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REPORT ON THE LATIN AMERICAN INFORMATION
INFRASTRUCTURE FOR DEVELOPMENT,
WITH SPECIAL REFERENCE TO THE CARIBBEAN



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INTRODUCTION

(a) Background information

The Latin American Centre for Economic and Social Documentation (CLADES) was established in 1971 as part of the Economic Commission for Latin America (CEPAL), in response to the need to systematize information and documentation activities carried out in Latin America and the Caribbean in the field of development.

Shortly after its establishment, the Centre began to feel that in order to perform its work of co-ordination and systematization successfully, it would need to know more about the infrastructure of information services existing in the region in support of development actions such as the formulation of plans and policies, the conduct of studies and research, the implementation of programmes and projects and the operation of enterprises and institutions with economic and social impact.

It therefore began to take steps to seek financing in order to undertake a regional survey of information units and networks by holding conversations with the International Development Research Centre (IDRC) of Canada, which at that time was finishing the feasibility study on an international information system for the development sciences (DEVSIIS).

Since both IDRC and CEPAL attached great importance to the establishment of a data base on sources of information for development, at the end of 1975 an ambitious regional project was embarked upon with generous support from the Canadian centre. The project activities were initiated during the first quarter of 1976, when CLADES officials established contact with national experts and authorities for the purpose of discussing the scope of this initiative and the responsibilities and tasks to be undertaken by each of the countries and by CLADES.

An excellent reception was given to the invitation issued by CLADES on the part of the following 22 countries: Argentina, Barbados, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, the Commonwealth of Puerto Rico, the Dominican Republic, Trinidad and Tobago, Uruguay and Venezuela. The survey covered close to 800 information units -primarily specialized libraries, information centres and documentation centres.

The information collected was then put together following a useful conceptual scheme for preparing a diagnosis of the information infrastructures of countries, subregions and the region as a whole and preparing directories which were widely disseminated.^{1/}

(b) Summary

The report has been divided into two parts and contains eight chapters. In addition, there is a final section with final observations and a set of annexes. Part one, DEVELOPMENT INFORMATION INFRASTRUCTURES: FOUNDATIONS OF THE STUDY, is intended to present the basic characteristics of the project, i.e., its objectives, the problem which surround it, how and where the research is carried out and the conceptual framework in which the data was collected and then analysed. In fact, it is this part which contains all data which might facilitate understanding of the study and the evaluation of the information generated by it.

A number of arguments are presented there to demonstrate the importance of information as a resource and as a critical ingredient of development activities. Attention is also drawn to the importance of national and regional institutions having mechanisms capable of selecting, organizing, preserving and disseminating this information, and light is thrown on the leading role of specialized libraries, information centres, documentation centres, etc., as basic components of national

^{1/} A list of publications produced under the project is contained in annex 1.

information infrastructures. It is also argued that the weakness of these infrastructures calls for action to strengthen them; and this action can be properly formulated only if previous information is available on the state of these bodies, which can be accomplished by conducting a survey and preparing a diagnosis of the existing information units.

In accordance with the facts presented above, the central objectives of the study were established in terms of:

(a) Identification and description of information units organized and in a position to provide information services in the field of economic and social development in Latin America and the Caribbean.

(b) A diagnosis of national, subregional and regional information infrastructures.

Attention is also drawn to a supplementary objective which is to transmit the methodologies and conceptual approaches generated by the study to the national focal points and to provide practical guidelines aimed at equipping them to take responsibility for similar studies autonomously in the future (see chapter I).

The geographical, institutional and technical scope of the research is defined later on. At the same time criteria are given for identifying development information units within the total number of units which make up the information infrastructure of a country. These criteria refer both to the types of units (information centres, specialized libraries, documentation centres, etc.) and to the development topics dealt with (economic planning, social welfare, environment, etc.).

On the basis of these ideas, the situation with regard to sampling is then defined by determining the total number of development information units existing in each of the countries and establishing the representativeness of the group of units which were finally surveyed in each of them. The overall representativeness of the survey was close to 20%. The situation with regard to sampling in each of the Latin American and Caribbean countries is shown in table 5.2/

There follows a discussion of the choice of method of data collection (the survey), the technical characteristics of the measuring instrument used (the questionnaire) and the way in which the information was processed. (See chapter II.)

Part One ends with a description of the theoretical frame specially designed for the enquiry, which involves a set of variables describing individual features of the units: (a) global or contextual variables relating to the establishment, geographical location and objectives of the institutions and development experts supported by units and (b) specific variables relating to the operation of the units and classified in accordance with the information services they provide; the human, bibliographical, physical and financial resources available to them; the pattern followed in their internal management and the importance or status they enjoy within the institutions of which they are part.

This theoretical frame was then used for the purposes of a methodology for evaluating information infrastructures, "the minimum threshold methodology", which makes it possible to form images of the state of groups of information units and to detect aspects or areas in which they are deficient. (See chapter III.)

Part Two of the study, entitled DIAGNOSIS OF THE DEVELOPMENT INFORMATION INFRASTRUCTURES IN LATIN AMERICA AND THE CARIBBEAN, presents information by country and subregion and for the region as a whole. It was organized in terms of four distinct subregions on the basis of criteria similar to those used in the population statistics prepared and published by the Latin American Demographic Centre (CELADE), those subregions being: (a) the Atlantic subregion of South America; (b) the Andean subregion of South America; (c) the subregion of Central America and Mexico, and (d) the Caribbean subregion. In this English version of the report the situation by country is only

2/ A list of each of the units surveyed in alphabetical order by country and city is contained in annex 2.

available for the followings Caribbean countries: Barbados, Jamaica, Dominican Republic, the Commonwealth of Puerto Rico and Trinidad and Tobago. (See chapter IV.)

The findings of the diagnosis give, according to CLADES, a faithful and impartial description of the realities studied. They have not been interpreted by CLADES, except in the case of the region as a whole. (See chapter V). Since these results need to be examined by interdisciplinary groups made up of experts in development problems, information specialists and institutional authorities of the countries and subregions covered, the present study is considered to be an exploratory study. In it, only the general patterns and trends of the behaviours of information units are indicated, on the basis of the statistical analysis of the data collected in the enquiry.

It is not easy to give a brief description of the main findings that emerged from the analysis. In any case, for each of the countries and subregions provision has been made, within the relevant chapter, for a conclusions section in which a preliminary summary is made of the main relevant traits.

It is important to note that a global and a detailed approach was used in the analysis of each infrastructure. The global analysis results in a description of the spacial and temporal evolution of the information infrastructure of the institutional setting where it has put down its roots and the information needs towards which it has oriented its operations. The detailed analysis of specific aspects of the operation of the units enables to see the areas of greatest weakness in the information infrastructures, whether they be in information services, resources, management or status. This makes it possible for those who are responsible for interpreting this diagnosis to get their bearings and strengthen the units where necessary and feasible.

In any case, it must be pointed out that the diagnosis has turned out to be very well attuned to the wide diversity of national and subregional situations. Thus, the picture which has emerged, far from being homogeneous and lacking in variety, is one of different perspectives and shadings which give each situation its own personality.

The Report ends with the section entitled FINAL OBSERVATIONS AND STUDY PROJECTIONS, containing a description of the contribution made by the diagnosis within a broad concept of information infrastructures which is more than a mere collection of information units. It includes technical support components in the areas of professional training, technical advisory services, standardization and research in information sciences and related disciplines; an interface with the institutions which generate and use information and, finally, a co-ordinating mechanism responsible for planning, animation, regulation and overall financing.

As for the ways in which the study can be projected, a distinction is made between the short, medium and long run. For the short run some limited action is suggested which might be taken in the region under a scheme for communicating the results of the diagnosis to the various institutions which support an information infrastructure. For the medium and long run reference is made to the need to establish mechanisms for the regional co-ordination of information activities; these mechanisms should be made responsible for future survey/diagnosis activities and, in particular, for those activities aimed at improving the proposed methodology and extending or utilizing the data base.

(c) Pre-evaluation of the study

This section contains some thoughts formulated by CLADES concerning the possible impact of the survey. Naturally, it is the region itself which in the last analysis must make statements in this connexion. Since there is a certain amount of subjectivity in the ideas expressed below, incidences having a direct effect on the region have been separated from examples of impact on the Centre itself.

From the regional point of view and at the risk of appearing presumptuous, we wish to draw attention to some of the possible effects of the study. We are aware that an evaluation as such is a task for an independent institution outside CLADES and for the institutions participating in the exercise, and an attempt has therefore been made to detect some of the effects which might serve as guidelines in a future evaluation.

Knowledge of information sources for development: one of the most important results of the project has been the establishment of a regional data base of organized sources of information specializing in various development problems. This data base of documentation and information centres and specialized libraries means that information is available to those responsible for the formulation of development plans, studies and projects. They are directed to those places which are equipped to help them in obtaining documents and data relating to various development topics and to provide various kinds of information service (translations, specialized referral services, bibliographies on request, etc.) Information on these sources has been made accessible in printed form (directories) and is available on request.

Knowledge concerning the state of the information infrastructure: the data base referred to has been used to analyse the position of information units in the field of development in what may be regarded as being a first in-depth diagnosis containing information on important aspects of the information supply -bibliographical, human and physical resources; technical characteristics and styles of managing the units-intended for experts in the field of the development of individual countries, the subregions and the region.

The conceptualization of information problems using an integrated approach: since the activities undertaken call for the study of the information problems in the region from both the political-institutional and the technical-administrative points of view, the CLADES team had to try to conceptualize these problems in such a way as to be able to describe the "information for development" phenomenon. This conceptualization, which has some novel aspects, may be useful in getting the countries of the region to deepen the diagnosis and formulate national information policies and in encouraging institutions of various kinds to organize information networks. Some of its other aspects include the definition of the "economic and social development field"; the broad concept of "information unit"; a system for analysing such units on the basis of a standard measure of resources, services, documentary activity and a strategy for communicating results.

Strengthening of co-operation and local apprenticeship: the project allowed for the effective participation of national focal points belonging to 22 countries, which shared the responsibility of CLADES for the various phases of its execution. This arrangement resulted, in the majority of cases, in a strengthening of the focal point in terms of greater knowledge and control of the units in its area of responsibility. Those responsible for directing these units took the opportunity of establishing direct contact with their counterparts during the meetings at which the project was launched or at the national diagnostic seminars and were able to learn an approach to research and to acquire experience in the administration of this kind of project during the execution phase.

Linkage and access of information specialists to political decision-making: as a direct result of the activities of the project, information specialists gained access, in the majority of cases, to the national authority responsible for the substantive development sectors (finance, education, planning, ...). This made it possible to define the information problems of the sector and to learn the opinions of these authorities. In addition, it was possible to make the authorities aware of the information problems through a programme in which CLADES officials conducted interviews in various public, university and private agencies in the region.

On the other hand, from the internal point of view of CEPAL, the project also produced very positive results in that it enabled the Commission to make itself felt in the region in a new dimension of development -"information and documentation". Attention should be drawn to the following results in particular:

Strengthening of CEPAL's institutional ties with the countries: the project and the decentralization strategy adopted by CLADES resulted, in a relatively short period of time, in the enrichment of the regional commission and a renewal of its formal and informal ties with many bodies active in the development field: central banks,

ministries, national commissions of science and technology, universities, enterprises, etc. The project resulted in a direct dialogue which enabled the Commission to identify its actual or potential relations and requirements in connexion with information. In addition, these linkages enabled CLADES, in its capacity as a regional centre, to come into direct contact with the information and documentation problems of the region.

Establishment of links with information experts: For the same reasons as those given above, CEPAL, through CLADES, established direct contact with a large number of information specialists responsible for information units, with whom it conducted a continual dialogue relating to operational and technical aspects of the project. The establishment of these contacts has created conditions which are very favourable for making further progress in the establishment of closer relationships and in the exchange of knowledge and data between the countries of the region and CEPAL.

Organization and refinement of an interdisciplinary study group on information within CEPAL: In order to implement the project, CEPAL provided CLADES with an interdisciplinary team which, in meeting the needs for technical support required by this type of research, amalgamated view points of different professional backgrounds. The project also required the Centre to undertake a thorough reorganization of its resources, which resulted in a new physical structure capable of meeting this great challenge effectively. Some of the more valuable experiences of the group include missions by its members to countries in the region, which have given them latent abilities they can use in future network projects and in the establishment of new regional information services.

New approach to information programmes: It is felt that the project has assisted CEPAL, a body which evaluates and studies development problems, to broaden its perspective with regard to the role of information as a resource or critical development factor. This will promote the strengthening of some of its organizational components, especially where the handling of information is concerned, so that they assume an increasingly active role in the generation, processing, dissemination or exchange of information for development in the region.

Articulation of components for a strategy of action: The conceptualization of "information-for-development" problems, together with what is known about the information units of the region, has left CEPAL and, as an indirect result, other regional and subregional bodies in a position to formulate a regional strategy for the development of the information sector. Once this strategy has been submitted to the countries for consultation, it will be able to serve as an overall frame of reference for action now being taken in a partial manner in connexion with various aspects of the problem. Moreover, an incidental result has been that CLADES has been able to reformulate its regional programme of action in the field of information and documentation for the next few years.

Finally, it should be noted that none of the positive effects described above would have been possible without the valuable participation of those national institutions which took on the responsibility of acting as local points in the different stages of this venture. Their co-operation and that of the people working in them was decisive at the level both of implementation and co-ordination and of the staff of the information units in each of the countries. They welcomed the idea and devoted part of their valuable time to answering the questionnaires accurately, seriously and consistently. This support is of course largely responsible for the excellent response obtained.

Naturally, if gratitude were expressed to all these people not only would it be necessary to add a very long list to this document, it would also mean running the risk of involuntarily leaving out an important contributor. It has therefore been decided to express our thanks to the institutions listed below, since having acted as focal points, they symbolize the extensive and generous co-operation received from various sectors within each country.

Argentina : Ministerio de Educación de la Provincia de Buenos Aires: Centro Provincial de Información y Documentación Educativa; Ministerio de Economía: Subsecretaría de Programación y Coordinación Económica; Departamento de Biblioteca e Instituto Nacional de Ciencias y Técnicas Hídricas (INCYTH); Centro Argentino de Referencia Ingeniería Sanitaria (CARIS).

Barbados : Ministry of Education; Barbados Public Library.

Bolivia : Ministerio de Planificación: Centro de Información para el Desarrollo Económico y Social (CIDES); Universidad Mayor de San Andrés; Centro Nacional de Documentación Científica y Tecnológica.

Brazil : Ministerio de Planejamento e Coordenacao Geral; Instituto de Planejamento Económico e Social (IPEA).

Colombia : Ministerio de Educación; Fondo Colombiano de Investigaciones Científicas (COLCIENCIAS).

Costa Rica : Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICIT).

Chile : Comisión Nacional de Investigación Científica y Tecnológica (CONICYT): Centro Nacional de Información y Documentación (CENID).

Ecuador : Ministerio de Educación; Universidad Nacional Central del Ecuador.

El Salvador : Ministerio de Educación; Biblioteca Nacional.

Guatemala : Ministerio de Planificación Económica.

Honduras : Ministerio de Educación; Universidad Nacional Autónoma de Honduras.

Jamaica : Prime Minister's Office; National Council of Libraries, Archives and Documentation Services (NACOLADS).

Mexico : Colegio de Mexico.

Nicaragua : Banco Central de Nicaragua.

Panama : Contraloría General de la República.

Paraguay : Centro de Información de Naciones Unidas (UNIC).

Peru : Agrupación de Bibliotecas para la Integración de la Información Socio Económica (ABIISE).

Puerto Rico : Departamento de Estado; Biblioteca Regional del Caribe.

Dominican Republic : Secretaría Técnica de la Presidencia: Biblioteca Nacional.

Trinidad and Tobago : University of the West Indies (St. Augustine); Main Library.

Uruguay : Universidad de la República; Escuela de Bibliotecología y Ciencias Afines "Ing. Federico Capurro".

