the Centre's President on this subject and it is hoped that an IS representative will materialize in the Nairobi office of IDRC in the 1983/84 financial year.

11.4 Fellowship Awards

As the first to hold IDRC's Fellowship Award in information science, I believe it would be useful to leave some of my impressions about the nature and objectives of the Award.

During the year, I have gained valuable experience working and learning at IDRC, as my three progress reports to the Fellowship Program have clearly shown. I believe my cumulative experience and the knowledge I have acquired during the year are a most worthy investment for IDRC, for IS, and particularly for Africa. The most far-reaching returns on that investment came <u>after</u> my return to Africa where an expanded and enriched career in at

least two specific areas is already evident: (a) a more practical orientation
to teaching and research in information science, and (b) a possible role as
IDRC's resource person for DEVSIS-type programs, especially in Africa. I
would also hope that the Fellowship Award can be extended to other worthy
information specialists in developing countries. Perhaps I could even be
given a role in their identification and selection so that gradually but
surely, IDRC would be investing in a solid corps of high-level information
specialists in the Third World who would have participated actively for up to
a year in the design and management of information systems in which IDRC has
strong intellectual and financial commitments in developing countries. That,
to my mind, is one of the surest ways to "assist the developing regions to
build up the research capabilities, the innovative skills and the institutions
required to solve their problems" (IDRC Act, Section 4(1)(b)).

I propose the following, therefore: (a) that one Fellowship in
information science be awarded annually to a worthy Third World specialist,
and (b) that IS and the Fellowship Program work out appropriate criteria for
selecting such award holders, bearing in mind such factors as research
experience, area of specialization, position in home institution, expected
functions at IDRC, and expected status in the IS hierarchy.

It is also my hope that each subsequent Award Holder would be required to
produce a comprehensive report similar to the one that led to this publication
so that IDRC could begin to build a body of knowledge that reflects different
but complementary viewpoints on the important development issues of the Third
World.

APPENDIXES

System	United Nations Development Information System	Latin American Planning Information Network	Caribbean Information System for Economic and Social Planning	Pan-African Documentation and Information System	DEVSIS (Canada) Experimental
Acronym	DIS	INFOPLAN	CARISPLAN	PADIS	NONE
Host institution	UN Department of International Economic and Social Affairs, Information Systems Unit (UN-DIESA/ISU)	UN Comisión Económica para América Latina (CEPAL)	CEPAL Port-of-Spain Office (Caribbean Documentation Centre)	UN Economic Commission for Africa (ECA)	International Development Research Centre (IDRC)
Year established	1978	1970	1979	1980	1975
Size of data base (approx.)	6000	1850	2500	2000	6100
Data processing					
Manual/computerized	Computerized	Computerized	Computerized (at CEPAL, Santiago)	Computerized	Computerized
Hardware	HP 3000 Series 30	-	-	HP 3000	HP 3000
Software	MINISIS	ISIS	-	MINISIS	MINISIS
Working language	English	Spanish	English, French, Spanish	English, French, Arabic	English, French, Spanish
Growth rate of data base/year	1500 (approx.)	700	500	1300 (approx.)	1000

Major publication	Development Information Abstracts	Planindex	CARISPLAN Abstracts	Devindex Africa	Devindex
Frequency	Bimonthly	Biannually	Quarterly	Biannually	Annually
Date of first issue	January 1981	1980	September 1980	1981	1977
Issues to date	8	4	6	4	7
Total staff	4	4	7	4	3
Project leader	Luciana Marulli-König (Chief)	Claudionor Evangelista (Chief)	Wilma Primus (Manager)	Juilien K. Quirino-Lanhounmey (Director)	Catherine Shearer (DEVSIS Project Manager)
Address	Room DC-594 United Nations New York, N.Y. 10017 USA	Latin American Centre for Economic and Social Documentation (CLADES), UN Economic Commission for Latin America, Avenida Dag Hammarskjold, Casilla 179 D, Santiago, Chile	Caribbean Documentation Centre, UN Economic Commission for Latin America, Salvatori Building, Room 300, P.O. Box 1113, Port-of-Spain, Trinidad and Tobago	Pan-African Documentation and Information System, UN Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	DEVSIS (Canada) Experimental, International Development Research Centre (IDRC), P.O. Box 8500, Ottawa, Ontario K1G 3H9 Canada
Telephone	(212) 754-5457	(56) 48 50 74; 48 78 18	(809) 62-35595; 35428; 37308	447000; 447200; Ext. 322 or 181 Director: 15 54 16	(613) 996-2321; Ext. 170
Cable	UNATIONS NEW YORK	UNATIONS SANTIAGO CHILE	ECLA PORTOFSPAIN	ECA ADDIS ABABA	RECENTRE OTTAWA
Telex	232 422	0053 295 40077	394 TRINIDAD AND TOBAGO	21029	0053-3753

Note: Only operational systems are included.

