

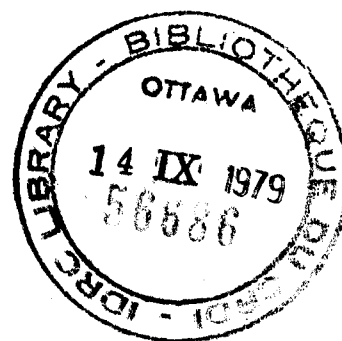
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## DEVIS — AFRICA

# A PAN-AFRICAN DOCUMENTATION AND INFORMATION SYSTEM FOR SOCIAL AND ECONOMIC DEVELOPMENT



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# **DEV SIS — AFRICA**

## **A PAN-AFRICAN DOCUMENTATION AND INFORMATION SYSTEM FOR SOCIAL AND ECONOMIC DEVELOPMENT**

### **REPORT OF A TEAM OF EXPERTS**

**A Joint ECA-OAU-IDRC Mission  
with the participation of  
Unesco, UN-DIESA and UN-CEPAL**

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INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

CENTRE DE RECHERCHES POUR LE DEVELOPPEMENT INTERNATIONAL

June 1, 1979

Professor Adebayo Adedeji,  
Executive Secretary,  
Economic Commission for Africa,  
Addis Ababa, Ethiopia.

Dear Professor Adedeji:

I have the honour to transmit the Report of the ECA/OAU/IDRC Mission that visited Ethiopia and other African countries from January 22 to April 29, 1979. As you know, the Mission was asked to advise on the design and establishment of a Pan-African documentation and information system for social and economic development and to give guidance to ECA on the best ways of promoting participation in the system, particularly at the national level. The Mission's perspective was always that of building a decentralized, cooperative regional information network.

In the name of all members of the Mission, please allow me to hope that our analysis and recommendations on the design and establishment of a Pan-African documentation and information system for social and economic development will prove useful to ECA and to its Member States.

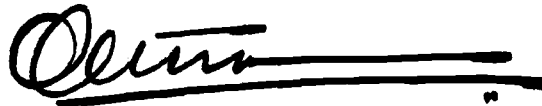
The main part of this Report was drafted jointly by members of the Mission in Addis Ababa between April 13 and 29, 1979. A steering committee, composed of Mr. L.E. Samarasinghe, Dr. J.K. Quirino-Lanhounmey and myself met in Paris from May 15 to 23, 1979, to complete the first draft. Then, Dr. Quirino-Lanhounmey and I, together in Ottawa from May 24 to June 1, put the finishing touches to the Report.

On behalf of all members of the Mission, I would like to take this opportunity to express our gratitude for the warm reception we received from ECA/OAU officials. All were extremely generous in placing their time and experience at our disposal. We are most grateful for the excellent administrative arrangements made by Dr. Quirino-Lanhounmey on behalf of ECA. Dr. Quirino made learning about ECA and the African situation as a whole an unforgettably enjoyable experience for us all.

Please permit me also to express appreciation, through you and on behalf of all the members of the Mission, for the willing cooperation of all the representatives of the numerous African national, sub-regional and regional institutions that the Mission visited.

Finally, the Mission would not have been a success without the cooperation and conscientious efforts and patience of the members of the Team. As you know, these were Mr. L.E. Samarasinghe and Mr. M. Pobukovsky of Unesco, Mrs. E. Miller of UN-DIESA, Mr. J. Cubillo of UN-CEPAL, Mr. J.-P. Aubrac of ILCA, Dr. W.O. Aiyepku of the University of Ibadan and Dr. J.K. Quirino-Lanhounmey and Mr. J. Samba of the ECA itself.

Respectfully,

A handwritten signature in black ink, appearing to read 'Shahid Akhtar', followed by a long horizontal line.

Shahid Akhtar,  
Team Leader,  
ECA/OAU/IDRC Mission.

## FOREWORD

An information system to meet the needs of African users has been under discussion for many years. Within the African continent the characteristics of users and their needs vary enormously. At one extreme are the research workers in highly specialized institutes whose needs can only be met by access to international information sources. At the other are the farmers and artisans - the rural population - who need clear, easily-understandable information to solve problems they encounter daily.

It is now generally accepted that information is a resource which, when organized and used in the proper manner, contributes substantially to the socio-economic development of nations. For this reason, many African governments have set up, within their countries, information systems and services capable of meeting, to varying degrees, the information needs of their populations. In these efforts, the assistance of international organizations has sometimes been sought and has been invaluable in the formulation of national information policies, application of international norms and standards, training of manpower and the development of infrastructures. Guidance has been provided by Unesco, which, through its UNISIST Programme, promotes international co-ordination in information system development and provides guidelines for building a world information network through voluntary co-operation among international, national and other information systems. Other agencies of the United Nations (e.g. UNIDO, FAO, ILO, WHO, ITC, UNCTAD)(1) and international organizations and foundations (e.g. IDRC, German Foundation for International Development, British Council, etc.) have also played an important role in the development of information services in Africa.

Nevertheless, it has been recognized for some time that the situation with respect to information about socio-economic development is far from satisfactory. Many countries do not have an established mechanism for keeping track of the published and unpublished information materials that arise from the activities of the planners, economists, scientists and others involved at all stages in the implementation of a national development plan. These materials appear in the form of reports, feasibility studies, evaluations, research papers, etc. prepared by national or international experts on behalf of the government. As these materials record the experience of countries in their efforts to find solutions to problems which are often common to others at the same level of development, the possibility of access to such information by other countries would be an important element in technical co-operation among developing countries.

It was with these considerations in mind that the Mission studied the feasibility of setting up a Pan-African information system addressed to the mission of development.

The structure of the system proposed in this report - to be called DEVSIS-Africa - will follow, in most respects, the design proposed for DEVSIS - the Development Sciences Information System designed by a Study Team convened jointly by Unesco, UNDESA, UNDP, ILO, OECD, and IDRC in 1975. (2)

The users that the system will be designed to serve are primarily decision-makers and researchers in fields related to economic and social development. But DEVSIS-Africa will address itself, to a greater extent than was proposed in the DEVSIS report, to the needs of science and technology policy makers. This slight modification of the DEVSIS scope is justified by the importance of science and technology policy to development and by the dearth of information services in this field in Africa.

This expansion of scope would mean that much of the material one would in the future expect to find in other information systems would initially be included in DEVSIS-Africa.

One can envisage, for the future, a Pan-African network of regional and sub-regional information systems, established, like DEVSIS-Africa, in accordance with international guidelines. These will be dependent for input on national information systems and networks. There is no doubt that such systems will come into being, and, because they will be compatible, DEVSIS-Africa will be able to relinquish to them development-related information in their particular fields. For the present, however, all types of development-related information will go into the DEVSIS-Africa data base to provide the comprehensive coverage which will ensure services to all groups of development researchers and implementers.

The Team has proposed that DEVSIS-Africa be a mission-oriented information system within the broader framework of a Pan-African information system and network. In order to support the development of DEVSIS-Africa, the Team has recommended assistance to African member States to build national information infrastructures and information handling capabilities. Member States would thus not only be able to participate in the development of DEVSIS-Africa but also in the development of other Pan-African information systems. This concept of a Pan-African information system and network should be kept in mind in any organizational or technical decisions taken in connection with DEVSIS-Africa. Further details on these and other proposals relating to DEVSIS-Africa are provided in the sections entitled "Summary of Recommendations" and "Work Plan".

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(1) See Annex 12 for acronyms used in this Report.

- (2) DEVSIS Study Team, "DEVISIS: the Preliminary Design of an International Information System for the Development Sciences", IDRC, Ottawa, IDRC-065e, 1976. (Also available in French and Spanish).

## SUMMARY OF RECOMMENDATIONS

The present initiative aims at the creation of a cooperative information system, to be called DEVSIS-Africa. DEVSIS-Africa will address the mission of social and economic development planning in Africa, and be the catalyst for improving the capabilities of African countries to handle socio-economic development information and to promote maximum use of information generated in and outside those countries.

Efforts will be directed towards designing a decentralized information-retrieval system based on materials produced by African countries, or by other countries about Africa, and linking multidisciplinary information resources in the ECA member States.

It is intended that DEVSIS-Africa should serve ECA member States by: (i) identifying and collecting African information, and processing it for dissemination to planners, decision-makers and decision-implementers, and research workers involved in the development process; (ii) promoting information sharing through the establishment of network nodes and sub-systems. The following recommendations are therefore put forward for consideration:

### 1. SYSTEM DEVELOPMENT AND ACTIVITIES

1. As regards the structure and future development of DEVSIS-Africa, it is recommended that the System design be as flexible as possible to ensure opportunities for gaining experience and to allow for adaptation to a rapidly changing information environment.

2. A Technical Advisory Committee comprised of representatives from participating centres should be constituted to advise the management of DEVSIS-Africa on the future development of the System.

3. DEVSIS-Africa should develop common standards, methodologies, manuals and other tools for use by all participants in the System, based on international norms, standards and guidelines.

4. As its overall objective, DEVSIS-Africa should satisfy the information needs of African users at the individual, institutional, national and international levels by providing accurate and updated information which is relevant to ideas-forming, planning, monitoring and evaluation, through the following series of activities:

- cataloguing, indexing and abstracting;
- current awareness and retrospective bibliographic searches on demand;
- selective dissemination of information;
- consolidation and repackaging of information;

- referral services;
- document delivery;
- provision of information-bearing magnetic tapes to interested member States; and
- advisory services to African countries on information and documentation problems.

5. DEVSIS-Africa should provide advice to member States and prepare guidelines regarding suitable hardware and software configurations selected on the basis of compatibility, cost and other factors.

6. DEVSIS-Africa should establish a register of ongoing socio-economic research and development projects.

7. DEVSIS-Africa should act as a clearing house for information on all forms of technical assistance to African countries for the development of socio-economic information systems and services.

8. DEVSIS-Africa should identify appropriate institutions in and outside Africa whose formal training programmes in library, documentation and information sciences would provide the necessary professional and sub-professional personnel for staffing information services in Africa. A continuously up-dated list of such institutions should be prepared for the guidance of African governments and donor agencies in the award of scholarships to technical personnel participating in DEVSIS-Africa at the national, sub-regional and regional levels.

9. DEVSIS-Africa should organize training courses and seminars for the staff of national, sub-regional and regional centres participating in the System.

10. DEVSIS-Africa should organize training courses and seminars for users of the System.

11. DEVSIS-Africa should establish links with other relevant information systems and services outside the African region.

12. A United Nations Inter-Agency Committee on documentation and information in Africa should be set up, and convened regularly, to establish the co-ordination and harmonization of the ongoing UN information programmes and projects in the region.

13. A Voluntary Agency Bureau consisting of representatives of United Nations organizations, non-governmental organizations and private foundations should be established to co-ordinate and harmonize financial and other assistance provided for the development of information programmes and services in Africa.

14. It is recommended that the following evaluation mechanisms should be built into the System: entry evaluation to be undertaken periodically by the staff of the Co-ordinating Centre (see Recommendation II.1) and macro-evaluation to be undertaken by independent external experts.

## II. RECOMMENDATIONS TO ECA

1. It is recommended that an information Co-ordinating Centre, supported by four technical sections, should be set up within the ECA Secretariat with responsibility for developing the Pan-African information system and its DEVSIS-Africa component. This Centre should be supported by four technical sections: Computerized Documentation Section; Computer Operations Section; Library; Reprographic and Printing Unit.

2. The ECA Library, in a restructured form, should constitute a substantive entity within DEVSIS-Africa. It is however recommended that steps to reorganize the library should be taken only after the DEVSIS-Africa program has been established within ECA.

3. The Divisional Reference Units within ECA will continue to serve a useful purpose as output units even after DEVSIS-Africa has been established. They should not therefore be incorporated in the proposed System. It is hoped that, with the installation of on-line facilities within the various divisions of ECA, DEVSIS-Africa will be able, eventually, to complement and supplement the services of the units and provide assistance in the form of training.

4. The proposed African Clearing House for Population and the Information and Communication Unit (Clearing House) of the African Training and Research Centre for Women within ECA should be considered as regional input centres to DEVSIS-Africa. To enable them to share their information resources, their development should be compatible with that of DEVSIS-Africa.

5. In order that DEVSIS-Africa outputs may be made available to users of the System as expeditiously as possible, it is recommended that the System be set up with a dedicated computer and appropriate printing and reprographic facilities. In the circumstances, the ECA Documents and Reproduction Unit and the Data Processing Section, which are extremely overtaxed as it is, should continue to service the rest of the ECA Secretariat.

6. The role of the ECA's sub-regional Multinational Programming and Operational Centres (MULPOC) in the development of DEVSIS-Africa is limited at the present time because of staffing and other difficulties. It is recommended, therefore, that information and documentation facilities and personnel be made available to the MULPOCs to enable them to play a more prominent role in the future.

### III. RECOMMENDATIONS TO AFRICAN MEMBER STATES

1. Comprehensive surveys of the existing situation should be undertaken by African member States and should precede the planning of national information systems.
2. As national information is an indispensable asset to users of information, the establishment of national capabilities to collect and store information about the results of national activities in all fields should be considered by African member States as a primary objective.
3. African member States should take advantage of training facilities established by DEVSIS-Africa at sub-regional and regional levels and by international organizations at regional and international levels.
4. A number of international referral and information systems e.g. AGRIS, INFOTERRA, handle information relevant to social and economic development. African member States should participate actively in these international information systems so as to be able to derive the fullest possible benefit from them.
5. Facilities for the pooling and sharing of information - through regional, and, to the extent possible, bilateral, programmes - among African countries, should be established as this will promote acceleration of the development of those countries.
6. African countries should nominate national participating centres which will be their contact points for the DEVSIS-Africa programme.
7. To increase and facilitate the flow of their documents to DEVSIS-Africa, ECA member States should establish screening mechanisms which will permit documents classified as confidential or restricted to be released for input into the System as soon as possible after their contents are deemed to be no longer of a sensitive nature.
8. Experts from various national and regional research and technical information centres who can advise on the setting-up of information and documentation services should be recruited through bilateral arrangements between African governments, with DEVSIS-Africa serving as a referral mechanism.

#### IV. RECOMMENDATIONS TO INTERNATIONAL ORGANIZATIONS AND DONOR AGENCIES

1. The UNDP inter-country programme should consider assisting in the establishment of a regional African Centre for Training Information Specialists on a par with the Ecole des Sciences de l'Information in Rabat which serves French-speaking African countries, to provide the trained manpower needed for development of information systems and services in English-speaking African countries and to supplement the limited facilities at present available in the region.
2. Unesco is invited to provide all possible assistance in the development of DEVSIS-Africa which is based upon the conceptual framework of its UNISIST programme and which represents the first effort at organizing voluntary co-operation between national information systems at continental level in the field of socio-economic development.
3. International organizations and foundations are invited to contribute technically and financially to the development of DEVSIS-Africa and to expand their assistance programmes for information handling at the national and sub-regional levels.
4. Member States of the United Nations outside Africa, and institutions holding information resources relevant to African needs, are requested to consider favourable pricing policies for making available information of importance to the social and economic development of the continent.

#### V. GENERAL RECOMMENDATIONS

1. Training programmes in modern information handling sub-regional and regional levels. In the establishment of these programmes, national, sub-regional and regional bodies should collaborate closely with international organizations working in this field to ensure that the thrust of the training programme responds adequately to the needs of the African continent.
2. DEVSIS-Africa should examine the question of the status of information personnel in relation to that of professionals in other fields and make recommendations to member States on appropriate action that might be taken at national level to correct imbalances.

## CHAPTER I

### INTRODUCTION

- 1.1 Need for documentation and information in Africa
- 1.2 Political backing for a socio-economic development information system (Data Bank)
- 1.3 Origin of the Mission
- 1.4 Programme of the Mission
- 1.5 Composition of the Mission

## CHAPTER I

### INTRODUCTION

#### 1.1 NEED FOR DOCUMENTATION AND INFORMATION IN AFRICA

The African continent has always suffered from certain impediments to the free movement of ideas, cultural cross-fertilization and the fruitful exchange of economic, sociological and technical information. The problem of exchange of information has had a serious impact on development planning at national, sub-regional and regional levels, as it has retarded the possibility for technical and financial co-operation between African member States and sub-regional, regional and international institutions.

Some of the constraints to development related to the problem of information are:

- limited or no exchange of data among African States;
- limited or no exchange of data between African States and sub-regional, regional and international organizations responsible for technical and financial co-operation activities in Africa;
- inadequate and slow postal services within and between African States;
- limited telephone services linking African States;
- scarcity of air links between African States;

- poor functioning of telex networks;
- insufficient communication between those who hold information and those who need it.

Development is a concept which implies change, either by a process of natural evolution or by deliberate action. In the latter case, when a strategy for development has to be worked out, it is essential to have adequate up-to-date data which can indicate the real nature of the economic, sociological and technical transformations that would take place following implementation of the development programme.

As far as Africa is concerned, it is still unfortunately the continent that is the most shrouded in mystery because qualitative and quantitative data concerning it are still rare or non-existent. Even when they do exist, they are badly classified and therefore difficult or impossible to obtain.

It is realized also that separate "nationalized" economic, social and technical development can only yield partial results. The efforts which are being made to break post-colonial preferential links and to lay the foundations for real co-operation at the sub-regional and regional levels, can be successful only if all the African partners know each other well through mutual access to information.

It is necessary therefore that information relating to Africa should be made freely available in order that those responsible, administratively, technically and financially, for the development of the continent can know its problems better and can define solutions.

## 1.2 POLITICAL BACKING FOR A SOCIO-ECONOMIC DEVELOPMENT INFORMATION SYSTEM (DATA BANK)

The Executive Committee of ECA at its Fifteenth Meeting held in Algiers in 1975, the Assembly of Heads of States and Governments at its Eleventh Session held in Libreville in 1977, and the Conference of Ministers(1) of ECA at its Fourteenth Session held in Rabat from 22-28 March 1979, agreed that:

- (1) There is need for an increasing measure of economic self-reliance among African States;
- (2) There is a need for the installation within the African countries, individually and collectively, of the components of an autonomous and self-sustaining process of growth and diversification, capable of being directed to meet the several objectives of socio-economic policy; and
- (3) That African development policy must be designed to include accelerated and diversified growth to meet the needs of the mass of people, to allow the wide-spread development of capabilities for generating and retaining real income,

reduction in unemployment and the moderation of the present pattern of unsustainable growth, as well as the increased use of natural resources and, in general, the protection and improvement of the natural environment.

During these meetings, fundamental questions were raised about the adequacy of the prevailing concepts and mechanisms for promoting socio-economic change.

The conclusions of these meetings are contained in Resolution No. 360 (XIV) adopted by the Conference of Ministers of ECA in Rabat (see Annex 1) which inter alia:

- "invites the Executive Secretary to provide out of the resources at his disposal, assistance to member states in order to enable them to create national numerical and non-numerical information systems and services."
- "calls upon the Executive Secretary to assist member states to establish national data banks and to facilitate insofar as it is possible, free access of African countries to data banks of industrialized countries containing information to which African countries have no access so that Africa can have a network of data banks at regional, sub-regional and national levels."

### 1.3 ORIGIN OF THE MISSION

This Mission was organized jointly by ECA, OAU and IDRC following a request sent to IDRC by the Executive Secretary of ECA who specified clearly that the data bank would consist of two branches - numerical and non-numerical - and that the terms of reference of this Mission would be to consider and make recommendations on the establishment of the non-numerical (bibliographic) data bank only (see Annex 2).

Following consultations with various African Governments, sub-regional and regional African organizations, national and regional offices of the UNDP and Specialized Agencies of the UN, and after consultation with delegates of the ECA Technical Committee of Experts and the Conference of Ministers of ECA held in Rabat in March 1979, the suggestions received by ECA as to the general organization of the information system relating to non-numerical development information could be summarized as follows:

- The African documentation and information system for development dealing with non-numerical information should consist of a number of collaborating national information and documentation systems, each constituted of sectoral systems relating to such fields as transport, population, education, manpower, health, industry,

agriculture and food, finance, planning and other socio-economic development sectors.

- Each of these sectoral systems might consist of a number of sub-systems: for example the field of transport could well consist of road transport, air transport, river and lake transport, maritime transport, etc. A further sub-division of these sub-systems into micro-systems is possible where the sub-system of road transport is sub-divided according to type and nature of the various roads.
- The national micro-systems, sub-systems and systems could be the foundation of a truly comprehensive national documentation and information system, which should greatly facilitate more efficient integrated national planning and development. This should eventually lead to the establishment of a Pan-African information system.

IDRC has considerable experience in the field of development information. Its involvement in the design and implementation of an information system to support development activities in Africa was therefore welcome.

In his letter to Mr. J.E. Woolston, Director of IDRC's Information Sciences Division, the Executive Secretary of ECA listed the following objectives for the creation of an African documentation and information system for development:

- (1) to co-ordinate the various data banks existing or to be created both in ECA and in the African countries; and
- (2) to make easily available through a network, as much existing information on the African continent as practicable, to decision-makers, policy-makers, planners, research workers, businessmen and scholars.

In the Terms of Reference agreed to jointly by IDRC and ECA, it was suggested that a three-phase plan of action be established by the Mission, namely a short term plan for two years, a medium term plan for five years, and a long term plan for ten years.

The Mission was expected to recommend action at the national, sub-regional and Pan-African levels, as well as to advise on reorganization of the ECA units connected with information activities so as to enable ECA to fulfill its role as the co-ordinator of the plan for the development of a Pan-African documentation and information system.

#### 1.4 PROGRAMME OF THE MISSION

The members of the Team arrived in Addis Ababa on 21st January, 1979. They spent one week receiving briefings at ECA headquarters, and visiting the substantive Divisions, the Library and the Computer Centre of ECA. They also had discussions with the Chiefs

and members of their staffs. Subsequently, for the purpose of carrying out field missions to selected African countries, the members of the Team formed into two groups. One group visited Kenya, Zambia, Botswana, Egypt and Nigeria. The other visited Zaire, the People's Republic of Congo, Ivory Coast, Mali, Morocco and Senegal (see Annex 3).

After the field missions, the Team participated in a Consultative Meeting on Information Needs for Development, Planning and Investment Agencies in Africa, in Nairobi, from 9-12 April, 1979. This meeting was organized jointly by IDRC and the German Foundation for International Development (DSE) (see Annex 11).

Finally, the Team spent two weeks at ECA headquarters in Addis Ababa discussing its findings and preparing its report.

#### 1.5 COMPOSITION OF THE TEAM

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M. POBUDOVSKY  
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Consultant to the Mission  
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- 
- (1) The Conference of Ministers consists of delegations from member States of ECA led by the Minister of Economic Development and Planning accompanied by other Ministers responsible for related development sectors.

## CHAPTER II

### THE PRESENT STATE OF SOCIO-ECONOMIC DEVELOPMENT INFORMATION AND DOCUMENTATION IN AFRICA

- 2.1 Introduction
- 2.2 The national level
- 2.3 The sub-regional level
- 2.4 The regional level

## CHAPTER II

### THE PRESENT STATE OF SOCIO-ECONOMIC DEVELOPMENT INFORMATION AND DOCUMENTATION IN AFRICA

#### 2.1 INTRODUCTION

The Team acknowledges that it was only able to pay visits to a selected number of countries in each of the five sub-regions of Africa (see Annex 3) as defined by ECA. However, it believes that it was able to gather sufficient information from these visits as well as from its briefing sessions at ECA and OAU headquarters in Addis Ababa and at the Consultative Meeting on Information Needs for Development, Planning and Investment Agencies in Africa, Nairobi, 2-12 April 1979, to draw some general conclusions about the present state of information and documentation activities in Africa.

The Team made a concerted effort to meet not only with the managers and processors of social and economic information i.e. computer specialists, archivists, librarians and documentalists, but also the producers and users of information i.e. researchers, policy- and decision-makers and others involved in the socio-economic planning and development processes in their respective countries.

The Team also made some efforts to hold consultations with institutions engaged in generating and processing scientific and technical information. However, the Team did not feel it necessary to study these areas in great depth as there already exist a number of regional or international information services in these fields which could, to a large extent, serve African needs. These include information services in agriculture (AGRIS), environment (INFOTERRA), and industrial technology (IDCAS).

All African countries are entitled to participate in and receive services from the non-commercial information systems initiated either by the UN or by international institutions with headquarters in

Africa. Such services are provided free of charge or at low cost. Some African countries are already participating actively in these systems. The Team recommends those ECA member States that are presently not participating in existing international (i.e. non-commercial) scientific and technical information programmes, to consider doing so at the earliest opportune moment.

However, the Team observed that there was no existing system having as its objective the identification, collection, processing and dissemination of information of a socio-economic development nature emanating from Africa. This is probably because such information, by and large, tends to be country-specific and is not of very much interest or utility to the industrialized countries which are the main clients of the commercial systems. This is in marked contrast to purely scientific and technical information which holds the same value and meaning from one country to the next, whether developed or developing.

The Team firmly believes, therefore, that if information generated in Africa pertaining to its socio-economic development programmes is to be organized so as to assist African researchers, development planners, policy and decision-makers and other users, it must be done by the African countries themselves. They must endeavor to set-up the necessary infrastructure (physical, material, human, etc.) to be able to take on this most important and urgent task. Delay or default can only lead to continued duplication of effort and enormous waste of badly needed resources, particularly human and financial.

While carrying out its background research and field visits in Africa, the Team was able to obtain a fairly comprehensive picture of the present state of the information infrastructure in Africa. This might perhaps best be described by examining the situation at three levels - national, sub-regional and regional - in terms of information resources, personnel and services.

## 2.2 THE NATIONAL LEVEL

### 2.2.1 National information resources: infrastructures

As could be expected, the Team came across a wide variety of situations at the individual country level throughout Africa. Some countries had fairly well developed information infrastructures (e.g. libraries, archives, documentation and information centres, computer centres, telecommunication facilities); many had just the bare minimum, while still others were somewhere in between.

Insofar as the existence of a national information policy-making and co-ordinating body is concerned, the situation is also extremely diverse. There are at present only a few countries that have established a central responsible authority or co-ordinating agency. Infrastructures tend to develop according to local circumstances and are often determined by the particular interest

shown by individual institutions. Even when the structure exists, the information policy-making body sometimes has inadequately defined tasks and does not have either the financial means or the authority to establish a realistic policy and plan and defend it at the national level. In most cases, these bodies are handicapped by the lack of co-ordination at the national level between archives, libraries and documentation services.

Legislation in the areas under consideration still does not exist in some countries and is very restricted in others. While it should not be assumed that a legislative framework would resolve all the problems, it is nonetheless true that good legislation facilitates the creation and development of infrastructures.

The scarcity of space, equipment and qualified personnel and the inadequacy of legal deposit legislation or its application are impediments to the organization of national bibliographic control. Even in those countries which publish national bibliographies many difficulties are experienced. In some, it was found that legal deposit laws, where they exist, often exclude government publications.

In many countries, there is no central point within the government (e.g. a Government Printing and Distributing Office) to which requests for government publications could be addressed. Further, as such publications are produced by various departments, lack of internal co-ordination in the distribution of government publications increases difficulties of access to them.

It was also observed that there were often no set standards for printing and numbering of documents. Often government documents were printed in short runs so that stocks were quickly exhausted. The absence of regular lists of government publications and of indexing and abstracting services related to these documents impeded their full utilization. Even sales procedures were usually erratic and "standing orders" for all government publications or for particular titles could not usually be placed.

In these circumstances, the preparation of reliable statistics on published government documents was difficult; even more difficult was the circulation, both within and outside, of publications produced in most African countries.

No reliable data is available on information resources (e.g. human, financial, material) and facilities (e.g. libraries, information, documentation and computer centres and archives) in most African countries. National union catalogs, union lists of serials, directories of libraries, documentation and information centres and other sources of information are generally lacking. As can be expected, the paucity of such basic information makes it extremely difficult for any nation to plan, in any systematic manner, the development of its national information infrastructure, programmes and services. The Team is convinced therefore, that in order to plan and establish their respective national information systems and services it will be necessary for African countries to undertake comprehensive

surveys of their existing information facilities and resources. Countries interested in so doing, should approach appropriate bilateral, regional or international sources from which assistance may be available for undertaking such surveys at the national level.

With few exceptions, most African countries still employ manual methods for processing, storing and disseminating information. Computerized processing of information is still in a very embryonic stage in Africa. Nevertheless, with the advent of cheaper, yet extremely powerful, mini-computers, more and more African countries are moving towards the use of mechanized means for the processing of information.

As can clearly be seen from the above, planners and decision-makers at the national level will have to pay particular attention to a number of issues before initiating a programme to set up a national information system and service.

Some of the more evident ones are: (i) Does the national development plan include a comprehensive information policy for documentation, library and archives services? (ii) Has any action been taken to create a co-ordinating body or national focal point for documentation, library and archives services? (iii) Has a national plan for developing co-ordinated documentation, library and archives services been prepared? (iv) Is the necessary legislation to support establishment and development of information services already in existence? (v) Is there a designated body responsible for planning and implementing documentation, library and archives services? (vi) Is there a national bibliographic agency for ensuring bibliographic control of the national production?

When the national production of all types of information is sufficiently great and cannot conveniently be handled by a single monolithic system, selected sectoral systems (e.g. education, health, transport) should be set up. In the area of socio-economic development information, wherever possible, the Central (National) Planning Agency or the Economic Development Agency should be responsible for the co-ordination of all national activities and for participating in any regional or international system in the socio-economic development field. The system serving the planning and investment functions will then need to be closely linked to the sectoral systems, and the overall national co-ordinating body (focal point) will have an even greater co-ordinating role to play.

The Team is of the opinion that individual countries must take steps to build-up their national information infrastructures to be able to participate fully in a Pan-African information system or network. This implies that individual countries must have full bibliographic control of their own national information production. Since the bulk of development information is produced at the national level, any regional or international system would of necessity have to be based upon the input received from national information systems through their respective input centres.

A pre-condition for the establishment of any regional system is the assurance of an adequate level and volume of input from the participating countries. This could be ensured by appropriate action to assist member States in the development of suitable national information systems. Thus the strategy which seems most appropriate for establishing the regional system would be to provide member States with the possibilities of building their national information infrastructures and thereby improving their respective information handling capabilities.

#### 2.2.2 National information resources: personnel

Even more serious than the lack of well-planned infrastructures at the national level is the shortage, that the Team identified in most countries, of adequately trained information manpower at all levels for carrying out documentation, library and archives work. Adequately trained personnel are urgently needed in African countries for the national, sub-regional and regional information systems that are planned or are being developed at the present time.

This dearth of appropriately trained personnel is due, in part, to a lack of an adequate number of African-based training programmes and facilities and, in part, to the traditional library-science oriented approach adopted by most of them in training professionals.

The Team found that numerous libraries, documentation and information centres in Africa were being run by people who had insufficient formal training in library or documentation science. In many cases, when trained personnel were managing libraries and documentation centres, they had been trained in schools of library science which had a rather traditional approach to librarianship and information. While the training of librarians in the traditional techniques of librarianship provides an essential manpower component of any properly functioning information system, there is also a definite need for training a cadre of professionals capable of working with and utilizing modern information handling techniques to enable African countries to keep abreast of the tremendous advances that are being made in the information field. Further, it was observed that sometimes trained personnel in a country had received their training in institutions located in different countries in Africa and elsewhere, and it was difficult for them to relate to each other on professional matters because of the diversified nature of their backgrounds and academic training.

Another serious shortcoming identified by the Team in a number of countries was the lack of a cadre of middle-level information specialists or technicians, who are required to shoulder the major share of the day-to-day operational responsibilities for the smooth running of a system. Similarly, a dearth of technicians needed to maintain and operate reprographic and printing equipment was also

evident.

As regards the status accorded to librarians, documentalists and archivists, the Team found that many African countries had still not taken steps to accord the profession the recognition and status that is due to it in relation to other professional groups within the country. Library associations in African countries, some of them recently established, are beginning to take steps towards inducing governments to remedy the problems being faced by their profession in their respective countries. In some African countries these library associations are the only effective professional bodies in the information field functioning at the national level.

The Team was able to identify nine schools of library science in Africa: Accra, Addis Ababa, Cairo, Dakar, Lusaka, Kampala, Ibadan, Maiduguri and Zaria. The standards for entry, length and content of courses, qualifications awarded, etc. vary greatly from one school to the other. As mentioned earlier, most of them still adopt a rather traditional approach in their training programmes. Only recently have courses in documentation been introduced in some of these schools, the school in Dakar (EBAD) possibly being the most advanced in this respect.

There are extremely few opportunities in Africa for receiving training in modern information handling techniques. Of the training programmes, perhaps the one being offered by the Ecole des Sciences de l'Information (ESI) in Rabat is the only one providing modern documentation and information science courses. While this programme offers possibilities for training specialists from French-speaking countries, there is no similar school for English-speaking Africa. The Team feels that if more training opportunities in information science are not provided soon in Africa or if the existing library schools do not include in their curricula appropriate courses in information and documentation science, African countries will face a critical shortage of trained information specialists in the years to come.

At present, most of the advanced training in these fields is obtained abroad. The German Foundation for International Development (DSE) has been offering specialized short-term (one to three weeks) courses in information science for the past several years in Eastern and Southern African countries. While these are useful and the efforts are to be commended, they are insufficient to make a sizeable impact on the overall requirements of continental Africa. More and more specialized courses of this type must, therefore, be initiated at all levels.

To sum up, it was apparent to the Team that a country which has an established information policy should include as a priority activity, the establishment of a national programme for training of information manpower at all levels. This should be planned as a long-term programme and should also include provision for the retraining of staff to enable them to cope with the rapid evolution of library and documentation sciences.

Since the establishment of viable and up-to-date training programmes involves substantial financial, material and, particularly, human resources, it would perhaps be wiser to work towards the development of complementary programmes which would bring together all material, human and educational resources available in a region, or among a group of countries, with a view to not only improving the quality of education, but also making optimum use of limited resources.

Countries that are participating in regional (e.g. DEVSIS-Africa) or international (e.g. AGRIS) information systems, should take advantage of the training programmes being provided by such systems. In sectors where such regional or international systems do not exist, countries should organize special training for the staff attached to information centres serving those sectors.

The training of users at the national level is also important to ensure that they are able to derive maximum benefits from any information services available to them.

### 2.2.3 National information services

The Team observed that some of the libraries, documentation centres and information centres which they visited had been established without the necessary background studies and plans having first been made, and without specific objectives. The result is that their collections and services are often inappropriate to actual needs.