Venezuela : Red de Información Socio Económica (REDINSE).

In submitting this report, CLADES hopes to promote the strengthening of the development information infrastructure in the region. It also owes a great debt of gratitude to the authorities and specialists of the various participating institutions and to IDRC of Canada for the confidence it placed in the Centre.

I. PURPOSE OF THE PROJECT

A. INFORMATION AND ECONOMIC AND SOCIAL CHANGE

Information is being generated at an accelerated pace throughout the world. The transfer of relevant information, selected from the vast store of existing data and ideas, for use by those responsible for promoting development -planners, entrepreneurs or administrators, political authorities, academics, workers or the general public- is a key to the achievement of change through a more rational process providing for greater involvement on the part of those concerned. Nevertheless, one of the crucial problems in any process of transformation is that of making accessible -in timely fashion and at a reasonable cost- all valuable information, of either national or international origin- whether written, graphic or oral, quantitative (statistical data) or qualitative (ideas, concepts, theories)- that could be of interest to those responsible for taking decisions and implementing development activities.

Both the industrialized and the relatively less developed countries are responsible for producing a large volume of information contained in development plans, projects, studies and progress reports on research, bulletins, statistical tabulations, etc. There is, however, a substantial difference between the ways the two groups of countries have met the challenge of handling and channelling information for decision-making purposes.

Most of the industrialized nations have created information mechanisms and institutions that are veritable nervous systems in the structure of their governments, enterprises, universities, professional associations, trade associations, etc. In this context, whether it be in line with a national information policy or a set of institutional policies, significant resources have been allocated for the establishment of an infrastructure made up of specialized units capable of absorbing the explosion of written data and ideas in order to provide information services in support of development activities. Some of the components of such an infrastructure are statistical services, libraries and archives, documentation centres, data analysis centres, information networks and systems, and, in general, communications channels and media.

The countries of the Third World, and particularly those of Latin American and the Caribbean, are becoming aware of the magnitude and importance of this problem through a protracted learning process and they have repeatedly had to pay the economic, social and political price of misinformation. Nevertheless, this learning process has been too slow and has taken place without a clear and explicit position on the part of government authorities and national or regional institutions to the effect that information is to be considered a critical resource in the development process.

It is interesting to note that this broad and modern vision of "information for development", which is the product of a gradual maturing process, has awakened an interest on the part of the international community in promoting, together with the more and the relatively less developed countries and with the sponsorship of UNESCO, an ambitious programme aimed at setting up a world-wide information system known with the acronym UNISIST. This system was conceived as a broad and flexible frame of reference to facilitate the harmonious creation of effective information tools to support the international scientific and technological community interested in creating and using new knowledge.

However, many factors have extended the view of the role of information to other spheres that go beyond merely scientific and technological aspects.

On the one hand, the developing countries have questioned the simplistic models whereby scientific research is viewed as the primary source of economic development and, on the other, there is now an awareness of the decisive importance of "non-scientific" information to those concerned with planning and directing economic and social development, in other words, empirical-practical information and subjective information

(standards, values) which is generated without using the method of creating knowledge that is characteristic of science and technology.

Moreover, the concept of "information for development" is beginning to be recognized in the international community, particularly as a result of the appearance of the study on the DEVSIS Information System for the Development Sciences, which provides a sound conceptual contribution as regards the role of information in one of the most challenging missions of contemporary man: economic and social development. (DEVSIS Study Group, 1976). ^{3/}

This process has culminated, without a doubt, in the explicit recognition of this concept at the second world conference on UNISIST, where information was viewed as the "lever of development" in the broadest sense of the expression. (UNESCO, 1979.)

1. Why is it necessary to take a position on information issues?

In the first place, because information has a value and in many cases a considerable value. Institutions and persons who promote development need information every time they have a problem to solve and, more specifically, every time they must take a decision, whether it be concerning alternative solutions to a problem or action to implement solutions.

In the last few years, much has been said about the problem of the unequal distribution of information in the world: the existence of "information-rich" countries and of "information-poor" countries. Access to information and the capacity to handle it may be seen as one of the forces that determines the nature of international relations between different types of institutions, whether they be national or supranational. These relations are normally established by means of co-operation agreements, joint projects and investments, trade agreements, political treaties, etc. All these arrangements involve a process of negotiation wherein -if a minimum principle of justice is demanded- the parties must possess, together with negotiating ability, as much information support as possible regarding the situation and objectives of their own countries or institutions and of those of the other party.

This imbalance, which is only a reflection of the centre-periphery issue, is also evident in the market for the products of the world information industry. The "information-poor" countries, not having resources or clear guidelines for generating and handling national information, are normally exporters, whether directly or through third parties, of cheap raw information concerning their own national situation while at the same time they must import, obviously at a higher cost, the same information processed and attractively presented by the entities of the "information-rich" countries in the form of studies, consultant reports, indexes, summaries, repertories, etc. One of the priority tasks to be addressed in the establishment of a New International Economic Order in the area of information is that of reducing these sharp imbalances.

Because of the economic, social and political value of information, it would seem that the countries in the region should be seriously concerned with learning how to handle it. Unfortunately, it appears that the institutions still approach this matter in piecemeal fashion, following ad hoc criteria that change according to circumstances. This has helped perpetuate problems such as: (a) the missing of opportunities to make maximum use of existing information because of the absence of mechanisms that would make it possible to keep and make accessible in a timely fashion the store of information; (b) the duplication of studies and efforts involved in the collection and processing of information; (c) the institutional impossibility of evaluating overlaps, gaps and inconsistencies in the information available to an institution, and (d) the

^{3/} Indicates the author and publication date; complete information on this reference appears in appendix 9 of this study. The bibliographical list is organized alphabetically by authors.

underutilization of information once it is produced owing to its being considered an intermediate good that can only be used once rather than a capital good that can be used many times; this makes it impossible to recover the investment put into processing it.

If the information resource, be it numerical or non-numerical, is to be handled efficiently, it is essential that national and regional institutions responsible for promoting development take a position on questions such as:

- (a) What type of information should be obtained outside the institution or country?
- (b) What type of information should be processed within the institution or country?
- (c) What percentage of this information could be exchanged with other institutions or countries and on what terms could this be done?
- (d) What part of the information would be confidential or subject to restricted circulation?
- (e) What mechanisms must be created, what should their quality be and what human and technological resources will be needed to handle external and internal information?
- (f) To what extent should these mechanisms be independent units or subordinate to substantive or administrative departments or organizations in the institution or country and to what degree should the specialized personnel responsible for these programmes participate in information activities?

The answers to these questions will show whether an institution, a country and even a region has truly assimilated the idea that information is a critical resource of development.

2. Principles to be applied in taking a position on information issues

The processing, collection and transfer of information are not ends in themselves, but rather means for fulfilling a purpose or objective, in this case that of economic and social development.

It is reasonable to assume that, since there are so many different concepts of development, there will be many different approaches and responses to the information issues. Nevertheless, within this wide diversity there should be some agreement with regard to certain widely shared principles concerning the creation of minimum conditions for harmonizing individual efforts.

The first principle is that, from the outset there must be an integral approach to the information function that takes into account all its facets. An integral approach is justified, considering that normally problem-solving, decision-making and the implementation of development activities call for the simultaneous use of different combinations of processed information taken from written reports, articles in periodical publications, statistical tables and series, press clippings, correspondence, oral communications, etc., as well as reference information that will point to and provide guidance regarding the content of the store of existing information and how to gain access to it. This may be expressed by saying that decision-making normally requires not so much individual data or unidimensional information as an organized set, or "information package", structured according to the different facets of the information needs. (Samper, 1977). Because this integrating vision has been missing, obstacles have arisen in connection with problem-solving that seriously weaken the information support provided to the "development community".

In the first place, there has been a tendency among the national and regional institutions to divide tasks because of the diversity and volume of information that must be handled. Thus, within an institution it is not unusual to find information scattered throughout the institutional registry, technical files, library, information centre, press service, statistical service, etc.

(i) flexibility in the selection of national counterpart(s); (ii) full participation of institutions concerned in every phase of the project, and (iii) communication of the findings of the diagnosis to the agents of change in the region.

2. Flexibility in the selection of national counterpart(s)

The designation of a suitable national counterpart is one of the central elements in the successful implementation of a project of this nature. It had originally been thought that it would be relatively easy to designate a national counterpart, since it would only be a matter of identifying the highest level of information co-ordination centre in the country.

Unfortunately, only a few countries in the region had a co-ordination mechanism of this type. It became necessary therefore to conduct a preliminary survey of the institutional situation in each country in order to identify by consensus that institution or those institutions that appeared to be best suited to assume the responsibility of acting as national counterparts.

It must also be stressed that, to the extent possible, an effort was made to ensure the participation, in either an executing or a sponsoring capacity, of the central agency for economic and social co-ordination -National Planning Office and Ministry of Economic Co-ordination- because of its role as a nucleus for the exchange of information for development. However, it was also found that several of the participating countries did not yet have a planning mechanism experienced enough to assume these new functions. In such cases, it was decided to ask for the assistance of some institution responsible for co-ordinating a network of socioeconomic information or of entities having important mandates in the area of information, such as national libraries and universities.

Table 1 shows the willingness of CLADES to adjust to the institutional reality of the countries of the region. This table contains a classification, by types of institution, of the national counterparts or focal points in the 22 countries that were eventually included in the inventory.

Table 1

DISTRIBUTION OF NATIONAL FOCAL POINTS BY TYPE OF INSTITUTION

Type of institution	Number of institutions	Percentage
National information centres	5	20
Economic and social planning and co-ordination agencies	5	20
Co-ordinators of socioeconomic information networks	2	8
Universities and institutions of higher education	6	24
National libraries and/or ministries of education	5	20
Other	2	8
<u>Totals</u>	25	100

As may be seen, in 48% of the cases it was possible to work through agencies concerned with the co-ordinating national information programmes or with economic and social co-ordination. In the remaining 52%, CLADES worked with institutions that were sectoral in nature although clearly dedicated to national service. This undoubtedly reflects the situation with regard to non-numerical development information in Latin America, where the idea of co-ordination is relatively recent. It must be stressed that this is in contrast with the tradition and experience with regard to the co-ordination of economic and social information of a numerical or statistical nature.

3. Full participation of institutions concerned in every phase of the project

The conception and implementation phase was viewed as providing a propitious situation for decentralizing the project activities in the countries in order to allow them to interact together with the CLADES team and share their experiences in each phase.

This national participation has greatly contributed to bringing the project in line with local needs; increasing interest and commitment to use its results as tools for promoting change, and stimulating a close dialogue among those responsible in each country for transforming information into a development resource, i.e., the political authorities, development specialists, entrepreneurs and investors, and information professionals.

The project, being a joint and co-ordinated effort of the national institutions and CLADES, was carried out by distributing the implementation responsibilities involved in the various stages and activities according to criterion of comparative advantages. The main stages in the implementation of the project were: (a) preparatory activities (b) collection of information, (c) processing of information, (d) analysis of information, (e) national diagnostic seminar.

Table 2 shows these stages divided by activities and shows how implementation responsibilities were assigned to the country or to CLADES. Two types of intervention are indicated, i.e., the main implementation responsibility, indicated by an "X", and supervisory or advisory responsibility, indicated by an "*".

The table shows that there was intense participation of the national focal points, who took charge of implementing 11 of the 21 activities (52%).

4. Communication of the findings of the diagnosis to the agents of change in the region

The search for a way to establish a link between the findings of the study and activities aimed at promoting change in the information infrastructures is fully justified because there is no reason to assume this could take place automatically. Essentially, the problem boils down to one of finding a way to transfer a message which, while suggesting change, is appropriate and makes sense to those who are in a position to transform the information infrastructures.

This transfer of information or communication can be carried out effectively to the extent that: (a) the groups of agents of change are identified, and (b) expeditious mechanisms are considered for bringing them the desired message.

In this study, it will be assumed that any change in the information infrastructure, whether sectoral, regional or national, will require the co-operation of agents belonging to each of four groups (see table 3), defined as follows:

- (a) Those responsible for taking decisions concerning resources and institutional standards governing the operation of the information units.
- (b) Administrators and persons responsible for the operation, functioning and administration of units and for the adoption of innovations affecting the operation of information units.

- (c) Persons responsible for training human resources specialized in information sciences or related disciplines.
- (d) The development community, in other words, the users of the information services offered by these units.

It should be mentioned that the category of decision-makers includes higher level authorities, such as persons in charge of national information co-ordinating agencies (for example, national information centres); heads of economic co-ordination offices and ministries, which in the final analysis decide on the future of the aforementioned national information centres; and sectoral ministers, directors of public services, managers of enterprises, etc., on whom the implementation of the institution's information policy depends. This group also includes national agencies that provide or channel resources for strengthening the information infrastructure, either totally or partially, such as colleges and associations of information specialists.

It should be mentioned that the inclusion of a given type of agent in a given group is to a certain extent arbitrary, since an institution may be assigned, in principle, to more than one group. Therefore, the classification should be interpreted as indicating the most significant contribution that the different types of agents are able to offer towards changing the information infrastructure.^{5/}

In the second place, the communication of findings will prove stimulating to the extent that expeditious mechanisms are considered for transferring the information to agents.

In this connexion, a suitable editorial policy for publications has been developed, since the recording of information, whether it consist of diagnostic reports or other by-products of the study such as directories of information units, provides permanent reference material on the background and data collected. In addition, an effort has been made to organize the information in national or sectoral documents that will provide agents of change with the frames of reference that are most related to their spheres of competence.

Nevertheless, the fact that a document is received does not guarantee that the user will take the necessary measures or change his attitude or arrive at some different understanding of the phenomenon that might be useful in future.

National seminars have therefore been carried out in every country where a national report was prepared except Paraguay.^{6/}

These seminars were attended by representatives of the various national institutions, in their capacities both as users of the information and as information specialists, in order to study in detail the data, proposals and suggestions submitted by CEPAL/CLADES. These events have allowed for a critical evaluation of the findings, conclusions and recommendations contained in the documents and a clarification of the new contributions that have been made by the national participants themselves.

^{5/} For example, the directors of national information centres have been included among the decision-makers, although they might also be considered in the categories pertaining to operations, innovations and even as users of information. However, it has been assumed that their political impact is more decisive for change than their other functions.

^{6/} These countries are: Argentina (Education Sector), Colombia, Trinidad and Tobago, Guatemala, Costa Rica, El Salvador.

Table 2

PROJECT ACTIVITIES

Concept	Sponsoring national institution	Participating national institutions	CLADES
<u>1. Preparatory activities</u>			
- Preparation of a list of information units to be surveyed	X	*	*
- Design of questionnaire	*	*	X
- Design of motivating letter	*		X
- Design of institutional agreement	*		X
<u>2. Collection of information</u>			
- Organization of meetings	X		*
- Discussion of the content of the questionnaire	X	*	
- Distribution of questionnaires	X	*	*
- Replies to questionnaires		X	
- Collection of questionnaires	X		
- Review of collected data	X		*
<u>3. Processing of information</u>			
- Receipt and coding of information			X *
- Preparation of machine readable records			X *
- Computer programming and processing			X *
- Review of computer processing			X *
<u>4. Analysis of information</u>			
- Preparation of the Directory	*		X
- Proof-reading of the Directory	X	*	*
- Publication of the Directory			X
- Interpretation and preliminary analysis of the diagnosis	*		X
- Preparation of the preliminary national report	*		X
<u>5. National Diagnostic Seminar</u>			
- Organization of the National Seminar	X		*
- Holding of the National Seminar	X	X	*
- Drafting of conclusions of the Seminar	X	X	*

Table 3

AGENTS OF CHANGE IN THE INFORMATION INFRASTRUCTURES

Decision-makers	Persons responsible for operations and for innovations in the information units	Persons responsible for the training of information specialists	Users of information services operated by the units
<ul style="list-style-type: none"> - Authorities of national co-ordinating institutions - Heads of administrators of public or private institutions that have information units - Directors of national information centres - Persons in charge of information programmes of international institutions promoting national information networks and systems (IDRC, UNESCO, FAO, ...) - Leaders of national associations of information specialists 	<ul style="list-style-type: none"> - Specialists - heads of networks and services - Specialists - heads of technical processes - Researchers in the information sciences - Specialists of international institutions promoting techniques and standards for the handling of information (UNESCO, FID, ISO) 	<ul style="list-style-type: none"> - Directors and teachers of training centres in information science and related disciplines 	<ul style="list-style-type: none"> - Entrepreneurs - Investors - Planners - Administrators of institutions and projects - Academic researchers - Consultants - Teachers - Students - Social communicators - General public

II. DESIGN OF THE STUDY

A. SCOPE OF THE ANALYSIS: INFORMATION UNITS TO SUPPORT ECONOMIC AND SOCIAL DEVELOPMENT

It would undoubtedly be difficult and almost impossible to obtain an overview of the infrastructure of information for development in Latin America and the Caribbean without a clear definition of the boundaries of those aspects of the situation that were to be studied.