Appendix B

IDRC'S FINANCIAL COMMITMENTS TO INTERNATIONAL DEVSIS-TYPE SYSTEMS

DIS:			
	Phase I	1980	CA$34 200
	Phase II	1981	52 800
	Phase III	1981-83	87 000
INFOPLAN:			
	Phase I	1979-80	280 900
	Phase II	1981-82	513 890
CARISPLAN:			
	Phase I	1979-80	146 465
	Phase II	1981-82	456 707
PADIS:			
	Phase I	1980-81	500 000
	Phase II	1982-84	408 000
DEVSIS (Experimental):		1976-77	37 900
		1978	57 400
		1979	70 400
		1980	58 000
		1981	77 300
		1982	47 600

Note: Preproject and postproject expenditures on activities such as feasibility studies, workshops, seminars, training, and trouble-shooting are not included. National DEVSIS-type systems are not included.

Appendix C

RECOMMENDATIONS OF THE TECHNICAL EXPERTS GROUP MEETING
ON COMMON INDEXING TOOLS,
NEW YORK, 15-17 JUNE 1981

The Meeting:

- Notes that CEPAL, ECA, ESCAP, DIESA/ISU, and several specialized
agencies, have all adopted the Macrothesaurus for the indexing of records
relating to economic and social development, and that ECWA is considering
doing so;

- Recognizes that the most recent published version of the Macrothesaurus
was prepared in 1978, and that many users were independently making
modifications to it - modifications that put at risk the compatibility of
their respective data bases and the prospects for effective exchange of
information;

- Appreciates the efforts of OECD in bringing the Macrothesaurus to its
present level of development;

- Considers that the management of the Macrothesaurus should now be
adapted to recognize its global acceptance;

- Believes, therefore, that it is necessary to establish a program for
the ongoing management and maintenance of the Macrothesaurus and to bring this
program under the auspices of the United Nations, in collaboration with the
specialized agencies;

- Calls on the regional economic commissions to act as regional managers
of this programme and to set up mechanisms for receiving and processing
proposals from the countries and institutions within their respective regions
for improvements to the Macrothesaurus;

- Invites DIESA/ISU, in consultation with the regional economic
commissions, to set up mechanisms to manage the program at the global level,
taking account of (a) the proposals received from the regions; (b) the
developments at UN headquarters, particularly the institution of the UNBIS
thesaurus, and the needs of TCDC/INRES of UNDP; and (c) the developments in
sectoral thesauri, particularly those adopted within the United Nations
family;

- Foresees that such mechanisms would involve: (a) channels for
communications from the regional economic commissions and international
agencies to propose improvements to the Macrothesaurus; (b) the availability
of expertise in the production and management of multilingual thesauri for
international use, which expertise would be applied to the processing of the
proposals received; (c) the utilization of the computer facilities of
DIESA/ISU for the processing of modifications to the Macrothesaurus and the
distribution of modifications to the regional economic commissions and other
users; (d) the convening of annual meetings of technical experts from the
regional economic commissions to give overall guidance to the experts and
DIESA/ISU, to reconcile needs, and to resolve problems; and (e) the
publication, within the next 2 years, of a revised version of the entire
Macrothesaurus;

- Recognizes that the regions all have similar needs for economic and social development information and that exchange of information among the regions would assist in the improvement of development activities in each region, while the information that DIESA/ISU is collecting from headquarters on the development activities of the UN would be extremely valuable to the regions;

- Recommends, therefore, that the appropriate mechanisms for this exchange would be the following: (a) that DIESA/ISU make its data base available to each regional economic commission; (b) that the regional economic commissions make their data bases available to DIESA/ISU so that they can be employed for information services in UN headquarters and to the national delegations to the UN; and (c) that DIESA/ISU be asked to create a merged data base of the data bases contributed by the regional economic commissions for distribution to each of the regional economic commissions and, if this is not found to be practicable, that exchanges of data bases among regional economic commissions be arranged on a bilateral basis.