There are only a few examples of national union lists of periodicals compiled for African countries. Many countries publish national bibliographies, but most of them do not cover fully the national production of published literature. Unpublished literature, e.g. non-conventional literature, receives even less attention.

As the few services (bibliographic, indexing and abstracting services, etc.) that are being provided do not usually meet the actual and immediate needs of most users, African researchers generally turn to information centres in the developed countries (e.g. British Lending Library, UK, Library of Congress, USA) to obtain the information that they require, even though the required information and documentation may be available in their respective countries, or in some neighbouring State. Needless to say, this situation leads to a tremendous waste of scarce resources, particularly foreign exchange.

International norms, standards, and guidelines originating from UNISIST, ISO (ISBN, ISSN), IFLA (UBC), etc. (modified wherever necessary to suit African needs) have as yet to be adopted by most African countries. Adoption of common standards and methodologies should greatly enhance the transfer and sharing of information among various institutions within Africa as a whole, as well as internationally.

If an African country participates in a regional system such as DEVSIS-Africa or an international one such as AGRIS, it should adopt the methodologies and standards (including thesauri) of those systems. In the absence of a regional or international system, the country's national development information service should be operated according to methodologies and standards generally advocated by its national co-ordinating body for documentation and information activities.

Although a few secondary information services such as retrospective bibliographies and current awareness bulletins are presently available in some African countries, it is usually difficult to procure copies of the documents referred to. This is due to a number of reasons, among them, the difficulty of locating the documents due to lack of bibliographic control, the shortage of human and financial resources, lack of reprographic facilities and the poor state of postal and telecommunication services throughout Africa.

The Team also noted the absence of a standard policy on the confidentiality of documents in most African countries. Quite often this resulted in a situation where although the information was freely available within the country or within the Ministry or Department from which it originated, it was for official purposes considered confidential due to restrictions on distribution placed at the time the document was produced. These restrictions often became invalid or unnecessary with the passage of time.

The Nairobi Consultative Meeting addressed itself to this question in some detail as it was recognized by many that such a situation could lead to a lack of useful information (research findings, feasibility studies) that might already be available within a country or region.

The Team recognizes the right of African States to determine the degree of confidentiality of their internally generated information and the need for establishing screening mechanisms prior to the sharing and transfer of such information across national boundaries; however, it is also of the opinion that African countries should take steps to review, without compromising their security, the entire question of confidentiality so as to make as much information as possible available to users, both within the country and within the region as a whole.

The Team also urges ECA to prepare guidelines to assist member States in establishing their respective criteria for the classification of documents according to varying degrees of confidentiality.

The Team felt that the greatest shortcoming was probably in the area of unpublished literature generated at the national level. Even in the area of published literature, particularly African periodical literature, there appeared to be a gap in the information available to and provided by most documentation and information services at the national level. It is hoped that with the establishment

of national co-ordinating bodies and national documentation centres, as well as the recommended regional information System - DEVSIS-Africa - these deficiencies will soon be removed.

Once national information systems have built up a capability to capture this information, they should be able to provide from their national data bases, regular and frequent services to users, such as retrospective indexes, selective bibliographies, question-and-answer services and SDI. A document delivery service (if possible taking advantage of microforms) might also be established. It will, however, be necessary to constantly adapt and modify, on the basis of surveys and other studies, the type of information services best suited to the requirements of users.

## 2.3 THE SUB-REGIONAL LEVEL

### 2.3.1 Sub-regional information resources: infrastructures

There are a number of established sub-regional institutions throughout Africa. Among them are institutions which cover research on subjects of a purely scientific and technical nature while others deal with the social and economic development sciences. Many of these institutions already have well-established documentation and information programmes or have plans to set up these programmes some time in the future.

Since many of these bodies have already invested substantial effort and resources in establishing what might essentially be described as specialized collections and are also themselves generators of development information, the Team felt that they should be included as special participating centres for DEVSIS-Africa. Ideally, they should be required to input into DEVSIS-Africa only that information which they themselves generate as sub-regional bodies, the responsibility for providing information on the national production of any one country being with the country itself.

However, a member State might request one or more of these sub-regional bodies to process national information for input into DEVSIS-Africa until such time as the member State has established the required infrastructure for handling this operation at the national level.

In addition to providing information on materials they themselves generate, these bodies should also make available to DEVSIS-Africa information on their respective holdings as well as information on their various products and services, so as to enable DEVSIS-Africa to set up a continent-wide referral service on African resource centres.

The Team is aware of the documentation and referral centre being established by the Centre for Co-ordination of Social Science Research and Documentation in Africa South of the Sahara (CERDAS) in Kinshasa, and of the effort of the Council for the Development of

Economic and Social Research in Africa (CODESRIA) in Dakar, to co-ordinate information and documentation activities in key socio-economic sectors, such as education, rural development, urbanization and economic integration. The Pan-African Institute for Development (PAID) in Douala, and the Institut Africain de Developpement Economique et Social (INADES) in Abidjan have also established sub-regional documentation and information programmes in rural and economic development.

The African Training and Research Centre in Administration for Development (CAFRAD) in Tangiers has a well established information service, complete with directories, bibliographies, bulletins, and a document delivery programme for some 20 African member countries in the field of public administration and management. All these sub-regional institutions, and many others like them<sup>(1)</sup> that are based in Africa have either established, or have plans to establish, documentation and information programmes and services in their respective fields of research and expertise. They could all, eventually, form special nodes or input centres for DEVSIS-Africa. Those that deal primarily with scientific and technical information should make such information available to international data bases that might exist in their respective fields e.g. AGRIS, INIS.

The Team was informed that ECA's Population Division had created a Clearing House on Population for Africa. The Team also learned of the newly established Population Information and Documentation System for Africa (PIDSA) of the Regional Institute for Population Studies (RIPS) in Accra, Ghana, which, in December 1978, published its first issue of "PIDSA Abstracts". Also the Institut de Formation et de Recherche Demographique (IFORD) in Yaounde and the Cairo Demographic Centre may establish population information programmes in the future and expand these to serve their respective sub-regions. While the Team is greatly encouraged to see these developments taking place, it feels that necessary and immediate steps must be taken to promote co-ordination and to avoid duplication between these programmes.

Since these programmes are aimed at providing information services in the same sector i.e. population, the Team feels that it is essential that their activities, both present and future, be well co-ordinated so as to provide as comprehensive a coverage as possible. Every effort should be made to establish such programmes on a co-operative basis and to adopt, as far as possible, common methodologies, policies and standards, so as to facilitate the free exchange of information with other established or proposed international information programmes (e.g. POPIN, DOCPAL/UN-CELADE), and thus make optimum use of available resources.

One of the agencies running such a sectoral programme could take the initiative for convening a meeting to discuss questions of scope, standards to be adopted, co-ordination and other actions. In the population sector, such a role might perhaps best be assigned to ECA's Population Division because of its regional, i.e. Pan-African mandate.

The Arab League Educational, Cultural and Scientific Organization (ALECSO) has established a documentation centre with a fairly extensive documentation and information programme and it is recommended that DEVSIS-Africa establish operational and other links with it.

The Team read the report of a survey conducted by the Economic Commission for West Asia (ECWA) of the library, documentation and information facilities in North African Arab States, all of which are members of ECA. The Team also read the report of a feasibility study undertaken by ECWA to establish an Arab Regional Documentation Centre for the Economic and Social Sciences (ARDCES) which would include all of ECA's Arab Member States.

The Team recommends that DEVSIS-Africa should make every effort to co-ordinate its programme and activities in the North African Arab States with ARDCES, once the latter comes into being.

The Team also read another feasibility study recently conducted by ALECSO to create an Arab Centre for Scientific and Technical Documentation. As any such Centre would also cover all North African Arab States, DEVSIS-Africa should take immediate steps to establish links with it.

The ECA's Multinational Programming and Operational Centres (MULPOCs) are still in an early stage of development and hence have little in the way of information services or personnel. However, all the MULPOCs consulted by the Team expressed a keen desire to play an active role in the establishment of DEVSIS-Africa and to co-operate with it to provide technical assistance to ECA's member States. Needless to say, this can only be done if the MULPOCs themselves have the financial, human and material resources. The Team did, nevertheless, feel that the MULPOCs could, even in the initial phase of DEVSIS-Africa development, be called upon to assist in the organization and co-ordination of various meetings, workshops and training courses to be launched by DEVSIS-Africa in the different sub-regions (see Work Plan).

#### 2.3.2 Sub-regional information resources: personnel

As already mentioned, there is an acute shortage of training programmes and facilities, and training programmes currently offered in Africa are not adequate for present-day needs. This is clearly reflected in the difficulties being faced by most African countries in obtaining sufficient numbers of appropriately trained personnel.

ESI, EBAD and the Makerere School of Librarianship have for some time been accepting students from African countries. The last two are currently in the process of designing new programmes for training middle-level information technicians, a category for which there is probably the greatest need in Africa.

It has been mentioned earlier in this Chapter (see 2.2.2) that the German Foundation for International Development (DSE) has been organizing and running short-term courses of a very specialized nature lasting from one to three weeks, but these are being given in the Eastern and Southern African regions only. No such regular specialized courses exist in other parts of Africa.

Since substantial investment is needed to establish new schools for training information specialists, it is felt that, as far as possible, training in librarianship, documentation and information sciences should be provided through existing programmes e.g. at EBAD, ESI and the various schools of library science in Egypt, Nigeria, and Uganda. Where lacking, information science programmes should be built into existing programmes. Where obvious gaps exist, as for instance the absence of a school offering training in modern information-handling techniques in English-speaking Africa, new programmes should be established (see Chapter VII). Finally, short-term specialized courses in such fields as cataloguing and classification, abstracting and indexing, computer processing of information, networking, etc. should be offered either by DEVSIS-Africa or by special arrangement with existing library and information science schools in Africa.

### 2.3.3 Sub-regional information services

Almost all of the sub-regional institutions and programmes in economic and social development mentioned earlier offer some information services. These include directories of libraries, directories of documentation and information centres, directories of sources of information, retrospective bibliographies, question-and-answer services (e.g. INADES) and current awareness services (e.g. OMVS). Some even maintain inventories of ongoing socio-economic development research (e.g. CODESRIA) while others operate referral services (e.g. CERDAS).

The National Science and Technology Development Agency in Nigeria (NSTDA), with the assistance of Unesco, has recently launched a sub-regional pilot project on a Regional Data Bank on Technologies in Africa. The primary purpose of this data bank is to provide users with computerized selective dissemination of information (SDI) using the CAN/SDI software package with information from the COMPENDEX, INSPEC and Food Science Technology Abstracts data bases. This project would be relevant to DEVSIS-Africa in that it applies and evaluates techniques which could equally well be applied in the handling and dissemination of socio-economic information.

## 2.4 THE REGIONAL LEVEL

### 2.4.1 Regional information resources: infrastructures

In addition to the sub-regional agencies, there are a number of regional agencies (e.g. African Development Bank (ADB), Organization for African Unity (OAU), African Economic Community (AEC)) that could serve as input centres for DEVSIS-Africa for the information that they themselves generate. By so doing, they would in effect be the third group of participants in the Pan-African information system in which the other partners would be the sub-regional institutions mentioned earlier and the national participating centres within each ECA member State.

The Team was informed of the lack of up-to-date information on ongoing socio-economic research and development projects in Africa. With the exception of the efforts being made by CODESRIA, no mechanisms at regional or sub-regional level existed for keeping track of these activities though some national efforts for ongoing research information systems were observed.

The Team therefore feels that DEVSIS-Africa should, in addition to its bibliographic data base, also establish Registers of ongoing socio-economic research and development projects in Africa (see Chapter VI and Work Plan).

### 2.4.2 Regional information resources: personnel

The Team has recommended that a study of manpower requirements for information services in Africa should be undertaken at the regional, sub-regional and, particularly, the national level. Based on the results of the study, appropriate programmes for formal and informal training should be developed.

The Team observed with some concern that the manpower problem affected also the relatively well-endowed regional bodies in Africa, such as IDEP, ADB, OAU. This naturally had an adverse impact on the information programmes and on the types of information services being provided by them, both within the agencies and elsewhere.

As these bodies are probably the largest holders of information on African development questions, it is crucial that some order be brought about in their respective in-house information programmes. The Team feels, therefore, that DEVSIS-Africa should provide guidance, technical assistance and manpower training in library, documentation and information science to help improve services provided by these bodies, to enable African researchers and planners to have better access to information housed in these agencies. Such an effort will also enable these institutions to become active partners in a Pan-African information network.

### 2.4.3 Regional Information Services

As is the case with sub-regional institutions, many regional institutions are providing a wide range of information services throughout Africa. Taken together, these regional bodies are also some of the more important generators of information. However, not all of their products or services are widely available, or even known, in Africa.

With the establishment of DEVSIS-Africa, it can be assumed that a more efficient method of collecting and disseminating information at the regional level will come into being. Some of the information products envisaged for DEVSIS-Africa will be of much importance to regional organizations in the planning and implementation of their own programmes.

The Team believes, however, that DEVSIS-Africa should establish a pricing policy for the provision of information services and the delivery of information and documentation, based on the costs involved.

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- (1) For example, ABC, ALECSO, BREDA/NIEDA, BIS, CIEH, CILSS, ECONAS, IDCAS, IFORD, OMVS, RIPS/PIDSA, WARDA, Institut du Sahel, Niger River Commission.

## CHAPTER III

### EVALUATION OF INFORMATION NEEDS IN AFRICA

- 3.1 Definition of information
- 3.2 Users: types, needs and services required
  - 3.2.1 Types of users
  - 3.2.2 Levels and nature of information needs
  - 3.2.3 Services required

## CHAPTER III

### EVALUATION OF INFORMATION NEEDS IN AFRICA

#### 3.1 DEFINITION OF INFORMATION

The word "information" is often understood as describing public enlightenment programmes and mass media activities such as radio and television programmes and the reporting of current events in magazines and newspapers. Consequently, most ministries of information in African countries include on their staff "information officers" who are almost invariably career journalists and mass media specialists.

"Information" in this Report, however, has a clearly different meaning. It is used to describe man's accumulated knowledge in all subjects, in all forms and from all sources that could help its users to make rational decisions. Specifically, in this Report, "information" is defined as: data of value in planning, decision-making and execution of programmes. Such data (information) is found in: technical reports and feasibility studies on proposed development projects; in-house memoranda; reports of government-appointed commissions; government position papers on various issues and subjects; gazettes which normally report the laws, statutes and decrees of governments; hansards; learned journals in which subject specialists communicate the latest knowledge in their areas of specialization; books; newspapers and magazines, and government documents of all kinds whether published for mass circulation or unpublished and of restricted or confidential nature. Valuable information could also be made available in other forms such as microfilm, microfiches and magnetic tapes.

Thus, "information specialists" or "documentalists" are those who are trained to locate, acquire and process these various sources

of data and disseminate the information contained in them for meaningful utilization by all categories of actual and potential users, for whatever purpose. Therefore, the words "information" and "documentation" are used for the purpose of this Report to refer to the same professional activity.

### 3.2 USERS: TYPES, NEEDS AND SERVICES REQUIRED

It follows from our operational definition of information that the relevance of DEVSIS-Africa to its users constitutes the most crucial consideration in the design of the System. What categories and levels of users constitute the target audience of the System? What are their present and potential information needs? What kinds of information services do they prefer and in what form? How may DEVSIS-Africa be expected to efficiently satisfy these needs and provide these services at the appropriate level and time for users as individuals and as groups?

To provide valid answers to these important questions one would have to conduct detailed inventories of the information needs of different categories of users of development information in each African country. Indeed, one would need to supplement the results of such inventories with even more detailed assessments of the information needs of each sector of a nation's economy such as agriculture, planning, health, education and industry. Such an undertaking was not possible in the context of the present exercise. Nevertheless, we have been able to collect data that provide answers to the questions posed above from the following independent sources:

- (a) the resolutions of African Governments since 1975 expressing a strong desire to access and share development information resources generated within and outside Africa (see Annex 1);
- (b) the numerous interviews that members of the Team held with individuals in institutions in African countries on the subject of establishing DEVSIS-Africa (see Annex 3);
- (c) the discussions at the Consultative Meeting on Information Needs for Development, Planning and Investment Agencies in Africa, Nairobi, 9-12 April, 1979 (see Annex 11), and
- (d) the numerous published and unpublished reports on the information needs of users of information in African countries (see Annex 9).

Consequently, we have been able to identify the following categories of users, the nature and levels of their needs and the types of services they require, in order to achieve integration of relevant information with African development processes at all levels.

### 3.2.1 Types of Users

The principal users of the services of DEVSIS-Africa will comprise the following:

- (a) policy-makers and planners in the public and private sectors;
- (b) administrators of public and private institutions;
- (c) financiers, especially those working in development banks;
- (d) field officers of the planning and other sectoral agencies, e.g. agricultural extension workers and rural development officers;
- (e) implementors of development projects, e.g. foremen, technicians, engineers and architects;
- (f) industrialists, especially the small-scale ones, and
- (g) research workers.

Those engaged in locating, acquiring and processing information materials will bear in mind all of these categories of users while the information services provided from the System will reflect their specific information needs.

### 3.2.2 Levels and Nature of Information Needs

The need for information is conceptualized at one or more of the following levels: individual, institutional, national and international.

Normally, a user realizes that he has a gap in his knowledge about a specific task he has to perform and seeks to bridge that gap either by consulting a colleague who has worked or is working in a related area or by reading a document on the subject. He may sometimes consult the librarian, archivist, documentalist or information specialist for help. Quite often, however, the task is performed without attempting to bridge the knowledge gap. The Team was told again and again by the people it interviewed that they have had to plan without the relevant information either because the information was not sought or it was not available in a usable form when needed, or was not available at all. In addition, the type of information sought by decision-makers is usually multidisciplinary, with the result that users often have difficulty in identifying possible sources of the information they require. Finally, even when the individual knows what information he needs and how to get it, he cannot always afford the cost of obtaining it. Information which has to be purchased is expensive and its cost is increasing rapidly, thereby placing even small items of information beyond the financial means of most users in Africa.

Thus, the individual who needs information would normally have recourse to some institution which could meet his need. The information support unit of a university, for example, would be the library whose functions are clearly defined in relation to the research and teaching functions of the university. The individual information needs of members of that university community should, as a result, be taken care of by the university library. If the university library sometimes cannot meet these needs, it should be capable of liaising effectively with other libraries or information institutions in order to obtain information requested by its normal users. In effect, the entire information resources of an institution such as a university are at the disposal of any individual who is a member of that institution.

The Team observed that African research institutions and universities have relatively well developed libraries although the state of public library development in most countries is still very poor. It also observed that while most government ministries and parastatals have no information support units, a few have poorly-organized units which lack qualified staff and adequate budgets. In this situation, these units would be unable to provide services for decision-making, development planning and implementation.

It is at the national level, however, that the most serious deficiencies were observed.

As shown in Annex 8, many African countries have neither national libraries nor national documentation centres. Some do not have national archives. Only a few African countries have all three institutions that collect or co-ordinate and make available to users the information generated within the country. Even in countries whose national libraries, documentation centres or archives are backed up by appropriate legislation to carry out these functions, performance varies enormously from country to country.

It is necessary to correct this serious deficiency to prevent information produced within a country from being lost to the country, as it has been shown that the most valuable information needed for a country's progress is usually produced within the country itself. Since information is produced at very high cost, it seems logical that a very small proportion of the cost be used to store, process, and make it available for subsequent use within the country. Thus, a national documentation centre or library will constitute an aggregate of the country's institutional and sectoral information resources. It will not only house and co-ordinate the nations' information resources, but will also be in a position to stimulate the development of information-support units in government ministries and parastatals, and in rural and urban areas.

Unesco has for some time actively encouraged its member States to name a National Information Focal Point. Detailed guidelines are available and technical assistance to help each country establish its National Information Focal Point may be requested from Unesco under its General Information Programme (see Annex 10). Up to the present

time, only a few African countries have responded by setting up National Information Focal Points. However, it is known that this is being actively considered by many other countries.

Many African countries are at a similar level of socio-economic development. Most of them lack vital resources such as capital and skilled manpower and would benefit from a sharing of limited resources in order to avoid duplication. The desire to share information was strongly expressed by countries which wished to have access to relevant information resources generated both within and outside Africa. Since international collaboration in information sharing is high capital and technology-intensive, which most African countries cannot afford, a co-ordinated regional system compatible with international systems, serving all African countries and located in Africa would seem to be indicated. DEVSIS-Africa is proposed as a solution to this problem and the subject is further discussed in Chapters II, III and VI of this Report.

Bearing in mind the types of users described in this Chapter and their levels of information needs in the context of socio-economic development in Africa, DEVSIS-Africa is being designed to provide information-support that would as far as possible, address the following sequential stages in the development process:

- ideas formation
- planning
- monitoring
- evaluation

More specifically, it is envisaged that DEVSIS-Africa would attempt to satisfy the following expressed information needs:

- (a) the need for mission-oriented information, i.e. multi-disciplinary information relevant to specific development projects such as urban renewal and highway construction in specific geographic and economic regions of Africa;
- (b) the need to know that a document generated within or outside Africa, dealing with an area of interest to users, exists;
- (c) the need to receive a known document physically and quickly within an African country and across national boundaries, either in its original form or in microform;
- (d) the need for regular and up-dated directories of ongoing development research and projects in a given country or economic sector of the country;

- (e) the need for effective access to unpublished material, especially that generated in African countries; and
- (f) the need for disaggregated data (information) of all types that would facilitate comparison of various components of the development process.

### 3.2.3 Services Required

Users of information services often cannot distinguish between their information needs and the types of information services they require. It is very common to express needs in terms of services and vice-versa. For example, out of the six specific areas of information needs listed above, (c) and (d) are services which, if provided, would automatically satisfy certain expressed information needs. Thus, in practice, the dividing line between needs and services is a very thin one that need not be over-emphasized.

DEVSIS-Africa, when fully operational, will provide the following services that are traditionally associated with manual and computerized documentation and information services all over the world:

- (a) cataloguing, indexing and abstracting;
- (b) current awareness;
- (c) retrospective bibliographic searches on demand;
- (d) selective dissemination of information;
- (e) consolidation and repackaging of information;
- (f) document procurement and referral services;
- (g) information-bearing tapes, and
- (h) advisory services.

The following is a brief description of the scope of these services.

#### (a) CATALOGUING, INDEXING AND ABSTRACTING

Cataloguing involves the description of each document in an information system in such a way that there is no possibility of confusing that document with another, no matter how similar. The major purpose of cataloguing, therefore, is to identify each document uniquely for the system by specifying its author(s), full title, edition, place of publication, publisher, date of publication, physical characteristics (e.g. number of volumes or pages) and series notes.

Indexing is the process of describing and identifying a document in terms of its subject content, by means of keywords.

Abstracting involves summarizing the content of a document to facilitate access to the information (through the condensation of the primary document).

(b) CURRENT AWARENESS

Users of DEVSIS-Africa can expect regular and frequent announcements about information sources that are considered relevant to their tasks. It may come in the form of photocopies of the content pages of learned journals; organized and indexed lists of documents available; announcements of specialized services outside the System that the System could make available to its users; new products such as bibliographies that have a particular bearing on socio-economic development in Africa, etc.

(c) RETROSPECTIVE BIBLIOGRAPHIC SEARCHES ON DEMAND

Users of the System can request that searches be made for them on any subject or area within the scope of the System. The print-out i.e. result of the search will be arranged in a systematic order that would facilitate consultation by users.

(d) SELECTIVE DISSEMINATION OF INFORMATION

The provision of information tailored to satisfy the expressed needs of an individual will constitute one of the services of DEVSIS-Africa.

Also, interest profiles on major topics, such as transport, urban development, etc. will be provided to groups of users having similar information interests. Information generated by the System will be regularly and systematically matched against individual interest profiles in order to produce a classified list of documents that relate exclusively to the users' information needs. The interest profiles will be regularly revised as the users' tasks, responsibilities and interests change.

(e) CONSOLIDATION AND REPACKAGING OF INFORMATION

Various groups of users of socio-economic information expressed a preference for having the information content of technical reports presented to them in a form different from the original and tailored through consolidation and repackaging to meet their specific needs.

It is recognized that the volume of information on a specific topic and the style in which documents are written often prevent a busy official from utilizing the literature to the best effect. Condensation and simplification would certainly promote better use of information by decision-makers and other users, including those at the grass-roots level. It is expected that DEVSIS-Africa will provide and

promote these services.

(f) DOCUMENT PROCUREMENT AND REFERRAL SERVICES

Copies of all documents contained in the DEVSIS-Africa file will be held by the DEVSIS-Africa Co-ordinating Centre. Copies will be in their original form or in the form of microfiche prepared either by the national, sub-regional or regional participating centres or by the Co-ordinating Centre itself.

As each bibliographic reference in the file will give an indication of the location or locations of the original documents or copies, this information will provide the basis for a referral service to obtain access to the documents themselves, whether in their original form or in microform, depending on availability.

(g) INFORMATION-BEARING TAPES

Some of the participating centres might have the capability for processing and retrieving information from data bases such as the one that will be built up by DEVSIS-Africa. The System should provide possibilities for making available to such centres, copies of the data base or parts of it on request and also make available any technical assistance and software that may be required.

(h) ADVISORY SERVICES

Since DEVSIS-Africa will have easy access to information specialists and documentalists in Africa, it should be in a strong position to advise and assist, in co-operation with Unesco and other international agencies, African information institutions in the following areas (see Work Plan):

- (1) development of national documentation and information infrastructures;
- (2) training of abstractors and indexers, especially on a short-term basis;
- (3) development of manuals, norms and standards for the planning and implementation of documentation and information programmes at national or sectoral levels; and
- (4) the purchase and adaptation of appropriate computer hardware and software for documentation and information applications.

## CHAPTER IV

### INFORMATION AND DOCUMENTATION SERVICES IN ECA

- 4.1 Introduction
- 4.2 Library
- 4.3 Divisional Reference Units
- 4.4 Clearing Houses
- 4.5 Documents and Reproduction Unit
- 4.6 Data Processing Section
- 4.7 Multinational Programming and Operational Centres

## CHAPTER IV

### INFORMATION AND DOCUMENTATION SERVICES IN ECA

#### 4.1 INTRODUCTION

The existing information and documentation services at ECA headquarters include the Library, the Divisional Reference Units, the Clearing Houses of the Population Division and the African Training and Research Centre for Women (ATRCW), the Documents and Reproduction Unit and the Data Processing Section. At present, these services report to different Heads of Divisions within the ECA Secretariat. They function parallel to each other in an unco-ordinated and unintegrated manner employing different methods and technical processes. Information at ECA is consequently scattered and not readily accessible. The rationalization of disparate arrangements is a prerequisite for the implementation of DEVSIS-Africa.

#### 4.2 LIBRARY

The ECA Library was established soon after the First Session of ECA to serve the research and information needs of the Secretariat. Its clientele has grown to include participants in ECA conferences, seminars and workshops, officials of other UN agencies in Ethiopia, members of the diplomatic corps, OAU staff, visiting scholars and students and African government departments and research workers elsewhere who write seeking information on Africa in the field of economic and social development.

The Library has over 150,000 volumes excluding mimeographed United Nations documents - perhaps the largest single collection in Africa of information on the African economies. There are three main departments. (1) The main Library contains commercially published material of interest to ECA, which includes the periodical and newspaper collection. Presently, some 500 periodicals and newspapers are received on a subscription basis and a similar number of journals in exchange or gratis; (2) The Government Publications Unit contains official publications of member and non-member States of ECA relating to the economies of Africa; and (3) The UN Documents Unit is a depository of all printed and mimeographed United Nations documents. These include the publications and documents of the United Nations and its Specialized and Operating Agencies.

Library material, except mimeographed United Nations documents, is catalogued and classified according to Universal Decimal Classification (UDC). Government publications are classified by broad subject headings under each country. A card catalogue arranged according to author-title, subject and geographical (area) indexes serves the collection.

The Library itself publishes the following bibliographic information:

1. New Acquisitions in the UNECA Library (bi-monthly)
2. Africa Index: Selected Articles on Socio-Economic Development (quarterly)
3. ECA Index: Bibliography of Selected ECA Documents (annually)

In addition, selected subject bibliographies are published. Under these, the following have appeared:

1. Bibliography of African Statistical Publications
2. Bibliography of Economic and Social Development Plans of African Countries

3. Bibliography of the Hydrology and Hydraulic Development of the Nile Basin
4. Directory of Government Printers and Prominent Bookshops in the African Region
5. Selected Bibliography: Manpower and Training Problems in Economic and Social Development
6. Selected Subject Bibliography: Model Schemes of Small-Scale Industries

For internal circulation, the Library publishes: "List of Tables of Contents of Selected Professional Journals" (fortnightly); "List of Selected UN Documents Received in the ECA Library" (fortnightly); "IBRD Country Reports Received in the ECA Library" (twice yearly); "Current African Development Plans Received in the ECA Library" (annually).

While the Library services at ECA have improved considerably since the recent move of the Library to new and spacious premises, a number of problems persist and the Library is still far from meeting the needs of its community of users adequately. The root of the problem is the existing inadequacies in staff resources. The Library is serviced by only two professionals who are assisted by a supporting staff of 18 General Service personnel. Some of the most serious gaps in the service are evident in the management and control of the receipt and circulation of periodicals. Issues are often missing from given series. A proper acquisition policy has also yet to be established to adjust the holdings of the Library to the specific needs of its users. Presently, the collection is extremely weak in the scientific and technical fields.

To function properly DEVSIS-Africa will have to have, at its centre, a well run, fully-stocked Library capable of meeting the immediate requirements of ECA and of responding rapidly to networks users' needs. There is no doubt that a strengthened ECA Library can play this role. However, in view of the recommendations made by the Team involving the Library in the overall organization of the System, it was considered advisable that any radical measures for the re-organization of the Library should be undertaken within the framework of DEVSIS-Africa. Some of the services now provided by the Library, which appear to require improvement, will be provided by DEVSIS-Africa in a more effective manner with the technology and manpower at its disposal. Other services will be studied and improvements effected at the appropriate time.

#### 4.3 DIVISIONAL REFERENCE UNITS

To meet the felt needs of their respective staff for readily accessible documents relating to their immediate fields of concern, a number of ECA's substantive Divisions have established their own references units. These units now exist in the Divisions of

Agriculture, Statistics, Trade, Industry, Social Development, Population and the African Training and Research Centre for Women.

The units receive no special assistance from the Library and have no overall policy guidelines on their functions or on what methodologies to adopt. They are serviced by staff members who have "drifted" into documentation from either secretarial or research assistant assignments. The existence of the units is itself a factor reducing the flow of information within the ECA Secretariat since only a few of the units circulate their acquisitions lists, if produced at all, and some units are not easily accessible to staff members of other Divisions.

These drawbacks notwithstanding, the Team shares the feeling of the Divisions that the units are indispensable for the effective implementation of their programmes and should be preserved. It is however hoped that, as DEVSIS-Africa develops, it will be in a strong position to assist the units in the training of their staff and provide common methodologies. DEVSIS-Africa will also supplement and complement the services that are now being provided by the reference units since its data base will be comprehensive and multidisciplinary as opposed to the information resources in the reference units which are organized along sectoral lines.

#### 4.4 CLEARING HOUSES

Two proposals have been submitted for UNFPA funding by the Population Division and the African Training and Research Centre for Women (ATRCW) to establish an African Population Clearing House and an Information and Communication Unit (Clearing House) respectively. Already, the reference units in these two programmes are doubling up as the nuclei of these Clearing Houses.

The African Population Clearing House is being set up to enable the Population Division to meet one of its objectives which is to create awareness of population issues and of the interrelationship between population and socio-economic development, among policy makers and others in the region (see Chapter II). It will have two functional components: a reference unit consisting of a library, and an information processing and dissemination unit.

The Information and Communication Unit (Clearing House) proposed by the ATRCW is expected to fill the essential need for establishing and maintaining between the Centre and the governments and other interested parties, the understanding and co-operation needed for the attainment of the countries' objectives, through the dissemination of information and publication of training material, the teaching of communications skills and the promotion of leadership roles for African women.

It is felt that since these two Clearing Houses are being set up to meet specialized needs, they should, therefore, be able to contribute to and benefit from DEVSIS-Africa (see Work Plan). Their

relationships to DEVSIS-Africa could be seen as being similar to those of other sub-regional and regional data bases such as those of CAFRAD and IDCAS which are expected to make specialized inputs into DEVSIS-Africa so that a common regional data base can be established within the framework of the System.

#### 4.5 DOCUMENTS AND REPRODUCTION UNIT

The Documents and Reproduction Unit which is located within the Conference Services Section is responsible for the reproduction and printing of all ECA produced documents. It also acts as a repository for all those documents. There are at present serious bottlenecks in the reproduction services provided by the Unit due to demands resulting from the many conferences, seminars and meetings organized by ECA. For this reason, the unit contracts its more complex printing work as well as much of the normal printing demands of ECA to outside printers.

DEVSIS-Africa will have to have access to the large stock of ECA documents held by this unit for processing and inclusion in its data base. It is however obvious that the printing and reprographic facilities available in the unit are far from adequate for the needs of the System. The existing facilities should continue to serve ECA's Conference Services and other printing needs while a separate Printing and Reproduction Unit is established for DEVSIS- Africa.

#### 4.6 DATA PROCESSING SECTION

The Data Processing Section is located within the Division of Administration. It uses an NCR Century 151 Computer, which at present has a capacity of 32K octal memory directly accessible in 750 nanoseconds for 2 octets. The computer is used for computing staff salaries and for elementary processing of statistical data.

The NCR Century 151 is however a small capacity and out-of-date computer for which no software is available for handling bibliographic data or for provision of continent wide services envisaged in DEVSIS-Africa.

#### 4.7 MULTINATIONAL PROGRAMMING AND OPERATIONAL CENTRES

As stated in Chapter II, information and documentation services are virtually non-existent at the ECA Multinational Programming and Operational Centres (MULPOCs). At best, the MULPOC headquarters have rudimentary collections of books and documents which serve as reference units. If these sub-regional bodies are to play the role reserved for them in the proposed network, the Team feels that their information support facilities in terms of personnel, expertise and equipment will have to be greatly strengthened.