This is due to factors such as the vast number of information units existing in the various national and regional institutions concerned with economic and social development located in each of the countries; the wide geographical area over which they are spread within the national territory, aggravated by the great distances between population centres; and the wide variety of types of units which by their very nature require the design and use of complex research tools suitable for covering a wide spectrum of functions, processes and users of information.

Because of these practical and theoretical-methodological considerations, it was found to be essential to adopt basic working definitions of the concepts of "information unit" and "economic and social field".

1. The concept of "information unit"

We should begin by discussing certain basic concepts such as information and information science. Information, understood as any "notion, idea or message, expressed in writing or orally, that is capable of conveying knowledge" (ARSAC, 1974, p.31), is a subject which is studied by several disciplines. While some emphasize the storage and preservation of information in order to ensure its future accessibility and usefulness, others are concerned with transferring and presenting it in such a way that it may be assimilated and used by its final recipients. Some disciplines specialize in the handling of non-numerical information (textual or iconic) while others are concerned with numerical information (statistics). In addition, some disciplines are concerned with information that is recorded physically (documents) whereas others mainly deal with non-recorded oral information.

Information science is understood to be "the study of the properties and behaviour of information, the forces that govern the flow of information and the means by which information is processed in order to guarantee its optimum accessibility and use. The structured processes of this branch of science include the creation, search, collection, organization, interpretation, dissemination, storage and use of information" (Thompson, 1963).

It should be stressed that these studies of information are carried out in accordance with the laws and methods of each discipline independently of the subject matter with which the information is concerned and hence of the substantive messages it bears.

From this standpoint, information units may be considered to be institutionalized mechanisms that have been established to handle the effective and efficient transfer of information from the sources to the final users. They cover a very wide range of possibilities, from archives and services providing statistical data bases to documentation centres, libraries and press services. Although in the abstract all these units are information systems with a similar overall structure, in practice different methodologies and techniques are needed to analyse them.

Thus, the study was focused from the outset on units which: (a) handled

information recorded in "documents";^{7/} (b) handled non-numerical information, including the storage, retrieval and physical dissemination of the information; and (c) served a specific community of users having specialized information needs in economic and social development issues. In addition, one of the criteria for selection was that the information units to be inventoried should exist not only on paper but that they should have a minimum base of human resources and an organized collection of documents that enable them to provide information services to users.

This limits the concept of "information units" to those specialized institutions whose mission is to select, compile, process, store, recover and disseminate both documents on specific subjects and information relating to the content and physical location of those documents (documentary information) for the purpose of providing support to the substantive work of a community of specialized users.

A variety of similar institutions fall within this scheme: information centres, documentation centres, referral centres, clearing houses, information analysis centres, libraries and archives.

This coverage was subsequently reduced by excluding national, institutional and technical archives, since the function and nature of the materials they deal with would have required a special study. They were considered indirectly to the extent that they were part of an information centre, library, etc. In such cases, their existence was identified and their resources were considered as an integral part of those units. Finally, personal private libraries were excluded because of the difficulty of identifying them and because usually they are not open to external users.

The first operating criterion for the selection of information units for the purposes of the project was thus established on the basis of the above considerations. The scope of the units:

- (a) includes specialized libraries, information centres, documentation centres, etc. having a minimum of organized collections and human resources capable of offering an information service, and
- (b) excludes institutional archives, press services and statistical data banks and, within libraries, private libraries belonging to individuals.

2. The concept of "information unit for economic and social development"

A second criterion for selecting information units was the degree to which they were linked with the different areas and problems of economic and social development.

In order to determine the existence of a direct link between the units and these areas and problems, a set of combinations of the two following aspects were considered: (a) whether the units belonged to institutions having specific social and economic development missions, and (b) whether they possessed significant documentary collections in given subject matter areas.

The missions relating to development were organized according to four categories, as follows:

- (a) Dissemination of basic knowledge and general culture.
- (b) Dissemination of specialized knowledge (both theoretical and empirical).
- (c) Conception, execution and evaluation of development plans, strategies, policies, programmes and projects.
- (d) Operation and functioning of systems and organizations of productive financial, legislative, technical and administrative nature.

The subject matter areas were also classified into five groups:

^{7/} The term document is used in the broad sense of a physical support for recorded information and includes a wide range of possibilities, particularly: reports, periodical publications, books, letters, audiovisual material, press clippings, statistical tables, magnetic supports, etc.

Table 4

CRITERIA FOR DETERMINING THE LINKAGE OF INFORMATION UNITS
WITH ECONOMIC AND SOCIAL DEVELOPMENT

Criterion I. Belongs to institutions having development missions B, C, D, E	Criterion II. Possesses significant collections on subject matter areas U, V and W												
A <u>Disseminates basic knowledge and general culture</u> e.g.: schools, cultural centres, religious organizations, philosophical organizations, etc.	S <u>Exact and natural sciences</u> e.g.: mathematics, physics												
B <u>Disseminates specialized knowledge</u> e.g.: training centres, university faculties, specialized mass communications media	T <u>Humanities</u> e.g.: philosophy, theology, literature, arts												
C <u>Generates specialized knowledge</u> e.g.: research centres institutes	U <u>Technologies</u> e.g.: engineering, medicine												
D <u>Conceives, implements and evaluates plans, strategies, policies, programmes and projects</u> e.g.: planning offices, project engineering firms	V <u>Social sciences and other socioeconomic disciplines</u> e.g.: economics, anthropology, education, communication and information sciences												
E <u>Operates systems and organizations</u> e.g.: ministries, foundations, enterprises, professional colleges	W <u>Development topics</u> e.g.: public administration, agriculture, social welfare, trade, education, energy, housing												
<p style="text-align: center;">VALID COMBINATIONS</p> <table><tr><td>B+U</td><td>C+U</td><td>D+U</td><td>E+U</td></tr><tr><td>B+V</td><td>C+V</td><td>D+V</td><td>E+V</td></tr><tr><td>B+W</td><td>C+W</td><td>D+W</td><td>E+W</td></tr></table>		B+U	C+U	D+U	E+U	B+V	C+V	D+V	E+V	B+W	C+W	D+W	E+W
B+U	C+U	D+U	E+U										
B+V	C+V	D+V	E+V										
B+W	C+W	D+W	E+W										

S: Exact and natural sciences.

T: Humanities.

U: Technologies.

V: Social sciences and other socioeconomic disciplines.

W: Development topics (for example; housing, transport, ...).

It should be borne in mind that information collections (documents, data bases), specialized according to disciplines, are organized in accordance with the theory, techniques, empirical data and subject matter classifications appropriate to each one.

A unit specializing in development topics, on the other hand, organizes the information around one or more topics (for example: public health, natural resources, etc.), all of which are vital in a society and so complex that they require joint contributions from different disciplines that are not necessarily related. In such cases, the selection, compilation and treatment of the information concerned is carried out following an integral approach covering the various aspects that must be taken into account in dealing with development topics (scientific-technical, cultural, economic, psychological, administrative and political, legal, ...).

In order to define the boundaries of the universe of units to be inventoried, consideration was given to those units combining the categories of "belonging to an institution" and "possessing collections" that were in principle most directly linked with persons responsible for development such as planners, administrators; entrepreneurs, academics and consultants.

It was thus decided to leave out category A, regarding the factor of "belonging to an institution", and categories S and T, as regards the collections.

The combinations that were considered valid for purposes of selecting the units are shown at the bottom of table 4.

Consequently, the following criteria were finally selected for determining the degree of linkage between the units and the persons mainly responsible for economic and social development:

- (a) includes all units which, belonging to institutions that create and disseminate specialized knowledge, conceive, implement and evaluate innovative development activities, operate systems and organizations designed to implement existing development activities, possess significant collections relating to the subjects of development, social sciences and socioeconomic and technological disciplines and,
- (b) excludes information units such as school libraries and public libraries except for national libraries that provide specialized information services, libraries that operate as such or public libraries that possess significant collections in the socioeconomic field.

B. THE RESEARCH METHOD

This section will deal with the study design and the gathering and processing of the empirical information. The following topics concerning the estimation of the reliability and validity of the data collected are discussed: (a) selection of the method: the survey; (b) design of the questionnaire; (c) the sample; (d) use of the questionnaire; (e) review and processing of the data.

1. Selection of the method: the survey

The lack of up-to-date diagnostic studies covering a wide range of information infrastructures in the different countries of the region made it necessary to compile primary information on this facet of the Latin American scene.

Among the direct information-gathering methods, it was decided to study a sample of the total universe of units, because of:

- (a) The large number of information units scattered throughout the region.
- (b) The little background information available about problems affecting information infrastructures which made it essential to measure a wide variety of aspects in order to obtain adequate knowledge about the field to be studied; in this regard it was found advisable to define the study as being of an exploratory-descriptive nature.
- (c) The limited time and resources available, making it necessary to unify the research in such a way that all the units would be observed from a single perspective and with a common set of tools.

Reasons (a) and (b) naturally made it necessary to dispense with a controlled experimental design, while reasons (a) and (c) made it advisable to discard other data-gathering methods, such as that of participant observation.

In addition, because of reason (a) it was not possible to design a survey whereby information would be gathered through interviews. This method was only used to supplement the data provided by questionnaires sent to participating information units.

2. Design of the questionnaire

The design of the data-gathering instrument is perhaps the most sensitive and complex stage of a study of this nature. Since CLADES was undertaking this task for the first time, it tried to make maximum use of the experiences of other institutions.

Three mechanisms were used for ensuring a suitable design for the questionnaire:

- (a) A critical study of existing questionnaire models, both international in scope (UNESCO, 1975) and those designed in Latin America and the Caribbean.
- (b) Design of a preliminary questionnaire to be discussed with different information specialists in the countries participating in the inventory.
- (c) Pre-testing of the preliminary questionnaire in a sample of information units in Chile.

An interdisciplinary team of CLADES specialists took part in the design of the initial preliminary questionnaire and of the final questionnaire, thus making it possible to incorporate into a single product the various approaches of the discipline. It must be stressed, however, that this effort was successful thanks to the contributions of the information specialists of the region in connexion with the terminology to be used in formulating the questions and the contributions of the specialists taking part in the pre-test, who commented in detail on the difficulties of interpretation and information-gathering involved in each question.

This does not seem to be the place to propose a revision or detailed explanation of the content, formulation and relative location of each of the questions that were eventually adopted for the final version of the questionnaire.^{8/} Nevertheless, it is worthwhile to consider certain basic decisions that had to be taken before the final product was developed and the Spanish, English, Portuguese and French versions prepared.^{9/}

In the first place, the scope and depth of the instrument had to be defined and the advantages of obtaining a greater breadth and depth of information weighed against the greater cost of gathering it and the possible adverse reaction towards responding to an excessively lengthy questionnaire. It was finally decided to adopt a relatively complete and exhaustive design, in view of the exploratory and to a certain extent pioneering nature of the study, in order to obtain a wide range of information on a whole series of problems that would make it possible to suggest more specific lines

^{8/} Appendix 3 contains a tentative evaluation of the questionnaire.

^{9/} Copies of the questionnaire are available upon request from CLADES.

and strategies for future research. This, of course, did not allow for an in-depth inquiry into each of the problems concerned.

In the second place, there was the problem of refining the instrument to fit an "average information unit" in the region. The same instrument was to be used for the observation of traditional, small, poorly organized units as well as of large, well-organized units with sophisticated technologies and information-handling methods. It was decided to adopt an image of an information unit that was somewhat more complex than the average unit in the region in order to find out whether the information infrastructure showed signs of modernization. As a result, however, the questionnaire was in many cases over-sized for the actual situation being observed.

Finally, certain decisions had to be taken concerning the structure, format and visual presentation of the data. Thus, in order to facilitate response, the questionnaire was divided into a first part, of a general nature, focused on administrative-institutional aspects and aimed at the chiefs or persons in charge of information units, and a second part, of a technical-operational nature, to be filled out whenever possible by technical subdirectors or supervisors of the information-handling processes.

The format and visual presentation of the data provided for a more natural interaction between the respondent and the questionnaire. For example, handwritten replies were encouraged; it was decided to avoid pre-coding the questions since, although it facilitates processing, it often confuses the respondent; and margins and blank spaces were left open for replies to direct questions and for additional information.

It was also decided to include explanations of most of the questions; in order to allow for optional reference to these explanations, they were placed in such a way that were readily accessible but did not interfere with the reply. In addition, requests for statistics concerning the unit, normally difficult to obtain, were kept to a minimum.

3. The sample

Once the scope of the study was defined, a decision had to be made as to whether to make a survey of the universe of "information units for economic and social development" or to conduct a survey of a sample or significant part of the universe. Naturally, whatever the choice might be, it would have to meet the requirement of providing valid information; in other words, the observations and conclusions would have to reflect as well as possible the actual situation with regard to the information infrastructures of the region and allow for as exhaustive a coverage as possible of these infrastructures in order to ensure that the data base would provide complete answers to the users as far as identifying existing information services was concerned.

Because of the latter reason and the difficulty of implementing a random sample design in all the participating countries, it was decided to attempt a partially stratified sample or one made up of the largest and most representative units in the national information infrastructure.

For this purpose, an exhaustive list of units to which the questionnaire should be distributed was prepared with the assistance of the national focal points. In many cases, however, limitations of time and the lack of background information made it impossible even to prepare the list and only some segments of the universe were identified. For example, in the larger countries, such as Brazil and Mexico, only a relatively small group of units that could be surveyed by the focal points was identified. In Argentina, the absence of a single national focal point made it necessary to divide the work among several focal points and it was still not possible to cover the entire universe. Finally, in a smaller country, Uruguay, it was only possible to identify a focal point in the university sector, which took responsibility only for covering units belonging to that institutional sector. In others, there was

no government focal point covering the entire country, and it was only possible to survey institutions linked to some pre-existing private socioeconomic network (Peru, Venezuela).

In the rest of the countries, the situations were varied. In some of them, it was not possible to make the survey either because the country could not be visited for purposes of inviting it to participate in the study (Belize, Bahamas, Grenada) or because, after having made contact, it was not possible to obtain a commitment, within the time planned for the survey, on the part of an institution that might act as the national focal point (Cuba, Haiti, Guyana, Suriname).

The above reasons explain why the universe was not covered and why the sample, although representative in many cases of the national information infrastructure, does not have the necessary characteristics to ensure that it is entirely representative at the subregional or regional levels.

In order to homogenize an estimate of the regional universe, the estimate for those countries where an exhaustive listing had been made was supplemented with indirect estimates obtained from a subsequent study of existing published sources. The result of this work is summarized in table 5, which shows percentages of representativeness obtained by dividing the number of units surveyed by the universe of existing units.