Appendix D

ACRONYMS USED IN THE STUDY

ADB –   African Development Bank (Abidjan, Ivory Coast)

AGRIS –   International Information System for the Agricultural
               Sciences and Technology (Rome, Italy)

AINAI –   African Integrated Network of Administrative Information
               (CAFRAD proposal)

ARDCES –   Arab Regional Documentation Centre for the Economic and
               Social Sciences (ECWA proposal)

BIDS –   Bangladesh Institute of Development Studies (Dhaka,
               Bangladesh)

CAFRAD –   Centre africain de formation et de recherches
               administratives pour le développement (Tangiers, Morocco)

CARICOM –   Caribbean Community (Georgetown, Guyana)

CARISPLAN –   Caribbean Information System for Economic and Social
               Planning (Port-of-Spain, Trinidad and Tobago)

CCO –   Central Coordinating Office (PADIS)

CDC –   Caribbean Documentation Centre (Port-of-Spain, Trinidad
               and Tobago)

CDCC –   Caribbean Development and Cooperation Committee
               (Port-of-Spain, Trinidad and Tobago)

CEDA –   Centre for Economic Development and Administration
               (Kathmandu, Nepal)

CELADE –   Centro Latinoamericano de Demografía (Santiago, Chile)

CENDIT –   Centre for Development of Industrial Technology (New
               Delhi, India)

CEPAL –   Comisión Económica para América Latina (Santiago, Chile)
               (see also ECLA)

CIS –   Caribbean Information System (CDCC proposal)

CLAD –   Centro Latinoamericano de Administración para el
               Desarrollo (Caracas, Venezuela)

CLADES –   Centro Latinoamericano de Documentación Económica y Social
               (Santiago, Chile)

CODEV –   Communications for Development Foundation (Rome, Italy)

CSCD –   Committee on Studies for Cooperation in Development
               (Colombo, Sri Lanka)

83

CSUCA -	Consejo Superior Universitario Centroamericano (San José, Costa Rica)
DAD -	Development Administration Division of the UN Department of Technical Cooperation for Development (New York, USA)
DFD -	Data for Development International Association (Marseille, France)
DEPLADIS -	Development Planning Documents Information System for ESCAP Countries (ESCAP proposal)
DEVNET -	Development Information Network (UNDP proposal)
DEVSIS -	Development Sciences Information System
DIALOG -	Dialog Information Service Inc. (Lockhead Corporation, Palo Alto, California, USA)
DIESA -	(UN) Department of International Economic and Social Affairs (New York, USA)
DIS -	(UN) Development Information System (New York, USA)
DOCPAL -	Sistema de Documentación sobre Población en América Latina (Santiago, Chile)
DSE -	German Foundation for International Development (Bonn, Federal Republic of Germany)
DTCD -	(UN) Department of Technical Cooperation for Development (New York, USA)
ECA -	(UN) Economic Commission for Africa (Addis Ababa, Ethiopia)
ECLA -	Economic Commission for Latin America (Caribbean Office in Port-of-Spain) (see also CEPAL)
ECOWAS -	Economic Community of West African States (Lagos, Nigeria)
ECWA -	(UN) Economic Commission for Western Asia (Baghdad, Iraq)
ESCAP -	(UN) Economic and Social Commission for Asia and the Pacific (Bangkok, Thailand)
ESRIN -	European Space Research Institute (Frascati, Italy)
EURONET -	European On-Line Information Network (Brussels, Beligium)
FAO -	Food and Agriculture Organization of the United Nations (Rome, Italy)
GIN -	Global Information Network (UN proposal)
HABITAT -	Human Settlements Information System (Nairobi, Kenya)
HIS -	Health Information System (WHO proposal)
IBICT -	Instituto Brasileiro de Informacao en Ciencia e Tecnologia (Rio de Janerio and Brasilia, Brazil)
ICAP -	Instituto Centroamericano de Administración Pública (San José, Costa Rica)
ICC -	International Computing Centre (Geneva, Switzerland)