## CHAPTER V

### PRINCIPLES AND GUIDELINES FOR THE DESIGN AND ESTABLISHMENT OF A PAN-AFRICAN INFORMATION SYSTEM

- 5.1 Introduction
- 5.2 Principles and guidelines derived from a Third World development philosophy
- 5.3 Principles and guidelines derived from a system development methodology
- 5.4 The nature of an African-oriented and decentralized information system with international linkages

## CHAPTER V

### PRINCIPLES AND GUIDELINES FOR THE DESIGN AND ESTABLISHMENT OF A PAN-AFRICAN INFORMATION SYSTEM

#### 5.1 INTRODUCTION

The conception and establishment of a Pan-African information system is a complex problem which admittedly, has several solutions. However, not all of them are equally suitable for supporting the long term goals for African development. The design of a system is normally a neutral and value-free exercise which leads to "technically pure alternatives" for submission to the decision-makers. This Chapter discusses the design principles and guidelines that appear to the Team to be most adequate for establishing an information system in one of the Third World Regions: Africa.

## 5.2 PRINCIPLES AND GUIDELINES DERIVED FROM A THIRD WORLD DEVELOPMENT PHILOSOPHY

Information and information management activities are not an end in themselves: information only acquires an economic value when it is utilized for the attainment of socio-economic goals. It is recognized that the promotion and orientation of African development objectives such as the production of more food, the delivery of health and education, the generation of knowledge through research and development, etc., require continued information support. This is also true of planning bodies involved in ensuring co-ordination and coherence between the various development programmes. It is to serve such needs that information systems are established.

The development programmes are not carried out at random but, on the contrary, are based on philosophical and political principles which are shared by each country or region.

In the sixties and in the present decade a philosophy for development has continuously been evolved in and by the developing countries. Principles have been formulated for the development of countries and groups of countries in Africa, Asia and Latin America in the context of a new international economic order. These principles can be summarized as follows:

At the national level, the leading ideas are self reliance and autonomous development, the planning of development efforts and a better internal distribution of development gains. At the regional level, the urge to strengthen the bargaining power of developing countries in the international context through conscious efforts of economic, social and political integration and special support to the weaker countries so as to lessen the wealth imbalance existing within the regions. At the international level, the promotion of efforts for horizontal, technical and economic co-operation needed to counteract the vertical dependency of the South-peripheral countries in relation to the North-central countries and the increasing claim of developing regions for access to a more equitable share of the world's resources and wealth.

These fundamental ideas can be translated into three principles in the area of information for development:

### 5.2.1 Information: a Critical and Strategic National Resource

Information is a critical national resource. Development can be conceived of as being a continuum of problem-solving activities directed towards improving the quality of life through the utilization of existing resources. To be able to identify needs, assess the impact of utilizing scarce resources with potentially competing uses, or apply principles that determine the choices to be made, the problem solvers (planners, entrepreneurs, researchers, and project administrators) must have access to reliable information. Information, whether stored on paper or magnetic tape or in the human brain, is thus a fundamental requisite for ensuring rationality and

coherence of decision-making. Information is also a strategic national resource as it stands on an equal footing with manpower, energy resources, and usable natural resources, among others. This is so because the existence of information implies that an investment of time and money was made by someone who thought it was worthwhile to produce it. The cost of producing new information, through research or intellectual creation, or repackaging and transforming existing information to meet different needs is obviously high since it involves the work of highly qualified professionals. Moreover, information activities towards supporting the generation of new information are also a costly component, though normally overlooked.

An exploratory study undertaken at one sister organization of ECA, the United Nations Economic Commission for Latin America shows that the staff of substantive divisions appeared to devote between 15% and 50% of their time to information search and retrieval (1). There are no reasons for believing that this situation might not have parallels in national institutions such as planning bodies, ministries, banks, research institutions and others.

It is therefore essential, in order to recover the high cost of collecting information, that steps are taken to avoid the possibilities that information, once collected, is not used at all or is used only once without being accessible for future applications.

Also, national information is strategic in the sense that if it flows indiscriminately out of a country, it will disclose facts to other countries which could enhance their relative bargaining strength in contractual negotiations on some later occasion.

Finally, national information is strategic since it constitutes an important component of the wealth of the nation. Most countries suffer from an acute imbalance in the distribution of information among the various groups of society and various geographical regions. The very existence of "information poor" and "information rich" groups or regions can be seen as a hindrance tending to perpetuate the unequal distribution of the gains of the development process. From this first principle the following design guidelines for a Pan-African information system can be derived:

1. A Pan-African information system should promote the collection and preservation in member States of all development information, including scientific and technological information, produced in their respective countries or produced elsewhere about such countries.
2. A Pan-African information system should stimulate and assist African governments in undertaking inventories of existing national information facilities, the dissemination of referral information to decision-making and decision-preparing agents so as to make them aware of what exists, and the delivery, at all levels, of components of the capital stock that constitutes national information so that it can be fully utilized.

### 5.2.2 The Need to Pool and Share African Development Information among African Countries

From the point of view of Africa as a whole it is evident that information is also critical and strategic for the promotion of the overall development of the region. To talk about development information for the region as a whole is to talk about the pooling and sharing of national inputs since regional information is normally an aggregate of information reflecting the situation in the component countries. However, it is also important to mention another type of regional information. This is produced by organizations such as the UN Regional Commissions, regional development banks and universities as a result of field work and direct enquiries undertaken by their staffs.

The pooling of nationally produced information and the results of field work made in the various countries of Africa in order to generate aggregated regional information, its transfer to African countries and dissemination to regional bodies would have the following national impact since individual countries will be able: (i) to benefit from the experience of other countries, (ii) to avoid having to purchase costly information and knowhow which foreign companies and multinational corporations sell over and over again in the region, (iii) to assess the evolution of the regional integration process, (iv) to promote the integration process through the delivery of information to foster co-operative agreements at all levels, and strengthen horizontal co-operative projects, and (v) to co-ordinate national, sub-regional and regional development actions through the supply of information to institutions in need of assistance or to those in charge of related or similar projects.

This second principle can be translated in the following design guidelines for a Pan-African information system:

1. A Pan-African information system should collect and preserve all country-specific development information produced in Africa or elsewhere, all regionally or sub-regionally aggregated development information produced in African regional bodies and information produced elsewhere about Africa as a whole.
2. A Pan-African information system should collect, process and disseminate the above mentioned information to national, sub-regional and regional bodies so as to ensure its maximum utilization.

### 5.2.3 The Need for Wide and Equitable Access to Development Information Produced in Industrialized Countries and Other Third World Regions

The increasing interdependence of world affairs, the pressure of an ever growing population on fixed and non-renewable natural resources, and the integration of different zones of the globe made

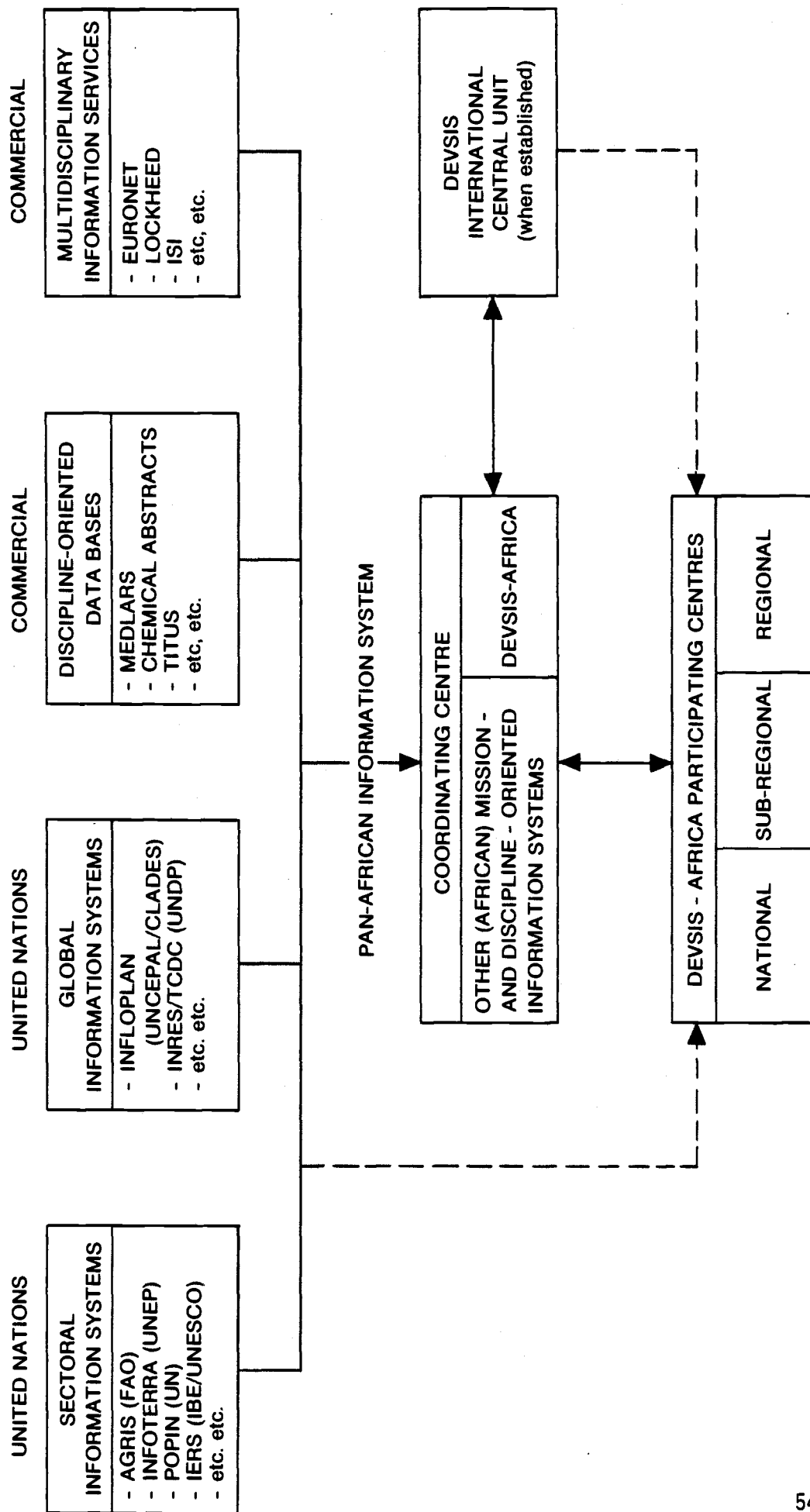
possible by modern transport and telecommunications technologies are gradually leading to the idea that resources and the products of human effort are no longer the exclusive patrimony of a particular country. Information as a resource and a product of human effort can also be considered within this perspective.

At present there is a huge imbalance between "information rich" and "information poor" countries or regions. The "information rich" countries are basically industrialized countries which have mastered the management of information, and through information -creation or information repackaging are generating consumption and capital applications. However, the bulk of this information is not easily available, or is not available at all, to developing countries. Legal-protection devices, monopoly practices and the high access costs of existing commercial information services obviously represent obstacles. This situation helps to widen the gap between both worlds and deepens the vertical links of dependency. The need to change this state of affairs in the world distribution of information has been explicitly recognized in the declaration of the new international economic order.

On the other hand, access to information pertaining to other Third World regions is a basic prerequisite to attempting horizontal co-operative programmes between developing countries. The impact of this information interchange might not only be reflected in the improvement of the bargaining position of Third World countries in relation to the highly industrialized world, but also in the possibility of gaining access to information relating to similar cultural or natural contexts.

These links between a Pan-African information system, DEVSIS-Africa and the existing information systems in the rest of the world are shown in the following chart.

# ACCESS TO THE WORLD'S INFORMATION SYSTEMS AND SERVICES BY AFRICAN INSTITUTIONS THROUGH A PAN-AFRICAN INFORMATION SYSTEM



The world's resources of development information should be available to all developing countries, and their access to it should be on an equitable basis. It is very likely that some of this information could be exchanged for nationally or regionally produced information. However the basic question is whether the terms of exchange are fair or not to developing countries.

Guidelines that can be derived from this third principle are:

1. A Pan-African information system should attempt to obtain a wide spectrum of development information relating to countries and regions outside Africa through equitable and fair terms of exchange. A high value should be attached to national and regional information produced in Africa if it is going to be used as an exchange currency.
2. A Pan-African information system should repackage development information produced outside Africa for dissemination to national, sub-regional and regional institutions so as to ensure its maximum utilization.
3. DEVSIS-Africa would have an impact by making available to African countries socio-economic information generated in the rest of the world. This would be facilitated if an international information system is established along the lines proposed in the DEVSIS Study Team Report.

### 5.3 PRINCIPLES AND GUIDELINES DERIVED FROM A SYSTEM DEVELOPMENT METHODOLOGY

In the last decade a methodology for the development of systems of different natures and for different purposes: artificial systems (roads, hospitals, factories,...), organizations (institutions, programmes,...) methods (procedures, norms,...), etc. has emerged. This methodology stresses the need to consider systems as "creatures" which emerge to satisfy a specific need or goal but which, at the same time, require to be endowed with built-in protective capabilities so as to be able to survive in hostile and constantly changing environments. These requirements can be met if and only if systems are:

1. Effective; i.e. capable of fulfilling the need they are supposed to satisfy.
2. Structured and adaptable, i.e. a system while requiring a formal structure or internal ordering of elements and components, is flexible enough to detect and absorb different changes in the system environment, such as changes in needs, technology, resources and supplies.

3. Efficient; i.e. it can satisfy a given need at a minimum cost.

This system philosophy can also be translated into three principles applicable to the design of a Pan-African information system.

#### 5.3.1 Full Satisfaction of Development Information Needs in Africa

This principle corresponds to the system's effectiveness requirement. Development agents i.e. decision-makers (ministers, planners and political authorities), decision-implementers (project managers, administrators) and decision-preparing agents (experts, researchers) require a wide range of information to carry out their tasks. The range can be divided into data directly pertaining to a problem or an aspect of development (substantive data) and data indicating where to find the existing information on a particular topic (reference data). The first group could in turn be split into:

1. Micro data (statistical-numerical) which are indivisible units of information representing the magnitude of a given development variable associated with specific time, space and functional attributes among others (e.g. percentage of income spent on food by a peasant household located in a rural district in Ghana in 1978), and
2. Packaged data which can be divided into aggregated statistical-numerical data (statistical tables) and packaged non-numerical groups of concepts representing theories, analyses, evaluations, etc.

Although both micro and packaged data can be registered in paper or microforms (documents) or in machine readable records (punched cards, magnetic tapes), it is normal to consider that an information and documentation system should be able to handle documents containing packaged non-numerical substantive information, and documents containing bibliographic information referring to existing records and files of micro data and packaged data, both numerical and non-numerical.

An information system able to handle the above mentioned information should comply if it is to be effective, with the following requisites:

1. Information provided by the system should have the required quality.
2. Information provided by the system should be available physically and at the required time to development agents. The question of quality is of course fundamental to development needs. Quality involves several attributes that need to be simultaneously met if the information provided is to be useful. In particular, the information collected and supplied by the system needs to be: 1) accurate, which

involves both validity and precision; ii) comprehensive, i.e. covering, if possible, all the topics required by development missions, and all the information produced about these topics, and iii) up-to-date, i.e. reflecting the situation of recent events. This, of course, does not mean that events of the past will not be recorded since they are also important for certain purposes. However, out-of-date information, in isolation from actual events, will not be useful for decision making.

3. Relevant, i.e. including only those aspects of actual or potential interest in the development field and screened so as to provide no more or no less information than what is required.

However, even if the quality of information is ensured, it will be useless for practical purposes if it is not accessible for use. Information would be considered to be accessible if it is: i) timely, i.e. is provided within the time period within which decisions need to be taken; ii) physically transferable i.e. information could be transferred through the supply of a document or transmitted to the recipient through other means, e.g. telecommunications, and iii) intelligible, requiring that the information message is displayed in an adequate format and language so that it can be understood by the final user.

The effectiveness principle can be translated into the following design guidelines:

1. The Pan-African information system should possess an intelligent quality-control mechanism capable of searching, selecting and screening data so as to ensure that given information needs are met.
2. The Pan-African information system should be started with the identification and processing of recently produced information, becoming retrospective as resources permit.
3. The Pan-African information system should only consider processing, communication and transport technologies which ensure a quick response and physical information transfer by the system.
4. The Pan-African information system should consider formats and languages which permit easy information search, retrieval and understanding.

#### 5.3.2 The Need for a Flexible and "Able to Learn" Information system

To be able to function, information systems require a structure, that is, the existence of certain fixed components having predetermined interrelationships. An important feature of this structure is the existence of formal institutional agreements,

preferably backed-up by legal and administrative regulations, which will determine the nature of the participation, duties and rights of the system components. In addition, routines and procedures for the technical operation of the system must be established. It is easy to see that without these stabilizing arrangements the system's behaviour will be unpredictable. Nevertheless, the environment of an information system is continuously changing as development problems and conditions evolve, new development philosophies emerge and new information needs arise.

This calls for related modifications in the amount, quality and content of information that is being produced. Changes are also taking place in information technologies and in the quality of information personnel. And the political, social or financial problems that the institutional components of the system normally face are also likely to have an impact on its behaviour and performance.

Within the structure there will, therefore, need to be some room left to manoeuvre, to allow adaptations to the changing circumstances to be made. An important and desirable feature of the information system design will therefore be the definition of areas in which a certain flexibility is to be allowed so that learning and interactive processes can take place between the system and its environment.

The advocated flexibility is needed both during the implementation and operational phases of the information system life cycle. The system from its very early stages should be able to "learn" from its mistakes, inasmuch as the design is normally based on imperfect and insufficient initial information on the environment. Naturally this involves uncertainties and the risk of costly failures. A cautious and phased approach is thus required to permit experimentation, adaptation to unforeseen environmental changes, and to give the system's components, particularly staff, enough time to become proficient.

Some other types of interaction need to be considered. For example, an implementation strategy for an information system could take into account the "snowball" effect which has been recorded during the establishment of international information systems where the products and services provided in the early stages stimulated and increased demand for information and interest in supplying information in the participating countries.

Finally, although the information system would be less likely to experience fluctuations and major adjustments once it is fully operational, it will nevertheless require an evaluative mechanism for controlling its performance, and detecting in advance trends and changes in its environment.

From this second principle the following design guidelines emerge:

1. The Pan-African information system should be endowed with a structure of administrative and technical instruments in order to regulate its behaviour and performance.
2. The Pan-African information system components and design parameters should not be rigidly defined so that the system's scope, organization and services can respond to evolving information needs for development.
3. The Pan-African information system should be implemented according to a phased programme so as to permit learning processes to take place.
4. The Pan-African information system should possess a built-in evaluation mechanism capable of detecting environmental changes and assessing the degree to which the system is responding adequately to them.

#### 5.3.3 Search for an Efficient (Optimal) Information System

Given the nature of development information needs in Africa which were discussed at the beginning of this Chapter, a general design problem arises - the question of how to locate the different activities and components of the system both in space and in time and how to organize each activity using the range of technological means and resources available, in such a way that information needs are met at minimum cost. The first step must be to identify the activities or "elemental operations" that the information system should perform so as to link the existing stock of produced information with the potential utilization of this information. An outline of activities would be:

1. identification of documents containing development information;
2. acquisition of such documents;
3. bibliographic and subject analysis of the documents;
4. processing of the information extracted to produce indexes, bibliographies, etc.;
5. storage of the documents;
6. transfer of information extracted and/or copies of documents to the planners, decision-makers, and administrators who will use it.

The activities at the extremes 1) and 6) can clearly be considered as the information system's interfaces with its environment. Then, three interrelated questions should be considered simultaneously:

1. where to place the responsibility for performing each of the mentioned activities (in national, sub-regional or regional centres?)
2. what technology and related equipment and personnel should be utilized to perform each of the activities (manual or computerized processing, highly qualified or less qualified personnel, use of postal or telecommunications systems?)
3. how would the implementation of the various activities need to be scheduled in order to follow a fluid sequence and avoid disruptions?

The range of possible alternatives (permutation of answers to questions 1, 2 and 3) would appear to be very great. However, this is not so. In fact several reasons can be put forward to explain why the range of options is not very wide: Firstly, not all the combinations are possible, that is, some of them will not be technically feasible or will involve a waste of resources. Secondly, the current state of transport and telecommunications technologies suggest the need for some sort of decentralization. Thirdly, improvements in design of information-handling equipment and the increasing capabilities, speeds, and declining costs of computers, suggest that the use of modern technologies is unavoidable.

From this third principle the following design guidelines can be derived:

1. The Pan-African information system should be organized in space and time so that waste of resources is avoided or minimized. In particular, it should ensure a rational policy for the acquisition and storage of documents together with a rational division of work so that a document is processed (catalogued, indexed and entered in a file) only once.
2. The Pan-African information system should benefit from modern technology so as to enlarge its data processing and storage capability at reasonable speed and cost.
3. The Pan-African information system should try to cut down the delays and costs of information transfer by using the most efficient physical transport or telecommunication means.

#### 5.4 THE NATURE OF AN AFRICAN-ORIENTED AND DECENTRALIZED INFORMATION SYSTEM WITH INTERNATIONAL LINKAGES

Given the foregoing design principles and guidelines, it is now possible to define the overall nature of a Pan-African information system.

#### 5.4.1 African-Orientation

The ultimate objective of a Pan-African information system is to facilitate problem-solving in African development processes. This approach implies that the system will be mission-oriented and interdisciplinary. It is necessary to clarify this further using the following quotation from the DEVSIS Study Team Report:

"Any new system to meet the needs identified in this study should not be discipline-oriented (economics, sociology), but should be mission-oriented (development). Thus the system would be hospitable to information that had been produced in the furtherance of the mission - for development objectives. It would be inhospitable to information that is purely academic. And provided a piece of information had been produced for development goals, its admission to the system would be assured irrespective of the discipline on which it was based.

The mission-orientation would be reflected, not only in the admission of information to the system, but also in its internal organization and its outputs. Thus a given piece of information, while it might be identified by its discipline, would certainly be identified by its potential role in the development process (e.g. identification of needs, policy-making, planning, project administration, evaluation)."(2)

In terms of the contribution of knowledge provided by the various disciplines, it is likely that in a Pan-African information system the bulk will come from basic and applied social sciences and technologies, instead of natural or physical sciences and technologies. Information relating to economics, management, public administration, educational sciences, sociology, etc. will, of course, be characterized by the lack of precision in the terminology. Another feature is the need to collect a large volume of unpublished literature.

Finally, to say that the system is African-oriented is also to say that it will recognize not only the information needs of the African countries but it will take into account the behaviour of African users in the production and utilization of information and the existing infrastructure or information units, equipment, personnel and financial resources of the region.

#### 5.4.2 Decentralization

As is clear from the discussion in the previous sections, technical and, above all, political reasons, demand that the system should be decentralized. A centralized solution consisting of a single input/output centre would in fact imply the need to identify documents scattered all over Africa, particularly unpublished documents and, to wait for items to arrive by mail which may involve

great delays. If the treatment of information (cataloguing, indexing, processing and the storage of documents) also takes place centrally, although it might result in substantial economies, it will not foster the creation of national capabilities to perform these tasks. Finally, the dissemination of information by one central unit will require identification of user needs, again scattered all over Africa, and will involve delays in collecting enquiries from the countries and the transfer of information back to them.

A decentralized solution on the contrary:

1. ensures that the persons responsible for input are close to the sources of production of new information, can develop close relationships with the producers of information and thus more effectively ensure the reporting of information to the system;
2. ensures that the persons responsible for output are close to the users of information; this permits a closer contact with their clientele and creates the basis for more relevant information services, and
3. allows local autonomy in the politico- technical decision about what is entered into the system and what is extracted from it.(3)

The main components of a decentralized system are outlined below.

(a) National information infrastructures

Success of a Pan-African information system will depend upon the establishment of national participating centres. The choice of an existing institution or creation of a national institution to be in charge of information input/output responsibilities is to be made by national governments. In the case of DEVSIS-Africa it is suggested that, the national planning agencies or ministries of finance, planning and development be considered as focal points since they are central to the processing of development information.

A first task of this focal point will be to identify and collect national publications, reports and documents which fall within the scope of DEVSIS-Africa (see Chapter VI). This task is a major one, since normally the publications are not available in one location because of lack of enactment and implementation of deposit laws and because unpublished material is scattered in various institutions that produce development information: government ministries, banks, research institutes, consulting firms and others.

A second task is digestion and recording of relevant information contained in the above mentioned literature. Initially, a national focal point might be able to identify and collect all the current development literature produced in the country. However, as

the national institutional basis becomes greater and more complex and as retrospective materials are incorporated into the system, a strong case could be made for a further decentralization of these efforts at each source institution.

A third task is related to the processing of information. Initially, due to cost factors and the size of the files, preparation of machine-readable files and indexes could be carried out at a single processing unit in Africa. However, as the price of computer hardware continues to fall, many countries might find it possible to set up their own computer processing units at the national level.

Finally, a fourth task which is related to output has two aspects. Firstly, there is the need to submit national information records to a regional unit which can then merge all the country-produced information in one regional file and send it back to the countries for utilization. Secondly, there is the need to provide information services to users based both on the regional file and the national file.

(b) Role of a co-ordinating centre of a Pan-African information system

Any system needs a component for performing the functions of a "brain"; a component able to co-ordinate, harmonize, stimulate and support the functioning of the other components so that the system's goals are achieved. This "brain", which will be the co-ordinating centre of a Pan-African information system, will also be responsible for the preparation of administrative and technical regulations to ensure consistency and implementation of decisions and actions, and to carry out research and development activities related to the system.

The co-ordinating centre is conceived basically as a managerial and catalytic unit. However, it would also require an information handling capability to merge the national information records and to disseminate them to the participating countries. This calls for the establishment of an "input-output" unit capable of handling machine-readable data (data-bank component) and physical documents (clearing-house component).

One of the specific duties of this unit that cannot be delegated to other units is the linkage with other regional and sub-regional information input/output units, and with co-ordinating units of international and Third World information systems, including those sectoral information systems that might later be established in Africa.

#### 5.4.3 International linkages

The design principles and guidelines suggest that the system should have access to the world's stock of information which is normally contained in international systems, or commercial systems in industrialized countries. In order to meet this need, a Pan-African

information system should have compatible technical characteristics and should be operated according to principles similar to those that guide the majority of international systems.

In this connection, linkages should be established with the UNISIST Programme and other international systems such as AGRIS, INIS, POPIN and others.

(a) UNISIST

UNISIST is a world-wide Unesco programme which "seeks to promote the adoption of norms and common tools that will maximize the compatibility of systems, to provide a mechanism by which the development of systems can be co-ordinated, and to encourage the building of the resources in all nations that will allow them to participate in information system-building and to secure the maximum benefits from the operation of such systems".(4)

The need for a Pan-African information system to operate according to internationally accepted methodologies is obvious. If a Pan-African information system were developed without applying the results of work that had been done elsewhere, it would carry the burden of having to develop tools solely for its own applications. Also, it follows that national participating centres and the Pan-African co-ordinating centre should adopt common methodologies, thesauri and computer software.

(b) Regional and international systems

The definition of boundaries between information systems is essential in system design in order to avoid duplication of indexing and processing. It is also a great boon to users who, faced with a particular question, will then know where to find the information they need. There are areas within the scope of the Pan-African information system which are of interest to other systems: agricultural development aims, policies and programmes to AGRIS, population growth to POPIN, etc.

The DEVSIS Study Team has included the following in its ideas for a solution to the problem of definition of related information systems:

1. That where other systems exist with missions adjacent to that of DEVSIS, the boundaries between the systems be negotiated with a maximum degree of precision.
2. That the primary DEVSIS data base should not be inflated by accepting transfers of records from other systems.

3. That in adjacent areas where no information system now exists, DEVSIS define a boundary that takes the more aggregated forms of information that are essential to decision-making in the development community, but be ready to pull back as soon as an effective information system is built in any of these areas.
4. That under UNISIST, DEVSIS should seek the level of compatibility with other systems that will enable a given user to merge segments of the data bases that are of interest to him or to merge the outputs separately obtained from each.(5)

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- (1) Verhoeven, F.R.J., "Feasibility study for the establishment of a regional information, documentation and research centre", UN-CEPAL, Santiago, 1970.
- (2) DEVSIS Study Team, op.cit., p.32.
- (3) DEVSIS Study Team, op.cit., p.31.
- (4) DEVSIS Study Team, op.cit., p.38.
- (5) DEVSIS Study Team, op.cit., p.39.

## CHAPTER VI

### DESCRIPTION OF DEVSIS-AFRICA

- 6.1 Introduction
- 6.2 Objectives of DEVSIS-Africa
- 6.3 Scope of DEVSIS-Africa
- 6.4 Description of DEVSIS-Africa
- 6.5 Selection of hardware and software in relation to long-term goals
- 6.6 Working languages and thesaurus
- 6.7 System requirements and outputs
- 6.8 Data elements of DEVSIS-Africa
- 6.9 Reprographic and printing requirements of DEVSIS-Africa
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- 6.11 DEVSIS-Africa register of ongoing research and development projects

## CHAPTER VI

### DESCRIPTION OF DEVSIS-AFRICA

#### 6.1 INTRODUCTION

A programme for establishing DEVSIS-Africa - an African information system on social and economic development - within the conceptual framework of a Pan-African information system, will be launched. DEVSIS-Africa will, for reasons discussed earlier, be a centralized system based at ECA in Addis Ababa but, with the further development of sub-regional and national information handling capabilities, would be decentralized with various functions being taken over or shared by sub-regional or national units.

## 6.2 OBJECTIVES OF DEVSIS-AFRICA

The main objective of DEVSIS-Africa should be to provide ready access to information required by policy makers, planners, technicians and others engaged in the economic and social development of African States. A rational approach to development cannot be successfully formulated unless all relevant information is fully considered during the planning and programming stages, and accurate knowledge of the past, as well as reliable projections, are used to form the basis for planning the future course of action.

DEVSIS-Africa should serve African countries by (1) identifying and collecting African information resources and creating an efficient system for the utilization of information produced for and by ECA and its member States, and (2) by promoting information sharing through the establishment of various network nodes and sub-systems.

Through the application of modern information processing technology and with carefully planned technical assistance and training programmes, DEVSIS-Africa should become the catalyst for improving the capacity of African countries to make maximum use of information generated and collected both within and outside their countries. By combining the use of the comprehensive data bank, with a co-operative scheme linking participating governments through a network for sharing information resources and knowledge, DEVSIS-Africa, as well as the larger Pan-African information system, could establish a strong bargaining position for obtaining the otherwise costly but useful information available from commercial sources located in developed countries.

DEVSIS-Africa will be designed to enable African States:

- (1) to have ready access to socio-economic information contained in literature generated within their borders, and
- (2) to assist each other through sharing their knowledge and experience.

## 6.3 SCOPE OF DEVSIS-AFRICA

One of the major difficulties experienced by the Team has been to define adequately the scope of the system. While the DEVSIS study was concerned with defining the scope of an international system in the development sciences, the Team felt that the scope of DEVSIS-Africa would have to be determined by a detailed analysis of the urgent needs of African countries in respect of both information related to social and economic development and of scientific, technological and other information needed to support development activities. This aspect is not entirely ignored in DEVSIS, but it should be noted that in the African context, where no significant scientific, technological and other information infrastructures exist

at present, it assumes a greater degree of importance.

Subject to the above, the general definition of the scope of DEVSIS (1) could be adapted in defining the scope of the DEVSIS-Africa.

A. FACTS, TRENDS AND ANALYSES

A.1 Basic information and data: national and regional

Statements of factual information and data relating to existing economic and social conditions and phenomena (including resources, production, consumption, distribution, trade and other transactions) for the African region, sub-regions and for particular countries.

A.2 Extrapolations and forecasts: national and regional

Extrapolations of economic and social conditions and phenomena (including resources, production, consumption, distribution, trade and other transactions) carried out with the purpose of forecasting future situations - for the African region, sub-regions, or for particular countries.

A.3 Existing situations: national and regional

Descriptions and analyses of existing economic, social, political and legislative situations carried out with the purpose of identifying causes of underdevelopment and factors favouring development in the African region, sub-regions, or particular countries.

B. PRESCRIPTIONS FOR DECISION-MAKING

B.1 Prescriptions for development policy or action: national and regional

Statements and studies produced with the purpose of recommending new policies and programmes to foster economic and social development in Africa, its sub-regions or in particular countries.

C. OFFICIAL POLICIES, PLANS, PROGRAMMES AND ARRANGEMENTS

C.1 Official statements of development policy

Documents issued by or on behalf of organizations: international, regional, national and local, such as governments, banks, funding and investment agencies and political parties, defining or explaining their policies in relation to the pursuit of development goals. Overall general descriptions by such organizations of their present and future activities.

## C.2 Commentaries on official policies and activities

Commentaries on the policies and overall activities of organizations: international, regional, national and local, such as governments, banks, funding and investment agencies and political parties.

## C.3 Development plans

Official plans, papers on plans and statements issued by organizations: international, regional, national and local such as governments, banks, funding and investment agencies and political parties, detailing their development plans, programmes, resource allocations, budgets, etc.

## C.4 Commentaries on development plans

Commentaries on the official plans issued by organizations: international, regional, national and local.

## C.5 Legal, financial and administrative arrangements: international and regional

Official documents relating to co-ordination and co-operation in development activities, establishing or involving international or regional institutions, or linking parties in different countries: treaties, agreements, institutional and contractual arrangements.

## C.6 Commentaries on international arrangements: legal, financial and administrative

Commentaries on international arrangements relating to co-ordination and co-operation in development activities: legal, financial and administrative aspects.

## C.7 Legal, financial and administrative arrangements: national

Official documents relating to co-ordination and co-operation in development activities, established or involving national or local institutions within single countries.

## C.8 Commentaries on national arrangements: legal, financial and administrative

Commentaries on national and local arrangements relating to co-ordination and co-operation in development activities.

# D. DEVELOPMENT ACTION: OPERATIONAL EXPERIENCE

## D.1 Studies for particular projects

Studies (including feasibility studies and market surveys) related to the economic and social aspects of specific projects and the

evaluation and appraisal of proposals and projects.

D.2 Development resources (particular projects)

Studies identifying resources for a specific development project and methods used in raising the resources.

D.3 Announcements and descriptions of new projects

News releases, announcements and descriptions of development projects that have been approved and are to be undertaken.

D.4 Operational experience (particular projects)

Descriptions and progress reports of particular development projects: reviews and evaluatory reports of the experience itself, including managerial, financial, legislative, administrative and contractual aspects: co-ordination and control experiences.

D.5 Operational experiences (general)

General review and evaluatory papers on experiences in implementing development projects and programmes, including managerial, financial, legislative and administrative aspects; co-ordination and control experiences. Retrospective reviews, such as annual reports, of the activities of organizations involved in development actions.