Table 5
REPRESENTATIVENESS - REGION AND SUBREGIONS. 1976-1977

Latin America and the Caribbean	Number of units surveyed	Number of existing units	Percentages
South America (Atlantic Zone)	182	1 774	10.3
South America (Andean Zone)	327	1 003	32.6
Central America and Mexico	146	769	19.0
The Caribbean	116	463	25.1
<u>Totals</u>	771	4 009	19.2

This shows that the representativeness by countries and subregions varies widely and that the total value for the region is approximately 20%. This is the product of two years of intense work on the part of the national counterparts and the CLADES team and shows the effort that would have to be made in any attempt to achieve exhaustive coverage.

4. Use of the questionnaire

One of the first decisions to be taken during the inventory design stage was to use the survey as the information-gathering method. For the survey envisaged a single form was to be used for all the information units identified, in order that the information obtained would be as homogeneous as possible in terms of quality and quantity.

Table 6

REPRESENTATIVENESS BY SUBREGION AND COUNTRY

Table 6-a

Subregion: South America (Atlantic Zone)	Number of units surveyed	Number of existing units	Percentages
Argentina	119 *	627 *	18.9
Brazil	22 *	1 002 *	2.2
Paraguay	23	52 *	40.0
Uruguay	18 *	93 *	19.3
<u>Totals</u>	182	1 774	10.3

Table 6-b

Subregion: South America (Andean Zone)	Number of units surveyed	Number of existing units	Percentages
Bolivia	23	66 *	34.8
Chile	112	280 *	40.0
Colombia	67	238 *	28.1
Ecuador	26	55 *	47.2
Peru	55	190 *	28.9
Venezuela	44	174 *	25.2
<u>Totals</u>	327	1 003	32.6

*/ Information on the methodology used for arriving at these estimates may be found in Appendix 4 to this report.

Table 6-c

Subregion: Central America and Mexico	Number of units surveyed	Number of existing units	Percentages
Costa Rica	35	107 *	32.7
El Salvador	31	45 *	68.8
Guatemala	31	36 *	86.1
Honduras	4	18 *	22.2
Mexico	30 *	526 *	5.7
Nicaragua	7	23 *	30.4
Panama	8	14 *	57.1
<u>Totals</u>	146	769	19.0

Table 6-d

Subregion: The Caribbean	Number of units surveyed	Number of existing units	Percentages
Bahamas	-	6 *	-
Barbados	28	58 *	48.3
Belize	-	1 *	-
Cuba	-	126 *	-
Grenada	-	5 *	-
Guyana	-	35 *	-
Haiti	-	29 *	-
Jamaica	28	66 *	42.4
Puerto Rico	15	45 *	33.3
Dominican Republic	13	34 *	38.2
Suriname	-	7 *	-
Trinidad	32	51 *	62.7
<u>Totals</u>	116	463	25.1

*/ Information on the methodology used for arriving at these estimates may be found in Appendix 4 to this report.

The ideal way to get the forms to the units was naturally to establish direct contact with the persons responsible for providing the answers in order to ensure that the questions were interpreted exactly as originally conceived and that the answers would be complete and truthful. A system of personal interviews therefore appeared to be the best method. This was possible only in a very few cases, however, and other possibilities had to be sought (for example, launching meetings or mailings) which would be adequate and at the same time easily handled by the national focal points.

Table 7 indicates the number of units surveyed in each subregion and the different methods used.

Table 7

LATIN AMERICA AND THE CARIBBEAN: SCHEME FOR THE USE AND DISTRIBUTION
OF THE QUESTIONNAIRE AMONG THE UNITS SURVEYED

(a) Absolute frequencies; (b) relative frequencies

Category	South America									
	Total region		Atlantic subregion		Andean subregion		C. America and Mexico		The Caribbean	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Method 1: Interviews	102	13.3	-	-	67	20.5	35	23.9	-	-
Method 2: Launching meetings	375	48.6	45	24.7	183	56.0	31	21.2	116	100.0
Method 3: Mailings	294	38.1	137	75.3	77	23.5	80	54.9	-	-
<u>Totals</u>	771	100.0	182	100.0	327	100.0	146	100.0	116	100.0

Because of the lack of a group of trained interviewers and the wide geographical distribution of the information units in some countries, it was only possible to apply the interview method in two of the 24 national focal points (8.3%) through which the inventory of the region was channelled.

Another procedure that was tried was to hold meetings to launch the survey. These meetings, to which the persons responsible for information units were invited, were organized by the focal points in each country for the purpose of explaining the objectives of the study and reviewing in detail the content of the questionnaire. This procedure was carried out in 11 of the 24 focal points (45.9%).

Finally, in those cases where none of the above alternatives was possible, responsibility for organizing the survey was transferred to the national focal points so that they might prepare suitable motivation letters, mail the forms out and subsequently answer questions regarding the responses. This method was applied in the remaining 11 focal points.

5. Editing and processing of the data

(a) Editing of the data

The responses to the form were reviewed at three levels:

- (i) by the national focal point and/or by a CLADES official, before the data were sent to Santiago;
- (ii) by the CLADES team, using manual and computerized methods to analyse the consistency of replies through the use of control questions, and
- (iii) by the national focal point, with regard to data extracted from the questionnaires used in the preliminary versions of the national directories.

All the information was reviewed at level (ii). The reviews at levels (i) and (iii) were carried out in most of the countries, although not with the same depth. At all times, however, inconsistent or contradictory data were carefully eliminated.

(b) Computer processing of the data

The information reviewed was processed in order to obtain two data bases:

- (i) a bibliographical data base capable of producing repertories of information units and making searches of units according to descriptors;
- (ii) a statistical data base capable of producing tables and computing indicators for a multivariate analysis of the data and organization of the information by numerical codes.

The first data base was established according to the ISIS/system (Integrated Scientific Information System) developed originally by ILO in Geneva and according to the CEPAL version, characterized by the use of the CMS/VSAM operational system. The second data base was established according to the SPSS system (Statistical Package of the Social Sciences), version number 6 in D.O.S.

The parallel development of both data bases and thus a certain degree of duplication in the coding and punching-verification was necessary because there was no single system accessible to CLADES capable of providing all the operations and products required.

III. CONCEPTUAL FRAMEWORK FOR THE DIAGNOSIS OF AN INFORMATION INFRASTRUCTURE

The decision to carry out a survey of existing information units in a country or region is normally the outcome of a willingness to improve the information infrastructure. However, if this exercise is viewed only as an inventory to detect deficiencies, it probably will not, in and of itself, promote the change desired.

A. CRITICAL DIMENSIONS OF INFORMATION UNITS

The emphasis of surveys measuring existing resources has usually led to suggestions being made that were aimed exclusively at increasing staff, equipment and bibliographical resources available to the information units. There is no guarantee, however, that these measures will have a real effect on the capacity and quality of the information services provided by the units, and even less so if the deficiencies are dealt with in a piecemeal and sporadic manner, e.g., through donations of books, the granting of fellowships, etc., which, in the best of cases, will solve a particular problem but will not have any direct impact as regards the substance of the problems.

Thus, it is thought that what is at stake in an in-depth diagnosis is the identification of all those factors that allow for the permanent development of the information units and that measures to increase resources will only be fruitful if they are accompanied by supplementary actions which can be individually defined only through a broader approach to information issues as such.

For example, there is not much use in purchasing new equipment if the internal management of the information units is not able to optimize its use or if there is no clear dedication to service that will facilitate its being projected dynamically to the users. Even an improvement in the internal management may not be sufficient to achieve an adequate and permanent growth of the units. It will probably also be necessary to take action with regard to factors affecting the viability of the units, such as the attitude of the authorities and officials of the institution to which the unit belongs vis-à-vis the "information function", an attitude which is in the last analysis evident in the degree of financial and administrative support and the quality of the feed-back the financial and administrative divisions give the units.

These considerations would explain the need for an integral approach to a diagnosis of information units. Following is a discussion of a scheme for the analysis which, in our view, is very simple but makes it possible to identify the sets of measures and mechanisms required to improve this infrastructure.

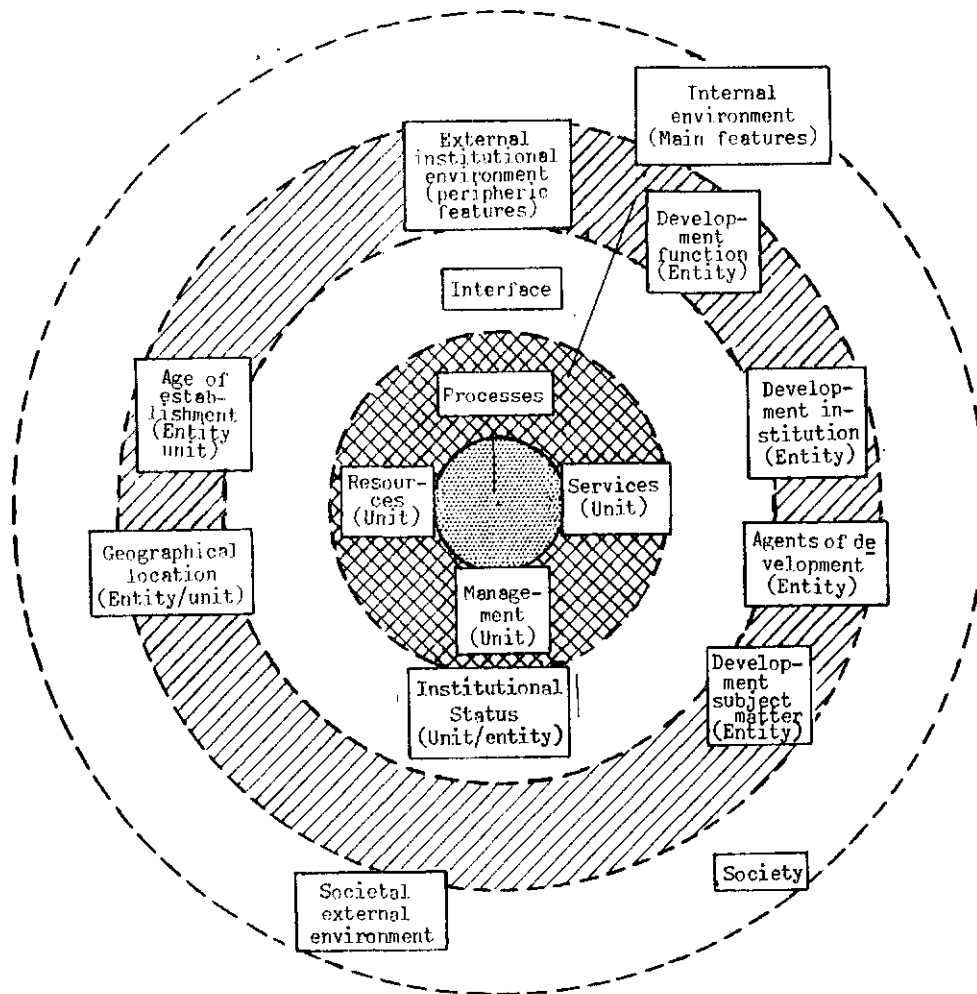
An information unit, whether it be an information centre, a documentation centre, a specialized library, etc., may be conceived schematically as an agency whose fundamental mission is to make available to its users certain information services. To this end, it must manage resources such as: data and documents, equipment, financial resources and the technical abilities of its specialized staff, combining these in such a way as to make it possible to generate information services that can be offered to users. These combinations of resources occur through processes of a technical nature (information processing operations such as selection, cataloguing, indexing, abstracting, etc.) and of an administrative nature (planning, control and evaluation of the overall functioning of the units).

The tasks of choosing the information services to be offered by a unit, determining the volume, quality and orientation of each service and subsequent allocating and combining the resources involved must be co-ordinated at a higher-level in order to overall harmony and optimum efficiency of the unit as a whole. This is conceived as internal management capability.

The aggregate of services, resources, processes and management capability may be considered the internal environment of the unit.

Figure 1

CONCEPTUAL FRAMEWORK FOR THE DIAGNOSIS OF AN INFORMATION INFRASTRUCTURE



By the same token, one may speak of the external environment of the unit; this would be made up primarily of the organization to which it belongs -the immediate institutional environment of the unit- and some aspects of the national or international environment that go beyond the sphere of activity of the institution (societal external environment). This external environment may be characterized by a series of aspects which ultimately define the context and mission of the units and hence delimit its sphere of action. These may be grouped into two categories, as follows:

(a) those relating to the historical background of the unit and its mother organization, such as the age of the unit (when it was established) and its geographical location (the population centre where it is located), and

(b) those relating to the mission of the institution to which the unit belongs, such as: the nature of the institution's contribution to development (e.g., "development function" such as education and culture, etc.), the legal-administrative character of the organization (e.g., "development institution" such as public decentralized entities, etc.) the community of users of the information unit (e.g., "agents of development" such as planners and entrepreneurs, etc.) and the content of the information which the unit controls and disseminates (e.g., "development subject matter area" such as natural resources, etc.).

Finally, under this conceptual scheme, there would be an intermediate level or interface, consisting of the unit-institution relationship, and particularly between the unit's internal environment and its external institutional environment. It is worth stressing that the existence and viability of an information unit will depend on its interaction with the rest of the organization to which it belongs. Thus, to put it in very simple terms, the organization expects to receive effective informational support from the unit and the unit, for its part, expects to obtain institutional and financial support from the leaders of the institutions, as well as substantive support from its officials, in order that it might better serve its clientele. The intensity and quality of these relationships will depend on the effectiveness with which the unit is able to project itself as a significant service, particularly within the organization, as well as on the role -strategic or non-strategic- that the officials and authorities of the institution assign to the "information resource". Both aspects determine the institutional status of the unit, which is evidenced by the lesser or greater degree of administrative, financial and substantive support it receives from the institution and the access which the unit has to decisions governing its growth.

Figure 1 summarizes graphically the ideas discussed above. It has been designed in concentric circles, with the nucleus representing the technical and administrative processes. The next ring, a dark one, represents the resources-management-services system which reflects the efficiency of the units. Between this ring and the lighter ring representing the institutional environment is a white ring corresponding to the unit-organization (status) interface which may strongly limit the impact which the units will ultimately have on the external environment (the outermost white ring).

The scheme presented has the following advantages:

(a) It provides an integral picture of the units: The different zones show that if the information units are to be strengthened, not only must their internal aspects be considered, but also the mediate and immediate institutional context to which they belong and the relationships between the two. This clearly shows the limitations of some partial diagnoses centred exclusively on one aspect of the internal environment of the units, i.e., their resources.

(b) It makes it possible to visualize various dimensions for a diagnosis: In order to make a diagnosis and communicate it adequately, the analysis must be organized so as to take into account different dimensions and approaches to meet the needs of different institutions or agents that might be in a position to promote changes in the information infrastructures. As will be seen later on, making a distinction between internal and external aspects allows for the treatment of different problems, approaches and methods of presenting the results.

B. GLOBAL ASPECTS OF THE UNITS: APPEARANCE LOCATION AND MISSION

In this section, a detailed study is begun of the characteristics of the units, with consideration being given in the first place to the features of the immediate institutional environment.

An attempt is made to characterize each of these -six in all- by means of a variable which in turn has been shown by a measurable indicator.

1. Pattern of appearance of the information units

The pattern of creation of information units over time is quite important in a global analysis, since it makes it possible to detect the interest shown by the various institutions at different times in having access to information.

The growth of a unit may be appreciated from the date of its creation. This figure shows the earliest date of its legal origin or of the actual beginning of its operation. In the case of units that have subsequently been restructured or whose administrative system has been modified, the origin of the unit is considered to be the earliest date of its creation. It must be borne in mind that use of this criterion may mean that the age of the units could be slightly overestimated. The "period of creation" indicator has been measured according to the following three categories:

- (a) Before 1961
- (b) The 1960s (1961-1970)
- (c) After 1970 (1971-1977)

2. Geographical location of the information units

This shows the geographical distribution of the units throughout the national territory and is potentially useful as evidence of the existence of large population centres that are not being served or of a high concentration of services in the main metropolis of the country.