ICWA –	Indian Council of World Affairs (New Delhi, India)
IDB –	Inter-American Development Bank (Washington, D.C., USA)
IDNAC –	International Data Base for Non-Aligned Countries (proposed)
IDRC –	International Development Research Centre (Ottawa, Canada)
IIAS –	International Institute for the Administrative Sciences (Brussels, Belgium)
IITA –	International Institute of Tropical Agriculture (Ibadan, Nigeria)
ILIS –	International Labour Information System (ILO proposal)
ILO –	International Labour Office (Geneva, Switzerland)
ILPES –	Instituto Latinoamericano de Planificación Económica y Social (Santiago, Chile)
INFOPLAN –	Latin American Planning Information Network (Santiago, Chile)
INFOTERRA –	International Referral System for Sources of Environmental Information (Nairobi, Kenya)
INIS –	International Nuclear Information System (Vienna, Austria)
INRES –	Information Referral System (of TCDC) (New York, USA)
IOB –	Inter-Organization Board for Information Systems and Related Activities (Geneva, Switzerland)
IS –	Information Sciences Division (of IDRC) (Ottawa, Canada)
ISIS –	Integrated Set of Information Systems (Geneva, Switzerland)
ISO –	International Standards Organisation (Geneva, Switzerland)
ISU –	Information Systems Unit of the UN Department of International Economic and Social Affairs (New York, USA)
MINISIS –	Mini Integrated Set of Information Systems (Ottawa, Canada)
MULPOCs –	Multinational Planning and Operational Centres (of ECA)
NAC –	Non-Aligned Countries
NAPLAN –	National Planning Information Network
NIDA –	National Institute for Development Administration (Bangkok, Thailand)
NIDOC –	Nigerian Information and Documentation Centre (proposed)
NIEO –	New International Economic Order
OECD –	Organisation for Economic Cooperation and Development (Paris, France)
ORBIT –	On-Line Retrieval of Bibliographic Information – Time-Shared (Santa Monica, California, USA)
PADIS –	Pan-African Documentation and Information System (Addis Ababa, Ethiopia)

PGI –	Programme of General Information (Unesco, Paris)
PIDE –	Pakistan Institute of Development Economics (Islamabad, Pakistan)
PIDSA –	Population Information and Documentation System for Africa (Accra, Ghana)
POETRI –	Programme on Exchange and Transfer of Information (proposed)
POPIN –	(UN) Population Information Network
RESADOC –	Réseau Sahélien d'Information et de Documentation Scientifiques et Téchniques (Bamako, Mali)
RIPS –	Regional Institute for Population Studies (Accra, Ghana)
SASEDIN –	South Asia Socio-Economic Development Information Network (CSCD proposal)
SIACs –	Specialized Information Analysis Centres
TCDC –	Technical Co-operation Among Developing Countries program of UNDP (New York, USA)
TWIN –	Third World Information Network (a proposal)
UNBIS –	United Nations Bibliographic Information System (New York, USA)
UNCHS –	United Nations Centre for Human Settlements
UNCSTD –	United Nations Conference on Science and Technology for Development (Vienna, Austria, Aug. 1979)
UNDP –	United Nations Development Programme (New York, USA)
UNEP –	United Nations Environment Programme (Nairobi, Kenya)
Unesco –	United Nations Educational, Scientific and Cultural Organization (Paris, France)
UNIBID –	UNISIST International Centre for Bibliographic Descriptions (London, England)
UNIDO –	United Nations Industrial Development Organization (Vienna, Austria)
UNISIST –	Intergovernmental Programme for Cooperation in the field of Scientific and Technological Information (Paris, France)
UNRISD –	United Nations Research Institute for Social Development (New York, USA)
WHO –	World Health Organization (Geneva, Switzerland)

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CELADE - **14, 25-26**

CENDIT - CSCD workshop **51**

Central American Bank for Economic
Integration - **27**

Central American Universities Higher
Council (see CSUCA)

Centre africain de formation et de
recherches administratives pour le
développement (see CAFRAD)

Centre for Development of Industrial
Technology (see CENDIT)

Centre for Economic Development and
Administration (see CEDA)

Centro Latinamericano de
Administración para el Desarrollo
(see CLAD)

CEPAL - **26,** meeting on compatability
with PADIS-DEV **38,** meetings,
common methodologies **22**

CEPAL, Port-of-Spain - **30**

CEPAL/CLADES - **14,** financial support
25

Chile - INFOPLAN **26, 27**

CIS - Collaboration with other
systems **34**

CLAD - Interest in public
administration information systems
54

CLADES - **13, 27,** INFOPLAN **25-26,**
mandate **28,** research on
information infrastructures in
Latin America **16,** scope of
INFOPLAN **28**

CODEV - Interest in DEVNET **53**

Colombia - INFOPLAN **26, 27**

Committee on Studies for Cooperation
in Development (see CSCD)

Common indexing tools - **22-23**

Communications for Development
Foundation (see CODEV)