E. CONSEQUENCES AND EVALUATION

E.1 Impact

Analytical studies and interpretations, commentaries, reviews and evaluations of the economic and social impact of development policies, plans, programmes and projects.

E.2 Evaluations

Evaluatory reports of specific development strategies, programmes and projects on the basis of the results achieved.

F. RESOURCES AND TOOLS FOR DEVELOPMENT

F.1 Research policy and surveys of research capacities and research personnel for development purposes

Descriptions of policies, programmes and activities (including annual reports) of development research institutes. Directories of research institutes and personnel. Bibliographies of research publications.

F.2 Information

Descriptions and surveys of information systems and services designed to support development activities. Directories of such systems and services. Glossaries and other terminological aids.

### F.3 Men, money and materials

Descriptions and surveys of the resources available for development actions: international, regional and national. Directories of such resources.

### F.4 Models, methodologies, techniques and tools

Descriptive and evaluative accounts of techniques and tools (e.g. economic and social indicators, econometric models, methodologies and computer programmes) useful in economic and social forecasting, development policy-making and planning, project appraisal, project management and programme evaluation.

## G. SCIENTIFIC, TECHNOLOGICAL AND OTHER INFORMATION RELATING TO DEVELOPMENT ACTIVITIES

G.1 Scientific, technological and other information generated in the African continent and relating to any area of social and economic development which has not been entered into an international data base or international indexing and abstracting service.

G.2 Scientific and technological information which is considered important within the framework of the transfer of technology among developing countries.

### 6.4 DESCRIPTION OF DEVSIS-AFRICA

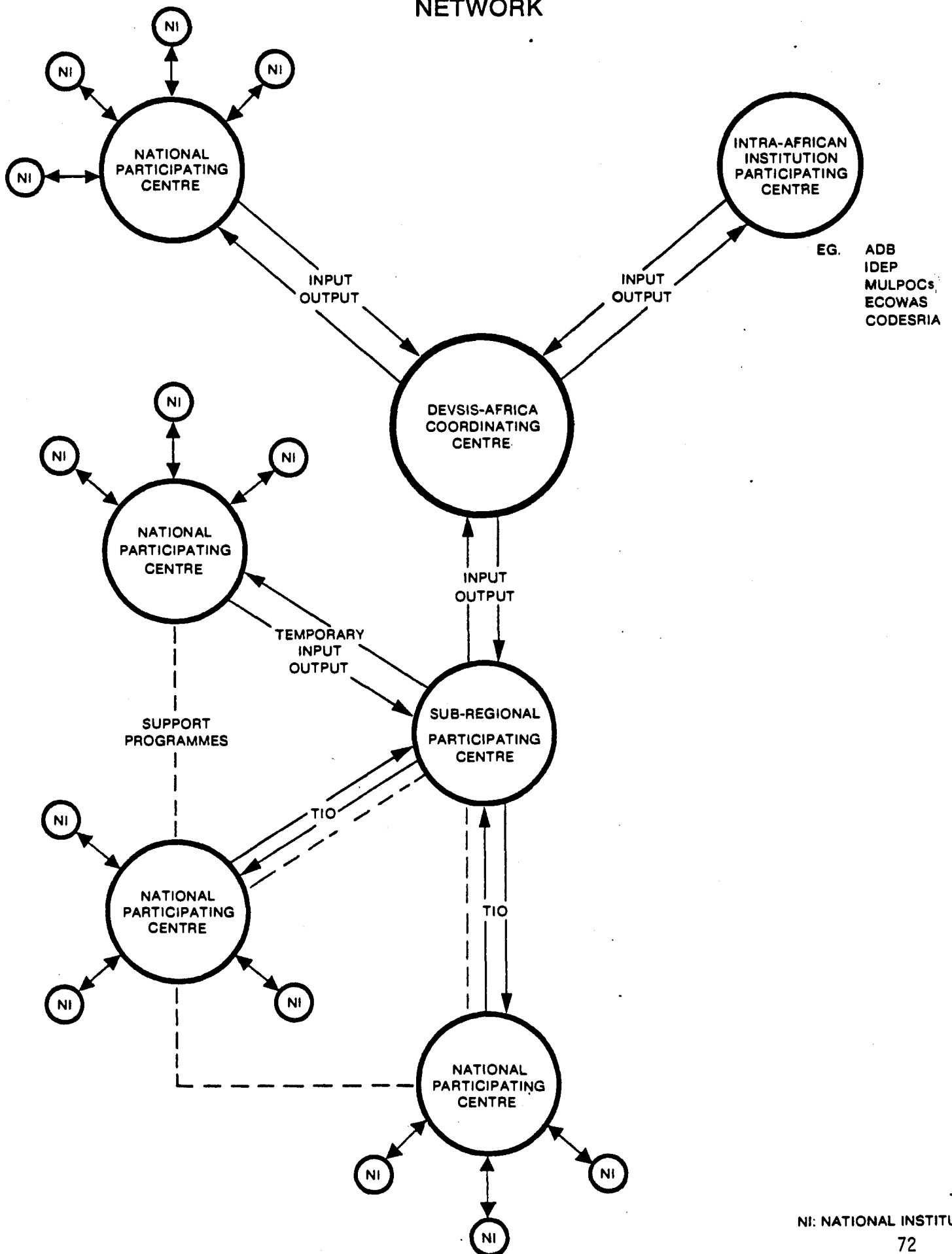
DEVSIS-Africa is designed to achieve its immediate objectives through the establishment of links between its Co-ordinating Centre and participating centres, as well as various information centres, libraries and data bases located in the African region. (This is illustrated further in the following diagram describing the DEVSIS-Africa Network and in section 6.10 below). The DEVSIS-Africa Co-ordinating Centre will establish a computerized information storage and retrieval system from which information necessary for economic and social development of the African region will be made readily available to African States.

The data base thus established will become the major source of socio-economic information for users in Africa, and its storage and retrieval system would become the model to be used in the development of a future decentralized network.

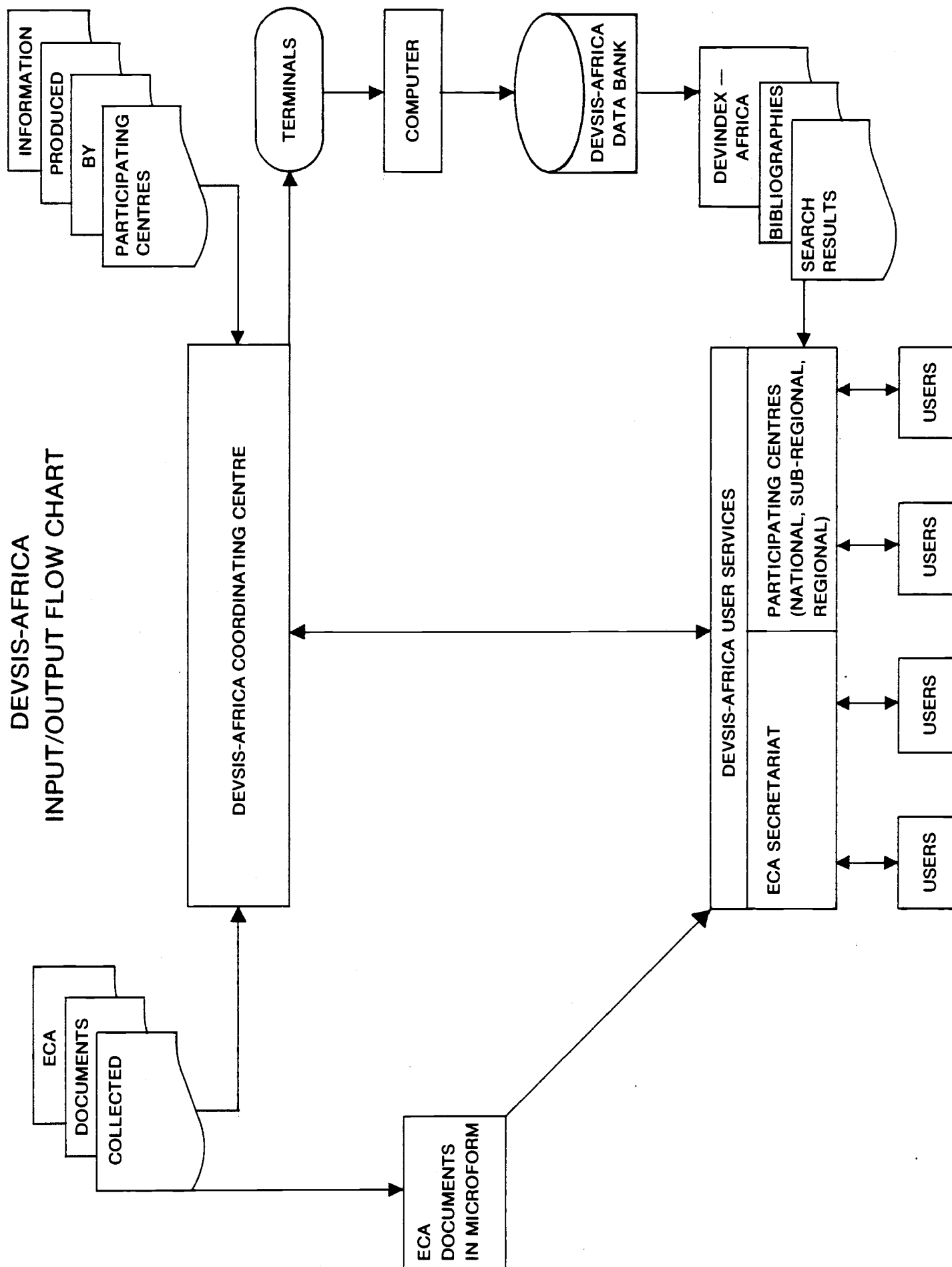
Three main components of the proposed DEVSIS-Africa information storage and retrieval system (as depicted in the following DEVSIS-Africa Input/Output Flow Chart) are:

- (1) collection of information resources such as books, reports, working papers, etc. and mechanisms for their delivery;

# DEVSIS-AFRICA NETWORK



# DEVSIS-AFRICA INPUT/OUTPUT FLOW CHART



(2) a computerized data base consisting of information about the resources contained in the collection, including mechanisms for delivering indexed copies of the data base (printed and on magnetic tape); and

(3) a set of computer programmes for data base creation, file interrogation, retrieval of information and production of various printed outputs.

(1) COLLECTION OF INFORMATION RESOURCES

All relevant documents generated by and for African States and ECA which fall within the scope as defined above should be collected for input into the System. The collection of materials includes published documents, studies, manuals, working papers, mission reports, etc. Since the collection is not intended for browsing but to serve as the master file of material to be widely disseminated, the documents should be reduced to microform and then filed according to the accession number assigned in order of arrival at the DEVSIS-Africa Co-ordinating Centre for rapid future retrieval and distribution.

ECA member States interested in participating during the first phase of DEVSIS-Africa should be urged to select and submit materials produced in their countries which they consider to be useful for input into the System. Those who are willing to prepare DEVSIS-Africa input sheets themselves in addition to contributing documents should be given a complete instruction manual for DEVSIS-Africa input preparation and should be encouraged to participate in training seminars so that the input sheets are properly prepared.

(2) COMPUTERIZED DATA BASE

The Team recommends that computerization is a key ingredient for the proposed System as the size and complexity of the file will be such that a manual system would not be cost effective or feasible. A computerized data base should be created by using the modified DEVSIS input sheets according to the suggestion

made by the Team (see Annex 5). This will ensure compatibility with other relevant systems such as the ones maintained at ILO, FAO, UNIDO, UN/CEPAL, Unesco and UN/DIESA, as well as the files created and maintained by member States and organizations participating in the DEVSIS effort. The input sheets completed by the indexing staff of DEVSIS-Africa during the first phase of its operation should be forwarded to the Computer Operations Section for input into the computer. The Computer Operations Section is also responsible for editing, updating and revision of the data base as well as the creation of various indexes (printed and on magnetic tape), on-demand bibliographies and lists. (See DEVSIS-Africa organizational chart in the Work Plan for details).

At a future date participating national and sub-regional centres already equipped with computer capability should be encouraged to produce computerized input in the form of compatible magnetic tape and move towards a decentralized file creation process.

### (3) COMPUTER PROGRAMMES

Since DEVSIS-Africa will create a computerized System which serves as a model for use by participating centres, preference should be given to selecting a set of programmes which can provide for the System to be replicated at no cost to the member States. Currently, there are at least three computer programmes which meet this requirement:

- (a) The Integrated Set of Information Systems (ISIS), developed by ILO and available from IDRC and Unesco, is widely used among IBM 360 and 370 users such as ILO Central Documentation and Library, FAO Library, UNDP Information Referral System (INRES), UN-CEPAL and over 30 organizations in Unesco's member States. There are currently two versions of ISIS available: DOS and OS. The DOS version developed in 1968 by ILO runs on IBM 360/370 computers using the DOS or DOS/VS Operating System. The new OS version of more sophisticated ISIS developed by Unesco runs on IBM 370, RIAD and AMDNAL computers. The ISIS programme, rewritten in COBOL language, is also being used for limited applications in Mexico and the Philippines on UNIVAC computers (Models 1106 and 9030).
- (b) MINISIS, developed by the IDRC in Ottawa, is a mini-computer based system and is comparable with ISIS. The data bases generated by both these systems (MINISIS and ISIS) are inter-changeable with a minimum amount of conversion. Among the current and prospective users of MINISIS are IDRC, UN/DIESA, ILO, the All-Union Institute for Information in the Social Sciences (INION) in Moscow, and several other institutions in the Netherlands, Morocco, Senegal, Tunisia and Zaire.
- (c) MILOR, an interactive information retrieval software package developed by CIXI-Ingenierie Informatique, in collaboration with the documentation centre of the Institut Gustave Roussy

in France, is written in Fortran IV and can be implemented on any mini-computer that has a Fortran IV compiler with ENCODE/DECODE extension. However, it has not as yet been as widely implemented as MINISIS or ISIS.

Given that the Burroughs and NCR computer equipment currently operating in Addis Ababa (including the NCR Century 151 currently rented by ECA) are adequate for the various specifications of the System (see Annex 4) and that neither of them have appropriate software for processing bibliographic information, it is felt that the computer models suitable for DEVSIS-Africa, in the light of the above considerations, are:

- 1) if the ISIS software is chosen: IBM 360 or 370 Series; RIAD ES Series, and AMDAHL;
- 2) if MINISIS software is selected: Hewlett Packard 3000 Series II, III or 33; and
- 3) if the MILOR software is selected: any mini-computer that has a Fortran IV compiler.

A comprehensive survey of the hardware and software requirements of DEVSIS-Africa in relation to cost, compatibility, maintenance and other factors is presently being carried out by Unesco at the request of ECA. The survey will also examine these questions as they relate to national efforts at computerization and the participation of African countries in a Pan-African information network.

## 6.5 SELECTION OF HARDWARE AND SOFTWARE IN RELATION TO LONG-TERM GOALS

There have been considerable advances in information processing technology in recent years particularly in computers and related equipment. At the same time, the cost of computers and peripherals has dropped to a fraction of what it was a few years ago. Therefore, despite the fact that a long range plan for the System will include direct linkage of computers and computer terminals located in member States with the central data base via a telecommunication network, the selection of the System's computer for the first phase should not necessarily take into account the full operational capability required from Phase III onwards. In view of the above considerations, the Team feels that a low-cost, high performance computer (e.g. a mini-computer) selected for its capability of delivering the outputs designed for the System, would meet the needs for Phases I and II of the project (see Work Plan). Additionally, since DEVSIS-Africa is intended to serve as a model for use by a number of participating national centres, it is important to consider software availability and its cost when selecting a computer.

## 6.6 WORKING LANGUAGES AND THESAURUS

Three major languages (French, English and Arabic) used in the ECA region should be the carrier languages of the System. Documents written in French for instance, should be processed complete with an abstract in French, using the French version of the "OECD Macrothesaurus"(2) for indexing. Similarly, documents written in English should be processed in English. All documents or materials submitted by participants in the System must be indexed using the same list of terms to ensure consistency within the System.

The Team recommends that rather than compiling a completely new set of indexing terms for the System, the "OECD Macrothesaurus" be used as a basis for the compilation of a thesaurus oriented towards particular African needs. In this connection, it should be mentioned that Unesco has already approved funds for the adaptation of the Macrothesaurus for meeting the requirements of DEVSIS-Africa. It is felt that such an approach will permit compatibility and facilitate exchange of information between DEVSIS-Africa and the large number of other information systems using thesauri based on the OECD Macrothesaurus.

It should be noted that the OECD, in collaboration with ILO, IDRC, UN/CEPAL, UN/DIESA and FAO, has produced an enlarged revised version of the Macrothesaurus in late 1973 in English and French. Spanish and Arabic translations are in preparation.

The System should, however, be able to refer to indexing terms in all three languages inter-changeably for data base searching so that a search conducted in any one of the three languages would retrieve materials written in all three languages.

## 6.7 SYSTEM REQUIREMENTS AND OUTPUTS

### 6.7.1 System requirements

- (1) Creation, up-date, revision and general maintenance of the data base in three languages: French, English and Arabic, according to UNISIST and ISO guidelines and using DEVSIS-Africa input sheets for data entry.
- (2) File sorting by each data element and creation of sub-files for production of DEVINDEX-Africa containing abstracts and indexes by author, country, subject, and institution, produced quarterly.
- (3) On-line file interrogation by any of the data elements and their combination as search elements, and the result displayed in a number of alternative forms, e.g. complete bibliographic citations (SDI) with or without abstracts, author list, institution list, etc.
- (4) High speed print capability with upper and lower case for production of: a) DEVINDEX-Africa, and b) Various bibliographies and lists created by file sort processes.
- (5) Production of machine-readable outputs on magnetic tape containing all newly added records on a monthly, quarterly and annual basis for those who are equipped with a computerized facility.

### 6.7.2 DEVINDEX-Africa

The System is expected to serve as an instrument for promoting the use of information collected and generated in Africa. One of the most important products of the System is a quarterly list of materials added to the System which must be distributed widely to announce the type and nature as well as the subject content, of information available from DEVSIS-Africa. The list, which is intended to provide a current awareness service to users, must describe fully each item listed with complete bibliographic description and abstract. The list should be arranged by seven broad categories (see section 6.3) used in defining the scope of the System, accompanied by subject, geographic, author, and institutional indexes (a sample of this list (to be called DEVINDEX-Africa) is included as Annex 6)).

To accommodate the needs of participating centres without computer facilities, annual accumulations of their national input will be prepared on request.

Specialized bibliographies on specific subjects will be prepared on request or as a by-product of on-line search or file interrogation.

## 6.8 DATA ELEMENTS OF DEVSIS-AFRICA

Since the System is intended to identify and locate information contained in the DEVSIS-Africa data bank, the data elements which serve as the key to locating the information required by the searcher must be carefully identified and selected for use by the System. DEVSIS-Africa should provide the searcher information at least by the following ten elements which can be used in various combinations:

- a) record type, such as book, document, report, map, etc.
- b) title
- c) author
- d) institution (the places where the work was done)
- e) country
- f) document symbol or number
- g) name of committee(s), conference(s), meeting(s) for which material was prepared
- h) language in which it was written
- i) descriptors which clearly identify or indicate the subject treated
- j) date on which the material was prepared

The detailed description of data elements and field definitions prepared for DEVSIS seems to meet the system requirements of DEVSIS-Africa, which is similar to that of the system being established by UN/DIESA. Therefore, in order to achieve compatibility with these systems, DEVSIS-Africa is advised to adopt the same tags for the same data element, as described in Annex 5.

## 6.9 REPROGRAPHIC AND PRINTING REQUIREMENTS OF DEVSIS-AFRICA

Having access only to citations and abstracts of literature available elsewhere and not being able to obtain a copy for closer examination reduces the usefulness of an information system. Therefore, DEVSIS-Africa should work towards providing copies of all literature cited in its bibliographies and indexes. However, distribution of literature from DEVSIS-Africa should as far as possible be in the form of microfiche. Use of microfiche will considerably reduce the cost of postage and cut down the time required for delivery of information to the user. Where microfiche readers and reader/printers are not available, the System will make an effort to provide photocopies.

Additionally, DEVSIS-Africa is viewed as a catalyst in improving the capacity of ECA member States to acquire the technology and expertise necessary to utilize information which they collect and generate. A laboratory should therefore be established in the DEVSIS-Africa Co-ordinating Centre to convert printed pages into a master set of microfiche from which copies can be made. Initially, two microfiche cameras should be purchased and installed in the laboratory together with equipment for producing fiche from

micro-image film strips. Once a master copy of the fiche is made, additional copies can be made quickly and relatively cheaply.

As regards printing requirements, since the documents to be distributed must be of high quality, error-free, easy to read and published with a minimum time lag, it is important for DEVSIS-Africa to have the support of a well managed and high quality printing capability. Therefore, it is recommended that a printing unit be established within the DEVSIS-Africa Co-ordinating Centre (see Chapter IV and Work Plan).

#### 6.10 DEVSIS-AFRICA AS A NETWORK

As described in section 6.4 the DEVSIS-Africa design will include a network linking various information resources located in the African region, although initially much of the effort would be concentrated on the establishment of a DEVSIS-like information retrieval system based on the collection of materials primarily produced by and for Africa.

Ultimately, DEVSIS-Africa should have at least one network node in each of the member States and links with regional and sub-regional centres whose major resources fall within the scope of the System.

As mentioned earlier (Chapters II and V), a comprehensive survey of information centres, libraries and research institutes devoted to the dissemination and utilization of economic and social development literature should be conducted and a data base of these information resources should be created, from which a directory of African development institution sources should be produced.

It is recommended that DEVSIS-Africa profit from the experience gained by UN-CEPAL/CLADES and by the United Nation's Asian and Pacific Development Institute in Bangkok by adopting, according to its particular needs, the survey design, questionnaire and methodology used by these two bodies.

The data base created as a result of the survey could also become the basis for an information referral system through which users could locate appropriate sources of information.

The survey will also yield information necessary for identifying potential network-nodes in the region as well as gaps where the DEVSIS-Africa Co-ordinating Centre could extend assistance in strengthening the capabilities of African countries to collect, utilize and share relevant development information generated in the area.

#### 6.11 DEVSIS-AFRICA REGISTER OF ONGOING RESEARCH AND DEVELOPMENT PROJECTS

The DEVSIS-Africa Co-ordinating Centre should also establish a register of ongoing socio-economic research and development projects. Although an effort in the area of UN funded projects is currently being undertaken by the UN Inter-Organization Board for Information Systems (IOB) in Geneva under the project title CORE (Common Register of Projects), there is no register of the various bilateral and privately funded development projects. Through the DEVSIS-Africa network it will be possible to collect and systematize for future retrieval, information concerning ongoing projects by sector and country. While it may appear costly to undertake such a data collecting activity, once channels are established for information collection through, for example, offices of the UNDP resident representatives and relevant institutions in each country, appreciable benefit could materialize as knowledge and experience gained from the various projects will have repeated use.

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- (1) DEVSIS Study Team, op. cit., p. 131.
- (2) Macrothesaurus for information processing in the field of economic and social development. New English Edition. OECD, Paris, 1978. Also available in French.

## CHAPTER VII

### SUPPORTING PROGRAMMES

- 7.1 Introduction
- 7.2 Education and training of DEVSIS-Africa participants and users
- 7.3 Technical Assistance
- 7.4 Development of manuals, standards and norms

## CHAPTER VII

### SUPPORTING PROGRAMMES

#### 7.1 INTRODUCTION

In various sections of this Report, three key issues have turned up repeatedly. These are:

- i) the need to produce a sufficient number of technically efficient personnel for DEVSIS-Africa;
- ii) the necessity to assist all member States of ECA to participate effectively in DEVSIS-Africa, and
- iii) the need to train users of the System in order that they can derive maximum benefits from it.

The specific programmes of activity recommended for achieving these three objectives are spelt out below.

#### 7.2 EDUCATION AND TRAINING OF DEVSIS-AFRICA PARTICIPANTS AND USERS

It is envisaged that the training of staff for DEVSIS-Africa, professional and sub-professional technical staff for participating centres, and users of the System will be undertaken at two locations: (i) at the DEVSIS-Africa Co-ordinating Centre, and (ii) at national and sub-regional levels. Responsibility for training staff at the national level lies with national authorities, although the Co-ordinating Centre could assist with the design of national training programmes.

### 7.2.1 Training to be given at DEVSIS-Africa Co-ordinating Centre

Adequate budgetary and administrative provisions have already been made in this Report (see Work Plan) for launching an intensive training programme beginning in September 1979, for core staff of DEVSIS-Africa who will in turn assist in the training of staff of participating centres. Both professional and sub-professional staff training will be designed to give all participants the technical know-how and the appropriate attitude to the successful launching of DEVSIS-Africa. It is expected that the services of a Technical Advisor will be needed for this and other purposes.

The major activity thereafter will concern the organization of short training programmes for sub-professional staff who will essentially be junior indexers, cataloguers, library assistants, reprographic assistants, cameramen, machine operators, etc.

Courses will include:

- preparation of DEVINDEX-Africa input sheets
- cataloguing and classification of material
- audio-visual equipment operation
- reprographic techniques
- file maintenance (both print and non-print materials)
- user services, including reference and search services
- publicity and information dissemination practices

The objective of the training programmes will be to ensure that the more routine aspects of DEVSIS-Africa operations are efficiently carried out and to provide an avenue for advancement for the junior staff who work in the System.

In preparing and organizing such programmes, DEVSIS-Africa should make use of materials and courses already prepared by Unesco and other international bodies (e.g. FAO, IAEA, IDRC, UN-CEPAL and UN-DIESA) whenever applicable. When the operations of DEVSIS-Africa have become fully computerized, various seminars and workshops on the use of the computer in information systems might be organized to teach:

- on-line data base interrogation
- data entry through a terminal
- operation and maintenance of a data processing unit
- elementary computer programming
- exploitation of the DEVSIS-Africa data base for various purposes such as the production of specialized bibliographies, lists of specialists by subject, lists of development projects by country and subject, and analytical indexes.

Education and training will also be provided for professionally qualified technical staff in the form of short orientation programmes so that they can achieve a proper conceptualization of DEVSIS-Africa, appreciate the relevance and

nature of the techniques of modern data processing, and understand the rules and procedures of the United Nations Organization generally and the ECA in particular as they relate to regional and sub-regional political/economic groups in Africa.

Finally, users of DEVSIS-Africa will be given short training courses at ECA Headquarters, to enable them to derive the maximum benefit from the services provided by the System. Seminars and workshops will be held primarily for Heads of Divisions, professional staff and research assistants at ECA and OAU Headquarters, and other government officials and researchers resident in Addis Ababa. Emphasis in the programmes will be on what DEVSIS-Africa is all about, how it can help its users to obtain information that is relevant to their planning, decision-making and implementation tasks, and what they must do in order to derive maximum benefits from the System.

#### 7.2.2 Training to be given outside DEVSIS-Africa Co-ordinating Centre

Each participating member State in DEVSIS-Africa will be encouraged and assisted to conduct short training programmes similar to the ones described above for its technical staff and users. However, as stated previously, responsibility for training staff at the national level lies primarily with national authorities, with the DEVSIS-Africa Co-ordinating Centre assisting only in the design of national training programmes and the provision of training materials.

In addition to distribution of DEVSIS-Africa instructional materials described later on in this Chapter (see 7.4) a variety of workshops and seminars at sub-regional level (e.g. MULPOCs) will be organized under the joint sponsorship of Unesco, ECA and other appropriate organizations (see Work Plan) to ensure:

- (i) that relevant documents produced in each country are systematically and comprehensively collected and processed for input to DEVSIS-Africa;
- (ii) that DEVSIS-Africa input sheets are correctly and consistently prepared, and
- (iii) that the System will receive maximum usage in the country or region.

It is particularly important to identify all actual and potential users of DEVSIS-Africa at the national level, especially those belonging to the categories specified in Chapter III of this Report. Ministers, Permanent Secretaries, Directors and other top policy-makers in the Government of each participating country should constitute a special target audience for advertising the services that DEVSIS-Africa is capable of providing to them. Since they constitute the group of people who will influence the future course of DEVSIS-Africa, every opportunity must be seized to convince them about its usefulness and of the importance of active participation by their

governments as users and of the need to establish national participating centres for the System. The preparation and distribution of explanatory materials (brochures, audio-visual aids) designed to show the relevance of the System to their official tasks and responsibilities and to provide an understanding of the role that DEVSIS-Africa could play in the development process in Africa would be crucial to the success of the System.

DEVSIS-Africa must also take immediate steps to identify appropriate training institutions in Africa and elsewhere whose formal training programmes in librarianship, documentation, and information science could make meaningful contributions to its programmes. A continuously updated list of such institutions should be prepared for the guidance of African Governments and donor agencies in the award of scholarships and fellowships to potential personnel for DEVSIS-Africa at national, sub-regional and regional levels.

#### 7.2.3 Resuscitating the Plan to create an African Centre for Training Information Specialists

In 1974, the UNDP entered into negotiations with the University of Ibadan's Department of Library Studies to make the institution an African Regional Training Centre to produce information specialists for English-speaking Africa. Part of the package was the sum of US\$150,000.00 for the first three years of the project; the provision of three information science teachers for the same period; and a plan to train four local staff as teachers of information science during the same period. Courses leading to a Master's degree in Information Science were drawn up and approved by the University's Senate and all seemed set to launch the programme in October 1975. The Senate also approved the proposal that the name of the Department be changed to "Department of Library and Information Science" to reflect the full range of its new programme. Unfortunately, the project has still not taken off.

In view of the absence of a full-fledged Master's degree programme in Information Sciences for English-speaking African countries (see Chapter II) the authorities of DEVSIS-Africa should enter into negotiations with the UNDP as soon as possible in order to resuscitate the abandoned programme. The Team is convinced that the continued absence of an indigenous training programme to produce fully-qualified, English-speaking information specialists to complement the products of the Ecole des Sciences de l'Information (ESI) in Rabat, Morocco, would constitute a serious constraint to the attainment of DEVSIS-Africa's objectives.

#### 7.3. TECHNICAL ASSISTANCE

The Team recommends that DEVSIS-Africa serve as a catalyst in strengthening the capabilities of already existing national and sub-regional centres by utilizing expertise available within and outside the United Nations family of organizations. In this respect

the experience of Unesco/PGI in the establishment of national information infrastructures, UN-CEPAL/CLADES in the in-depth survey of information systems and services in Latin America and the Caribbean, UN-DIESA's pilot implementation of a Development Information System, ILCA's training programmes for semi-professionals in indexing and abstracting, and IDRC's experience in the establishment of national, sub-regional and regional information systems, offer DEVSIS-Africa a wealth of already proven experience and knowledge.

Although DEVSIS-Africa is designed to provide bibliographic and other information resources to its participating centres, it should also serve as the clearing house for DEVSIS-Africa related information such as:

#### 7.3.1 A directory of information science experts

By maintaining a directory of individuals with proven expertise in development information systems and services in the African region, DEVSIS-Africa could assist its participating centres in obtaining high-quality advice from such experts.

#### 7.3.2 Sources of funding and methods for obtaining financial and technical assistance

A list of sources from which funds could be obtained for DEVSIS-Africa participating centres to purchase equipment and services needed to strengthen their information-handling capabilities should be maintained by DEVSIS-Africa and assistance should be given to member States in applying for and obtaining funds from these sources. The record of such referral activities in itself serves as a valuable inventory of DEVSIS-Africa related projects and provides a built-in tool for co-ordination.

#### 7.3.3 National inventories of information systems and services in DEVSIS-Africa member States

Included in the clearing house function should be the inventory of capabilities of various national and sub-regional research and technical information centres for: providing translation services; information analysis operations; and surveying collections and information processing techniques. Special projects such as translations of manuals and thesauri, updating of the System, etc., may be undertaken by these centres to improve the operations of DEVSIS-Africa in the future. Experts in information and documentation services should be used through bilateral arrangements between concerned centres and governments with DEVSIS-Africa serving as the referral mechanism.

#### 7.3.4 Inventory of equipment

The clearing house should maintain an inventory of equipment in use as well as planned to facilitate up-grading of current equipment taking into account the economic advantages to be gained by ordering multiple units. There is a definite advantage in purchasing the same computer hardware, for instance, for national centres located in the same sub-region; the cost of services (training, maintenance) and of the computer itself could thereby be reduced. Moreover, possibilities for using the same software, exchange of trained personnel, etc., are further increased.

#### 7.4 DEVELOPMENT OF MANUALS, STANDARDS AND NORMS

DEVSIS-Africa will assume responsibility for producing and distributing all standards, manuals, norms, and other instructional instruments necessary for consistency and uniformity of input by participants. Certain instructional materials should be made available to DEVSIS-Africa participating centres from the outset in order to ensure compatibility. These are divided into:

##### 7.4.1 Materials for preparation of input to DEVSIS-Africa

The basic manuals necessary for the creation of machine-readable materials for DEVSIS-Africa are:

##### (a) Guide to bibliographic description of materials

The procedure must follow the UNISIST guidelines for machine-readable bibliographic description as well as ISO specifications for the use of geographic and language codes with modifications, where necessary, to meet the needs of DEVINDEX-Africa.

##### (b) Guidelines on subject indexing

As stated previously (Chapter VI), in order to standardize the terms used in describing the content of documents, it is essential that the same set of agreed-upon terms be used for this purpose. The Team recommends adoption of the OECD Macrothesaurus as the DEVSIS-Africa thesaurus on the understanding that it would be enlarged with additional terms carefully selected to reflect the uniquely African situation.

##### (c) Guidelines on direct input of machine-readable material into DEVSIS-Africa

Participating centres with computerized information systems will be encouraged and equipped to input directly into the System using an agreed format compatible with the one used by DEVSIS-Africa.

#### 7.4.2 Aids for users of DEVSIS-Africa

As the success of DEVSIS-Africa in actively supporting development decisions, programme planning and implementation depends on how well the System is used by its target audience, the Team recommends the use of clear, simple manuals prepared for specific categories of users. These will provide step-by-step explanations of how to put DEVSIS-Africa to maximum use on individual, group, national, sub-regional and regional levels. These manuals must be used as supplements to the various training sessions and workshops recommended above at national and sub-regional levels (see 7.2.2). They include:

- (a) explanatory notes on the use of DEVINDEX-Africa for manual searches;
- (b) guidelines for preparation of "user profiles" for SDI purposes;
- (c) guidelines for information search strategy and how to respond to the System's interactive facilities when they become available.