Geographic location can be determined with different degrees of accuracy through classifications ranging from the more detailed political-administrative divisions to aggregate groupings by headings or major blocks of regions within the country. In this report, the unit of measurement used is a very simple spatial indicator having only mutually exclusive alternatives:

- (a) Unit located in the capital or main metropolis
- (b) Unit located outside the capital or main metropolis

The term "capital or main metropolis" is understood to be the population centre with the greatest population density.

3. Development missions supported by the information units

The development missions constitute a complex set of actions served by each information unit, such as the mother organization's role or function in development, the legal-institutional nature of the mother organization, the varied range of clients of development agents and the problem areas or disciplines with regard to which the units are able to meet requests for information.

(a) Development function of the entity to which the information unit belongs

An information unit is usually attached administratively to an entity that fulfills different national development functions. The institution's function determines the type of contribution it makes to the various aspects and stages in the process of economic and social change. Its importance is obvious if one bears in mind that the very raison d'être of the information unit is to support these functions.

It is important to point out that the institutions included in the study were listed according to the development function that most closely reflected its work, according to the following basic categories:

(i) The government function. This covers a wide spectrum of institutions whose role is to regulate, orient and lead the development process from a national perspective: ministries, agencies and administrative bodies of the central and regional government and the legislative and judiciary powers.

(ii) The educational and cultural function. This includes those institutions that are responsible for disseminating specialized knowledge either through the training of human resources at different levels -universities, training institutes, etc.- or the preservation of the cultural heritage: national libraries, national archives, museums, etc.

(iii) The research, advisory and extension function. This covers those institutions responsible for generating, applying and disseminating new knowledge pertaining to development problems: institutes, research centres, etc.

(iv) The financing and promotion function. This refers to all those institutions that study the allocation of funds and make contributions to encourage works required for social welfare and progress among the different sectors of national activity: development corporations, financial entities, banks, etc.

(v) The function of production, marketing and distribution of goods. This concerns those institutions responsible for generating inputs, consumer goods and capital goods, as well as those concerned with regulating the marketing and distribution of such goods on the domestic and external markets of a country or a region: enterprises, chambers of commerce, producers associations, etc.

(vi) The social development function. This includes all those activities that are concerned with legislation and social security, the protection of the interests of social groups, cultural extension, etc.: labour and community organizations, political, religious and philosophical organizations, etc.

(vii) The international co-operation function. This covers institutions and agencies whose purpose is to regulate, orient and lead the development process from an international perspective through the sciences, culture, the arts, technology, foreign investments, trade, tourism, international relations, etc.: intergovernmental and non-governmental associations and offices, and regional and international ones of an economic, social, cultural, commercial, technical nature, etc.

In brief, the development functions of the mother entities are as follows:

- (a) Government function
- (b) Educational and cultural function
- (c) Research, advisory and extension function
- (d) Financing and promotion function
- (e) Function of production, marketing and distribution of goods
- (f) Social development function
- (g) International co-operation function

(b) Legal-institutional nature of the entity to which the information unit belongs

In determining the different legal-administrative categories into which the entities to which the information units belong can be classified, at least the following aspects should be considered: (a) geographical scope of the institution (national or

foreign), (b) legal standing of the institution (public, mixed, private), (c) autonomy of the institution (autonomous, not autonomous) and (d) economic motivation of the institution (profit-making or non-profit).

The following categories were established based on a combination of the above four aspects:

(i) Centralized public agencies: includes public agencies of national scope that are not autonomous and that are non-profit (ministries, national councils, etc.).

(ii) Decentralized public agencies: includes autonomous public agencies of national scope, which may be either non-profit or profit-making (e.g.,: national institutes, central banks, state universities, etc.).

(iii) Private or mixed non-profit agencies: includes agencies of national scope, usually autonomous and always non-profit (e.g.,: private universities, training centres, etc.).

(iv) Private or mixed agencies that operate for profit: includes agencies of national scope, usually autonomous and always profit-making (e.g.,: commercial enterprises, banks, etc.).

(v) Intergovernmental international agencies: includes agencies of international scope whose existence and development is directly or indirectly linked with governments (e.g.,: OAS, ALALC, the Andean Pact, CEPAL, ILPES, CELADE, etc.).

(vi) Non-governmental international agencies: includes agencies of international scope whose existence and development are linked with the private entities they represent (e.g.,: entities attached to private foundations, research centres, etc.).

In brief, the legal-institutional nature of the mother entities may be classified as follows:

- (a) Centralized public entities
- (b) Decentralized public entities
- (c) Non-profit private entities
- (d) Private entities that operate for profit
- (e) Intergovernmental international entities
- (f) Non-governmental international entities

(c) Agents of development served by the information unit

In a study of the services provided by an information unit to different agents of development, it must be borne in mind that the unit usually schedules its activities to serve more than one type of user. Consequently, an objective criterion was established that would make it possible to decide when a unit could be considered as being mainly oriented towards a particular groups of agents of development and what percentage of its time it devoted to serving each category of user. The figure "35% or more" was used to determine that support was provided mainly to a given group.

In this context, the following categories of units were defined according to the users to whom their services were oriented:

(i) Units oriented towards planners, administrators or entrepreneurs, i.e., units whose services mainly support the formulation of alternatives, decision-making and implementation of decisions.

(ii) Units oriented towards researchers, i.e., those whose services support research activity.

(iii) Units oriented towards teachers and students, i.e., those whose services mainly support educational processes.

(iv) Diversified units, i.e., those whose efforts are distributed more or less equally among several types of users.

In summary, the classification of units according to this criterion is as follows:

- (a) Planners, administrators and entrepreneurs
- (b) Researchers
- (c) Teachers and students
- (d) Diversified

(d) Development subject matter areas supported by the information unit

The units have a definite responsibility to meet information needs with a view to solving the problems posed by development.

This demand is evidenced in two complementary approaches. In the first place, there is the "development topic" approach taken by interdisciplinary groups or institutions whose mission is centred on all those problems that are vital in a society (for example: housing, public health, natural resources, etc.), the complexity of which calls for joint contributions from different techniques and scientific-technological and economic and social disciplines.

The socio-economic "disciplines" approach, on the other hand, is taken by specialists whose theoretical and methodological training is geared towards the analysis of partial aspects of economic and social problems. These include the social sciences (economics, law, political sciences, ...) and others such as educational science, environmental science, etc.

The capability to respond to requests for different types of information may be viewed from many different angles. One aspect that was taken into account in this report was the predominance of subject matters in a unit's collections, whether they be "topics" or "disciplines" pertaining to development.

For this purpose, the units were provided with an alphabetical list of "topics" and "disciplines" and asked to estimate what portion of their collections of books and non-conventional documents (mimeographed documents, pamphlets, theses, ...) belonged to each item on the list, as well as what the percentage distribution was for each one.

Subsequently, in order to provide for a more manageable classification, a study was made to group those topics and disciplines that were clearly related. Nine major "areas of specialization" were classified, as follows:

- Area 1: History, international relations, geopolitics, geography, integration, forecasting, national security.
- Area 2: Public administration, political and administrative sciences, law, public powers.
- Area 3: Planning and economic policy, economics, trade, international trade, finance, public finance.
- Area 4: Social welfare, sociology, population, social policy, public health, nutrition, social security, labour.
- Area 5: Education, mass communications, educational sciences, information science, documentation, scientific policy.
- Area 6: Natural resources, environment, agriculture, energy.
- Area 7: Industry, enterprises.
- Area 8: Public works, urban issues, transport, tourism, housing.
- Area 9: Anthropology, statistics, psychology.

Finally, it was decided that the indicator of predominance of a given "area of specialization" would be the existence of collections in a given area that contained "20% or more" of the unit's material. When there were two or more areas with collections of over 20%, the subject matter area having the higher percentage was considered to be the area of specialization. Information units which indicated that none of their collections consisted of more than 20% in a given area were classified as "non-specialized units".

In brief, the areas of specialization were classified as follows:

- (a) International relations, history, ...
- (b) Public administration, political and administrative sciences, ...
- (c) Planning and economic policies, economics, ...
- (d) Social welfare, sociology, ...
- (e) Education, mass communications, ...
- (f) Natural resources, environment, ...
- (g) Industry, enterprises, ...
- (h) Public works, urban issues, ...
- (i) Anthropology, psychology, ...
- (j) Non-specialized

C. SPECIFIC ASPECTS OF THE UNITS

In this section, we begin a discussion of the specific features of the internal environment and the interface with the institutional environment of the information units. As shown in the diagram, the specific aspects are those closest to the nucleus.

1. Information services

Information services are the raison d'être of the units. Knowledge of their situation is of interest not only to information specialists but, particularly, to development agents and institutions who are users of the units, as they to a certain extent define what is to be expected of the unit.

The services have been structured according to three approaches considered useful for the study: (i) the services considered individually, such as circulation, reference, selective dissemination of information; (ii) accessibility of services, both as regards variety, geographical scope and working hours, and (iii) the linkage between information specialists and users, through users' training courses and schemes for promoting the unit's services.

1.a Information services considered individually

(a) Circulation services

The circulation service is that provided by a unit to make its documents accessible to users over a given period, either on a loan basis or by making them available for consultation in the reading room.

The volume of the circulation service may be estimated according to the number of documents delivered to users within a certain time unit. The definition of ranges for measuring this flow involves a decision which is to a large extent an arbitrary one, since the high or low rate of flow can only be established by reference to other parameters of the unit, such as the size of its collection, the size of its information staff and the type and size of its clientele of users.

For purposes of this analysis, only the number of books and non-conventional documents circulated within a week's time has been considered. The measurement unit used is the number of volumes consulted and/or delivered on loan per week.

Thus, the following tentative definition has been set for the ranges of circulation:

- (a) Over 2 000 volumes/week
- (b) 751-2 000 volumes/week
- (c) 251-750 volumes/week
- (d) 101-250 volumes/week
- (e) 100 volumes or less

(b) Reference service

The reference service is a service offered by the unit to users whereby they are provided with replies to queries for information, both of a substantive nature and regarding the physical location of information available either in the unit or through external sources. This term covers both quick replies and those requiring more exhaustive and in-depth searches.

As in the case of the circulation services, the definition of absolute ranges for estimating the flow of responses to queries over a period of time is necessarily arbitrary. For the purposes of this study, the measurement unit used is the number of responses to queries over one month's time.

The following ranges are proposed for determining the volume of reference services:

- (a) Over 500 queries/month
- (b) 101-500 queries/month
- (c) 51-200 queries/month
- (d) 50 queries/month or less
- (e) No reference service provided

(c) Selective dissemination of information service (SDI)

This service consists of the systematic distribution of documents or document references the content of which is highly relevant to the activities and interests of users.

The importance of SDI as a permanent and essential support service for the various development agents lies in the possibility it provides of delegating on the information unit all activities relating to the search and selection of bibliographical material required for the user's work which, in the absence of such a service, might require extra work, perhaps of a sporadic and unsystematic nature, on the part of the user. The institutional benefits of having a unit capable of providing this service are considerable, if one bears in mind the potential savings in staff time, which are usually greater than the cost involved in setting up the service.

In order for the dissemination service to fulfill its purpose, i.e., to allow for the delivery of accurate, timely and relevant information to each user, each individual unit should study specific information needs, both express and potential, through a series of activities called "user profile studies". Without these, it is quite likely that dissemination will be inadequate, as the information delivered would be incomplete, redundant or simply irrelevant.

Taking into account the availability or not of SDI services and the quality of the method used in preparing user profiles, the following categories were established to determine what the situation is in this respect:

- (a) Offers SDI with a profile prepared on the basis of surveys 10/ and indirect methods.11/
- (b) Offers SDI with a profile established only through surveys.
- (c) Offers SDI with a profile established only through indirect methods.
- (d) Offers SDI without a prior profile study
- (e) Does not offer SDI.

(d) Referral and awareness service

This section contains a discussion of all those activities undertaken by an information unit that are concerned with the preparation, editing and distribution of publications that notify users about the existence of information and documentation that is potentially relevant to their activities and which may be accessible owing to its having been received by the information unit or other related internal units with which information can be exchanged. This service covers four types of publications: (i) periodical bulletins concerning recent acquisitions, (ii) bibliographies, (iii) periodical bulletins of abstract, and (iv) other specialized publications such as lists of translated documents, etc.

In addition, it was felt that the impact of this user orientation activity depended not only on the types of publications issued but also on the number of copies produced. This was set at a minimum annual distribution of 500 copies of the aggregate of all publications distributed during that period.

Thus, the following categories were established in this regard:

- (a) Offers a publications service including a bulletin of recent acquisitions, bibliographies, periodical bulletins of abstracts and others.
- (b) Offers a publications service including a bulletin of recent acquisitions and some other type of informative publication.
- (c) Offers a publications service which only includes bulletins of recent acquisitions.
- (d) Offers a publications service that includes other combinations not indicated in (i) and (iii).
- (e) Offers a publications service, but the annual number of copies produced is under 500.
- (f) Does not offer a publications service.

1.b Accessibility of the information services

(a) Range of services to which users of other institutions may have access

It is important to know how open the units are to requests for information from outside their own mother entity inasmuch as this provides a picture of an important aspect of the exchange of information. Such requests for information may come from other information units or other institutions that act as agents of development and have been classified according to four types of services: (i) circulation service (loans and reading room consultations), (ii) information service and response to queries (reference queries and preparation of bibliographies on request), (iii) documents reproduction service (photocopies) and (iv) other services, such as SDI, translations and others of an equally specialized nature.

10/ Includes the use of questionnaires and personal interviews.

11/ Study of users' activity programmes and other indirect methods.

The following categories of units were established based on the access users have to the information services provided:

- (a) Units which make accessible to outside users their circulation, information and reference, documents reproduction and other services.
- (b) Units that make accessible to outside users their circulation, information and reference, and reproduction services.
- (c) Units that make accessible to outside users their circulation, and information and reference services.
- (d) Units that make accessible to outside users only their circulation services.
- (e) Units that make accessible to outside users other combinations of services not included under the above items.
- (f) Units that offer services only to in-house users.

(b) Geographical scope of services

The impact of the services provided by the units may also be considered from the standpoint of the geographical area they cover.

For this purpose, consideration was given to the possible geographical areas towards which the information might flow: interlibrary loans and exchanges of bibliographical material. In addition, the following geographical areas were defined as destinations for the services:

- (i) Latin America, the Caribbean and the rest of the world.
- (ii) The country, province or region where the unit is located.
- (iii) The city where the unit headquarters is located.

On the basis of this information, the geographical coverage of document circulation and exchange was studied by using an indicator made up of the following categories of units:

- (a) Co-operate in information exchanges with users located in countries of Latin America and the Caribbean and the rest of the world.
- (b) Co-operate in information exchanges with users located in the country, province or region where the unit is located.
- (c) Co-operate in information exchanges only with users located in the city where the unit is located.
- (d) Do not co-operate in information exchanges with other institutions.

(c) Availability of time for providing services to users

This is another facet which shows how accessible an information services is. The time during which a unit serves the public reflects the facility and possibilities the public has of using the services.

In this report, we use a series of time ranges during which the information units are open to the public. These ranges are given as "number of hours per week". The categories of units, according to their availability, are the following:

- (a) Available over 40 hours/week.
- (b) Available 40 hours/week.
- (c) Available between 26 and 39 hours/week.
- (d) Available 25 hours or less.

1.c Interface of information specialists with users

(a) User training

One of the critical responsibilities of an information unit is to enable its users to make better use of its information potential. To this end, suitable training activities must be carried out in order to acquaint users with the unit's organization, the tools it uses to conduct information searches and the documentary collections it possesses.

In this report, this aspect has been measured by means of a very simple quantitative indicator which only shows whether or not such activities are carried out and, when they are, shows whether they are a regular part of the unit's work programme or whether they are carried out sporadically.

Thus, the following categories of units were established:

- (a) Carry out "user training" activities regularly.
- (b) Carry out "user training" activities sporadically.
- (c) Do not carry out "user training" activities.