Compatibility - DEVSIS-type and
DEVSIS related systems **44**

Consultants - Computerization of the
information services of
CDC **33,** DEVSIS-Western Asia

proposal **49,** evaluation of use
of Devindex **44, 45,** Hilmi,
F.R. **49,** nonbibliographic
information systems **16,**
65, nonbibliographic information
systems, program of action for
IDRC **65,** presentation of report on
computerization at CDC **33,** project
evaluations **14, 17, 73,** Seshagiri,
N. **52,** Vasarhelyi, P. **49,** Viet,
Jean **23**

Cost per information unit - **59**

Costa Rica - INFOPLAN **26, 27**

CSCD - proposal for DEVSIS-South
Asia **50-51,** SASEDIN **15**

CSCD workshop - **51**

CSUCA - **27**

Cuba - CARISPLAN **30,** CARISPLAN focal
point **31,** CARISPLAN training
workshops **31-32,** regional workshop
in Barbados **32-33**

Current Awareness Bulletin - CDC **32**

DAD - Management of a proposed
administrative sciences
information system **54**

Data base structure (see also
Manual for the Preparation of
Records in Development Information
Systems) definition and testing
43

Data for Development International
Association - ESCAP government
information systems proposal
50-51

Decentralization - Input and output
58

DEPLADIS (see DEVSIS-Western Asia)

Derivative research - **68,**
recommendation **16**

Development Information Abstracts -
21, need for feedback studies
68

Development Information Network
(see DEVNET)

Development Information System (DIS)
(see UN Development Information
System)

Development Planning Documents
Information System (see DEPLADIS)

93

94

95

96

MINISIS - **59, 69-70,** Franklin
Institute **21,** model manual **22,**
PADIS **37,** summary of recommen-
dations **16,** UN-DIESA/ISU **21**

Model for development information
systems - **22**

Montserrat - CARISPLAN **30,** CARISPLAN
focal point **31,** CDC technical
assistance **32,** National workshops,
participation in the CIS **33,**
regional workshop in Barbados
32-33

Morocco - DEVSIS (Canada) Experiment
43, information infrastructure
development **72**

MULPOCs - Focus of ECA and PADIS
activities **39**

Multinational Planning and
Operational Centres (see MULPOCs)

Nairobi office - Request for IDRC IS
representation **17**

NAPLAN - **27**

National Information and
Documentation Centre, Grenada -
visit by CDC librarian **32**

National information infrastructures
(see information infrastructures)

National Planning Agency of the
Maldives - CSCD workshop **51**

National Planning Information
Network (see NAPLAN)

National workshops on techniques for
effective participation in the CIS
- **33**

Nepal - CSCD DEVSIS-South Asia
proposal **51**

Netherlands - DEVSIS (Canada)
Experiment **43,** ESCAP government
information systems proposal
50-51

Netherlands Antilles - CARISPLAN
30, regional workshop in Barbados
32-33

NIDOC - Focal point in PADIS-DEV **40**

Nigeria - Focal point in PADIS-DEV
38

Nigerian Information and
Documentation Centre (see NIDOC)

Nonbibliographic information systems
- Policy proposals **64-65,** summary
of recommendations **16**

Nongovernmental institutions -
Participating centres in INFOPLAN
29, participating nodes **15**

OECD - DEVSIS File II **67,**
Study Team 1975 **12**

Office of Planning and Evaluation
(see IDRC/OPE)

Oman - DEVSIS-Western Asia proposal
49

OPE (see IDRC/OPE)

Organisation for Economic
Cooperation and Development (see
OECD)

PADIS - **13, 35-41,** cooperation with
international agencies **41,** need
for qualified personnel **39,** Phase
II **72,** summary of recommendations
15, telecommunications **40,**
training policy formulation **41**

PADIS/CCO - **37-38**

PADIS Central Coordinating Office
(see PADIS/CCO)

PADIS-DEV (see also PADIS Phase I,
DEVSIS Africa) Meeting,
compatability with other systems
38, national focal points **38,**
participating centres, IDRC
support **40,** role of MULPOCs **39,**
training by Ottawa DEVSIS team
43, training of indexers **38**

PADIS Phase I - Establishment at ECA
35, goals **35-36**

PADIS Phase II - Proposed program
36-37

Pakistan - CSCD DEVSIS-South Asia
proposal **51,** DEVSIS workshop **43**

Pakistan Institute of Development
Economics (see PIDE)

Pan-African Documentation and
Information System (see PADIS)

Participating centres -
Identification **17,** INFOPLAN
29

Peru - INFOPLAN **26, 27**

Phildev - **42**

99