#### 7.4.3 Publicity and preparation of information brochures

Although interface between DEVSIS-Africa and its users is largely the responsibility of various participating centres in the System, publicity materials should be carefully prepared by DEVSIS-Africa for distribution through such centres as a public-relations service for the System. It is generally better and cheaper to undertake such an activity from the centre than to leave it to individual participating centres.

## CHAPTER VIII

### MONITORING AND EVALUATION OF DEVSIS-AFRICA

- 8.1 Introduction
- 8.2 Monitoring of DEVSIS-Africa
- 8.3 Evaluation of DEVSIS-Africa

## CHAPTER VIII

### MONITORING AND EVALUATION OF DEVSIS-AFRICA

#### 8.1 INTRODUCTION

This Chapter is devoted to analyzing the built-in institutional mechanisms which will permit the monitoring of the System and evaluation of its performance. This set of mechanisms is considered to be a very important component of an information system since it determines its capacity to respond to new information needs.

#### 8.2 MONITORING OF DEVSIS-AFRICA

DEVSIS-Africa, like any other information system, will require a managerial component located at its Co-ordinating Centre and some subsidiary mechanisms that will allow management to get permanent feedback from the participating centres, to receive professional advice from information specialists and development specialists currently engaged in information work in their respective institutions, and to be kept informed of existing information projects in Africa sponsored by international, intergovernmental or private agencies so that harmonization and cross-fertilization of efforts can take place.

##### 8.2.1 Operations of the DEVSIS-Africa Co-ordinating Centre

The four units of the Co-ordinating Centre will perform three main functions:

- i) Planning
- ii) Organization
- iii) Follow-up

Planning relates to the capacity to envisage the future developments of the System, to forecast needs and resources and to determine and schedule the different activities that are to be carried

out. Planning requires a research component addressed to finding solutions to current and future problems that normally go together with the implementation of an information system. Also a programming and budgeting capability is needed as a support for the planning function.

Organization involves a number of activities that are needed to co-ordinate and harmonize resources, in the Co-ordinating Centre and outside, being used during the implementation and operation phases of the System.

Finally, follow-up is a function that groups together the control of the programme and related activities. It permits insight into the ways in which resources are utilized and products obtained in relation to what was originally planned.

### 8.2.2 Subsidiary mechanisms

Three mechanisms for facilitating the operation of the Co-ordinating Centre have been identified:

First, the establishment of formal and informal communication links between the Co-ordinating Centre and the participating input/output centres located at national, sub-regional and regional institutions. To this end, a Technical Advisory Committee composed of representatives from participating centres (information specialists, documentalists, computer analysts and librarians responsible for the different activities at their centres) and management of the Co-ordinating Centre will meet at Technical Seminars to discuss problems encountered in setting up their respective operations, user reaction to the services and products offered, current and planned DEVSIS-Africa developments, etc. Representatives of participating centres would identify for DEVSIS-Africa management research studies that should be undertaken in areas which appear critical for the promotion of the System. They would advise on alternative African institutions having adequate technical capabilities to undertake these and other activities. They would also assess the quality of the norms and methodologies developed for DEVSIS-Africa and their compatibility with international norms and standards.

The first such Technical Seminar is scheduled for Phase I (see Activity 11 in Work Plan), and a second for Phase II.

Second, the establishment of a UN Interagency Committee on Documentation and Information Systems in Africa. This Committee should be set up by the DEVSIS-Africa Coordinating Centre at ECA headquarters and would be made up of representatives from all the regional offices of the UN system in Addis Ababa who are involved in information programmes or in development programmes in which an information component has been explicitly identified. Its main function would be to compile and revise exhaustive inventories of information programmes at the national, sub-regional and regional levels so as to achieve mutual reinforcement and a rational division of work.

Finally, a third mechanism, a Voluntary Agency Bureau would regularly bring together the management of the DEVSIS-Africa Co-ordinating Centre and representatives of non-governmental organizations, private foundations and other related institutions, to attempt the co-ordination of their information programmes in Africa with those of the UN system.

### 8.3 EVALUATION OF DEVSIS-AFRICA

Various evaluative mechanisms need to be explored in order to comprehend, from different angles and at different points in time, the degree to which DEVSIS-Africa is attaining the goals set for it. Evaluation can take place through built-in internal mechanisms or with the help of external independent consultants. These exercises could in turn be undertaken according to short, medium and long-run time horizons. In this section, two of the more basic evaluative mechanisms will be examined since they are considered to be not only useful but also easy to administer.

#### 8.3.1 Entry evaluation

This refers to a methodology designed to assess the general situation of a project at any given point in time. This methodology has been tested successfully in development projects of different natures, particularly ECA technical assistance projects.

It is based on a questionnaire and interview procedure which helps the project manager to identify, in a systematic way, the different variables that need to be known in order to form a comprehensive and detailed picture of the overall project. It allows urgent problems that need to be dealt with during the initial stages of project implementation to be identified, and it has proved useful in assessing what the project situation is likely to be at future points in time, and permits comparison of the actual situation with that existing when the project was first initiated.

#### 8.3.2 Long-term macro evaluation

This is the type of evaluation which is required by the institutions sponsoring the programme. The question here is not to assess a particular product or service, but to find out whether the overall impact of the project in the subject areas or geographical regions it is supposed to cover has been big enough to justify the investment made.

This approach consists of measuring the changes induced by the implementation of the System in previously existing information services. If those services are discontinued, reoriented to other areas or absorbed by the newly emerging System, that would indicate the overall impact of the System. In other words, the technique

"...seeks, not to make a direct judgement of the service, but to detect decisions that responsible people have made and that reveal their judgement of service..."(1)

It is clear that this technique requires direct and indirect information of a nature which is unlikely to be readily available. It is essential also that steps be taken to try to identify all the institutional changes induced by the emergence of the System. This exercise requires a high degree of impartiality and can only be undertaken by qualified and independant external experts after the System has been in operation for some time, preferably only after at least three years from inception, so as to have a long enough time perspective a to permit observation of the induced changes.

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(1) DEVSIS Study Team, op.cit., p. 109.

## WORK PLAN

### Contents

1. Introduction
  2. Objectives
  3. Implementation of the System
    - Phase I (1979-1981)
    - Phase II (1982-1984)
    - Phase III (1985-1989)
  4. Organizational structure of the Pan-African information system and DEVSIS-Africa
  5. Preparation of a pilot issue of DEVINDEX-Africa
  6. Budget
  7. Description of outputs
  8. Timetable (Phase I)
- Annexes: Post descriptions

## WORK PLAN

### 1. INTRODUCTION

A Pan-African information system handling both numerical (statistical) and non-numerical (bibliographical) information will be created under the aegis of ECA headquartered in Addis Ababa. As presently conceived the final structure of the system would be a co-ordinated network of collaborating national and sub-regional information systems or participating centres within the African continent. It is anticipated that with the emergence of various mission and discipline-oriented systems the Pan-African information system will be multidisciplinary in scope and will establish effective linkages with international information networks and data bases situated outside Africa, thus enabling it to serve a large part of the total information needs of the continent. One of the main components of the Pan-African information system will be a development information system called DEVSIS-Africa\*. Concerned primarily with bibliographic or non-numerical information relating to social and economic development, DEVSIS-Africa will be a co-operative and decentralized system designed to serve the increasing information needs in support of development activities in Africa. DEVSIS-Africa will be based on the guidelines, principles and recommendations established for the international system DEVSIS.

### 2. OBJECTIVES

The major objectives of DEVSIS-Africa may be summarized as follows:

1. Establishment of a System which would ensure access to both published and unpublished documents produced in Africa on questions relating to economic and social development.

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\*DEVSIS is an acronym for "Development Sciences Information System". It refers to an international information system for the development sciences, proposed by an international Study Team, which took into account the information needs of policy-makers, planners, managers, researchers, financiers, communicators and others involved in social and economic development activities. While DEVSIS is a proposal for a world-wide information system, DEVSIS-Africa will be concerned, as earlier stated, with African development information.

2. Provision of services to organizations, institutions, and individuals in African countries working on economic and social problems as a support to overall social and economic development of the continent.
3. Creation of a Co-ordinating Centre and an African data base at ECA headquarters containing references to information on African economic and social development. Exploitation of the data base would provide services to development planners and implementers in the form of printed indexes, retrospective bibliographies and selective dissemination of information services and, upon request, an expeditious delivery of photocopies or microfiches of documents contained in the data base.
4. Provision of assistance to member States of ECA to strengthen their national information infrastructures so that they would be able to participate fully in the System by contributing to it as well as deriving benefits from it.
5. Support for information activities of specialized regional and sub-regional organizations working in the development field in Africa so as to facilitate their involvement as participating centres in the System.
6. Establishment of linkages with international information networks, data bases and information and documentation units situated outside Africa as additional sources of development information.
7. Establishment of technical procedures to ensure the System's compatibility with existing national and international information systems so as to facilitate information transfer and exchange between them.

### 3. IMPLEMENTATION OF THE SYSTEM

It is recognized that in establishing DEVSIS-Africa, a number of actions related to the creation of a Pan-African information system will need to be effected concurrently. They will include those that need to be initiated at ECA as well as others at regional, sub-regional and national levels, such as promoting the collaboration and participation of specialized regional and sub-regional organizations, and developing, through technical and financial assistance and manpower training, national capabilities in the handling of information.

Although responsibility for the development of a Pan-African information system should rest with ECA, it should be emphasized that this must be done with the closest collaboration of other organizations assisting information systems development in Africa. The conceptual framework for co-ordinated information systems development elaborated in the UNISIST programme of Unesco, which has been endorsed by African member governments, should provide the background for its organization. Further, many United Nations

agencies, particularly Unesco, UNEP, FAO, UNIDO and ITC are assisting national and regional information infrastructure development at the sectoral level. While overlap and duplication are undesirable and costly and should be avoided, it should be recognized that a Pan-African information system could provide a framework for multidisciplinary information transfer, and the sectoral information system - DEVSIS-Africa - with which we are primarily concerned in this Work Plan.

The DEVSIS-Africa project will be implemented in three phases:

- Phase I     - Starting 1 September 1979 and  
              continuing until 31 December 1981
- Phase II    - 1 January 1982 to 31 December 1984
- Phase III   - 1985-1989

#### PHASE I

This could be considered as the preparatory and experimental phase of the project and is scheduled for a period of two years and four months, from 1 September 1979 to 31 December 1981.

#### OBJECTIVES

The primary objectives of this phase of the project are:

- (a)     The building up of the basic infrastructure of DEVSIS-Africa at ECA Headquarters through the restructuring of some present facilities at ECA and the establishment of some new units, recruitment of staff and acquisition of equipment. DEVSIS-Africa will require the establishment of a Computerized Documentation Section, a Computer Operations Section, and a Reprographic and Printing Unit. Qualified staff to man these units and the equipment necessary to carry out the operations will be required.
- (b)     The Library of ECA, which will be included in the System, will be strengthened to play the dual role of providing services to the ECA Secretariat and to users in ECA member States. This will be done through an improved policy for acquiring African periodicals related to economic and social development and the preparation of inputs to DEVSIS-Africa based on articles contained in periodicals. It should be noted that the ECA Library already publishes numerous bibliographies indexes based on the contents of African periodicals (see Chapter IV). The additional responsibilities foreseen will involve primarily, selection of articles according to the defined scope of DEVSIS-Africa, from journals produced by a number of sectors, and the preparation of abstracts. A certain consistency in selection, abstracting and indexing would thus

be assured.

However, when national infrastructures are sufficiently developed to take on these responsibilities, and some may be at a level to do so immediately, the selection, abstracting and indexing of articles in African journals could become a national responsibility with the products being transferred to DEVSIS-Africa for input into the System.

- (c) ECA houses two important sources of relevant documentation, namely the African Clearing House on Population and the Communication and Information Unit (Clearing House) of the African Training and Research Centre for Women. These two Clearing Houses are expected to receive substantial grants for improving their documentation and information facilities and it is crucial that technical co-ordination be established between them and DEVSIS-Africa. The resulting compatibility of the information resources of DEVSIS-Africa with these two programmes will be of mutual benefit and will help to eliminate unnecessary and wasteful duplication.
- (d) The production of a pilot issue of an index entitled "DEVINDEX-Africa" comprising about 1000 processed documents contained in the DEVSIS-Africa data base and processed for input by as many African member States as possible, and the establishment of facilities for obtaining copies of these documents if requested by users.
- (e) The production of directories, lists and other reference documents on subjects relating to Africa. These will include lists of libraries and documentation centres housing information relating to economic and social development, lists of economic and social research personnel, lists of ongoing research activities in economic and social development fields, lists of specialists in the library and information professions in Africa, etc. Work will start in 1980 on the preparation of these materials and will be carried out under contract, if necessary. Regular updating of existing lists will also be undertaken in collaboration with the institutions that produced them originally.
- (f) Strengthening the manpower available for information activities both in ECA and in member States, through appropriately designed training courses. These courses will initially be directed towards training indexers and abstractors for DEVSIS-Africa Co-ordinating Centre and for its participating centres. Courses for the training of personnel for computer centres and for reprographic units in member States are envisaged for the second phase of the project. Another important area of training is that of the training of users of information which will be promoted at sub-regional levels, using guidelines established by international organizations, e.g. Unesco.

- (g) Promoting the development and use of the System's services at national and sub-regional levels. Technical assistance for the design of appropriate national systems is available from international organizations and it is feasible that ECA would also play a role in this operation. It is also recognized that the experience of ECA in setting up DEVSIS-Africa and in the production of its various outputs would provide useful guidelines for its member States wishing to set up similar systems at the national level.

Activities -----	Outputs -----	Starting Date -----	Completion Date -----
PHASE I			
1. LIBRARY ACTIVITIES			
Acquisition of a comprehensive collection of socio-economic journals produced in Africa and the indexing and abstracting of selected articles.	Worksheets for input into data base	Sept.1979	continuing
Provision of photocopying services, microfiche services to users from periodicals and books will be provided when the microfiche laboratory has been established in March 1980.	User services	Sept.1979	continuing
2. ESTABLISHMENT OF COMPUTERIZED DOCUMENTATION SECTION			
Collection and storage of documents analyzed for input into the System.	Support services for other units of the System.	Sept.1979	continuing
Provision of photocopying services. Microfiche services to users from document collection will be provided when microfiche laboratory has been established in March 1980.	User services	Sept.1979	continuing

Preparation of indexing guidelines and procedures.	Manual containing guidelines for indexing input into System	Sept.1979	Oct.1979
Indexing and abstracting of documents received by DEVSIS-Africa and preparation of input worksheets.	Completed worksheets for computer input and processing	Sept.1979	continuing
Maintenance of thesaurus and other indexing tools (see Chapter VI).	Adapted techniques and indexing tools in accordance with the particular needs of the System	Sept.1979	continuing
Preparation of directories of development information units, development specialists, institutions and ongoing research.	Printed lists which could be periodically updated	1980	continuing
3. COMPUTER OPERATIONS SECTION			
Input of processed information based on worksheets. (At IDRC or Unesco until Section is established).	Creation of data base files	Nov.1979	continuing
Processing of data base to produce first DEVINDEX-Africa tape in photo-composition format.	Tape input for printing operation	June 1980	July 1980
Pilot SDI service to a selected number of users at ECA/OAU headquarters.	Computer print-out services to users at ECA/OAU	Sept.1980	continuing

#### 4. REPROGRAPHIC AND PRINTING UNIT

Establishment of a  
microfiche laboratory

Production of  
microfiche  
copies of  
documents

Mar. 1980 continuing

Preparation of microfiche  
copies of document

Preparation of  
copies to be  
sent to users  
on requests  
received by  
Computerized  
Documentation  
Section

Establishment of printing  
unit - ordering of  
equipment

All  
publications of  
the System  
e.g. DEVINDEX  
-Africa,  
bibliographies,  
lists,  
directories,  
manuals, from  
1982 onwards

May 1981 continuing

#### 5. ESTABLISHMENT OF DEVSIS-AFRICA CO-ORDINATING CENTRE

Providing responsive  
services from the System  
using resources available  
in the ICA Library,  
Computerized Documentation  
Section and the DEVSIS-  
Africa data base.

Documents,  
photocopies,  
microfiche

June 1980 continuing

6. Negotiating with member States of ECA following initial contact in June 1979 for the establishment of national participating centres for collection, processing and transferring to DEVSIS-Africa of information and documents produced in their respective countries.	Comprehensive coverage by DEVSIS-Africa data base of relevant materials produced in member States	Sept.1979	continuing
7. Negotiating with regional and sub-regional organizations following initial contact in June 1979 for the provision of processed input to the System.	- do -	Sept.1979	continuing
8. Organization, in collaboration with ILCA, Unesco, IDRC of two training courses at ECA on abstracting and indexing for newly recruited staff of DEVSIS-Africa, ECA-based Clearing Houses and, possibly, some national participating centres (10 persons in each course: 3 weeks).	Trained personnel for processing information at ECA and in member States	Sept.1979 Jan.1980	Oct.1979 Feb.1980
9. Organization of training courses at sub-regional level by MULPOCs, with the assistance of the newly trained staff based at the Co-ordinating Centre of DEVSIS-Africa, Unesco, IDRC and ILCA, for training staff from national participating centres in indexing and abstracting. 3 courses in 1980, 4 in 1981: one in each MULPOC region (10 persons in each course; 3 weeks/course).	Trained personnel for processing information in member States	3 in 1980 4 in 1981	1980 1981
10. Establishing links with the Clearing Houses on Population and the African Training and Research Centre for Women located at ECA for the purpose of standardizing techniques	Additional input to data base of DEVSIS-Africa	Sept.1979	continuing

and ensuring compatibility of their own information systems with that of DEVSIS-Africa.

11. Organization of first technical seminar of DEVSIS-Africa Technical Advisory Committee i.e. representatives of regional, sub-regional and national participating centres (Chap. VIII, 3.2.2) to discuss participation in DEVSIS-Africa and to organize input to the pilot issue of "DEVINDEX-Africa" (60 participants; 5 days; languages: English, French).

Promotion of national and sub-regional support to the System

Jan.1980

12. Organization of seminars for the training of users of social and economic information in collaboration with Unesco, IDRC, etc. At least one seminar will be held in each MULPOC region and will be organized by the respective MULPOCs. 3 seminars in 1980, 4 in 1981 (15 persons in each seminar, 3 days/seminar).

User training to promote maximum utilization of the services of DEVSIS-Africa

3 in 1980  
4 in 1981

1980  
1981

13. Organization of a training programme for the Systems Analyst/Programmer and Reviser on the staff of DEVSIS-Africa for training in systems software and documentation processing respectively. At an appropriate institution(s) abroad.

Trained personnel for computerized operations of DEVSIS-Africa

Oct/Nov 1979  
(Reviser)  
Jan.1980  
(Systems Analyst)

4 weeks each

## PHASE II (1982-1984)

A number of activities initiated in Phase I have been described in the schedule as continuing activities. During 1981/1983, these activities will be expanded, where necessary, and oriented towards meeting the needs of an enlarged user community, specifically, African development planners, researchers and implementers outside the ECA Secretariat.

The main thrust of this phase of the project will be to promote active participation at all levels in the development of the System. National participating centres will be assisted in:

1. Establishing mechanisms for collecting information in the form of documents, reports, studies, data (published and unpublished) towards the creation of national data bases on development information.
2. Indexing, abstracting and organizing material to be made available to users in the country.
3. Establishing microfiche collections of the documents to be able to respond to requests from users.
4. Transferring to DEVSIS-Africa, at regular intervals, information in processed form from the national data base which the member country wishes to place at the disposal of the other African countries through the System.

As far as the regional and sub-regional participating centres are concerned, similar assistance will be provided for collecting, processing and preparing microfiche of the documents produced by these centres and of any other information materials of a regional or sub-regional nature produced in their particular specialized fields.

The System will also promote the establishment of a mechanism, at national level, for capturing documents relating to international assistance programmes. These usually appear in the form of feasibility studies, mission reports, project proposals, evaluation reports, surveys, etc. and are produced by a multitude of United Nations agencies and other international organizations and foundations. The local UN Resident Representative's Office would normally be in possession of many of these documents, particularly the UN and UN Agency-sponsored studies, as it would be a depository for all such country reports. Most of these, however, require declassification by governments before being made available for general distribution.

Studies will be made during this phase for the possible decentralization of the System at sub-regional levels. In addition to the presence of appropriate sub-regional and national infrastructures, decentralization of the System will require the availability of not only the requisite manpower, but also the necessary computer technology and the possibility of utilizing a sophisticated telecommunications network to enable transfer of information between the sub-regional nodes and between these nodes and member countries. It is therefore necessary to link decentralization with national and sub-regional infrastructure development, including manpower development, the introduction of computer technology and the development of telecommunications networks in Africa.

During this phase a second seminar of the DEVSIS-Africa Technical Advisory Committee will follow the lines described in Chapter VIII. Participating centres will thus have a further opportunity to discuss with the Co-ordinating Centre the future development of the System.

During this phase also, it is expected that DEVINDEX-Africa will appear as a quarterly index in printed form and will be produced by the Reprographic and Printing Unit of DEVSIS-Africa. Member States that have the necessary computer facilities may obtain the DEVSIS-Africa magnetic tapes from the Co-ordinating Centre, for retrospective searching or for on-line retrieval. Assistance will be provided by DEVSIS-Africa Co-ordinating Centre towards the installation of the software for these purposes and for the training of personnel in the computer centres and reprographic units of member States.

With regard to the provision of services to the ECA Secretariat and OAU staff members, a special effort will be made to service the various divisions in these two organizations by providing on-line access to the System through the installation of terminals in each division. The Computerized Documentation Section will also provide services to staff members of ECA and OAU in the form of photocopies or microfiche of any documents requested by them. A regular SDI service based on profiles of users at the ECA and OAU will also be established and retrospective searches will be carried out on request.

DEVSIS-Africa will establish linkages with information systems abroad for the purpose of:

- (a) identifying and acquiring materials related to Africa produced outside the continent; and
- (b) identifying information relevant to the needs of its African users and requested by them, but produced in the course of development activities and research carried out elsewhere.

This linkage will be in the form of arrangements with (i) various agencies of the UN family (e.g. FAO, ILO, Unesco, UN-CEPAL, UN-DIESA, UNDP/CORE, UNEP, UNIDO) maintaining specialized data bases or referral services, (ii) IRS (European Space Agency Information Centre, Frascati), Lockheed or similar organizations holding multiple data bases, and (iii) well-known development centres in Europe, Asia, North America and Latin America. The possibility of linkage using a dedicated line could be examined, if and when the volume of usage warrants it.

Details pertaining to the staff requirements of DEVSIS-Africa Coordinating Centre for Phase II are given below.

### PHASE III (1985-1989)

It could be assumed that with the completion of Phase II, the building up of the national, sub-regional and regional infrastructures to permit active participation in DEVSIS-Africa would have been more-or-less completed. Some progress would have been made towards decentralization of the data base or alternatively for developing a capacity at DEVSIS-Africa national and sub-regional levels to process the magnetic tapes produced at DEVSIS-Africa for information retrieval. In such circumstances, the principal objectives of Phase III would be:

- (1) To pursue the trend towards a network arrangement, thus farming out the operational activities to selected regional and sub-regional institutions, with DEVSIS-Africa taking on the co-ordinating function as its principal responsibility. As mentioned earlier, this rests heavily on the assumption that the telecommunication support then available will permit the establishment of a decentralized network enabling the rapid exchange of information between the sub-regions. The application of modern computer technology at these sub-regional nodes would also be a necessary pre-requisite.
- (2) To further establish and consolidate links with international information systems, data bases, information centres, etc. outside Africa for information exchange.
- (3) To provide technical assistance to participating centres towards the introduction of new techniques in information management.
- (4) To continue to provide short-term training programmes for sub-professionals and professionals in the field of information and to users of information.
- (5) To upgrade in-house information services through expansion of on-line information access capability and document delivery services.
- (6) To collaborate with the United Nations and its specialized agencies, in particular FAO, ILO, UN-DIESA, Unesco and UNIDO, to share experience in information system development and to coordinate activities so as to avoid unnecessary duplication.
- (7) To evaluate at regular intervals the programmes and services of the System so as to determine the usefulness as well as the efficiency of the System.

4. ORGANIZATIONAL STRUCTURE OF THE PAN-AFRICAN INFORMATION SYSTEM AND DEVSIS-AFRICA

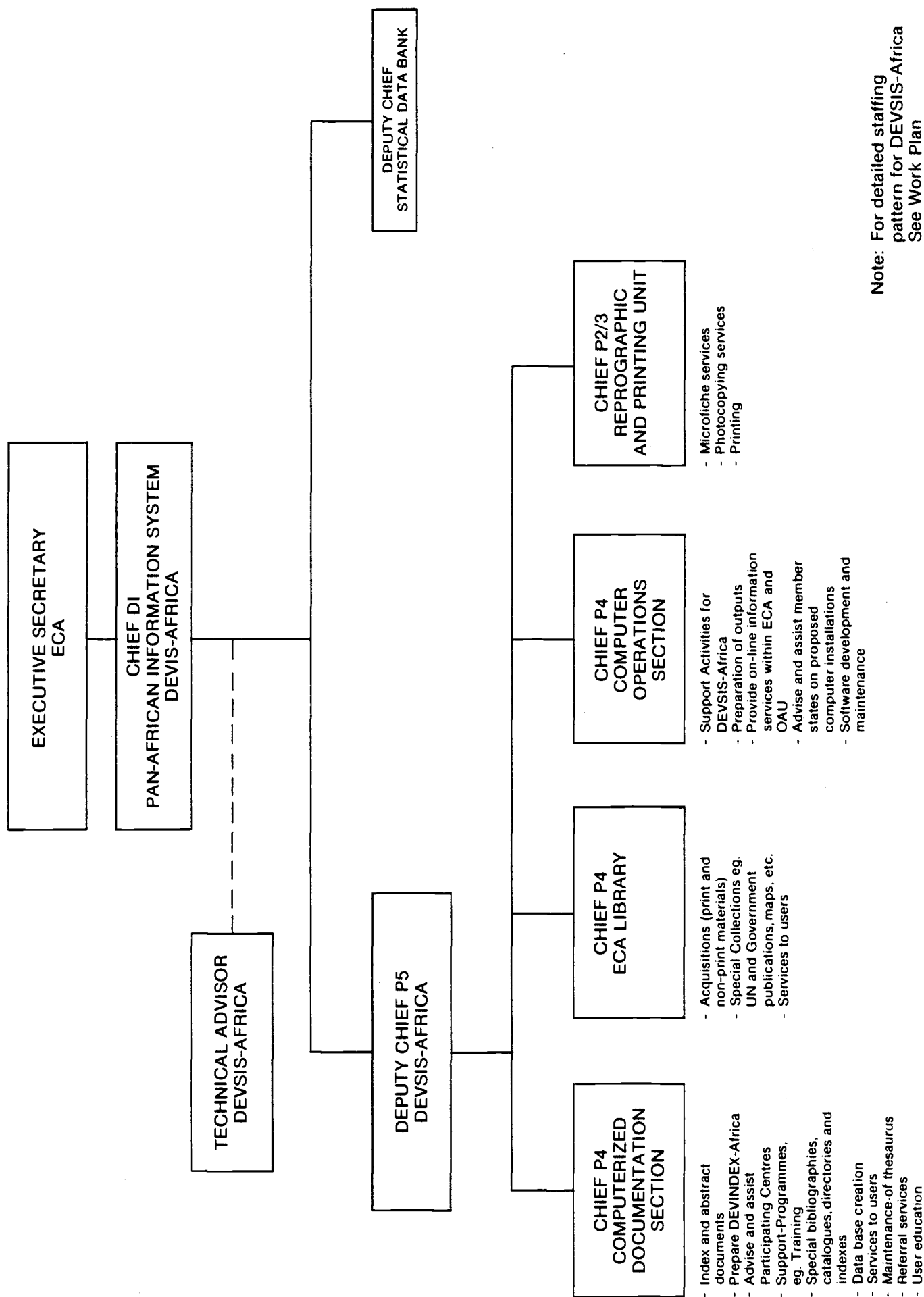
I. The Pan-African Information System and its DEVSIS-Africa component will be administered by a Co-ordinating Centre consisting of:

- Chief (D1), assisted by two GS (8 and 7)
- Deputy Chief (P5), assisted by one GS7

Four technical units, structured and staffed on the following lines, will implement DEVSIS-Africa.

COMPUTERIZED DOCUMENTATION SECTION. This Section will be responsible for receiving, indexing and abstracting documents sent to the DEVSIS-Africa Co-ordinating Centre by national participating centres, as well as documents produced by ECA and regional and sub-regional organizations. Among the functions of this Section are: key-punching and other input techniques, maintenance of the thesaurus, programming and systems development. (see Organizational Chart)

# PAN-AFRICAN INFORMATION SYSTEM DEVISIS-AFRICA ORGANIZATIONAL CHART



Note: For detailed staffing pattern for DEVISIS-Africa See Work Plan

It is estimated that during the period 1979-1981, an average of 5,000 documents will be received per year (approximately 20-25 percent of these being documents produced by the ECA itself on behalf of its member States), while for the period 1982-1984, the average will be between 8-10,000 per year. The staff proposed for this Section is based on these assumptions:

- Chief of Section (P4)
- One Reviser (P3)
- One Systems Development Officer (P3)
- Two Key-boarders (GS8)
- One Secretary (GS7)

For the period 1982-1984, the following additional staff will be required:

- Six Indexers (GS8)

COMPUTER OPERATIONS SECTION. This Section will service the computer centre which will be set up to support the activities of DEVSIS-Africa and to provide the outputs which have been described in another part of this Work Plan. In addition, the Computer Operations Section staff will participate in the proposed development of the network commencing with the provision of on-line information facilities to the substantive Divisions of ECA and OAU and the decentralization plan referred to in Phase III of the workplan. They will also advise member States of ECA on proposed computer installations and provide any software support that is available.

The suggested staff for this Section is as follows:

- Chief of Section (P4)
- Two Systems Analysts/Programmers (P3)
- Two Operators (GS8)
- One Secretary (GS7)

It is expected that with the increases in the workload in Phase II of the project, the following additional staff will be required:

- Two Operators (GS8)

ECA LIBRARY. At present, the Library has the following personnel:

- Chief Librarian (P4)
- Librarian (P3)
- 18 GS at various levels

It is considered that the staff now available will be adequate, perhaps with further training which has been envisaged in the Work Plan, to take on the additional responsibilities connected with the incorporation of the Library into DEVSIS-Africa.

REPROGRAPHIC AND PRINTING UNIT. During Phase I, it is proposed to concentrate on the establishment of reprographic facilities needed to support the responsive services of the System, rather than to take on printing activities.

This will involve the installation and operation of microfiche equipment. Photocopying facilities will also be maintained by this Unit.

During the second phase it is expected that a modern printing unit will be installed which will be able to cope with the many demands for printed materials resulting from the activities of the System. This will include the preparation of the quarterly DEVINDEX-Africa, the directories and lists which are included in the section entitled "Outputs of the System" and other applications. Although a printing facility is already functioning in ECA, it is realized that the specialized nature of the outputs of the System require sophisticated equipment which is not at present available. Moreover, efficient functioning of an information system is judged by the rapidity with which information can be passed on to users, a condition that can be assured only if a special unit for this purpose is established. This recommendation is made primarily because the present printing facilities at ECA are too overloaded to meet even its present day requirements thereby causing tremendous delays in publication.

The Reprographic and Printing Unit will function during Phase I with the following staff:

- Cameraman (GS9)
- Operator/Processor (GS8)
- Secretary (GS7)

In Phase II, it is expected that the following additional staff will be required:

- Chief of Section (P2/P3)
- Operator/Processor (G38)
- Printers/Composers (G38)

## ESTABLISHMENT OF NATIONAL PARTICIPATING CENTRES

DEVSIS-Africa will have responsibility for promoting the establishment of national participating centres and for providing training in those areas of information processing which are essential for the successful operation of the System. In some cases, it may be necessary to provide consultant services and advise on the purchasing of basic equipment necessary for the organization and operation of the participating centres. Training programmes will take into account the following relevant areas of information processing: bibliographic descriptions, abstracting and indexing, reprographic techniques (particularly microfiche), manipulation of DEVSIS-Africa outputs to meet user needs, the application of alternative computer technologies to bibliographic work, etc.

In June 1979 the Executive Secretary of ECA will invite Ministries of Planning of member States of ECA to designate a national participating centre for DEVSIS-Africa and to participate in the Technical Seminar scheduled for January 1980 to discuss participation in the DEVSIS-Africa programme. The letter will suggest the following guidelines for the selection of the participating centres, based on the DEVSIS Study Team Report: A participating centre could be built on any one of a number of different candidate organizations, existing library and documentation centres, central banks, planning ministries, universities, etc. DEVSIS-Africa will provide ECA member States with guidance, if requested, on the selection and organization of the participating centres. Whichever organization is selected should have the support of its government to facilitate the collection of published and unpublished documents; it should have assured sources of finance; it should have the technological capability to process and exploit the information products of DEVSIS-Africa and it should be willing to develop close links at the national and international levels. Preferably, the organization should already have established close links with users of social and economic information; preferably, it should also have on its staff a specialist in the social sciences.

The identification of the participating centre should be made by the government on the advice of whatever organization is primarily responsible for development policy-making and planning and in consultation with the unit responsible for information policy (national focal point).

When nominated, the participating centres will establish close links with the DEVSIS-Africa Co-ordinating Centre. In the first stage, the national participating centre will provide the documents for the pilot edition of DEVINDEX-Africa and will avail itself of the training opportunities provided by DEVSIS-Africa. With the growth of the national participating centre and the development of the services to be offered, the participating centre will gradually take on the information processing function, thus, providing finished input into the System. It would also be the national centre for dissemination of the products of the System, initially of the printed indexes but later using available computer facilities for searching the DEVSIS-Africa data base at the national level and providing relevant services to its users.

#### REGIONAL AND SUB-REGIONAL PARTICIPATING CENTRES

In June 1979, the Executive Secretary of ECA will write to regional and sub-regional organizations which themselves produce information and documents within the scope of the System, inviting those that are in a position to process this material and, where possible, provide input as well as the documents to DEVSIS-Africa, to serve as participating centres for the System. Some of the regional or sub-regional organizations which have qualified staff to do this work, could assist other regional and sub-regional organizations that do not at present have adequately trained personnel but are engaged in similar programmes by undertaking to process on their behalf the materials produced by the latter.

It should also be noted that some sub-regional and regional participating centres could be requested by some African countries to perform these functions on their behalf until such time as these countries develop their own national capabilities to handle such information.