(b) Promotion of services

Another way to facilitate use of an information unit's services is to promote and disseminate its activities throughout the community of users, although this may not necessarily involve formal training. In this regard, the objective is rather to make users aware of the existence of the services and of the mechanisms through which they may gain access to them.

Thus, three types of promotion were listed, from the most direct to the indirect: (i) distribution of informative pamphlets concerning the units; (ii) organization of talks and lectures to promote the services, and (iii) organization of exhibits, film showings, etc.

The following categories of units were established:

- (a) Promote their services by means of pamphlets, talks and exhibits.
- (b) Promote their services by means of pamphlets and talks.
- (c) Promote their services by means of pamphlets.
- (d) Promote their services by means of other combinations not included in the above categories.
- (e) Do not carry out promotion activities.

2. Available resources

The purpose of this section is to discuss various indicators relating to the availability of resources of all types, whether bibliographical, human, physical or financial.

It is important to learn about these resources in order to detect areas where there are shortages and, in general, to define the maximum capacity of a unit to meet information needs, with satisfactory quality and quantity, within a given period of time.

2.a Informative-documentary resources

Informative-documentary resources are the central source of information with which a unit meets information needs. These resources may be classified according to the following categories: (i) resources belonging to the unit or the institution itself,

- (ii) resources belonging to other institutions to which the unit has access, and
- (iii) devices for gaining access to documentary collections.

2.a.1. Internal documentary collections

These are the collection or store of documents and the reference instruments that make it possible to seek information existing in the aforesaid collection.

(a) The collection: The quality of the collection as a source of information has been assessed from two standpoints: its size and its currency.

(i) The size of the collection has been studied on the basis of the availability of books and non-conventional documents (mimeographed documents, pamphlets, theses, etc.).^{12/}

As with other quantitative indicators discussed in this study, in this case a series of underlying limitations must be borne in mind, particularly the fact that account is not taken of factors such as the nature of the units, the community of users they serve, etc. Thus, following an empirical criterion, the following five categories of units have been established according to the size of their collections:

- (a) Over 100 000 volumes
- (b) Between 10 001-100 000 volumes
- (c) Between 2 501-10 000 volumes
- (d) Between 1 001-2 500 volumes
- (e) 1 000 volumes or less

(ii) The currency of the collection should also be studied. The collections are increased year by year through the purchase, exchange or donation of bibliographical material. It is possible to estimate how up-to-date the bibliographical stock is from the incidence of the annual volume of acquisitions on the total size of the collection. This incidence, expressed as a percentage, shows the rate of growth of the collection and, from another angle, shows the relative importance of new material in the existing stock.

The following categories for this percentage indicator have been established, taking into account mainly units that acquire more than 250 documents per year.

- (a) Over 10% growth (1 000 volumes or more)
- (b) 7 to 10% growth (250 to 1 000 volumes)
- (c) 4 to 7% growth (250 to 1 000 volumes)
- (d) 0 to 4% growth (250 to 1 000 volumes)
- (e) Units with an acquisition level of 250 documents or less

(b) Elements for an information orientation service

Some of the means that should be considered for orienting users towards sources of non-documentary information (institutions, specialists and information regarding future events -such as congresses and conferences and on-going projects) are directories and registries of the unit's information collection.

The existence in a unit of a variety of instruments of this type leads to the expectation that it will adequately and expeditiously orient users towards

^{12/} In the analysis of the collections, information referring to the number of titles of periodical publications and the number of reference works has been excluded because there were serious deficiencies in the replies (for example: confusion between number of titles and number of volumes). Nevertheless, these figures may be requested directly from CLADES.

non-documentary sources. Thus, the following classification has been set up which takes into account whether or not the units have automated directories or registries, with stress on "institutions" and "specialists":

- (a) Possess directories of institutions, specialists and others
- (b) Possess at least directories of institutions and specialists
- (c) Possess at least directories of institutions or of specialists
- (d) Does not possess directories of institutions or of specialists.

(c) Documentation produced internally by the entity

Another important documentary source that should be considered by an information unit -in addition to its collection- is the bibliographical material received and produced in the various substantive units of the institution to which it belongs, which is usually difficult to discover.

Development institutions collect, select, process, preserve and generate a wide range of information through their different units, such as the substantive divisions, the statistical service, the publications office, etc.

An important aspect of these links is the receipt -in the information units covered by this study- of documents produced by the entity, either conventional -books and periodical publications- or non-conventional, such as internal documents of the institution (progress reports, advance research reports, working papers, etc.). For the purposes of the analysis, this aspect was measured according to the degree -total, partial, none- to which the various categories of documents were received in the unit. Among these, the following were listed: publications prepared and/or edited and/or sponsored by the entity (P), internal reports of restricted circulation (I) and papers submitted at congresses by staff members of the entity (C).

Consequently, an indicator of "degree of receipt of internal documentation" was established which includes the following categories:

- (a) Units that receive all (P), (I) and (C)
- (b) Units that receive all (P), (I)
- (c) Units that receive all (P)
- (d) Units that receive all (I) or (C)
- (e) Units that receive only part of any of the above categories
- (f) Units that do not receive any type of internal documentation

(d) Access to external documentary collections

In any field of knowledge substantial volume of literature is generated at a constant and adequate rate. In order to provide access to that flow of documents, it has become essential to enter into institutional arrangements that allow for the sharing of the documentary collections of different information units.

One of the co-operative mechanisms most often used is the organization of union catalogues, which make it possible for a unit to have access to a much more extensive stock of documents than what is available in its own bibliographical collection.

This section contains an analysis of the participation of units in union catalogues of periodical publications and the geographical coverage of such publications, measured in terms of the physical location of the collections of participating units.

The following categories of units were established:

- (a) Units that participate in union catalogues of periodical publications of international scope (subregional, regional and worldwide).
- (b) Units that participate in union catalogues of periodical publications of national scope (country and regions of the country).
- (c) Units that participate in union catalogues of periodical publications that only cover the city where the unit is located.
- (d) Units that do not participate in union catalogues of periodical publications.

(e) Devices for gaining access to internal and external documentary collections

Each document in the unit's collection is analysed in order to construct search devices that will make it possible to locate those documents that contain information that is pertinent to the needs of users.

There are many such devices of different degrees of efficiency and effectiveness as regards the quality of the information identified and obtained from the documentary source.

One of the key elements in the efficiency/effectiveness ratio is the documentary language, in other words, the specialized vocabulary that is used to analyse the content of each document and to translate the information needs expressed by users in a natural or free language. This vocabulary serves as a bridge between the needs that have been expressed and the availability of information in each unit.

Current trends in the area of information retrieval indicate the advisability of using a language consisting of synthetic unambiguous terms called descriptors which, through many different combinations, make it possible to retrieve all the information existing in the collection.

This is called the post-co-ordinated search method and is the one most frequently used in automated information services.

The more traditional approach was to use subject matter headings made by pre-co-ordinating two or more concepts. Information may be sought by means of either pre-co-ordination or post-co-ordination, the latter being the most frequently used in modern information services.

The information units have been classified under the following categories according to the search devices they possess for the retrieval of non-conventional documents:

- (a) Possess search devices allowing for automated post-co-ordination.
- (b) Possess search devices allowing for manual post-co-ordination.
- (c) Possess pre-co-ordinated search devices.
- (d) Do not possess search devices (which means that the collection of non-conventional documents has not been analysed).

2.b Human resources

The human resources of an information unit are a fundamental element in its potential capability to meet in adequate and timely fashion the information needs of its users. Furthermore, according to modern information theory, the "personnel" resource is more important to the effectiveness of the services than the "collection" resource.

In this section, the human resources of the units are discussed both from the quantitative (size of staff) and the qualitative (level of professional training) standpoints.

(a) Size of staff

The information units usually have a variety of staff members with different types of training. It is now generally recognized that it is essential that a unit have at least one person who is qualified as an "information specialist" and who has a sound background in one of the following fields: library science, documentation, information science or related disciplines. Because of this variety in training, these professionals are called by different names, e.g., librarian, library specialist, documentalst, information scientist, systems analyst, etc.

The units have been classified according to size of staff on the basis of whether or not they have this type of professional. The following categories are covered:

- (a) Units that have at least 4 or more "information specialists".
- (b) Units that have at least 2 or 3 "information specialists".
- (c) Units that have 1 "information specialist" and at least one other support staff member.
- (d) Units that have only 1 "information specialist".
- (e) Units that only have staff that are not specialized in information.

(b) Staff training

There is no question that the quality of the training of human resources is another important aspect that indicates the capability of the units to provide relevant information on development problems.

In this study, an attempt has been made to measure the quality of human resources according to the educational and professional level of the staff. Nevertheless, we are certain that because of the complexity of this aspect, it will not be possible to provide a more complete and refined vision on the basis of the data collected.

The following elements have been considered: (i) the specialization of staff training, (ii) the number of years of university-level or equivalent study of unit staff members, and (iii) the participation of staff in training courses, whether domestic or foreign, of at least on month's duration. The combination of these attributes has made it possible to establish the following categories of units based on staff training:

- (a) Units that have information specialists who have taken graduate-level courses.
- (b) Units that have information specialists who have had more than one year of university or equivalent training and who have participated in training courses of at least one month's duration.
- (c) Units that have information specialists who have more than one year of university or equivalent training but who have not participated in training courses.
- (d) Units that have professionals who have had more than one year of university or equivalent training but who have not received training in information and related disciplines.
- (e) Units that have no personnel with more than one year of university or equivalent training.

2.c Facilities and equipment

In order to fulfil its information function effectively and efficiently, a unit must have adequate physical facilities. In this section, three dimensions for describing the physical infrastructure are discussed: the premises, the communication elements and the specialized information equipment.

(a) The premises

The building determines how many users can be served and the physical conditions under which the unit is to operate. The characteristics of the premises are examined from the qualitative standpoint, stressing the characteristics of the internal arrangements in the space allocated to a unit.^{13/}

The arrangement and use made of the internal areas of the premises are decisive in determining the facility with which an information unit can carry out its work. All other things being equal, one particular physical arrangement will be better than another if the areas used for the unit's activities are set aside exclusively for that purpose, with no interference for other purposes of the unit itself or for purposes extraneous to the unit. In measuring this aspect, three areas that are basic for the information unit had to be identified: the reading area, the area used for technical processes and the administrative area.^{14/}

Once the existence of the areas was determined and each one was identified, the following four categories of functional independence were established:

- (a) Units having "independent areas" where all three areas were available and each was set aside exclusively for its own purposes.
- (b) Units having "partially independent areas" where one or two areas were set aside exclusively for their own purposes.
- (c) Units having "joint areas" where the existing areas are used simultaneously for different purposes of the unit.
- (d) Units having "areas with interference" where the existing areas are used for more than one of the unit's purposes, as well as for purposes extraneous to the unit.

(b) Elements of communication

This section is devoted to analysing an important tool that is essential for providing adequate service to users, namely, the physical means for facilitating communication with other units and with users, such as telex or cable facilities, telephones and post office boxes. These elements of the infrastructure are essential to provide flexible services of circulation, reference and the selective dissemination of information at the national and international levels.

The following categories of availability of these elements of communication have been established for this indicator:

^{13/} This analysis may be complemented with other quantitative indicators, such as the area of the building. This information is available at CLADES.

^{14/} In the survey, the term "area" in the building was understood to refer to the places allocated for the performance of a given activity independently of whether or not they were physically separate.

- (a) Units that have a telephone, post office box and telex or cable.
- (b) Units that have a telephone and post office box.
- (c) Units that have a telephone.
- (d) Units that have no telephone but have some of the other elements.

(c) Equipment

A study of the equipment available to a unit makes it possible to determine to what extent it is able more efficiently to provide certain information services or carry out certain technical processes. In this section, equipment is discussed from the standpoint of the access the unit has to different types of equipment, whether the equipment is available for the exclusive use of the unit or whether the unit shares it with other units of the institution.

The accessibility of basic information equipment varies from one unit to another. While one unit may own certain equipment for its own exclusive use, others must share their equipment with other units in the institution or simply contract for its use outside the institution. Basic equipment is considered to be: (i) a photocopy machine; (ii) micro-readers and other graphic reproduction equipment.^{15/} The units have been classified according to the following categories of access to equipment:^{16/}

- (a) Units that have a photocopy machine for their own exclusive use and have access to micro-reading and graphic reproduction equipment.
- (b) Units that have access to a photocopy machine and micro-reading and graphic reproduction equipment.
- (c) Units that only have access to a photocopy machine.
- (d) Units that only have access to micro-reading and graphic reproduction.
- (e) Units that do not have access to any basic information equipment

2.d Financial resources

The purpose of this section is to study a factor that is fundamental for the operation and development of an information unit, namely, its financing. As is well known, monetary resources allow for the hiring of staff, the expansion and maintenance of its physical infrastructure and the purchase of bibliographical material and other inputs necessary to an information service. As such, they determine the type, amount and quality of the information services that may be offered by a unit.

One global indicator of the magnitude of the financial resources that are required to keep a unit in operation is its annual operating expenditure. This expenditure includes the total amount of payments made, either directly by the unit or by the

^{15/} This includes systems used by the unit to print its publications, such as multilith, stencils, dittos, offset, etc.

^{16/} This indicator represents a first step towards the study of equipment used by the units, since it does not take into account the quality of the equipment as regards its technical features or its condition as regards wear and tear.

institution -to cover the payroll and the purchase of bibliographical material and office supplies and materials- or for services contracted outside the unit.^{17/}

As had been anticipated -based on preliminary surveys in the region- it was difficult to determine total operating expenditure. Nevertheless, the questionnaire was designed in such a way as to make it possible to obtain reasonable estimates of this aspect. Details concerning the methodology used for calculating this amount be found in appendix 5.1.

Nevertheless, when these figures are expressed in national currency, they are not very meaningful unless they are placed within a specific national context defined in terms of a minimum volume of expenditure that may be used as a pattern and that takes into account the differences in cost of living among countries. Patterns of minimum expenditure by countries were developed according to the methodology explained in appendix 5.2 and the deviation of annual operating expenditure of individual units with respect to the aforementioned national pattern was estimated.

The following categories of units were established:

- (a) Units whose annual operating expenditure is at least 200% higher than the national minimum expenditure.
- (b) Units whose annual operating expenditure is between 100% and 199% higher than the national minimum expenditure.
- (c) Units whose annual operating expenditure is equal to or more than 99% higher than the minimum national expenditure.
- (d) Units whose annual operating expenditure is no more than 99% lower than the national minimum expenditure.
- (e) Units whose annual operating expenditure is between 100 and 199% lower than the minimum national expenditure.
- (f) Units whose annual operating expenditure is at least 200% lower than the national minimum expenditure.

3. Management of the unit

In this section, factors that are indicative of the administrative management of the information unit, which have an important influence on the efficiency and effectiveness of its services, are discussed. Three aspects are explored: (i) the degree of internal organization of the unit's activities, (ii) the degree of knowledge of the situation with regard to its services and resources, and (iii) the unit financial management capability.

3.a The internal organization of the unit

The quality of the internal organization of a unit will determine whether it is able to provide more or less competent and timely information services at a reasonable cost.

^{17/} This value is of course an approximation of the total financial resources required by the information unit, since it does not include capital spent annually for purchase of equipment, construction of facilities, replacement, etc.

This factor was not investigated, however, as it would have required too great an effort on the part of the units responding to the questionnaire. In any event, the annual operating expenditure does provide a good estimate of a unit's total expenditure, as capital expenditure is usually low, except in the case of very sophisticated units or units that have just recently been established.

An indicator was constructed which summarizes many of the qualities required to manage an information unit, such as the ability to programme its activities and the manner in which tasks are assigned.

The following categories of "degree of internal organization" were established:

- (a) Units that programme their activities and assign tasks in the context of a functional organization chart and an organization and procedures manual.
- (b) Units that programme their activities and assign tasks using either a functional organizational chart or an organization and procedures manual.
- (c) Units that programme their activities and assign tasks more or less informally through verbal and/or written communications.
- (d) Units that do not programme their activities.

3.b Availability of statistics on resources and services

The ability to measure or estimate indicators of the operation of a unit is a good reflection of the interest taken by those responsible in providing good management.

This aspect was analyzed by studying a unit's ability to respond to questions of a quantitative nature concerning aspects such as services, resources, users, etc. It should be understood that these responses may be based on simple estimates or queries to internal statistical information mechanisms.

The following 18 questions were considered pertinent to the measurement of this aspect:

Data regarding services

1. Volume of circulation of books and non-conventional documents
2. Volume of circulation of periodical publications
3. Queries answered by the reference service
4. Number of copies printed of the information unit's publications

Data regarding the collection

- Collection of books and non-conventional documents
 5. Size
 6. Percentage distribution by major topic
 7. Percentage distribution by language
- Collection of periodical publications
 8. Size
 9. Percentage distribution by major topic
 10. Percentage distribution by language
 11. Size of the reference collection
 12. Bibliographical acquisitions during the 1973-1975 period
 13. Value of the bibliographical material acquired in 1975
 14. Percentage of material offered for exchange

Data regarding users

15. Percentage distribution of users by activity
16. Percentage distribution of users by sector

General data

17. Date of creation of the information unit
18. Total staff working in the information unit

It should be noted that this list does not provide for measurement of the variables of the monetary-financial type, which will be considered in the following section.

The replies, which varied in degrees of complexity, were weighted differently, and the following classification of the degree of awareness of the internal situation expressed in percentages was developed.

- (a) Units that replied to 100% of the questions
- (b) Units that replied to between 90 and 99% of the questions
- (c) Units that replied to between 80 and 89% of the questions
- (d) Units that replied to between 70 and 79% of the questions
- (e) Units that replied to 70% of the questions or less

3.c Financial management capability of the unit

One may speak of real management by the persons in charge of a unit only to the extent that they are able to exercise some control over the financial situation.

Since this aspect is considered crucial to the growth and proper adjustment of a unit to the dynamics of information needs in the field of development, a more thorough analysis of the following aspects will be made: (a) the degree to which an information unit is aware of the financial situation, (b) the degree of financial independence the unit enjoys with respect to the entity to which it belongs, and (c) the degree to which the leadership of the unit is involved in the preparation of its budget.

(a) Awareness of the financial situation

This is a very important aspect, inasmuch as without adequate knowledge of a unit's financial resources and needs it is not possible to plan how it should grow and constantly readjust its services to the constantly changing information needs of its users. In addition, an information unit will only be viable to the extent that its costs are acceptable to the entity to which it belongs.

Knowledge of a unit's financial resources requires a certain type of record-keeping; this does not necessarily mean that the unit should keep a decentralized financial record, but it does point to the need for records to be kept at some administrative level and for them to be accessible and structured in such a way as to allow the person responsible for managing the unit to find out what the financial situation of his service is in a truthful and timely fashion.

The degree of awareness of a unit's financial situation was classified according to mutually exclusive categories based on the number of types of financial data of which the units are aware. The financial data considered crucial for this purpose were: sources of income, total expenditure, percentage breakdown of expenditures for payroll, bibliographical acquisitions, purchases of office supplies and others.

The categories of "degree of awareness of the financial situation" are the following:

- (a) Units that are aware of their sources of income, breakdown of expenditures and amount of total expenditure.
- (b) Units that are aware of their sources of income and breakdown of expenditures.
- (c) Units that are aware of sources of income and amount of total expenditure.
- (d) Units that are only aware of sources of income.
- (e) Units that are only aware of breakdown or total expenditure.

(b) Financial independence of a unit with respect to the entity to which it belongs

This measures the extent to which a unit has resorted to sources of financing outside those of the entity to which it belongs. This aspect has been analysed by means of an indicator of the degree of diversification of sources of financing, which

is inversely related to the share of the entity in the financing of the information unit.

The categories are simple and self-explanatory:

- (a) Units in which 50% or more of the income is from sources outside the entity.
- (b) Units that receive 10 to 49% of their income from outside sources.
- (c) Units that receive from 1 to 10% of their income from outside sources.
- (d) Units that do not receive any income from outside sources (in other words, they are financed 100% by the mother entity).

(c) Involvement in budget decisions

The effectiveness with which any department within an organization is managed depends inter alia on the involvement of its administrative staff in the preparation of the annual budget and in ensuring that the resources necessary to implement its annual work programme are obtained and available when needed. The growth and operation of an information service will undoubtedly be affected to the extent that a budget is imposed upon it which does not provide, either as regards the amount of funds provided or the structure, for the financial needs anticipated by the unit for the budget year.

Involvement in the preparation of the annual budget may occur in different degrees: access to information during the budgeting process, participation in the process, capacity to modify the proposed budgetary structure, capacity to increase the amount of the budget proposed.

These activities may be listed according to different degrees of involvement in budget decisions by the following categories:

- (a) Units that are able to increase and modify the structure of the budget.
- (b) Units that are able to increase or modify the structure of the budget.
- (c) Units that are aware at the appropriate time of information concerning the budgetary situation but which cannot alter it.
- (d) Units that are not aware at the appropriate time of information regarding their budgetary situation.

4. Status of the information function

The status of the information function within an institution and within the society as a whole was studied according to the rewards received by information specialists in terms of: (i) salaries; (ii) prospects for salary increases throughout their professional career, and (iii) access to opportunities for further training.

4.a Salaries of information specialists

Remuneration of information personnel will be studied from three points of view: (i) the difference in each institution between the average salary of an information specialist and the minimum entry-level salary of administrative personnel, (ii) the difference between the average salary of an information specialist in each institution and the industrial wages of the country in question, and (iii) the difference between the average salary of an information specialist and the national salary equivalent to that of an information specialist in the United States civil service.

Average salaries for each unit were calculated taking into account the minimum salary received by an information specialist upon entry to the unit and the maximum salary to which he may aspire.

(a) Comparison with minimum salary of administrative staff

For this purpose, an indicator was developed which quantifies the difference between the two types of salaries expressed as a percentage of the minimum entry-level administrative salary. This ratio may be shown by the following formula:

$$\frac{(\text{Av. Sal. Inf. Sp.}) - (\text{Min. Ad. S.})}{\text{Min. Ad. S.}} \cdot 100$$

This measurement is very important as it indicates how much more highly information work is valued than routine work in the institution. Naturally, the lower the value assigned to information work the less the incentive for the information staff of an organization.

The categories for this indicator were established as follows:

- (a) Units where the difference between the average salary of information specialists and the minimum entry-level salary is 200% or more.
- (b) Units where the difference is between 150 and 199%.
- (c) Units where the difference is between 100 and 149%.
- (d) Units where the difference is between 50 and 99%.
- (e) Units where the difference is between 1 and 49%.
- (f) Units where there is no difference.
- (g) Units where the difference is between -1 and -49%.
- (h) Units where the difference is between -50 and -99%.

(b) Comparison with industrial wages

It would seem advisable, in addition, to have an indicator that would make it possible to discover the relative position of information specialists with respect to a pattern of national wages. It would thus be possible to estimate the importance attached to the information function in terms of other activities that are important to the nation.

It is difficult to select a salary that is representative of the national environment because of the conceptual and practical problems involved. There are conceptual problems in deciding what activity or groups of economic activities are representative of national concerns. There are practical problems because reliable statistics on wages for the various national activities are scarce.

Industrial wages provide an indicator for which there is a reasonable statistical base in the various countries of the region. Nevertheless, it is questionable whether they adequately reflect the true national wage situation. There are at least two problems that must be borne in mind: (i) the size and degree of technological development of the industrial sector varies greatly from one country to another; for example, an industrial sector of very little strategic importance that is of a semi-craft nature will probably be associated with low wages; (ii) industrial wages are an abstraction that reflects an average of wages in the various branches of industry and the incidence in each one of them of the various categories of labour: skilled, non-skilled and administrative personnel.

With these limitations in mind, the values of industrial wages shown in appendix 5.3 were used as a basis for comparison.

The comparison was made by means of an indicator or differential estimated according to the following formula:

$$\frac{(\text{Av. Sal. Inf. Sp.}) - (\text{Industrial Wage of the Country})}{\text{Industrial Wage of the Country}} \cdot 100$$

The following categories were established taking into account these values:

- (a) Units where the difference is 100% or more.
- (b) Units where the difference is between 50 and 99%.
- (c) Units where the difference is between 1 and 49%.
- (d) Units where there is no difference.
- (e) Units where the difference is between -1 and -49%.
- (f) Units where the difference is between -50 and -99%.

(c) Comparison with national salary providing a purchasing power equivalent to the salary of an information specialist in the United States civil service

This measurement is aimed at placing the average salary of information specialists in an international perspective. It represents an attempt to find a frame of reference in terms of the salaries of information specialists outside the region.

It is very difficult to decide which country or group of countries should be used for this purpose. Because of the importance assigned to information in the western industrialized countries, it was felt that it would be useful to take them as a basis for comparison. Moreover, since most of the Latin American information units fell within the public administration sector and in view of the availability of information, it was decided to focus the analysis on the United States civil service.

It was decided to use the figure of US\$ 750/month as the average salary of information specialists; this figure was obtained by averaging 1977 entry-level salary figures, which consisted of a maximum of US\$ 1 000 and a minimum of US\$ 500.^{18/}

This figure was converted into a national salary providing a purchasing power equivalent to US\$ 750/month in the United States, by using: (i) a conversion factor that makes it possible to associate the cost of living in each country with the cost of living in the United States, and (ii) the rate of exchange in force at the time. The estimated figures for national salaries of information specialists providing a purchasing power equivalent to that of the United States are shown in appendix 5.4.

On the basis of these figures and utilizing the formula:

$$\frac{(\text{Av. Sal. Inf. Sp.}) - (\text{National Information Salary providing Equivalent Purchasing Power})}{\text{National Information Salary providing Equivalent Purchasing Power}} \cdot 100$$

the following categories were established for this indicator:

- (a) Units where the difference is 50% or more.
- (b) Units where the difference is between 1 and 49%.
- (c) Units where there is no difference.
- (d) Units where the difference is between -1 and -49%.
- (e) Units where the difference is -50% or less.

4.b Salary prospects

Another important economic incentive offered to the staff of any organization is the existence of an attractive salary scale and career prospects. In order to measure this aspect, an indicator was established which quantifies the possible salary increments

^{18/} These figures are taken from data provided by the Special Library Association, 1980.

throughout a staff member's career. This was expressed according to the following formula:

$SP = (MAXS - MINS) \cdot 100/MINS$ in which:

SP = Salary prospects

MAXS = Maximum salary for an information specialist at the end of his career

MINS = Minimum salary for an information specialist upon entry to the institution.

On this basis, a classification of salary prospects was established which covers the following categories:

- (a) Units where an information specialist may expect to increase his minimum entry-level salary by 200% or more.
- (b) Units where a specialist may expect to increase his minimum entry-level salary by 150 to 199%.
- (c) Units where a specialist may expect to increase his minimum entry-level salary by 100 to 149%.
- (d) Units where a specialist may expect to increase his minimum entry-level salary by 50 to 99%.
- (e) Units where a specialist may expect to increase his minimum entry-level salary by 1 to 49%.
- (f) Units where there are no salary prospects for information staff.

4.c Opportunities for further training

One of the incentives granted by an entity to the staff of its information unit is access for the staff to further training programmes. The existence and nature of these programmes indicate the interest of the entity in strengthening or updating the knowledge of its information specialists.

The importance of the training programmes in which the information staff have participated may be assessed by taking into account the geographical location of the institution which has offered them together with the duration of the programmes. It should be explained, however, that these criteria do not take into account the quality of the programmes but only indicate the willingness on the part of an entity to absorb the cost involved in having the staff of the information unit participate in the programmes, whether this be the monetary cost of the programme or the sacrifice which the absence of a staff member for a given period of time represents to the entity.

The following categories were established to classify the information units in this regard:

- (a) Units whose information staff have participated in training courses abroad having a duration of over 6 months.
- (b) Units whose information staff have participated in training courses abroad having a duration of 1 to 6 months.
- (c) Units whose information staff have participated in training courses in the country having a duration of over 6 months.
- (d) Units whose information staff have participated in training courses in the country having a duration of 1 to 6 months.
- (e) Units whose information staff have participated in training courses in the country or abroad having a duration of less than 1 month.
- (f) Units whose information staff have not participated in training courses.

D. EVALUATION SCHEME FOR A DEVELOPMENT INFORMATION INFRASTRUCTURE: AN OVERVIEW

In this section, the indicators analysed in detail in previous sections are presented in more compact form for the purpose of evaluating of the different categories. This section has been divided into two parts: (i) discussion of a methodology for carrying out the evaluation, and (ii) identification of the minimum critical values for each indicator (minimum thresholds).

1. The "minimum thresholds" methodology

An information infrastructure is conceived as a set of information units having a wide variety of characteristics both as regards the manner in which they serve their communities of users and as regards their resources, internal organization and the institutional support they receive. Nevertheless, within this variety, it is possible to visualize a common nucleus of basic requirements that must be met, which determine a unit's potential capability for meeting the information needs of its users in a timely fashion and providing the quality of services required, as well as its ability to use efficiently the resources available to it.

For example, one could hardly expect much from an information unit that did not have on its staff at least one person having basic training in information sciences and related disciplines. Nor would it be acceptable for a unit not to have a facility that provided it with enough independence to carry out its work or for it to have such a meagre budget that it could not even cover its payroll and maintain a basic programme of acquisitions and organization of bibliographical material.

It is thus evident that minimum values must be established for each of the indicators discussed in subchapters III-B and III-C that will allow for an expectation of some type of support to users on the part of the information units. The minimum threshold for any indicator may thus be visualized as a hurdle that must be crossed or at least met by the units in order that their situation may be considered acceptable in terms of any given indicator.

Because the information units are multifaceted organizations, they should be analysed on the basis of a fairly large number of aspects in order to allow for some kind of understanding of their potential to provide effective support to users. How many aspects should be considered? In this section it is suggested -maintaining a consistent line of thought- that the scheme used for analysing the aforementioned subchapters should be retained; this takes into account four major problem areas: services, resources, management and status and, within each one, the corresponding aspects or indicators, amounting to a total of 31: (services (9), resources (12), management (5) and status (5)). It is possible, in principle, to set minimum acceptable values or minimum thresholds for each of these dimensions or aspects.

2. Identification of minimum thresholds

Table 8 shows proposed minimum thresholds for each of the 31 aspects considered. The table has been divided into four columns corresponding to the four areas of analysis. Each indicator has been described with the following information: (i) abbreviation of the indicator (to be used during electronic processing of the data from the countries); (ii) the variable to which it refers, (iii) content of the indicator and (iv) minimum threshold, i.e., the minimum indicator value that must be met by a unit in order to be considered acceptable.

The aggregate of minimum thresholds would provide an outline of a possible standard against which the information units could be compared. It may be said that this model: (i) does not take into account -according to a modern view of the information function- whether or not the units are specialized libraries, information centres, documentation

Table 8

IDENTIFICATION OF "MINIMUM THRESHOLDS"

[illegible]

centres, etc.; (ii) outlines a series of requirements in terms of the resources and functioning of the units. Some of these requirements might be, for example, a certain aggressiveness and definiteness of purpose in the provision of information services, either through the publication of bibliographic information that would allow for optimum utilization of its own collections or those of related institutions; the performance of user profile studies in order to better refine the dissemination of information; accessibility to outside users; closer interrelationship with other similar units, etc. The unit should also have sufficient resources of its own, and it should show concern for supplementing its resources with those of other institutions; it should have facilities and basic equipment that will enable it to carry out its work independently and it should have a significant management capability whereby it would change from a passive object to a subject that is involved and committed to solving problems arising from the development process, with a capacity for record-keeping and a degree of internal autonomy that will enable it successfully to meet these challenges. Finally, a unit must have enjoy institutional environment that is favourable to its activities, with an institution willing to provide it with counterparts at the highest level, who are interested in establishing support mechanisms and incentives to the staff that are in keeping with the central role which the entity itself should assign to its information units.