#### 5. PREPARATION OF PILOT ISSUE OF DEVINDEX-AFRICA

##### PREPARATORY WORK

This involves the preparation of the input sheets, manuals and authority lists. In view of the fact that several pilot editions of DEVINDEX have already appeared in print using manual and mechanized techniques, e.g. Canada, Germany, Pakistan, Philippines, it would appear that only slight modifications would be necessary to adapt them to the particular requirements of DEVINDEX-Africa. It is assumed that for the pilot edition, the "OED Macrothesaurus" appropriately modified to suit the African situation and needs, would be used.

The preparatory work should be carried out by a consultant under a two-month contract. (Consultant services: 2 m/m; Sept./Oct. 1979).

In the meantime, steps will be taken to modify the Macrothesaurus so as to produce a DEVSIS-Africa thesaurus to be used in the indexing of input to DEVSIS-Africa. Consultant assistance for this work has already been requested from Unesco. (Consultant services: 3 m/m; Sept.-Nov. 1979).

A study will be carried out to assess the organizational and technical problems, the thesaurus, software, and hardware involved in the utilization of Arabic as the third working language of DEVSIS-Africa. This will be done in close collaboration with the Industrial Development Centre for the Arab States (IDCAS), Cairo, Institut d'Arabisation, Rabat, and other institutions already engaged in studying this problem. (Consultant services: 3 m/m; Sept./Nov. 1979).

#### DESCRIPTION OF OPERATIONS

The pilot issue of DEVINDEX-Africa will include references to development information materials produced in as many African countries as possible.

It is suggested that the following procedure be adopted:

- |            |   |
|------------|---|
| June 1979  | The Executive Secretary of ECA will write to the Ministry of Planning of all member States of ECA and to regional and sub-regional organizations inviting them to send to DEVSIS-Africa a selection of up to 25 documents, published and unpublished, relating to social and economic development, for possible inclusion in the System. The letter will give a summary of the scope of the System and will request that the selected documents should have been prepared not earlier than two years before the date of the letter. |
| July 1979  | ECA will commence recruitment of the staff of the Computerized Documentation Section (one P3, two P2, one GS) to be ready to take up appointment on 1 September 1979.   |
| Sept. 1979 | A training course for the staff of the Computerized Documentation Section and others will be organized at ECA with the assistance of Unesco, ILCA and IDRC. The three-week course will provide instruction on abstracting and indexing techniques for input to DEVSIS-Africa.   |

Aug./Oct. 1979	Documents received from member States and from regional and sub-regional organizations in response to the Executive Secretary's letter will be one source of information. Other sources will be ECA documents, articles from African journals, documents from the African Clearing House on Population and African Training and Research Centre for women and a selection from the collections of the ECA's Divisional Reference Units. The material collected will be examined and about 1,000 documents will be selected for inclusion in the pilot issue of DEVINDEX-Africa.												
Oct.1979/ April 1980	The documents will be indexed by the staff of the Computerized Documentation Section and input sheets prepared. These will be sent in batches to a computer centre (IDRC, UN-DIESA, Unesco or UN-CEPAL/CLADES) for entry into a computer and the creation of a base, as well as checking of output. The file will thus be built gradually until April 1980. The procedure will be continued only until such time as the Computer Operations Section of DEVSIS-Africa becomes operational.												
May 1980	When the file i.e. data base is ready, the selected computer centre will prepare a tape for photocomposition from which an index will be made.												
Aug.1980	<p>The pilot issue of DEVINDEX-Africa could be expected in August 1980.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 70%;">Input costs at \$10/title x 1,000 titles</td> <td style="text-align: right;">US \$ 10,000</td> </tr> <tr> <td>Printing cost (2,000 copies)</td> <td style="text-align: right;">15,000</td> </tr> <tr> <td>Postage, Packaging and Transport</td> <td style="text-align: right;">5,000</td> </tr> <tr> <td></td> <td style="text-align: right;">-----</td> </tr> <tr> <td></td> <td style="text-align: right;">US \$ 30,000</td> </tr> <tr> <td></td> <td style="text-align: right;">-----</td> </tr> </table>	Input costs at \$10/title x 1,000 titles	US \$ 10,000	Printing cost (2,000 copies)	15,000	Postage, Packaging and Transport	5,000		-----		US \$ 30,000		-----
Input costs at \$10/title x 1,000 titles	US \$ 10,000												
Printing cost (2,000 copies)	15,000												
Postage, Packaging and Transport	5,000												
	-----												
	US \$ 30,000												
	-----												

6. BUDGET

PHASE I

I. EXPERT AND CONSULTANT POSTS

	Sept./Dec.1979 -----	1980 -----	1981 -----
	US\$		
1. Technical Adviser (see Annex to Work Plan for Post Description) 24 m/m at US \$62,000/year	20,660	62,000	41,340
2. Consultant to undertake preparatory work (Sept./Oct.1979) on input sheets, manuals, authority lists etc. Fees (60 days x US \$100/day) 6,000			
Per Diem (60 days x US \$50/day) 3,000			
Travel US \$1,500 ----- 10,500	10,500		
3. Consultant to modify OECD Macrothesaurus to African needs (Sept./Oct.1979)  Fees (90 days x US \$100/day) US \$9,000  Per Diem (90 days x US \$50/day) 4,500  Travel 1,500 ----- US \$15,000			
	15,000		

4. Consultant to assess the organizational and technical problems (thesaurus, hardware, software) for the introduction/utilization of Arabic (Sept./Nov.1979)

Fees (90 days x US \$100/day) US \$ 9,000

Per Diem (90 days x US \$50/day) 4,500

Travel 1,500

US \$15,000

15,000

TOTAL

US \$61,160

62,000

41,340

## II. PAN AFRICAN INFORMATION SYSTEM AND DEVSIS-AFRICA STAFF POSTS

CENTRAL CO-ORDINATING UNIT	Sept./Dec.1979	1980	1981
Chief D1	US\$ 20,660	62,000	62,000
Deputy Chief P5	17,550	52,600	52,600
3 Secretaries (one GS8; two GS7)GS7/8	6,700	19,100	19,100

### COMPUTERIZED DOCUMENTATION SECTION

Chief P4		44,300	44,300
Reviser (one) P3	11,850	35,600	35,600
Systems Development Officer (one) P3		35,600	35,600
Senior Indexers/Abstractors (two)P2	18,900	36,800	36,800
Keyboarders (two) GS		13,400	13,400
Secretary (one) GS	2,250	6,700	6,700

# COMPUTER OPERATIONS SECTION

Chief	P4	44,300	44,300
Systems Analyst/ Programmer (two)	P3	71,200	71,200
Operators (two)	GS8	13,400	13,400
Secretary (one)	GS7	5,700	6,700

# REPROGRAPHIC AND PRINTING UNIT

Camerman (one)	GS9	6,700	6,700
Operator/Processor (one)	GS8	6,700	6,700
Secretary (one)	GS7	5,700	6,700
SUB TOTAL	US\$ 77,910	\$461,800	\$461,800

# ECA LIBRARY (EXISTING STAFF POSTS)

	Sept./Dec.1979	1980	1981	
Chief	P4	US \$ 14,750	44,300	44,300
Librarian (one)	P3	11,850	35,600	35,600
18 General Service Staff		40,200	120,600	120,600
SUB TOTAL	US \$ 66,800	\$200,500	200,500	
TOTAL	US \$144,710	\$662,300	662,300	

# III. TRAINING PROGRAMME

	1979	1980	1981
(1) Two training courses (Sept./79 and Jan./80) in abstracting and indexing for newly recruited DEVSIIS-Africa staff (ECA) and, possibly, staff of some participating centres. (10 participants per course x 3 weeks/course).			

For each course:

Consultant (0.75 m/m)

Fee	US \$ 1,600
Per Diem	630
Misc.	250
Travel	2,000
	-----
	US \$ 4,480
	-----

Resource

materials	1,520
	-----

TOTAL	US \$ 6,000	6,000	6,000
	-----		

(Participants will meet their own travel and per diem costs)

- (2) Seven training courses (3 in 1980 and 4 in 1981) in abstracting and indexing for training staff from national, sub-regional and regional participating centres (MULPOCs). (Ten participants per course x 3 weeks/course).

For each course:

Consultant

fees, travel and per diem	US \$ 4,000
---------------------------	-------------

Staff travel and per diem	1,750
---------------------------	-------

Resource materials	750
	-----

US \$ 6,500	-----
-------------	-------

12,500	26,000
--------	--------

(Participants will meet their own travel and per diem costs)

- (3) One technical seminar for representatives of national and other participating centres to discuss participation in DEVSIS-Africa (ECA). (60 participants x 5 days).

Working papers, organizational costs, hospitality, etc. US \$ 1,500

Interpretation E/F 1,500

Travel (60 participants x \$400) 24,000

Per Diem (60 participants x \$30/day x 7 days) 12,600

US \$39,600

39,600

- (4) Seven seminars (3 in 1980 and 4 in 1981) for training of users (MULPOCs). Fifteen participants/seminar x 3 days).

#### Consultant

Fees and per diem US \$ 3,000

Staff travel and per diem 1,750

Resource materials 750

US \$ 5,500

16,500 22,000

(Participants will meet their own travel and per diem costs)

- (5) Training Abroad (see Activity 13 under Phase 1 above)

#### (a) Reviser

Travel US \$ 2,000

Per Diem (30 days x \$75/day) 2,250

US \$ 4,250

4,250

(b) Systems Analyst/  
Programmer

Travel US \$ 2,000

Per Diem  
(30 days x \$75/  
day) 2,250

US \$ 4,250

TOTAL

US \$10,250

4,250

85,850

48,000

IV. EQUIPMENT AND PUBLICATIONS

	1979	1980	1981
	----	----	----
1. Library			
(a) Purchase of periodicals to support DEVSIS-Africa activities (to supplement provisions now available) US \$ 2,000		10,000	10,000
(b) Processing costs: materials 500		1,500	1,500
2. Computerized Documentation Section			
(a) Input, printing, dissemination etc. of DEVINDEX-Africa (Pilot issue in 1980; four quarterly issues in 1981).		30,000	120,000
(b) Other processing costs: materials 500		1,500	1,500
(c) Documentation/Reference materials 500		3,500	2,500

### 3. Computer Operations Section

(a) Cost of mini-computer and peripherals (terminals, upper and lower case line printer, tape drive, etc.)	300,000	30,000
(b) Maintenance contract (\$3000/mo; 6 mos. in 1980, 12 mos. in 1981)	18,000	36,000
(c) Materials	5,000	5,000
(d) Documentation	2,000	2,000

### 4. Reprographic and Printing Unit

(a) Microfiche equipment Camera, Developer, Microfiche, Preparation Equipment, Microfiche Duplicator, Reader/Printer, etc.	60,000	
(b) Photocopying equipment 1 large machine 1 small machine	2,000 10,000	
(c) Printing equipment Printer, Composer, Stitching Machine, Platemaker, Masticot Headliner, Paperfolding Machine, etc.		80,000
(d) Supplies: microfilm photocopying/printing paper	1,000 ----- -----	5,000 ----- -----
TOTAL	US \$ 6,500 -----	446,500 ----- 293,500 -----

### V. ASSISTANCE TO NATIONAL AND OTHER PARTICIPATING CENTRES

1. Grants for establishment strengthening of participating centres	US \$	10,000	15,000
2. Consultant services		15,000	15,000

3. Staff Travel	10,000	10,000
	-----	-----
TOTAL US \$	35,000	40,000
	-----	-----

# VI. MISCELLANEOUS

1. Project vehicle: cost, maintenance and operation US \$10,000	3,000	3,000
2. Maintenance of equipment	3,000	3,000
3. Sundries	2,000	2,000
	-----	-----
TOTAL US \$10,000	8,000	8,000
	-----	-----

# VII. REPORTING, SURVEYS AND STUDIES COSTS

Preparation of reports: to ECA and member States: Quarterly reports, annual reports, surveys and studies, etc. US \$	2,000	2,000
	-----	-----
TOTAL US \$	2,000	2,000
	-----	-----
GRAND TOTAL US \$232,620	1,301,650	1,095,140
	-----	-----
	-----	-----

## 7. DESCRIPTION OF OUTPUTS

	STARTING DATE -----	COMPLETION DATE -----
1. DEVINDEX-Africa		
(a) Pilot edition consisting of about 1,000 references	Sept.1979	July 1980
(b) Quarterly publication of DEVINDEX- Africa	Jan.1981	Continuing
(c) Annual cumulations of national literature i.e. national bibliographies upon request of member States	1981	
2. Updating of existing Unesco directory of information centres, documentation centres, libraries and archives in Africa using computerized techniques	1980	Annual updates
3. Directory of economic research institutions in Africa	1980	
4. Directory of specialists in economic and social development in Africa	1980	
5. List of institutions receiving publications under national deposit laws	1980	
6. List of DEVSIS-Africa participating centres	1980	Continuing
7. List of African periodicals	1980	Continuing
8. Register of ongoing socio-economic research and development projects	1980	Continuing
9. Specialized bibliographies	1980	Continuing

10. Training manuals	1980	Continuing
11. Guidelines for establishing national development information centres and systems in Africa	1980	Continuing
12. Production of a brochure and other information materials on DEVSIS-Africa and its services	1980	1980
13. List of specialists in the library and information professions	1980	Continuing
14. List of training programmes in library, documentation and information science in Africa	1980	Continuing

Wherever necessary, due to staffing or other constraints, the outputs listed above with the exception of DEVINDEX-Africa, will be prepared under contract. Some of these items (e.g. Nos. 2, 7 and 13) have already been prepared by other institutions or organizations. They will be consulted and their experience utilized in the updating of the documents concerned.

# 8. TIMETABLE (PHASE I)

	1979	1980	1981
Activities	S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
RECRUITMENT OF STAFF			
Chief	-		
Deputy Chief	-		
Technical Advisor	-		
Supporting staff	-----	-----	
Computerized Documentation Section	-----	-	
Computer Operations Section		-----	
Reprographic Sub-Unit	---		
Printing Sub-Unit			-----
EQUIPMENT			
Reprographic	-----	---	
Photocopying	---		
Printing			-----
Computer	-----	-----	

	1979				1980												1981											
Activities	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
DEVINDEX- AFRICA -----																												
Preparation of input sheets																												
Input sheets to IDRC for processing																												
Tapes for Photo- Composition																												
Publication																												
TRAINING COURSES -----																												
Indexing and Abstracting: ECA																												
Indexing and Abstracting: ECA																												
MULPOC, Lusaka																												
MULPOC, Tangiers																												
MULPOC, Viamey																												
MULPOC, Yaounde																												
MULPOC, Gisenyi																												

	1979	1980	1981
Activities	S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
Abidjan: Regional Institution		--	
Dakar: Regional Institution			-
COMPUTER OPERATIONS SECTION (see Activity 13)	---	--	
COMPUTERIZED DOCUMENTATION SECTION (see Activity 13)	---		
CONSULTANTS FOR SPECIFIC TASKS			
Preparatory work: manuals, etc.	---		
Africa Thesaurus	-----		
Utilisation of Arabic	-----		
USERS TRAINING SEMINARS			
MULPOC, Lusaka			-

	1979	1980	1981
Activities	S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
MULPOC, Yaounde			-
MULPOC, Gisenyi			-
MULPOC, Tangiers			-
MULPOC, Niamey		-	
Abidjan		-	
Dakar			-
TECHNICAL SEMINAR	-		

## ANNEX

### POST DESCRIPTIONS

Title of Post	Chief - DEVSIS-Africa
Grade	D1
Post Description	<p>The incumbent will function as director of the secretariat of DEVSIS-Africa and will be responsible for ensuring the fulfilment of the objectives of the System. In addition to the technical installation and development of the System, the work involves negotiation and agreement with member governments, sub-regional organizations and international organizations of the United Nations family and others. As the System depends largely on extra-budgetary financing, the incumbent will be required to contact prospective donors for financial support.</p> <p>The post is attached to the ECA Secretariat and will be placed under the authority of the Executive Secretary of the ECA.</p>
Qualifications	<p>High academic qualifications at doctoral level or equivalent. Good knowledge of systems design and operation and experience in the organization and management of information systems. Negotiating ability and experience in the functioning of international programmes is an essential qualification.</p>
Languages	<p>English and French. A knowledge of African languages will be a definite asset.</p>
Starting Date	September 1979

## POST DESCRIPTION

Title of Post	Deputy Chief
Grade	P5
Post Description	The incumbent will function as the chief technical officer of DEVSIS-Africa and will assist the Chief in technical matters relating to its organization. He will organize training programmes in collaboration with other senior staff for newly recruited personnel and for staff of national participating centres. During the stages of development of the System, he may be required to take under his charge the supervision of one or more units within DEVSIS-Africa.
Qualifications	High academic qualifications together with professional qualifications in information sciences or a related field plus at least 10 years experience in a senior capacity in a computerized information system.
Languages	English and/or French. A knowledge of Arabic or of an African language will be an added qualification.
Starting Date	September 1979

## TECHNICAL ADVISER

The Mission has recommended that the services of a technical adviser be obtained for at least part of the period covered by Phase I of the project. In view of the nature of the System that has been recommended, it will be necessary, in the initial stages, for the senior staff to have the benefit of the expertise and experience of a qualified specialist who has been involved in organizing and implementing similar activities. It is therefore suggested that the assistance of interested international organizations be sought for identifying a suitable specialist and perhaps, also, for financing this post for an initial period of two years. The post should be at D1 level and will cost approximately US \$62,000 per annum at current UN rates.

An abbreviated description of this post is given below:

### POST DESCRIPTION

Title of Post	Technical Adviser - DEVSIS-Africa
Location	Addis Ababa
Duration	Two years
Terms of Reference	To advise the Chief of DEVSIS-Africa on technical organization and development of the System. The incumbent will advise and assist the staff in the establishment of the various units; in the preparation of documentation relating to the System; in the organization of the training courses and other activities to be undertaken at or on behalf of DEVSIS-Africa. Further, he will advise on infrastructure development at the national and sub-regional levels and on measures to ensure early and effective participation by member countries and other sub-regional and regional bodies in the System.
Qualifications	High academic and professional qualifications, including the equivalent of a Master's or Ph.D. degree in information science or a related subject.  Several years experience in the organization and management of bibliographic information systems.
Languages	English. A knowledge of French and Arabic will be an added qualification.
Starting Date	September 1979

Annex 1

RESOLUTION 360 (XIV) ADOPTED BY THE ECA CONFERENCE  
OF MINISTERS ON THE ESTABLISHMENT OF A PAN-AFRICAN  
INFORMATION SYSTEM (DATA BANK)

360 (XIV) DATA BANK

THE CONFERENCE OF MINISTERS

CONSCIOUS of the poor state of numerical and non-numerical information and documentation resources and referral services in Africa;

CONVINCED that well organized numerical and non-numerical information and documentation services with emphasis on internally generated documents and data are urgently needed for the new approach to the economic development of Africa;

TAKING INTO ACCOUNT the objectives collectively agreed upon by member States to promote at the national, sub-regional and regional levels an increasing measure of self-reliance and self-sustainment;

RECOGNIZING the need to develop national, multinational and regional data bases reflecting this change in perspective;

RECALLING that at its fifteenth meeting held in Algiers the Executive Committee of ECA (1) and that the Assembly of OAU Heads of State at its eleventh session held in Libreville in 1977 recommended close co-operation between OAU and ECA for the creation of a Pan-African Data Bank;

RECALLING the programme for the development of household survey capabilities in Africa;

NOTING WITH SATISFACTION the efforts of the Secretariat to create a Pan-African numerical and non-numerical information network, with sub-regional branches based on national information and documentation systems and in close co-operation with existing international systems and networks

1. ENDORSES the general design and objectives of the African Data Bank;

2. INVITES the Executive Secretary to provide, out of the resources at his disposal, assistance to member States in order to enable them to create national numerical and non-numerical information systems and services;

3. CALLS UPON the Executive Secretary to assist member States to establish national data banks and to facilitate in so far as is possible free access of African countries to data banks of industrialized countries, containing information to which African countries had no access hitherto, so that Africa can have a network of data banks at regional, sub-regional and national levels;

4. ALSO CALLS UPON member States to give the Executive Secretary the fullest possible assistance and to co-operate with him in the design and implementation of this project;

5. FURTHER CALLS UPON donor Governments and institutions to give the necessary assistance to ECA to enable it to realize this project;

6. EXPRESSES APPRECIATION for assistance already rendered to the project by the International Development Research Centre (Canada) and wishes that such assistance will continue to be made available in future.

-----  
(1) See ECA documents E/CN.14/655-E/CN.14/LCO/116.

## Annex 2

### TERMS OF REFERENCE OF THE ECA-OAU-IDRC MISSION TO ADVISE ON THE ESTABLISHMENT OF SOCIO-ECONOMIC DEVELOPMENT INFORMATION NETWORK IN AFRICA, 22 JANUARY 1979 - 27 APRIL 1979

1. Taking into account the policies of the UN Department of Economic and Social Affairs, the UN Inter-organizational Board for Information Systems and Related Activities, and the General Information Programme of Unesco, and taking into consideration, where appropriate, the methodology recommended by the DEVSIS Study Team:
  - 1.1 To review the existing resources and activities of bodies affiliated to the United Nations for handling documentation related to economic and social development in Africa;
  - 1.2 To visit ECA Headquarters at Addis Ababa and to assess the existing plans and programmes and the needs of ECA for the establishment of an African development information network in the light of short, medium and long-term programmes of the ECA and within the areas of its competence;
  - 1.3 To evaluate the felt needs and resources of other regional and sub-regional intergovernmental organizations in Africa;
  - 1.4 To identify through visits, the strengths and weaknesses of the organization and use of information (non-statistical) for management decision-making in a representative sample of the African governments.
2. Taking into account the findings of section 1:
  - 2.1 To recommend a definition of the subject scope and coverage of an African documentation programme responding to the interests of African governments and within the areas of substantive activity of ECA;
  - 2.2 To prepare, as a long-term (ten years) goal, the establishment of a co-operative network of African governments centred at ECA, for the identification, processing, storage and retrieval on demand of documents relevant to decision-making in economic and social development;

- 2.3 To outline, as a medium-term (four to six years) plan and indicative budget, the establishment at ECA of the resources (trained personnel, computer facilities and other equipment) that would provide the minimum necessary base for launching such a network and for managing the relevant documents received by ECA or produced by ECA and its affiliated institutions and programmes;
- 2.4 To define a short-term (two years) plan and budget, within the known and anticipated resources of ECA, maximizing the capacity of ECA to manage the documents that it now receives or produces and to introduce documentation services in support of decision-making within the Secretariat and, to the extent possible, in African States;
- 2.5 To prepare and deliver to the Executive Secretary of ECA a report and recommendations, including estimates of the resources required for future work, on the establishment of an African development information network.

Annex 3

THE MISSION'S PROGRAMME AND THE  
INDIVIDUALS/ORGANIZATIONS VISITED

A. MISSION'S PROGRAMME (in chronological order)

PLACE -----	DATE(S) -----	TEAM MEMBERS INVOLVED -----
ETHIOPIA (Briefing sessions only at ECA-OAU headquarters)	22-26 January, 1979	Entire Team (minus Miller/Cubillo/Pubokovsky)
KENYA (See below for organizations visited)	29 January - 2 February, 1979	Aiyepeku/Jack/Samarasinghe
ZAIRE	29 January - 2 February, 1979	Akhtar/Quirino
CONGO	1-3 February, 1979	Akhtar
ZAMBIA	5-9 February, 1979	Aiyepeku/Jack/Samarasinghe
IVORY COAST	5 February, 1979	Akhtar/Quirino
MALI	6 February, 1979	Akhtar/Quirino
BOTSWANA	12-14 February, 1979	Aiyepeku/Jack/Samarasinghe
EGYPT	26 February - 2 March, 1979	Aiyepeku/Jack/Samarasinghe
MOROCCO	26 February - 2 March, 1979	Akhtar/Aubrac/Quirino
NIGERIA	5-9 March, 1979	Aiyepeku/Akhtar/Jack
SENEGAL	5-9 March, 1979	Aubrac/Quirino/Samarasinghe

KENYA (Consultative Meeting on Information Needs for Development, Planning and Investment Agencies in Africa)	9-12 April, 1979	Entire Team (minus Pubokovsky)
ETHIOPIA (Final Report Writing Session at ECA/HQ)	16-29 April, 1979	Entire Team

## 8. INDIVIDUALS/ORGANIZATIONS VISITED

### 1. BOTSWANA

#### CENTRAL STATISTICS OFFICE

Mr. F. Modise  
Mr. Tony Williams

#### CENTRAL BANK OF BOTSWANA

Mr. Charles Harvey

#### NATIONAL LIBRARY SERVICE OF BOTSWANA

Mr. G.B. Seame, Director  
Mr. Ahmed, Senior Librarian

#### NATIONAL INSTITUTE OF DEVELOPMENT & CULTURAL RESEARCH

Mr. H.J. Masterbroek  
Dr. J. Jeske

#### UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

Mr. Manzur Zaidi, Resident Representative

#### UNIVERSITY OF BOTSWANA

Professor Pelai, Department of Statistics

### 2. REPUBLIC OF CONGO

#### MINISTRY OF PLANNING

Mr. Moussa, Secrétaire General  
Mr. Georges Mahenga, Chef, Service de Documentation  
Mr. M. Azzam, Consultant

#### UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

Mr. Jan van Eyndhoven, Acting Resident Representative  
Direction Generale des Services de Bibliothèques,  
d'Archives et de Documentation (DGSBAD)  
Mme Jose Mathey, Directeur General

MINISTRY OF INFORMATION

M. Batheas Mollomb, Chef de la Division de la  
documentation des archives  
du Parti et Secretaire  
General, Ministere de  
l'Information.

DIRECTION GENERALE DES SERVICES DE BIBLIOTHEQUES,  
D'ARCHIVES ET DE DOCUMENTATION (DGSBAD)  
Mme Jose Mathey, Directrice General

3. EGYPT

MINISTRY OF PLANNING

Eng. Ismail Badary, Under Secretary  
Ali A. Farag, Under Secretary of State  
Dr. Abd El-Mohsen El-Gani, Director General  
Salah Seleim, Under Secretary  
Said Loutfy, Under Secretary

MINISTRY FOR ECONOMY & ECONOMIC COOPERATION  
Samir Koraiem, Under Secretary of State

MINISTRY OF FOREIGN AFFAIRS  
Ambassador Marei

REGIONAL (ARAB) CENTRE FOR RESEARCH AND DOCUMENTATION  
IN THE SOCIAL SCIENCES

Mr. Ahmed Ezz-el-din Zidan, Head, Information Service  
Dr. Fathy Abdel Hady, Library School, University of Cairo

NATIONAL INFORMATION & DOCUMENTATION CENTRE  
Mr. A.M. Gad, Director

NATIONAL INSTITUTE FOR PLANNING

Mr. Mahmoud Eid, Director, Documentation Centre  
Dr. Sayed Adb-el Maksoud, General Planning  
Dr. Atef el-Sayed, Director General Planning  
Dr. Iqbal Rateb, Foreign Relations  
Dr. Sayed Mahmoud, Agricultural Planning

MINISTRY OF PLANNING

Dr. Saad Barghout, Under Secretary

ARAB LEAGUE (DEPARTMENT OF ECONOMIC AFFAIRS)  
Dr. Khalil, Chief, Economic Affairs

ARAB LEAGUE EDUCATIONAL, CULTURAL and SCIENTIFIC  
ORGANIZATION (ALECSO)

Dr. M.T. Khafagi, Director, Information Service  
Dr. Ossama S. El-Kholy, Assistant Director General

4. IVORY COAST

AFRICAN DEVELOPMENT BANK

Mr. Umah Tete, Policy and Planning Department  
Ms. Jean-Elie Solange, Chief, Library  
Ms. Diarra Madjigeune, Chief, Publications and Archives  
Mr. Y.L. Yuma, Secretary General

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

Mr. Luis Darbous, Deputy Resident Representative

5. KENYA

KENYA NATIONAL ARCHIVES

Dr. Kagombe  
Mr. Lyle

KENYA NATIONAL ACADEMY FOR THE ADVANCEMENT OF ARTS AND SCIENCES  
Professor Khamala

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Mr. S.N. Muri  
Ms. Irene N. Kamau

UNIVERSITY OF NAIROBI

Professor Senga  
Professor Odhiambo  
Professor Mbithi  
Dr. Mureithi

UNIVERSITY OF NAIROBI LIBRARY

Mr. Abukhutsffa

INDUSTRIAL COMMERCIAL DEVELOPMENT CORPORATION

Mr. Mgwanga  
Mr. Muiri

INDUSTRIAL DEVELOPMENT BANK

Mrs. Kariuki

6. MALI

INSTITUT DU SAHEL

M. Aliou Camara, Chef, Centre de Documentation  
Dr. Nalla O. Kane, Directeur

7. MOROCCO

MULPOC/UNECA, (NORTH AFRICAN REGION, TANGIERS)

M. Jacques Spikerman, Deputy Head

CENTRE AFRICAIN DE FORMATION ET DE RECHERCHES  
ADMINISTRATIVES (CAFRAD)

Mme. Touria Tamsamani, Centre de Documentation

Mme. Aicha Bentría, Centre de Documentation

M. Abdelaziz Antair, Centre de Documentation

CENTRE D'ETUDES INDUSTRIELLES DU MAGHRES (CEIM)

M. Lakhdari Abdel Malek, Directeur

M. Lili Salah, Chef, Documentaliste

M. Mohamed Yaiche, Statisticien-Economiste

CENTRE NATIONAL DE DOCUMENTATION

M. Fassi Fihri, Directeur

BIBLIOTHEQUE GENERALE

M. Abdullah Regroqui, Directeur

ECOLE DES SCIENCES DE L'INFORMATION

M. Ben Jelloun, Director

8. NIGERIA

MINISTRY OF ECONOMIC DEVELOPMENT

Mr. Cipio Chikuni, Permanent Secretary

Mr. C.O. Idokogi, Principal Secretary (Economic Affairs)

NATIONAL SCIENCE & TECHNOLOGY DEVELOPMENT AGENCY (NSTDA)

F.N.C. Oragwu, Director, Department of Industrial Sciences

Mr. O. Akande, Assistant Chief, Publications and Information Unit

MINISTRY OF ECONOMIC DEVELOPMENT

Mr. G.P.O. Chikulu, Permanent Secretary

Mr. J.D. Edozien, Assistant Director, Social Services

Mr. E.O. Ayo, Assistant Director, Agriculture

NATIONAL POLICY DEVELOPMENT CENTRE (THINK TANK)

Dr. U.O. Eleazu, Director

Mr. Enilolobo

NATIONAL LIBRARY OF NIGERIA

Mr. J.A. Dosunmu, Senior Principal Librarian and Chief,  
Mechanised Services Division

Mr. A.O. Olafioye, Principal Librarian, Special Duties

ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS)

Dr. James Nti, Deputy Executive Secretary

NIGERIAN INSTITUTE FOR INTERNATIONAL AFFAIRS

Dr. R. Akindede, Director of Research

Mr. Isaac Aluko, Research Fellow

Mr. Gboyega Banjo, Chief Librarian

NIGERIAN INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH  
(NISER), LAGOS

Mr. Emmanuel Chibunda, Management Consultant

Mr. M. Dele Ogegbo, Senior Consultant, Mechanical  
Engineering

NIGERIAN INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH  
(NISER), IBADAN

Dr. H. Onitiri, Director

Mr. B.U.M. Igwe, Acting Director

Mrs. R.U. Onuorah, Librarian

COMMONWEALTH DEVELOPMENT CORPORATION LTD., LAGOS

Mr. T.S. Jones, Chairman

9. SENEGAL

MINISTERE DU PLAN ET DE LA COOPERATION

M. Jacques Daniel, Bureau d'etudes

CENTRE NATIONAL DE DOCUMENTATION SCIENTIFIQUE ET TECHNIQUE

M. Diop, Directeur

INSTITUT DE DEVELOPPEMENT ECONOMIQUE ET DE PLANIFICATION (IDEP)

M. Diakhite

CONSEIL POUR LE DEVELOPPEMENT DE LA RECHERCHE ECONOMIQUE  
ET SOCIALE EN AFRIQUE (CODESRIA)

M. Bujra, Secretaire executif

PROGRAMME DES NATIONS UNIES POUR LE DEVELOPPEMENT (PNUD)

M. Borna, Representant resident

ECOLE NATIONALE DES ARCHIVISTES ET DOCUMENTALISTES (ENAD)

M. Sene, Directeur des etudes

INSTITUT FONDAMENTAL D'AFRIQUE NOIRE (IFAN)

M. Mamadou Moustapha Niang, Juriste

Mme. Diallo, Conservatrice bibliotheque

PRESIDENCE DE LA REPUBLIQUE, BUREAU ORGANISATION ET METHODES

M. Talla, Directeur

M. Saliou M'Baye

ORGANISATION POUR LA MISE EN VALEUR DU FLEUVE SENEGAL (OMVS)

M.D. Sall, Chef, Service documentation

MINISTERE DES FINANCES

M. Idrissa Thiam, Chef du Service de la Prevision

BUREAU REGIONAL DE L'UNESCO

M. El Jack, Directeur adjoint

M. Dadzie, Chef, Documentation

M. Skouri, Conseiller en environnement et ecologie

M. Zouain, Conseiller en population

Mme. Kayzer, Conseiller en innovation de l'education

M. Traore, Conseiller en developpement rural

10. ZAIRE

DEPARTEMENT DU PLAN

Citoyen Sekabuoro, Secetaire d'Etat

Citoyen Ushula, Directeur de la Direction des Projets

Citoyen Mubilumikini, Directeur de la Direction de la  
Prevision

Citoyen Vsele Mawisi, Direction des Projets et Programmes

Citoyen Kindidikipezo, Direction des Projets et Programmes

Citoyen Mutomboya Kalonda, Direction des Projets et  
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Mr. Baza-Luemba, Team Leader

## 11. ZAMBIA

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Mr. R.E. Spillers, Head, Department of Library Studies  
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NATIONAL ARCHIVES OF ZAMBIA

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Miss Zulu, Librarian  
Mr. P.K. Nhandu, Archivist

## Annex 4

### AN INVENTORY OF COMPUTER FACILITIES IN ADDIS ABABA, ETHIOPIA

#### I.B.M.

- |    |  |  |
|----|--|--|
| 1. | Ethiopian Electric<br>Light and Power<br>Authority | IBM System/3 - 48K memory<br>3 Disc drives<br>1=20 MB, 2=40 MB<br>2 Tape Handlers<br>1 Disket reader + 1 Line<br>printer |
| 2. | Municipality of<br>Addis Ababa                     | IBM System/3 - 24K memory<br>2 Disc drives of 10 MB<br>1 Disket reader + 1 Line<br>printer                               |
| 3. | Central Statistics<br>Office                       | IBM System/3 - 48K memory<br>1 Disc drive of 10 MB<br>3 Tape handlers<br>Card readers 96 col. + 1 Line<br>printer        |
| 4. | Telecommunications                                 | IBM System/3 - 32K memory<br>2 Disc drives of 10 MB<br>Card reader 96 col. + 1 Line<br>printer                           |
| 5. | Ethiopian Air<br>Force                             | IBM System/3 - 32K memory<br>2 Disc drives of 10 MB<br>Card reader 96 col. + 1 Line<br>printer                           |

#### N.C.R.

- |    |             |   |
|----|-------------|---|
| 1. | E.C.A. (UN) | NCR 151 - 64K memory<br>1 Dual single spindle 656 Disc<br>drive of 10 MB<br>1 I/O Writer<br>1 Integrated Card reader 682<br>1 Line printer 645 (650 LPM)<br>2 Tape handlers<br>1 636 Dual cassette handler<br>(Read/write)<br>1 7510 D.E.T Terminal equipped<br>with a micro-processor of 40 K<br>bytes memory of RAM programmable<br>in Basic + 6 and an interface |
|----|-------------|---|

- for the 6440 M.P.  
1 6440 Matrix Printer
2. Chemin de Fer Franco-ethiopien
    - 1 NCR 8200 - 64K memory
    - 1 Dual single spindle 656 disc drive of 10 MB
    - 1 Line printer
    - 1 CRT Terminal model 796
    - 1 Cassette handler (Read/write)
    - 3 7200/Model 1 D.E. Terminal cassette system
  3. Relief & Rehabilitation Commission
    - 1 NCR - 8250 - 64K memory
    - 1 Dual single spindle disc drive 656 of 10 MB
    - 1 CRT Terminal 796
    - 1 349 Line printer (200 LPM)
    - 1 7200 Model 1 D.E. Terminal cassette system
  4. Ministry of Housing & Administration
    - 1 NCR-8250 - 64K memory
    - 1 Dual single spindle 656 disc drive of 10 MB
    - 1 796 CRT Terminal
    - 1 349 Line printer (300 LPM)
    - 3 7200 D.E. Terminal cassette system
  5. H.V.A.
    - 1 NCR 399 - 16K memory
    - 1 Line printer (125 LPM)
    - 1 7200 D.E. Terminal cassette system
  6. R.P.A. (Rural Project Agency)
    - 2 NCR 399 - each of 16K memory (32K)
    - 1 Line printer (125 LPM)
    - 2 7200 D.E. Terminal cassette system
  7. Progress Trading Company
    - 1 NCR 499 - 32K memory
    - 1 NCR 349 Line printer (300 LPM)
    - 1 656 Dual single spindle disc drive of 10 MB
    - 2 7200 Model 1 D.E. Terminal cassette system
  8. Commercial Bank of Ethiopia
    - 3 NCR 399 - each of 16K memory (48K)
  9. Addis Bank
    - 1 NCR 399 - 16K memory
    - 1 7200 D.E. Terminal cassette system

- |     |  |   |
|-----|--|---|
| 10. | E.P.I.D.                                   | 1 NCR 499 - 16K memory<br>1 Line printer (125 LPM)<br>2 7200 Model 1 D.E. Terminal cassette system  |
| 11. | Housing and Savings Bank                   | 2 NCR 399 - each of 16K memory (32K)<br>1 7200 D.E. Terminal cassette system  |
| 12. | I.L.C.A.                                   | 1 NCR 499 - 16K memory<br>1 7200 D.E. Terminal cassette system  |
| 13. | Forest and Wildlife Conservation Authority | 1 NCR 399 - 16K memory<br>1 7200 model 1 D.E. Terminal cassette system  |
| 14. | E.D.D.C.                                   | 1 NCR 499 - 32K memory<br>1 Line printer 349 (300 LPM)<br>1 656 Dual single spindle disc drive of 10 MB<br>3 7200 Model 1 D.E. Terminal cassette system |
| 15. | National Bank of Ethiopia                  | 1 NCR 399 - 32K memory<br>1 656 Dual single spindle disc unit of 10 MB<br>1 349 Line printer (200 LPM)<br>4 7200 Model 1 D.E. Terminal cassette system  |
| 16. | Maritime Transit Service                   | 1 NCR 399 - 16K memory<br>1 125 LPM Matrix printer 6440<br>2 7200 Model 1 D.E. Terminal cassette system   |
| 17. | Total Mer Rouge                            | 1 NCR 399 - 32K memory<br>1 6440 Matrix printer (125 LPM)<br>2 7200 Data Entry Terminal cassette system   |
| 18. | Ethiopia Coffee Marketing Board            | 1 NCR 499 - 16K memory  |
| 19. | National University                        | 1 NCR 399 - 16K memory  |

#### BURROUGHS

- |    |                    |  |
|----|--------------------|--|
| 1. | Ethiopian Airlines | 1 B3500 - 120K memory<br>5 Disc drives of 160 MB<br>4 Tape handlers<br>1 Line printer<br>1 Card reader |
|----|--------------------|--|

- |    |  |  |
|----|--|--|
| 2. | Ministry of<br>Finance                   | 1 B3700 - 100K memory<br>2 Disc drives of 130 MB<br>3 Tape handlers<br>1 Line printer<br>1 Card reader 80 col. |
| 3. | Ethiopian Road<br>Authority              | 1 B3700 - 200K memory<br>2 Disc drives of 20 MB<br>4 Tape handlers<br>1 Line printer<br>1 Card reader 80 col.  |
| 4. | Agricultural<br>Marketing<br>Corporation | 1 B80 - 64K memory<br>2 Disc drives of 36 MB<br>1 Cassette handler   |
| 5. | Aid Bank                                 | 1 B80 - 64K<br>2 Disc drives of 9.20 MB<br>1 Cassette handler  |
| 6. | Tobacco Monopoly                         | 1 B80 - 64K memory<br>1 Disc drive of 1 MB<br>1 Cassette handler   |

# SAMPLE DEVSIS-AFRICA INPUT SHEET

Annex 5

ISN				Cat. B02		
TRN B99				Geo. Code 1 B03		
L/T A23		L/R B01		Geo. Code2 B03		
				Sect. Code B04		

BIBLIOGRAPHIC LEVEL

DOCUMENT TITLE	A08 A09 A10				
EDITION	A27				
PERSONAL AUTHOR(S)	A11 A12 A13				
AFFILIATION	A14 A15 A16				(CODE)
CORPORATE AUTHOR(S)	A17 A18 A19				(CODE)
PUBLISHER NAME LOCATION	A25				
DATE	A21				
PAGE NUMBERS	A20			NUMBER OF REFERENCES	A45
COLLATION	A28 A29				
ISBN REPORT NUMBER	A26 A39			VALUE OF INVESTMENT	B06
THESIS UNIVERSITY DEGREE	A41 A42				
MEETING NAME LOCATION DATE	A30 A31 A32				
AVAILABILITY	A43				
ANCILLARY DATA	A99				

## MONOGRAPH / SERIAL

TITLE	A03		
EDITION	A09 A27		
PERSONAL AUTHOR(S)	A12		
AFFILIATION	A15		
CORPORATE AUTHOR(S)	A18		(CODE)
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ISSN ISBN	A01 A26		

## COLLECTION

TITLE	A10		
PERSONAL AUTHOR(S)	A13		
AFFILIATION	A16		(CODE)
CORPORATE AUTHOR(S)	A19		(CODE)
COLLATION	A28		
ABSTRACT	B07		
DESCRIPTORS	B08		
STATISTICAL TABLES	B09		

## Annex 6

### SAMPLE OF DEVSIS-AFRICA OUTPUT

#### Contents

- I Bibliographic index/Index bibliographique
- II Subject index/Index par sujet
- III Geographical index/Index géographique
- IV Institution index/Index par institution
- V Author index/Index par auteur

NOTE: The categories (A10, A20,...D10, etc) used for the classification of the documents in the bibliographic index are those found in the DEVSIS Study Team Report (pp. 131-137), and therefore differ slightly from the ones proposed in Section 6.3 of this Report.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

A10 Basic information and data: national and international /  
Données et informations de base: nationales et internationales

XA LR 0001

Liberia. Ministry of Planning and Economic Affairs LR  
Economic survey of Liberia 1974. Monrovia, Ministry of  
Planning and Economic Affairs, 1975. 134p. tables.

#/Economic survey\*/ of Liberia, 1974, covering /national  
accounting\*/, /public expenditures\*/, /statistical data/.

XA LY 0002

Libya. Ministry of Planning LY  
Statistical abstract of Libya. Tripoli, Ministry of Planning,  
1972. (5 fiches).

#Abstract of the /yearbook\*/ of Libya - includes  
/statistical data/.

XA MZ 0003

Korn, J.  
Mozambique. Ministry of Health MZ  
World University Service DK  
Report from the health sector of the People's Republic of  
Mozambique. Maputo, Ministry of Health, 1976. (various  
pagings).

#/Health services\*/, /health centres\*/, Mozambique.

XA SD 0004

Nimeiri, S. (University of Khartoum SD)  
Taxation and economic development: a case study of the Sudan.  
Khartoum, University of Khartoum, 1974. 228p.

#Discusses the /tax system\*/ and its role in Sudan's  
economic development - discusses /tax/ rationality criteria and  
their role in developing countries' /economic structure/;  
/administrative aspects/ (/tax exemption/, /tax deduction/,  
/tax collection/) and /economic aspects/ of direct /taxation/  
such as /income tax/ and /land tax/, and of indirect taxation  
such as /tariffs/ and /consumption tax/; /evaluation/ of the  
tax system as a whole and its effects on /income distribution/  
through /tax incentives/. /Statistical data/, /bibliography/.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

A15 Basic information and data: sub-national / Données et informations de base: sub-nationales

XA UG 0005

Ker, A.D.R.

Uganda. Agricultural Dept. UG

Agriculture in Bukedi District, Uganda. Soroti, Arapai  
Agricultural College, 1967. 144p. graphs, maps, tables.

#Report on /agricultural production\*/ and /agricultural development\*/ in Bukedi District, Uganda, examining in particular the /farming systems\*/ - gives general information on the area (principal /tribe/s, /history/, /geography/, /climate/, /soil/s); describes /cultivation techniques/, /traditional /cultivation practices/. /Statistical data/, /bibliography/.

A20 Extrapolations and forecasts: national and international /  
Extrapolations et prévisions: nationales et internationales

XA 0006

Byerlee, D.

Eicher, C.K.

Liedholm, C.

Spencer, D.S.C. (Michigan State University, East Lansing US

)

Rural employment in tropical Africa: summary of findings.  
Working paper - African Rural Economy Program. Njala University  
College (SL). no.20. Njala, Njala University College, 1977.  
175p. (Also published by Michigan State University).

\*/Economic analysis/ of /employment\*/ in /rural areas/ of  
West Africa, particularly Sierra Leone - examines the  
implications of /consumption/ patterns, relationship between  
/technological change/ and /employment opportunities/ in the  
/agricultural sector/, focusing on the /choice of technology/  
and on the availability and /profitability/ of /labour  
intensive/ techniques in /agri product processing/, role of  
/small scale industry/ in /rural development/, implications of  
various /government policy/s; includes /economic model/, /case  
studies/, /statistical data/, /bibliography/.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

XA NG 0007

Fukur, M.

Olagunju, T. (Ahmadu Bello University, Zaria NG)  
Nigeria in search of a viable polity. Zaria, Baraka Press, 1973  
. 346p. tables. Conference on Institutional and Administrative  
Perspectives for National Development, Zaria NG Nov 1972.

#Discusses /government policy\*/, /public administration\*/  
and economic /development policy\*/ for Nigeria - considers  
/ideology/, /development planning/, the /constitution/,  
/government/ and /civil service/ in Nigeria; /economic  
conditions/ in Japan, Egypt and Tanzania. /Bibliography/c  
notes, /list of participants/.

A30 Existing situations: international and national /  
Situations existantes: internationales et nationales

XA 0003

Fransman, M.

National Institute for Research in Development and African  
Studies, Gaborone BW  
University of Botswana, Lesotho and Swaziland, Gaborone BW  
Development and underdevelopment in Southern Africa: a case study  
. Working paper - Documentation Unit. National Institute for  
Research in Development and African Studies (BW). no.5. Gaborone  
, National Institute for Research in Development and African  
Studies, 1976. 41p.

#/Underdevelopment\*/, /economic geography\*/, need for  
/regional planning/ in Southern Africa - /case study/ of  
Swaziland, /bibliography/c notes.

XA 0009

Unesco. Bureau régional pour l'éducation en Afrique, Dakar  
SN

Mouvements de population et systèmes d'éducation dans les pays  
sahélo-soudaniens (Haute-Volta, Mali, Mauritanie, Niger,  
Sénégal, Tchad). Dakar, Unesco, 1975. (paginations diverses).  
BRED/PLAN/POP/04/75. Réunion sur les mouvements de population  
et les systèmes d'éducation dans les pays sahélo-soudaniens  
(Haute-Volta, Mali, Mauritanie, Niger, Sénégal, Tchad), Dakar SN  
26 mai-7 juin 1975.

#Actes d'une réunion sur les divers /systèmes  
d'enseignement\*/ en Afrique, plus particulièrement au /Sahel/,  
dans le contexte des /migrations rurales\*/, de la /colonisation  
rurale\*/ et du /nomadisme/ - inclut /agenda/, /liste des  
participants/, /données statistiques/, notes /bibliographie/ques.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

XA MW 0010

Mills, J.C. (University of Malawi, Zomba MW)  
Price responses of Malawi smallholder farmers: fast, slow or none  
. Zomba, University of Malawi, 1975. 42p.

#Assesses the effect of increased /agricultural prices\*/  
between 1972 and 1974 on /cultivation practices\*/ and plans of  
small-scale /farmers\*/.

XA NG 0011

Callaway, A. (University of Ibadan, Ibadan NG)  
The employment problem of secondary grammar school leavers: a  
pilot study. NISER monograph series (NG). no.4. Ibadan,  
Nigerian Institute of Social and Economic Research, 1975. 32p.  
tables.

#/Unemployment\*/ among /secondary school/ /school  
leavers\*/ in Nigeria - /statistical data/.

XA TZ 0012

Kocher, J.E.  
University of Dar es Salaam TZ  
Tanzania. Ministry of Labour and Social Welfare TZ  
Social and economic development and population change in  
Tanzania: proceedings. Research paper - Bureau of Resource  
Assessment and Land Use Planning. University of Dar es Salaam  
(TZ). no.36. Dar es Salaam, University of Dar es Salaam, 1975.  
103p. graphs, maps, tables. Workshop on Social and Economic  
Development and Population Change in Tanzania, Dar es Salaam TZ  
23-27 Sept 1974.

#Discusses interrelationships among /social development/,  
/economic development/ and /population dynamics\*/ in Tanzania -  
/education/, /agriculture/, /maternal child health/, etc.;  
/statistical data/, /bibliography/.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

XZ 0013

Temmar, H.

Approche structurelle du phénomène du sous-développement: la structure de l'économie sous-développée. Alger, SNED, 1973. 123p. graphiques, tableaux.

#/Analyse économique/ du /sous-développement\*/ par l'étude de la désarticulation des /structure économique\*/s et de l'influence des variables /démographie/ques sur la /croissance économique/ - étudie le /dualisme économique/ dans le /secteur agricole/, le sous-développement du /secteur industriel/, la /structure du commerce international/, la situation de l'emploi/, la /répartition du revenu/ national. /Données statistiques/, /bibliographie/.

A35 Existing situations: sub-national / Situations existantes: sub-nationales

XA NG 0014

Simmons, E.B. (Ahmadu Bello University, Zaria NG)  
Rural household expenditures in three villages of Zaria Province, May 1970-July 1971. Zaria, Ahmadu Bello University, 1976. 113p. graphs, tables.

#/Survey/ of /rural/ /consumer expenditures\*/, /village/ /household/s, Nigeria - influence of size of household, /income/, location, /farm size/ and /productivity/; /statistical data/, /bibliography/.

XA SN 0015

Herzog, J.R. (African Institute for Economic Development and Planning, Dakar SN)  
Population change and productive activity among the Serer of Senegal: some hypotheses. Dakar, African Institute for Economic Development and Planning, 1975. 38p. map, tables.  
Population Association of America Annual Meeting, Seattle, Wash. US 17-19 Apr 1975.

#/Population dynamics\*/, /population increase/, /economic conditions\*/ of the Serer, a /tribe/ of Senegal - /biolliography/, /statistical data/.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

B10 Prescriptions for development policy or action:  
international and national / Recommandations concernant des  
actions ou des politiques de développement: internationales et  
nationales

XA 0016

IDRC, Ottawa, Ont. CA

African Training and Research Centre in Administration for  
Development, Tangier MA

Final report of the Preparatory Workshop on African Government  
Documents. Tangier, CAFRAO, 1976. 24p. Preparatory Workshop  
on African Government Documents, Tangier MA 7-11 June 1976.

#Reports on problems associated with /information  
processing\*/ of African /government/ /documents/ and includes  
/resolution/s, country reports, /questionnaire/, /agenda/ and  
/list of participants/.

XA 0017

Pearson, D.S.

Industrial development in East Africa. Studies in African  
economics (KE). no.2. Nairobi, Oxford University Press, 1969.  
213p. illus., tables.

#Discusses /industrial policy\*/ for /industrial  
development\*/ in East Africa - examines the arguments in favour  
of /industrialization policy/s, the /institutional framework/,  
industrial and /economic structure/ of East Africa; presents an  
/economic analysis/ of the /manufacturing industry/; concludes  
that its stimulation can contribute to development provided  
certain conditions are met. /Statistical data/, /bibliography/.

C10 Official statements of development policy / Déclarations  
officielles relatives à la politique de développement

XA 0018

OMS. Bureau régional de l'Afrique, Brazzaville CG

Planification sanitaire à long terme pour la région africaine,  
1975-2000. Brazzaville, OMS, 1974. 28p. tableaux. AFR/PHA/133.

#/Planification de la santé\*/ et des /services de santé\*/  
en Afrique - /personnel médical/, /salubrité/, /lutte  
anti-maladie/.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

XA ET 0019

Ethiopia ET

Declaration on economic policy of Socialist Ethiopia. Addis Ababa, Ethiopia Tikdem, 1975. 11p.

#/Economic policy\*/, /nationalization\*/ in Ethiopia.

XA TZ 0020

Nyerere, J.K. (Tanzania TZ)

Indépendance et éducation. Yaoundé, C1é, 1972. 103p. (Extrait de Independence and socialism publié par Oxford University Press, 1968 et traduit par A. Collange).

#Discours et articles sur la /politique de l'éducation\*/ à la lumière de la /théorie sociale\*/ et économique tanzanienne visant l'/'autodéveloppement\*/ dans le cadre du /socialisme/ - discute le rôle de l'/'aide au développement/ et celui de l'/'éducation/ dans le développement du pays.

C15 Commentaries on official policies and activities /  
Commentaires relatifs aux activités et politiques officielles

XA KE 0021

Okoth-Ogendo, H.W.O. (University of Nairobi KE)

The adjudication process and the special rural development programme. Discussion paper - Institute for Development Studies. University of Nairobi (KE). no.227. Nairobi, University of Nairobi, 1976. 17p. (Originally appeared in IDS Occasional paper no.12, 1975).

#/Land reforms\*/ and Special /Rural Development\*/  
Programme, Kenya - /land utilization/, /bibliography/c notes.

XA LR 0022

Morris, J.G.

Rural development: the Liberian experience. Monrovia, 1974. 8p. Conference on the International Dialogues in West Africa, 21st, Kumasi GH 29 July-2 Aug 1974.

#/Rural development\*/, /development policy\*/, /development aid/, /community development/.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

XA MW 0023

Baker, C. (University of Ife, Ile-Ife NG)  
The evolution of local government in Malawi. Institute of  
Administration monograph series (NG). no.3. Ile-Ife, University  
of Ife Press, 1975. 60p.

#/History/ of /local government\*/ in Malawi, 1891-1975.

C20 Development plans / Plans de développement

XA AJ 0024

Angola. Ministerio da Economia AO  
Economic programme of Angola. Programa económico de Angola.  
Luanda, Ministério da Economia, 1975. 96p. illus.

#/Development policy\*/, /national plan\*/, Angola.

XA BI 0025

Burundi BI  
Plan quinquennal de développement économique et social du  
Burundi 1973-1977. Gitega, République du Burundi, 1973. 355p.  
cartes, tableaux.

#/Plan national\*/ quinquennal pour 1973 A 1977, Burundi.

XA LS 0026

Lesotho. Central Planning and Development Office LS  
Kingdom of Lesotho: second five year development plan 1975/76  
to 1979/80. Maseru, Central Planning and Development Office,  
1976. 2v.

#Second five year /development plan\*/ (1975-76 to 1979-80)  
for Lesotho - includes /statistical data/.

XA MA 0027

Maroc. Ministère des affaires économiques, du plan et de  
la formation des cadres MA  
Plan du développement économique et social 1973-1977. Casablanca  
, Ministère des affaires économiques, du plan et de la  
formation des cadres, 1973. 3v.

#/Plan de développement\*/ quinquennal (1973-1977) pour le  
/développement économique/ et le /développement social/ du Maroc.

BIBLIOGRAPHIC INDEX / INDEX BIBLIOGRAPHIQUE

XA MG 0028

République malgache. Ministère du plan MG  
Plan de développement national 1974-1977. Tananarive,  
Ministère du plan, 1974. 201p. tableaux.

#/Plan de développement\*/ pour 1974-1977, Madagascar.

XA ML 0029

Mali. Direction générale du plan et de la statistique ML  
Plan quinquennal de développement économique et social. Bamako,  
Direction Générale du Plan et de la Statistique, 1973. 44p.

#/Plan de développement\*/ quinquennal, /système  
économique/, /politique économique\*/.

XA NG 0030

Nigeria. Federal Ministry of Economic Development and  
Reconstruction NG Central Planning Office  
Third National Development Plan 1975-1980. Lagos, Federal  
Ministry of Economic Development and Reconstruction, 1975.  
467p. in 2v.

#Third National /Development Plan\*/ for 1975-80 for Nigeria.

XA SO 0031

Somalia. Ministry of Planning and Coordination SO  
Five year development programme 1974-1978. Hqadisu, Ministry  
of Planning and Coordination, 1974. 298p. tables.

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Main-d'oeuvre, fonds et matières premières: sur les plans  
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SUBJECT INDEX / INDEX PAR SUJET

AGRICULTURAL DEVELOPMENT

XA UG Agriculture in Bukedi District, Uganda. 0005

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XA MW Price responses of Malawi smallholder farmers: fast, slow or none. 0010

AGRICULTURAL PRODUCTION

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AUTODEVELOPPEMENT

XA TZ Indépendance et éducation. 0020

COLONISATION RURALE

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NG Third National Development Plan 1975-1980. 0030

SD Five year development programme 1974-1978. 0031

SZ Second National Development Plan 1973-77. 0032

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LR Rural development: the Liberian experience. 0022

NG Nigeria in search of a viable polity. 0007

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ECONOMIC CONDITIONS

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ECONOMIC GEOGRAPHY

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SZ Development and underdevelopment in Southern Africa: a case study. 0008

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ECONOMIC SURVEY

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- XA TZ Social and economic development and population change in Tanzania: proceedings. 0012

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- LR Rural development: the Liberian experience. 0022

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- XA Planification sanitaire à long terme pour la région africaine, 1975-2000. 0018

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- SL Rural employment in tropical Africa: summary of findings. 0006
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- SZ Development and underdevelopment in Southern Africa: a case study. 0008  
  
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- ZM Design, construction and economic consideration of fish dry-smoking plant in Zambia. 0035
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- XP ASIA AND THE PACIFIC/ASIE ET PACIFIQUE
- JP Nigeria in search of a viable polity. 0007

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AO Angola. Ministerio da Economia  
0024

BI Burundi  
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BJ Bénin. Commission nationale pour l'Unesco  
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Bénin. Ministère de l'éducation nationale, de la culture,  
de la jeunesse et des sports  
0036  
Bénin. Ministère du développement rural et de la coopération  
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BW National Institute for Research in Development and African  
Studies, Gaborone  
0008  
University of Botswana, Lesotho and Swaziland, Gaborone  
0008

CG OMS. Bureau régional de l'Afrique, Brazzaville  
0018

ET ECA, Addis Ababa  
0037  
Ethiopia  
0019

KE University of Nairobi  
0021

LR Liberia. Ministry of Planning and Economic Affairs  
0001

LS Lesotho. Central Planning and Development Office  
0026

LY Libya. Ministry of Planning  
0002

MA African Training and Research Centre in Administration for  
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0016  
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la formation des cadres  
0027

MG République malgache. Ministère du plan  
0028

ML Mali. Direction générale du plan et de la statistique  
0029

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0010

MZ Mozambique. Ministry of Health  
0003

NG Ahmadu Bello University, Zaria  
0007  
0014  
Nigeria. Federal Ministry of Economic Development and  
Reconstruction  
0030  
University of Ibadan, Ibadan  
0011

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0023

SD University of Khartoum  
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SN African Institute for Economic Development and  
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0015  
Sénégal  
0039  
Unesco. Bureau régional pour l'éducation en Afrique, Dakar  
0009  
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SO Somalia. Ministry of Planning and Coordination  
0031

SZ Swaziland  
0032

TZ Tanzania  
0020  
Tanzania. Ministry of Labour and Social Welfare  
0012  
University of Dar es Salaam  
0012

UG Uganda. Agricultural Dept.  
0005

ZA Central Fisheries Research Institute, Chilanga  
0035  
Zambia. Ministry of Lands and Natural Resources  
0035

## XE EUROPE

DK World University Service  
0003

FR Centre européen pour le développement industriel et la  
mise en valeur de l'outre-mer, Paris  
0039

GB Commonwealth Association of Surveying and Land  
Economy, London  
0037

## XN NORTH AMERICA/AMERIQUE DU NORD

CA IDRC, Ottawa, Ont.  
0016

US Michigan State University, East Lansing  
0006

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## Annex 7

### ELEMENTS OF A NATIONAL INFORMATION AND DOCUMENTATION FACILITY TO SUPPORT DEVELOPMENT

The Team was informed that the representatives of several African countries had asked ECA for precise information on the financial implications of establishing their respective national information infrastructures and of participating in any regional or international information programmes. An accurate answer to this question would be possible only after a complete survey is conducted at national level and the strength or weakness of the existing information infrastructure determined. Unesco has already conducted such surveys in a number of African countries and the consultants' reports resulting from these surveys, often with detailed costings, have been sent to the Governments concerned (see Annex 9 Section II).

However, in order to comply with the requests, the Team proposes the following indicative costings in the hope that they will provide some guidance and will facilitate the active participation of Member Governments in the System.

1. Establishment of a focal point for information policy and coordination of national information activities. (This unit will play a coordinating role in respect of all sectoral information systems, documentation centres, libraries and archives).

#### Requirements:

##### Office space

##### Personnel (2 professionals, 2 secretaries)

professionals 2 x \$3,600	\$ 7,200
secretaries 2 x \$1,200	2,400
Equipment: typewriters, copying machine	5,000
Reference tools	5,000
Operating costs	6,000

-----  
Total annual cost                      US\$25,600

2. Establishment of a national information and documentation centre, using modern technology. (In many countries this centre could undertake full responsibility for identifying, collecting, processing and disseminating information relating to all sectors, and for compiling the national data base).

## Requirements:

### Office space

### Personnel

Administration:	1 professional, 1 secretary
Services:	3 professionals, 3 secretaries
Computer Unit:	1 professional, 3 operators
	-----
Total staff:	5 professionals; 7 others

Professionals:	5 x \$3,600	US\$18,000
Others:	7 x \$1,200	8,400
		-----
		26,400

### Equipment

Computer & peripherals	US\$300,000
Reprographic equipment	60,000
Printing equipment	80,000
Office equipment & vehicle(s)	20,000
	-----
	460,000

### Information resources

Journals and books	US\$25,000
Documents	5,000
Audiovisual materials & microforms	5,000
Newspapers	1,000
Tape services	15,000
	-----
	51,000

### Operating costs

Supplies	US\$3,000
Utilities	1,500
Maintenance of equipment	22,500
Sundries	2,000
	-----
	29,000

Total capital cost:	US\$460,000
Total annual operating cost:	US\$106,400

# Annex 8

## TABLE OF NATIONAL DOCUMENTATION, INFORMATION AND TRAINING INSTITUTIONS IN AFRICA

Country	National Library	National Archives	National Documen- tation Centre	UNISIST Focal Point	UNISIST National Committee	Library/ Information Science Schools
TOTAL	31	38	14	5	7	10
Algeria	X	X	X			
Angola	X					
Benin	X	X	X			
Botswana	X	X				
Burundi						
Cameroon	X	X	X			
Cape Verde						
Central Africa Empire		X				
Chad		X				
Comoros						
Congo	X	X	X			
Djibouti						
Egypt	X	X	X		X	X
Equatorial Guinea						
Ethiopia	X					X

Country	National Library	National Archives	National Documentation Centre	UNISIST Focal Point	UNISIST National Committee	Library/Information Science Schools
Gabon	X	X				
Gambia	X	X				
Ghana	X	X	X		X	X
Guinea	X	X	X			
Guinea-Bissau	X					
Ivory Coast	X	X	X		X	
Kenya	X	X				
Lesotho		X				
Liberia		X				
Libya	X	X	X			
Madagascar	X	X		X		
Malawi		X				
Mali	X	X				
Mauritania	X	X				
Mauritius		X				
Morocco	X	X	X	X	X	X
Mozambique	X	X				
Niger		X				
Nigeria	X	X		X	X	X (3)
Rwanda						
Sao Tome and Principe						
Senegal	X	X	X	X	X	X
Sierra Leone	X	X				
Somalia	X	X				
Sudan		X	X			

Country	National Library	National Archives	National Documentation Centre	UNISIST Focal Point	UNISIST National Committee	Library Information Science Schools
Swaziland	X	X				
Tanzania	X	X				
Togo	X	X				
Tunisia	X	X	X	X	X	
Uganda		X				
Upper Volta	X	X				
Zaire		X				
Zambia	X	X	X			X

NOTE: The above Table is not based on an actual survey but on published information collected by the Team during its investigations.

## Annex 9

### A BIBLIOGRAPHY OF DOCUMENTATION AND INFORMATION PROGRAMMES AND SERVICES IN AFRICA

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- III. Regional and Sub-Regional Information Programs and Networks
- IV. Socio-Economic Information Systems and Programs and the Utilization of Information
- V. Programs in Administrative Information, African Government Documents and CAFRAD, Tangiers
- VI. African Bibliography, the Africa Bibliographic Centre (ABC) and the Standing Conference on Library Materials on Africa (SCOLMA)
- VII. Library, Documentation and Information Science Education and Training
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3. Library Associations
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X. General Reference Materials on  
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## Annex 10

### UNISIST TECHNICAL MANUALS, GUIDELINES, ETC. USEFUL IN THE PLANNING AND DEVELOPMENT OF INFORMATION SYSTEMS AND SERVICES

#### 1. INFORMATION POLICY OBJECTIVES (UNISIST PROPOSALS)

A checklist of proposals for information policy objectives that has been prepared to assist member States and their national focal points or agencies to identify priorities in order to guide, stimulate and co-ordinate development of information resources and services. The document covers primary communications, libraries and translations; secondary services and systems; needs and gaps in national services; networking and technological facilities; support activities; economic, financial and legal problems. Available in English and French. 26 p. (SC/74/NS/3)

#### 2. SCIENTIFIC AND TECHNOLOGICAL INFORMATION AND DOCUMENTATION FACILITIES

Discusses the methodology of inventory-taking and suggests facilities to be included in this type of survey. Examples of useful by-products which can be generated from the survey and of techniques for keeping the inventory up-to-date are given. A detailed questionnaire for manual and machine processing with extensive coding instructions is included. Available in English, French and Spanish. 46 p. (SC/75/NS/28)

#### 3. GUIDELINES ON THE CONDUCT OF AN INVENTORY OF CURRENT RESEARCH AND DEVELOPMENT PROJECTS

Explains in a concise manner the steps in planning and data collection and processing necessary to establish such an inventory, from which useful information on ongoing research can be extracted. 49 p. (SC/75/NS/13)

#### 4. GUIDELINES ON THE PLANNING OF NATIONAL SCIENTIFIC AND TECHNOLOGICAL INFORMATION SYSTEMS

Details the steps involved in planning a national information system as well as the various systems-design parameters to be considered in drawing up policy recommendations and timetables. Such parameters include operational and managerial questions, anticipated systems performance, systems-user interaction, present and proposed activities and economic constraints. 55 p. (SC/75/NS/39)

5. GUIDELINES FOR THE EVALUATION OF TRAINING COURSES, WORKSHOPS AND SEMINARS IN SCIENTIFIC AND TECHNICAL INFORMATION AND DOCUMENTATION

Outlines a methodology for the evaluation of training activities, including a review of the state-of-the-art of various evaluation techniques, a statement of recommended techniques, a bibliography and sample questionnaires. Available in English, French and Spanish. 132 p. (SC/75/WS/44)

6. GUIDELINES FOR THE ORGANIZATION OF TRAINING COURSES, WORKSHOPS AND SEMINARS IN SCIENTIFIC AND TECHNICAL INFORMATION AND DOCUMENTATION

Conceived particularly for course designers and teachers to meet the needs of developing countries. Covers course organization from the planning to the evaluation and follow-up stages. Available in English, French and Spanish. 88 p. (SC/75/WS/29)

7. A REFERENCE MANUAL FOR MACHINE-READABLE BIBLIOGRAPHIC DESCRIPTION

Designed to meet the needs of secondary information services for an agreed minimum set of data elements for bibliographic data records to allow interchange between computer-based systems, enabling them to present bibliographic information to the user in a more compatible and, therefore, more easily usable form. Available in English, French, Russian and Spanish. 71 p. (SC/74/WS/20)

8. GUIDELINES FOR ISDS (INTERNATIONAL SERIALS DATA SYSTEM)

Explains the scope, activities and functions of ISDS, which is an international network of operational centres responsible for the creation and maintenance of computer-based data banks containing essential information for the identification of serials. Available in English, French and Spanish. 67 p. (SC/WS/538)

9. GUIDELINES FOR INDEXING PRINCIPLES

Developed with ISO to serve as international standards in indexing. Available in English and French. 11 p. (SC/75/WS/58)

10. METHODOLOGY FOR TESTING AND EVALUATING STANDARDS WITH SPECIAL REFERENCE TO INFORMATION, DOCUMENTATION AND RELATED FIELDS

A "standardization matrix" is recommended as an aid to deciding upon the need for proposed new standards and priorities in the standardization programme. Available in English and French. 14 p. (SC/75/WS/102)

11. A COURSE IN ADMINISTRATION FOR MANAGERS OF  
INFORMATION SERVICES: DESIGN, IMPLEMENTATION  
AND TOPICAL OUTLINE  
  
Available in English and Spanish. (SC/76/WS/110)
12. EDUCATION AND TRAINING OF USERS OF SCIENTIFIC AND  
TECHNICAL INFORMATION: UNISIST GUIDE FOR TEACHERS  
  
Available in English and Spanish.
13. HANDBOOK FOR INFORMATION SYSTEMS AND SERVICES  
  
Available in English, French and Spanish.
14. INFORMATION NETWORKS FOR ON-LINE BIBLIOGRAPHIC  
RETRIEVAL  
  
Available in English. (PCI/77/WS/4)
15. GUIDELINES FOR THE EVALUATION OF INFORMATION SYSTEMS  
  
Available in English. (PGI/78/WS/18)
16. GUIDELINES FOR CURRICULUM DEVELOPMENT IN INFORMATION  
STUDIES  
  
Available in English, French and Spanish. (PGI/78/WS/27)
17. GUIDELINES FOR FORMULATING POLICY ON EDUCATION, TRAINING  
AND DEVELOPMENT OF LIBRARY AND INFORMATION PERSONNEL  
  
Available in English, French and Spanish. (PGI/78/WS/29)

Note: The above documents are available from:  
Division of the General Information Programme  
Unesco  
7 Place de Fontenoy, Paris, France

## Annex 11

### SUMMARY OF DISCUSSIONS HELD BY BY THE TEAM WITH PARTICIPANTS AT THE CONSULTATIVE MEETING ON INFORMATION NEEDS FOR DEVELOPMENT, PLANNING AND INVESTMENT AGENCIES IN AFRICA, NAIROBI, KENYA, APRIL 9-12, 1979

The Team, during extensive field trips in Africa, consulted a mid-range of potential users of the proposed Pan-African information system as well as potential providers of input to, and output from, the system. The Team took account of the views expressed during those field trips, and felt that further discussions on a number of points with participants at the Consultative Meeting would be helpful in clarifying certain issues having a bearing on the ultimate design of the system. Ten specific points were discussed at the Consultative Meeting. A summary of the discussions is presented here, together with other related recommendations.

#### 1. SCOPE OF THE SYSTEM

The principal users of the system will be planners and policy-makers; financiers, especially those working in development banks; field officers of the of the planning agencies; implementors of development programmes; and research groups and individuals studying the development process.

The proposed system should be designed to support development missions identified as priority areas in the national development plans of member States of ECA. In addition, national information services should have mechanisms for accessing information from bilateral agencies to support development activities in the country and information from other developing countries with similar development plans.

All types of social, political, and economic information in all forms produced within and outside Africa, in particular newly-generated unpublished material, as well as scientific and technological information that has a bearing on African socio-economic development, should be included in the proposed system.

Information services on these and other areas should be factual, descriptive, evaluative and projective.

## 2. CONFIDENTIAL NATURE OF CERTAIN DOCUMENTS

The unrestricted circulation of certain confidential documents that the Team considered to be desirable basic input material for the system raised the question of security for the countries which produce them. What kind of acceptable arrangement could be worked out in this regard?

The Meeting recognized the right of African States to determine the degree of confidentiality of their internally-generated information and their right to establish screening mechanisms as a condition of their participation in the sharing and transfer of information across national boundaries. However, the Meeting strongly urged ECA to prepare guidelines to assist member States in establishing their respective criteria for the classification of documents according to varying degrees of confidentiality.

Without compromising the security of African countries, it is recommended that the whole area of confidential material be reviewed so as to make as much information as possible available to the proposed information network.

## 3. DOCUMENT DELIVERY

Document delivery capabilities of the system would have to be worked out. The Team wished to know the preferences of users regarding the form in which information should be provided - printed copies, photocopies, or microforms.

The physical delivery of information and documents is a basic component of the proposed information programme. ECA should establish a pricing policy for the provision of information services taking into account both the needs and costs involved in their delivery and the state of postal and telecommunications facilities in Africa.

Documents should be made available in the form of printed copies, photocopies and microfiche. Other types of microforms, maps, magnetic tapes, video tapes, audio-recordings, newspaper clippings, and data in their aggregated and disaggregated formats should also be considered.

## 4. SERVICES EXPECTED FROM THE SYSTEM

In addition to the services normally associated with computerized and manual information services, the Team wished to know if any other services of particular relevance to the needs of Africa were desired.

The proposed system should provide a wide range of services including indexing, abstracting, current awareness, selective dissemination of information (SDI), etc., utilizing both computerized

and manual methods, geared to needs of users identified in (1) above.

The services provided by the national systems should include regular and frequent announcements to users (clients) together with retrospective indexes, selective bibliographies on demand, and SDI if possible. Compilation and repackaging of information, e.g., producing and distributing pamphlets and brochures in the right form for intended users should be encouraged possibly by individual contracts to subject specialists.

#### 5. LONG-TERM DEVELOPMENT INTO A NETWORK

The strategy for developing the system into a network should aim at the establishment, in the long-run, of a co-operative, decentralized Pan African information network consisting of a variety of nodes (i.e., input and output information centres) operating at regional sub-regional, and national levels. The Team sought advice on the most effective mechanism for such a network at all levels.

#### 6. TRAINING OF PERSONNEL AND USERS

Besides the types, levels and frequency of training programmes required, the Team also sought advice on the question of payment of salaries at the local (national) and international (United Nations) levels for different categories of staff in the member States that would participate in the system.

A study of the manpower requirements for information services, particularly at the national level, to run the proposed system and information network should be undertaken without delay. Based on the results of the study the appropriate curricula for formal and informal courses should be developed. In the implementation of the training programmes special effort should be made to improve and co-ordinate the existing training facilities in Africa.

If a country is participating in a regional or international development information system, it should take advantage of the training programme provided by that system. It should, when sufficiently advanced, also be willing to offer on-the-job training to personnel from other member States participating in the System. In the absence of a regional or international system, the country should organize or obtain special training for its staff that will be operating its development information service.

Training of users of the system at the regional and national levels should be aimed at ensuring that they are able to exploit all the services of the proposed information system and network. In general, the training of users at the national level should be organized with national resources though some international assistance may be available for the setting up of such a programme.

## 7. POSTAL AND TELECOMMUNICATIONS PROBLEMS

These are well known in Africa. Since these problems could present impediments to the efficient functioning of the system at both national and regional levels, the Team asked for suggestions as to how they could be tackled.

No specific suggestions were made under this heading except for the passing reference to it in (3) above.

## 8. METHODOLOGIES

Standardization of methods and techniques through the acceptance and application of international norms, appropriately adjusted to meet particular national and sectoral situations, is an essential feature of a system that is built up from the efforts of cooperating member States. The Team sought the views of participants on whether the approach should aim at compatibility with international systems through the utilization of international norms and standards, thesauri, etc.

Internationally agreed-upon norms, guidelines, standards and methodologies for processing bibliographic information should be adopted by all participating members of the cooperative information network so as to facilitate the transfer of information regionally and internationally.

If a country is participating in a regional or international system to handle development information, it will avoid unnecessary duplication of effort by adopting the same methodologies, standards and tools (including the thesaurus) of the system.

The national development information services should be operated in accordance with the methodologies and standards generally advocated by the national bodies responsible for coordinating information and documentation activities.

## 9. COMPATIBILITY OF INFORMATION HARDWARE AND SOFTWARE

Discussions were held on whether it was desirable to advise member States regarding appropriate hardware configurations for information handling, paying particular attention to efficiency and cost, as well as provide them information on available software, normally free of charge but which, unfortunately, requires a particular hardware facility for its utilization.

In order to ensure technological compatibility ECA should take immediate and necessary steps to prepare guidelines for informing member States about suitable, from the point of view of efficiency and cost, hardware and software configurations for information handling.

## 10. TECHNICAL ADVISORY COMMITTEE

Members of the Team felt that once the system became operational, it would require a group of technical specialists, functioning in a purely advisory capacity, to advise on the system's future development, establishment of new services, links with external sources, new technologies and similar matters that are subject to constant change.

A technical committee composed of information specialists including librarians, documentalists and computer scientists should be established to advise the co-ordinating organization of the proposed system and network.

The meeting made five additional recommendations regarding the establishment and operation of a national information and documentation service for development and the quality of information resources generally.

### (1) NATIONAL INFORMATION AND DOCUMENTATION POLICY AND CO-ORDINATION

There is a need for African Governments to formulate policy statements and to establish a central body for co-ordinating national information and documentation activities. From experience it may be necessary to have some lobbying from a strong professional group to point out the importance of creating such a body.

### (2) ROLE OF CENTRAL PLANNING AGENCY

The National Central Planning Agency should be represented on the body that is responsible for national information and documentation policy and co-ordination. If the country is participating in a regional or international system for the exchange of information about economic and social development, the Central Planning Agency should provide the country's representative on the management body of this system.

### (3) RESPONSIBILITY FOR OPERATING A NATIONAL INFORMATION AND DOCUMENTATION SERVICE FOR DEVELOPMENT

If a country has a national documentation centre, this centre should be assigned the responsibility for operating the national development data base and services. If a country does not have a national documentation centre, this responsibility should be assumed by the National Central Planning Agency itself or should be entrusted to an institution designated by the National Central Planning Agency and accorded the necessary financial and manpower resources.

#### (4) LINKS TO OTHER NATIONAL SYSTEMS

When the national production of information of all types is sufficiently great, it probably cannot be handled effectively in a single monolithic system. At this time, sectoral systems should come into being (e.g. agriculture, health, transport, etc.). The system serving the planning and investment functions will then need to be closely linked to the sectoral systems and the national body will have an even more important role to play.

#### (5) QUALITY

The Meeting recognized that the determination of quality of information is best left to the user and that trying to present general guidelines on quality would not be in his best interests. However, the Meeting recommended that information should be as disaggregated as possible in order to facilitate comparative analysis and that the methodology and source of information should be carefully considered as useful quality indicators.

## Annex 11.1

AGENDA: CONSULTATIVE MEETING ON INFORMATION NEEDS  
FOR DEVELOPMENT, PLANNING AND INVESTMENT AGENCIES  
IN AFRICA, NAIROBI, 9-12 APRIL, 1979

MONDAY 9th APRIL, 1979

### MORNING:

Registration:	9:30 a.m.
Introduction:	Dr. Gerhard Beck
Welcome Address:	Chairman, Kenya National Academy
Opening Address:	Dr. Robert Ouko, M.P., Minister for Economic Planning and Community Affairs
Keynote Address:	1) Professor Adebayo Adedeji, Executive Secretary, Economic Commission for Africa (ECA): Regional Requirements for Information  ii) Hon. R. Chisupa, Minister for Industry, Commerce and Foreign Trade, Zambia: National Requirements for Information
Election of Officers:	Chairman Vice Chairman Rapporteurs Steering Committee

### AFTERNOON:

#### INFORMATION REQUIREMENTS FOR PLANNING AND POLICY-MAKING

- 1) Information in the Service of Development  
(John Woolston, IDRC)
- ii) Report by the ECA-OAU-IDRC Mission (Shahid Akhtar,  
Team Leader, ECA-OAU-IDRC Mission)
- iii) Discussion

TUESDAY, 10th APRIL, 1979

MORNING AND AFTERNOON:

INFORMATION REQUIREMENTS FOR DEVELOPMENT PLANNING AND  
DECISION MAKING AT REGIONAL AND SUB-REGIONAL LEVELS

- i) The Latin American Experience: Julio Cubillo,  
CLADES/UNCEPAL
- ii) The African Experience (a) A. Bujra, CODESRIA  
(b) K. Amoa, IDEP
- iii) Discussion

INFORMATION REQUIREMENTS FOR DEVELOPMENT PLANNING  
AND DECISION MAKING AT THE NATIONAL LEVEL

- i) Malawi (Augustine Y. Bobe, Economic Planning  
Division, Office of the President)
- ii) Kenya (Esther Keli, Ministry of Economic  
Planning and Community Affairs)
- iii) Discussion

WEDNESDAY, 11th APRIL, 1979

MORNING:

INFORMATION TRANSFER

- i) Methodological, technological and managerial  
problems in the collection, storage, processing  
and diffusion of information (Gerhard Beck, DSE/CRIT)
- ii) How is information generated, by whom and where  
it can be found (Professor Arntz, Federation  
International de Documentation (FID))
- iii) Discussion

AFTERNOON:

FORMULATION OF WORKING GROUPS

- i) Type, quality, nature and sources of information  
needed for development planning
- ii) To explore the mechanisms and structures of  
information flow at the national level

- iii) To explore the mechanisms and structures of information flow at the regional level

THURSDAY, 12th APRIL, 1979

MORNING:

- i) Presentation of Working Group Reports
- ii) Discussion
- iii) Meeting of Drafting Committee - drawn from among the members of Working Groups

AFTERNOON

- i) Presentation of Final Recommendations and Conclusions by Rapporteur
- ii) Discussion
- iii) Adoption of Recommendations
- iv) Closing Ceremonies

## Annex 11.2

OPENING ADDRESS BY THE RIGHT HONOURABLE DR. ROBERT OUKO,  
MINISTER FOR ECONOMIC PLANNING AND COMMUNITY AFFAIRS, KENYA

Mr. Chairman,

Ladies and Gentlemen,

I am delighted to be with you and to open this four day consultative meeting on information needs for development, planning and investment. This meeting is timely, since we in Kenya have just launched our Fourth National Development Plan and are proceeding with the publication of forty district level development plans. The concerns that are evident in your agenda are those that we have been working on intensively, and we have marshalled the facts, the statistics and the non-statistical information needed for the broad formulation of development policy and the framing of more specific national and regional development programmes.

The focus of this consultative meeting - information needs - is of extreme importance. It is more than a single topic, and involves interrelationships between a large number of activities and professional skills. These include the information content for decision making in planning, data collection procedures and the management and organizational requirements for data storage and retrieval. Your agenda is a full one and the breadth and complexity of topics is challenging. I see from the list of participants and sponsoring agencies that the interest of the meeting will be continent-wide. This raises the important question of information needs and planning requirements over a broad spectrum of national economies and social structures. Many factors influence the type of information needed, the available sources and the reliability and permanence of the data itself. These factors include the relative dependence on agriculture, the extent of non-monetized or semi-monetized activity, the importance of foreign trade in relation to overall economic activity, and the degree of shifting population patterns within the nation or within particular regions. It will be interesting to see whether your deliberations over the next four days suggest a generalized set of information needs and managerial procedures, or whether you will find it more useful to move toward typologies which relate both the needs and the mechanisms to the underlying structural characteristics of the economy in question.

It appears to me that data and information management requirements exist at three levels. The first, or at least the level of greatest abstraction, is the development of macro-parameters to guide the planning process in terms of forming national policy. This involves the framing of national time series on the important determinants and indicators of national economic activity, both in the public and private spheres. Looking at the progress made in African nations in this regard during the last two decades, it is clear that

this has been a highly successful effort. The nations represented here this morning generally possess systems of macro-planning data, both historical and projective, that would have appeared startling in their sophistication and completeness just fifteen years ago.

A second level of information requirements is for cross-section micro-studies to provide guidance and background data on specific policy and planning issues. Examples of such exercises include household budget and expenditure studies, urban wage employment profiles and continuing series of farm practice studies. The record with regard to such micro-studies is less consistent than in the national macro-level area, but there is now the capacity in many of our countries for the orderly and dependable collection of such information through onetime analyses or through ongoing sectoral or programme studies. This second group of activities has a different set of requirements, both in techniques of collection, replicability, and use and management of results, than the first group.

The third level of information requirements is for planning and programme formulation at regional and sub-regional levels. It is a safe assumption that most of the nations and organizations represented here this morning are engaged to some extent in a conscious effort to decentralize aspects of their planning and development decision-making processes. In Kenya we have chosen the District as our fundamental unit for planning, and more importantly at present, for implementation. There are forty districts, excluding Nairobi, so we are talking about population groupings averaging something over three hundred thousand persons each. As relative newcomers to the process of decentralized planning, we find ourselves in a weaker position with regard to information and data management at this level than at national level or with respect to special purpose micro-studies. We have become painfully aware of the costliness of data and information generation at regional levels, measured in terms of time, available human skills and financial resources. Several generalizations have emerged from our experience. I would like to share three of them with you, not because they are startling in any way, but because their simplicity often causes them to be overlooked in the enthusiasm for new and vigorous efforts at local level planning.

First, "Know what you already have and make sure it is available to the people who need it". Over the years, an impressive amount of information is gathered and analyzed which is relevant to the needs of a decentralized planning approach. Unfortunately, much of this past work tends to be unused because it is not available or even known to the planners and decision makers who need it. University departments, research institutes, government departments, private sector and non-governmental organizations produce a truly monumental flow of valuable information for regional and local level planning. Unless there are specific programmes for its accumulation and use, there is the constant danger that we will devote much of our energy to reinventing the wheel. In Kenya we are just now conducting a feasibility study on the formation of district documentation centres, to plan for the continuing and orderly use of information that already

exists.

The second generalization I would suggest is "Don't collect it unless you have a clear and immediate use for it". There is a built-in tendency for information and data systems to acquire a life-force of their own and to expand the amount of information available beyond the capability of the system to absorb it. This is a particular risk in local level planning since staffing limitations may suggest a low cut-off point in terms of the capacity to use information effectively. We are limiting our own development of district level planning information to four basic areas:

First, baseline data on the most fundamental parameters, such as land use, income levels and sources and distribution of productive and infrastructure assets. The use of more sophisticated information will have to await improvements in collection capability and analytical capacity in the field.

Second, revenue, and particularly expenditure, information disaggregated to district levels. As with many other countries, we find that our budgetary and financial information flow systems are well designed to produce national level and programme or functional summaries, but are not geared to providing regional or local information in a coherent and consolidated form. Yet this is precisely the information that is essential for a coherent analysis of local ongoing programmes in relation to locally defined goals.

Third, the development of output criteria, relating investment to a desired outcome. It is often necessary to use surrogate variables in place of the underlying welfare function in which we are interested; for example, using the physical dispersion and patient-use statistics for health centres as a surrogate for the measurement of improved health practices.

Finally, we are developing improved systems for gathering impact data on programme effectiveness through built-in processes of monitoring and evaluation. Here again, the emphasis must be on simplified approaches, and of limiting the scope of the inquiry in order to increase the probability of obtaining useful results.

The third generalization follows from the second and can be summed up in the phrase "Keep it simple". Analytic skills at local levels are frequently limited. There are often problems of low confidence limits on locally generated data. For these reasons it is important that the approaches and techniques used do not become over-sophisticated in relation to the skills of the analyst or the reliability of the information being analyzed.

In conclusion, let me express once again my pleasure at joining you on your opening day. I wish you every success in dealing with a complex and formidable agenda, and will look forward to reviewing the results of your deliberations. Thank you.

### Annex 11.3

#### KEYNOTE ADDRESS BY PROFESSOR ADEBAYO ADEDEJI, EXECUTIVE SECRETARY, ECA, AT THE CONSULTATIVE MEETING IN NAIROBI

The decision to create a numerical and non-numerical information and documentation system (and network) for the African continent, taken more than ten years ago, is now being implemented, and I must confess to you that I am very happy. However, some people might still be asking themselves why the African continent to which belong most of the neediest countries in the world, wants to be in possession of a numerical and non-numerical information and documentation system (and network). For Africa, the new international economic order has a concrete meaning and must include some basic ideas.

Firstly, there is the need for an increasing measure of economic self-reliance. Secondly, there is the need for the installation, within the African countries individually and collectively, of the components of an autonomous and self-sustaining engine of growth and diversification, capable of being directed to meet several objectives of socio-economic policy.

This means, thirdly, that any African development policy must be designed to include accelerated and diversified growth to meet the needs of the mass of the people, to allow the widespread development of capabilities for generating and retaining real income, the reduction of unemployment, and the moderation of the present pattern of urban growth, as well as the careful use of natural resources and, in general, the protection and improvement of the natural environment.

These main objectives can be reached only if there is an efficient numerical and non-numerical information and documentation system to enable basic choices to be made and to help decision-makers to define their priorities. There is, of course, an essential complement to the supply of information whether numerical or non-numerical, viz. the organization of demand for such information.

A viable development programme and planning process must be based on some critical socio-economic indicators such as employment, the means of production (land, capital, tools, implements and equipment, raw material inputs, education and training - whether formal or non-formal - transport and communications, markets); basic elements in the standard of living (food, clothing, housing, health facilities, participation in cultural activities as well as decision making affecting the community and its affairs, etc.) and such macro-indicators as income levels and distribution, intersectoral resources flows, the eradication of illiteracy and of endemic diseases.

These are in marked contrast to the indicators presently used - GDP, GNP, foreign exchange gaps and the like - which tend to lay stress on the external dependency relations of the African economies

and to ignore the problems of internal structural transformation and the inter-relations of social and cultural factors with economic and technological factors.

Your meeting is exclusively concerned with the non-numerical part of the African information system.

The system as a whole will be divided into two natural branches: numerical and non-numerical. For these two branches the hardware and the central administration will most probably be commonly shared but each branch will enjoy a considerable degree of autonomy. Indeed, as regards the building up of a numerical information system we already have a considerable programme directed mainly by the Division of Statistics in consultation with the Conference of African Statisticians and the United Nations Statistical Commission. The combination of the Conference of African Statisticians with the Conference of African Planners and the Conference of African Demographers just approved in Rabat will, we expect, considerably enrich and facilitate this programme, particularly when account is taken of the African Household Survey Capability Programme which is now in progress.

Based upon consultations which ECA has had with various African Governments, sub-regional and regional African organizations, and African regional offices of United Nations agencies, and based as well on the advice received from the delegates to the ECA Technical Committee of Experts and the ECA Conference of Ministers meeting in Rabat last month, we think that the structure of this non-numerical branch might be as follows:

1. The national information and documentation system (and networks) should be based on sectoral systems like transport, population, education and manpower, health, industry, agriculture and food, financial institutions, plans and project documents, public enterprises, private enterprises, etc.

These systems will be built up from sub-systems, such as, in the field of transport: road transport, air transport, river and lake transport, maritime transport. Within the roads sub-systems it must be possible to distinguish between roads of different standards.

The national micro-systems, sub-systems and systems will be the foundation of the national information and documentation system and should lead to more efficient integrated planning and development of national economies.

2. The national micro-systems, sub-systems and systems will also facilitate work on economic co-operation in several ways. Firstly, they will enable existing economic co-operation institutions such as, at the geographical level, OMVS and CILSS, to get a clearer insight into the dimensions and even the dynamics of the problems they are designed to solve. They will also facilitate the discovery of identities - especially at the sectoral level - which offer new opportunities for co-operation. Finally, they may significantly

contribute to the widening and enrichment of learning processes through consultations and the sharing of experiences arising from the discovery of common problems and attempts to solve them.

3. At the Pan-African level the information and documentation system (and network) will therefore be easily constituted from the feeder micro-systems, sub-systems and systems existing at the national level. The role of the Pan-African co-ordinating body will consist mainly of:

- giving general guidance for the constitution of the micro-systems, sub-systems and systems;
- defining a common methodology of work (common worksheets) to enable easy grouping at various levels (national, sub-regional and regional and sectoral);
- undertaking necessary research into the compatibility of the various forms of hardware which will be purchased by the various governments;
- organizing Pan-African research into the readaptation of the ISIS software package to the various big computers already installed in the African countries;
- starting as soon as possible the necessary research for the adaptation of the MINISIS software package to the various existing mini-computers;
- encouraging the manufacture in Africa of computer cassettes, magnetic tapes, and some small peripheral equipment which will be the nucleus of a computer equipment industry in Africa;
- with potential African or international private or public donors, creating and installing sub-systems and systems (and networks) at national, sub-regional and regional level;
- providing assistance to African States to enable them to solve the problems (technical, staff, training, etc.) which they will be facing in creating their respective information systems and networks, and
- obtaining access at the lowest possible rate to the private and public data bases existing in the industrialized countries.

An important part of the system at the regional level, will be the re-organization of the disparate and unintegrated pattern of

arrangements of non-numerical information available at present at the ECA headquarters.

This is the system (network) that we in the ECA believe to be most likely to serve the region's needs most effectively.

The IDRC has, since early 1978, taken a keen interest and given not only moral and professional but also financial support to this project. At Rabat, the Conference of Ministers renewed its commitment to the project and appealed to member States, to donor agencies and to the international community for further help in developing and realizing it. It therefore gave us great pleasure that the role of the IDRC was given recognition in the resolution re-affirming the commitment of member States to this project. We are depending on the IDRC for further help in terms of technical advice, direct financial contributions and assistance in mobilizing aid from other sources.

We hope, with IDRC help to begin work on the re-organization of the information structure at ECA headquarters, on the establishment of a Clearing House and on the installation of a demonstration and training centre at ECA headquarters in Addis Ababa. I should like to say here that, of course, I hope to negotiate for some of the monies made available in future pledges to the United Nations Trust Fund for African Development to be applied to this project, but I am painfully aware of the number of projects with claims on this Fund. However, it is my belief that we should not entirely depend on donor agencies and governments outside the Region for the implementation of such an important project.

#### Annex 11.4

KEYNOTE ADDRESS BY THE RIGHT HONOURABLE  
MR. R. CHISUPA, MINISTER OF INDUSTRY,  
COMMERCE AND FOREIGN TRADE, ZAMBIA, AT  
THE CONSULTATIVE MEETING IN NAIROBI

I wish to join Professor Adedeji, the Executive Secretary of ECA, in thanking the sponsors and organisers of this Conference.

I wish also to take this opportunity to thank Dr. Ouko, the Kenyan Minister for Economic Planning and Community Affairs, and through him the Kenyan Government, for permitting this meeting to be held in the friendly city of Nairobi.

For many countries of the world, the most precious commodity produced after food and medical services is information. Availability of correct information results in right decision making which can avoid expensive mistakes (blunders) which would cost the country dearly. On the other hand, lack of information is a key factor in the nonfulfillment of the targets set by Development Plans, many of which look genuinely grandiose on the drawing board.

For any country to plan its education programme, health services, housing and other social services, accurate information is required on population and population growth. Lack of accurate information on population and population growth will, after a short time, inevitably result in children going without schooling, hospitals without medicines, and many families without any hope of being allocated a house in urban areas for years.

It may be that what we need is not only information or data, but rather the correct interpretation of that data and to put it to correct use. Of course, incorrect interpretation of data will result in wrong use of the results of data and wrong results in our programming.

I take it that planning is for the management of the economy and proper utilisation of resources, for the enhancement of the quality of life of the citizen. Utilisation of resources includes manpower resources. This therefore implies not only general information, but statistics, facts and data.

In the field of investment promotion and development planning accurate information on the following is essential:

1. Energy-generating capacity of the country,
2. Transport and communications
3. Mining and minerals produced, and quantities
4. Agricultural production and diversity of crops
5. Industry, both public and private
6. Education and training

7. Health services
8. Housing
9. Tourism
10. Climate: rainfall, physical features, water supply and land elevation
11. Size of the economy
12. Locality: geographical location (whether the country is landlocked, or situated on the coast, and how many other countries border it)
13. Employment within the country.

If information for Central Government purposes is difficult to come by, it is more difficult to come by in the regions and districts.

It is very easy in many countries to find good schools and good health facilities in major cities or towns, and this naturally leads to drift of population from rural to urban centres, resulting in the unfortunate springing up of squatter compounds or illegal urban settlements. If this trend is to be avoided or reversed, accurate information is required on national geographical distribution of manpower and social capital investment in the rural areas. The planning for the rural areas will be better done by the people on the spot and not by those in the capital cities who may be out of touch with the realities of the rural areas.

Naturally national centres will have to be established for collection and analysis of information, which will then be made available to those who will be able to use it in decision making, administration and economic and industrial management. But as long as the information remains undigested it is useless to anybody.

Thank you.

Annex 11.5

LIST OF PARTICIPANTS AT THE CONSULTATIVE MEETING ON INFORMATION  
NEEDS FOR DEVELOPMENT, PLANNING AND INVESTMENT AGENCIES IN  
AFRICA, NAIROBI, 9-12 APRIL, 1979

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## Annex 12

### ACRONYMS USED IN THIS REPORT

AEC	African Bibliographic Centre, Nairobi
ADB	African Development Bank, Abidjan
AEC	African Economic Community
AGRIS	International Information System for Agricultural Sciences and Technology
ALECSO	Arab League Educational, Cultural and Scientific Organization, Cairo
ARDCES	Arab Regional Documentation Centre for the Economic and Social Sciences
ATRCW	African Training and Research Centre for Women, Addis Ababa
BIS	Bureau interafricain des sols et de l'economie rurale, Bangui
BREDA(NIEDA)	Bureau regional pour l'education en Afrique (Network of Educational Innovation for Development in Africa), Dakar
CAFRAD	Centre africain de formation et de recherches administratives, Tanger
CAN/SDI	Canada/Selective Dissemination of Information
CELADE	Centro Latinoamericano de Demografia, UN Santiago
CEPAL	Comision economica para America Latina, UN, Santiago
CERDAS	Centre de coordination des recherches et de documentation en sciences sociales desservant l'Afrique sub-saharienne, Kinshasa
CIEN	Comite interafricain d'etudes hydrauliques, Ouagadougou
CILSS	Comite interetats pour la lutte contre la secheresse au Sahel, Ouagadougou

CLADES	Centro Latinoamericano de Documentacion Economica y Social, UN/CEPAL, Santiago
CODESRIA	Council for the Development of Economic and Social Research in Africa, Dakar
COMPENDEX	Computerized Engineering Index
CORE	Common Register of Projects
DEVINDEX	Development Index
DEVSIIS	Development Sciences Information System
DEVSIIS-Africa	Development Sciences Information System - Africa
DOCPAL	Sistema de Documentacion sobre Poblacion en America Latina
DOS	Disk Operating System
DOS/VS	Disk Operating System/Virtual Storage
DSE	Deutsche Stiftung fur Internationale Entwicklung (German Foundation for International Development), Berlin
EBAD	Ecole de Bibliothecaires, Archivistes et Documentalistes, Dakar
ECA	Economic Commission for Africa, Addis Ababa
ECA-MULPOCS	Economic Commission for Africa - Multinational Programming and Operational Centres
ECLA	Economic Commission for Latin America, UN, Santiago
ECOSOC	Economic and Social Council, UN, New York
ECOWAS	Economic Community of West African States, Lagos
ECWA	Economic Commission for West Asia, Beirut
ESI	Ecole des Sciences de l'Information, Rabat
EURONET	European Network
FAO	Food and Agriculture Organization of the United Nations, Rome
FID	Federation Internationale de Documentation, The Hague

GDP	Gross Domestic Product
GNP	Gross National Product
IAEA	International Atomic Energy Agency, Vienna
IBE	International Bureau of Education, Geneva
IBRD	International Bank for Reconstruction and Development, Washington, D.C.
IDCAS	Industrial Development Centre for Arab States, Cairo
IDEP	Institut Africain de Developpement Economique et de Planification, Dakar
IDRC	International Development Research Centre, Ottawa
IERS (IBE)	International Educational Reporting Service (International Bureau of Education), Geneva
IFLA	International Federation of Library Associations, The Hague
IFORD	Institut de formation et de recherche demographiques, Yaounde
ILCA	International Livestock Centre for Africa, Addis Ababa
ILO	International Labour Organization, Geneva
ILPES	Instituto Latinoamericano de Planificacion Economica y Social, Santiago
INADES	Institut africain pour le developpement economique et social, Abidjan
INFOPLAN	An Information System for Planning in Latin America and the Caribbean, UNCEPAL/ILPES/CLADES
INFOTERRA	An International Referral system for sources of environmental information
INIS	International Nuclear Information System, Vienna
INRES	Information Referral System
INSPEC	International Information services for the Physics and Engineering Communities
IOB	Inter-Organization Board for Information Systems and Related Activities, Geneva
ISI	Institute for Scientific Information, Philadelphia

ISIS	Integrated Set of Information Systems
ISBN	International Standard Book Number
ISO	International Standards Organization, Geneva
ISSN	International Standard Serial Number
ITC	International Trade Center
MEDLARS	Medical Literature Analysis and Retrieval System
MINISIS	Mini Integrated Set of Information Systems
MULPOCs	Multinational Programming and Operational Centres
NCR	National Cash Register
NIEDA	Network of Educational Innovation for Development in Africa, Dakar
NSTDA	National Science and Technology Development Agency, Lagos
OAU	Organization for African Unity, Addis Ababa
OECD	Organization for Economic Co-operation and Development, Paris
OMVS	Organisation pour la mise en valeur du Fleuve Senegal, Dakar
OS	Operating System
PAID	Pan African Institute for Development, Douala
PGI	Programme Generale d'Information (General Information Programme), Unesco, Paris
PIDSA	Population Information and Documentation System for Africa, Accra
POPIN	Population Information Network
RIPS(PIDSA)	Regional Institute for Population Studies (Population Information and Documentation System for Africa), Accra
SDI	Selective Dissemination of Information
SPINES	Science Policy Information Exchange System
TCDC	Technical Co-operation among Developing Countries

TITUS	Traitement de l'Information Textile Universelle et Selective
UBC	Universal Bibliographic Control
UDC	Universal Decimal Classification
UK	United Kingdom
UN	United Nations
UN/CELADE	Centro Latinoamericano de Demografia, UN, Santiago
UN/CEPAL	Comision economica para America Latina, UN, Santiago
UN/DIESA	Department of International Economic and Social Affairs, UN, New York
UN-ECA	United Nations - Economic Commission for Africa, Addis Ababa
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme, New York
UNEP	United Nations Environment Programme, Nairobi
UNESCO	United Nations Educational, Scientific and Cultural Organization, Paris
UNIDO	United Nations Industrial Development Organization, Vienna
UNISIST	World Information System for Science and Technology
USA	United States of America
VS	Virtual Storage
WARDA	West Africa Rice Development Association, Monrovia