A study of each of these "minimum thresholds" and of all of them as a whole, as set forth in the chart, should provide a full picture of the situation of a given information infrastructure. Moreover, it must be pointed out that the minimum thresholds indicate levels of requirement that are considered high, but that are feasible. In other words, we do not wish to promote the development of mediocre information infrastructures, but rather, by setting demanding goals, we wish to provide incentives that will lead to a real strengthening of this vital element of support to development.

Finally, it should be stressed that another way to view the minimum thresholds is to refer to the categories in the statistical tables shown in appendix 6, which quantify the situation with regard to the variables considered.

IV. THE SITUATION IN THE CARIBBEAN

A. THE CARIBBEAN AS A WHOLE

1. The sample

For purposes of quantitative analysis it should be noted that the study surveyed only five of the twelve countries composing the Caribbean subregion: Barbados, Jamaica, the Commonwealth of Puerto Rico, the Dominican Republic and Trinidad and Tobago. The 116 units studied offered a fairly discreet representative sample -around 25%- if the 12 countries are taken into consideration; but, if we analyse only the situation of the five countries studied, we have a very adequate representative sample of around 46%. However, it is hoped that the limitations of the sample, whatever may be the reasons which prevented a wider coverage, will make it possible to draw some valid conclusions for the diagnostic study of the information infrastructure in this subregion.

2. Origin, location and orientation of the units

From the analysis of the data referring to the overall variables considered in this section (see table 9), it may be inferred, in respect of the subregion as a whole, that there is a clear concentration of information units in the capitals of the countries within it, since approximately 92% of them are located in these population centres.

In the pattern of origin or establishment, there appears to be a clear predominance of units established after 1970, 37%, and a slightly lower proportion of units established during the 1960s, which unquestionably gives a young and dynamic character to the information infrastructure in this subregion.

Secondly, the users of the information units are predominantly "teachers and students" (47%) and "researchers" (25%). Moreover, with respect to the major subject area, there is a marked tendency, although not preponderant, towards the area of "public administration" (22%). There is also a fairly significant proportion (19%) corresponding to a "miscellaneous" subject orientation. Finally, the institutions to which the information units are attached preferentially support the "government" function by 47%, and "education and culture" by 28%; these are located essentially in the public sector (65%), with an emphasis on decentralized bodies (36%).

3. Evaluation of the information infrastructure in the subregion

Graph No. 1 shows a subregional information infrastructure which, while not decidedly unfavourable, offers a broad range profile, with between 20 and 80% of the units exceeding the minimum threshold as defined for the different variables considered in the analysis. It must be kept in mind, however, that this tendency does not necessarily affect the totality of these variables nor the subject areas being studied. These clearly exist not only a sizable number of indicators located around the average range, but some of them rise considerably above this range, in 39% of the scores recorded.

(i) Services. A detailed evaluation shows a services area in a somewhat unfavourable position, considering that almost all the variables included in the sector are located below the conventional dividing line equivalent to 50% of units which cross the defined minimal threshold. The only exceptions are the number of hours open -which rises above 80%- and the circulation service, which barely crosses the conventional mean of 50%. In some measure, the attention given to users for reference consultations (44%) also presents a favourable picture.

The situation is fairly unfavourable with respect to the interest shown in reaching outside users; apart from the lack of incentives for promoting services, only 20% of the units consult some type of methodology in the development of users' profiles, and only

Table 9

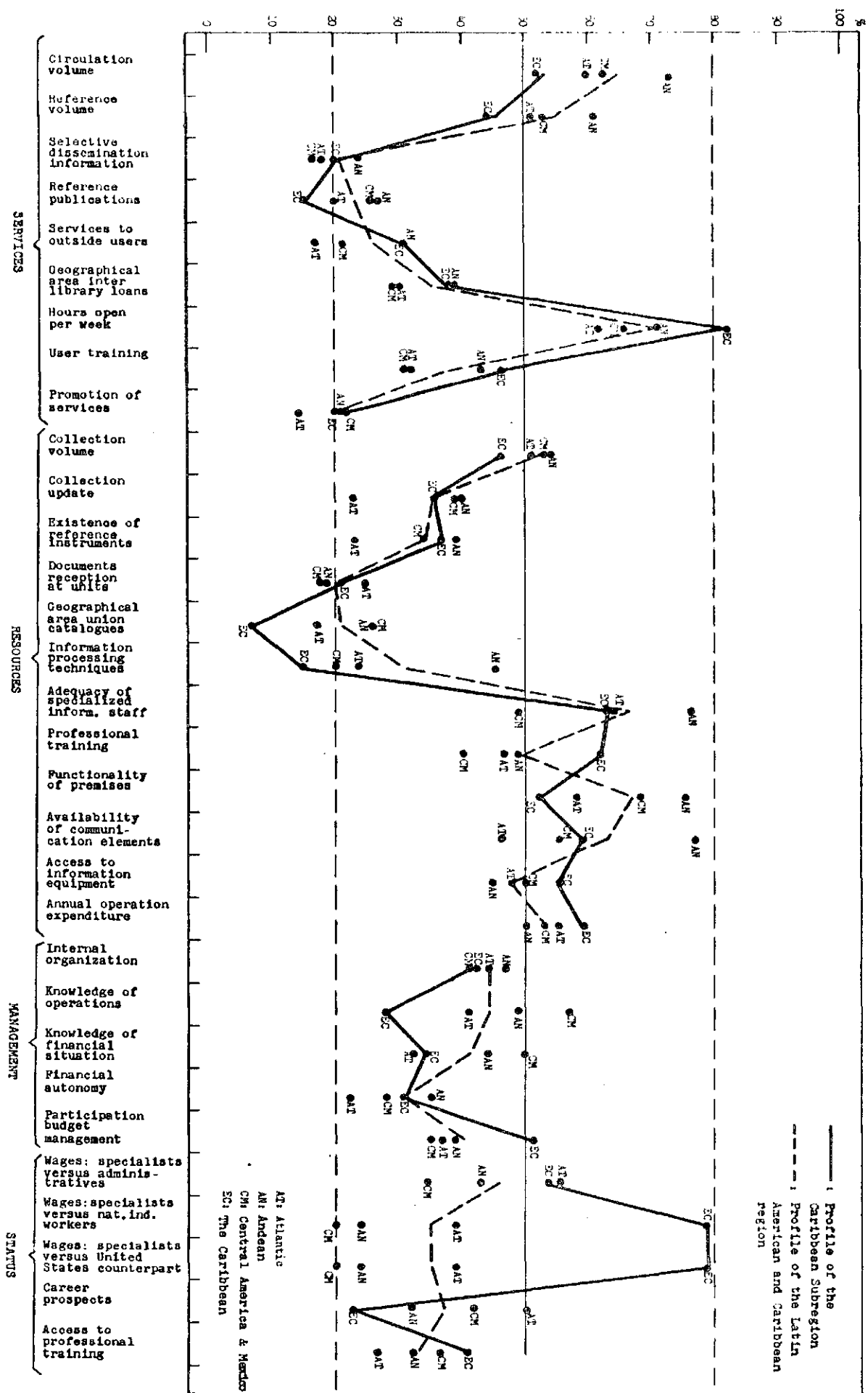
CARIBBEAN SUBREGION: ORIGIN, LOCATION AND ORIENTATION OF UNITS
(Predominant percentages)

	Period of establishment of units	Geographic location	Function of development	Legal-administrative category	Predominant group of users	Development subject of specialization
Caribbean Subregion	36.7 (post-1970)	92.0 (in the capital)	47.4 (Govt.)	36.2 (pub. decent.)	47.1 (Teach. and Stud.)	22.4 (Law, pub. adm.)
	34.9 (1961-1970)		27.6 (Educ. and Cult.)	29.3 (pub. cent.)	25.0 (Research)	19.4 (Miscell.)
Barbados	42.3 (1961-1970)	92.9 (in the capital)	39.3 (Govt.)	32.1 (pub. cent.)	42.9 (Teach. and Stud.)	25.0 (Law, pub. adm.)
	42.3 (post-1970)		25.0 (Educ. and Cult.)	32.1 (pub. decent.)		20.8 (Miscell.)
Jamaica	35.7 (pre-1961)	100.0 (in the capital)	75.0 (Govt.)	35.7 (pub. decent.)	38.5 (Research)	21.7 (Law, pub. adm.)
	35.7 (post-1970)		*	28.6 (pub. cent.)	30.8 (Teach. and Stud.)	17.4 (Nat. Res., Env.)
Puerto Rico	34.3 (pre-1961)	100.0 (in the capital)	60.0 (Educ. and Cult.)	80.0 (pub. decent.)	66.7 (Teach. and Stud.)	41.7 (Law, pub. adm.)
	35.7 (1961-1970)		33.3 (Govt.)		26.7 (Research)	
Dominican Republic	75.0 (post-1970)	84.6 (in the capital)	46.2 (Govt.)	*	75.0 (Teach. and Stud.)	*
			46.2 (Educ. and Cult.)		16.7 (Planners, Adm., Ent.)	
Trinidad and Tobago	44.8 (1961-1970)	77.4 (in the capital)	37.5 (Govt.)	31.3 (pub. cent.)	38.5 (Teach. and Stud.)	25.9 (Miscell.)
	34.5 (post-1970)		21.9 (Res. Cons., Ext.)	25.0 (Interg. int.)	26.9 (Planners, Adm., Ent.)	18.5 (Econ., Com.)

* Indicates that the percentages are equally distributed among the various categories.

Graph 1

LATIN AMERICA AND THE CARIBBEAN: RELATIVE POSITION OF THE INFORMATION UNITS OF THE CARIBBEAN SUBREGION,
WITH RESPECT TO DEFINED MINIMAL THRESHOLDS



16% put out a minimal volume of informative publications. However, the situation looks somewhat better if we note that 31% of the units make available a variety of indispensable services to outside users, while 39% have cooperative inter-library loan agreements at the national level.

There also appears to be some concern for user training activities, where 47% of the units in the subregion exceed the defined minimal standards.

(ii) Resources. The availability of resources to information units in this subregion is rather favourable, although there are some deficient areas. For example, if we analyse the field of human resources, we see a positive situation in the recording of the same percentages of adequate staff and professional training level (64% of the units). This is true in a somewhat smaller proportion, fluctuating between 52 and 56% but equally acceptable, of the physical infrastructure, in terms of the independence of functional areas within the premises, and in terms of the availability of physical channels of communication, an identical proportion to that registered in accessibility to basic information equipment on the part of users and in harmony with the equal level of annual operations expenditure available to the units, in comparison with a standard minimal national expenditure.

The situation of the size of document collections, where only 48% of the units meet the defined minimal standards, is somewhat unfavourable; as for the growth rate of collections, only 36% of the units update bibliographical material in accordance with the required minimal standards; and with respect to the existence of registers and directories for a ~~reference~~ and consultation service, 37% of the units reach the established goals.

Finally, the situation is definitely weak in respect of the regularity with which the units receive publications edited and prepared by bodies to which they belong (21%) and the utilization of techniques for information processing which would make post coordinate searches possible, an area in which only 15% of the units use some system within these lines. There is almost no participation in co-operative programmes of union catalogues for periodical publications at the national level.

(iii) Management. The situation in this area is decidedly inadequate, considering that practically all the variables included in it are found below the 50% of units which cross the minimal threshold. In effect, the trajectory of the curve does not show any particularly satisfactory percentage, except in the degree to which those responsible for the information units participate in the formulation of financial management, an area which slightly rises above the conventional mean of 50%.

However, this apparently favourable indicator is not very consistent with the situation of the other related variables. In fact, in the area of knowledge of general operations, only 28% of the units claim to have any knowledge of operation statistics at sufficient level; only 35% of them say they have a knowledge of the origin and distribution of the funds allocated, and scarcely 31% of the units have the opportunity to obtain resources from sources outside the bodies to which they are attached. Only in the area in which an attempt is made to measure the existence of programming and assigning of tasks does a slightly more encouraging picture emerge, with near 42% of the units exceeding the minimal standards defined as acceptable. In brief, the quality of management exercised by those in charge of the units is rather conventional and passive.

(iv) Status. The status of the information function in the subregion, particularly that corresponding to professional staff in charge of substantive activities, could be described as very favourable if we consider the high percentage of units which allocate adequate salaries to information specialists. Actually, the wages of specialized staff, compared with the national industrial wage and with the wage level of these same specialists in terms of buying power of their counterparts in the United States, are in an excellent position, considering that approximately 80% of the units equal or surpass the defined minimal standards. As for the average salary level of the professional staff compared with the minimal entry level administrative salary, the situation

is adequate in 54% of the units, although in only 23% of the cases are there good prospects for staff advancement.

However, the favourable situation described becomes weaker in respect of the opportunities for staff training and in the prospects for career advancement, since in only 41% of the units are courses offered under the minimal conditions stipulated, and barely 23% of them comply with the minimal requirements for wage increases.

(v) Conclusions. In summary, the information infrastructure in the Caribbean has experienced a sustained growth since the 1960s -only 28% of the information units included in the sample were established before this date- which has been concentrated in these countries' capitals. The users are mainly "teachers and students" (approximately 50%), and there are about half that number of "researchers". Moreover, the subject area of specialization is oriented towards "public administration" in a proportion of about 22%, while the next closest category is "miscellaneous", around 19%.

The overall picture of the evaluation profile is not very favourable, considering that only 39% of the indicators are found above the conventional mean of 50%. However, a detailed look at the critical dimensions reveals that most of the information units in the Caribbean give preferential attention to circulation and reference services provided on their own premises, where the physical infrastructure is appropriate, with enough basic support equipment and staff to take care of these services, both quantitatively and qualitatively.

Correspondingly, one of the areas which undoubtedly deserve greater attention is the effort to reach outside users, including expanding the geographical reach of the co-operative inter-library loan agreements with other national information institutes and probably reformulating a promotional policy for services. On the other hand, the unsystematic reception of documents generated internally by the bodies should not be ignored; the same is true for the low level of participation in union catalogue agreements for periodical publications. It is also clear that the availability of means to offer an information and guidance service to users and the adoption of information processing techniques which would allow for post-co-ordinated searches should be encouraged.

B. THE COUNTRIES OF THE CARIBBEAN

1. Barbados

(a) The sample

Aside from the actual coverage of the sample, it may be said very accurately that, proportionally the representation of Barbados compared with the other countries of the Caribbean subregion is certainly adequate, since it is in second place with 48%. Moreover, the institutions from which information was obtained appear to be a faithful reflection of current socioeconomic information activities in this country.

(b) Origin, location and orientation of the units

The analysis of the available information shows a clear concentration of the information units in the capital of the island, with 92% of them -a similar proportion to the subregional average- located in the most densely populated area. As for the pattern of origin or creation, there has been a strong impulse towards the establishment of an information infrastructure in Barbados since the 1960s, considering that 85% of the information units studied were established since this time, and that of these are distributed throughout the past two decades.

The users are predominantly "teachers and students" (43%). In addition, the main subject areas of the units are "public administration", "political and administrative sciences and law", (25%). "Miscellaneous" subjects have the second highest score, with 21% (see table 9).

(c) Evaluation of the information infrastructure in Barbados 19/

An overall glance at the relative position of the information units with respect to the defined minimal thresholds for each variable shows that the information infrastructure in Barbados presents a clearly unfavourable picture if we note that, of the total number of indicators considered in the analysis, only 8 (26%) cross the conventional threshold equivalent to 50% of the total range. The 23 remaining variables (74%) present a somewhat deficient picture even considering that 6 of them (19%) appear more adequate, with percentages of units fluctuating between 40 and 48%. If we look at separate areas, the worst situation appears to be in services, and the best in status, with the other two areas, resources and management, in an intermediate position.

(i) Services. The situation of services offered by the information units in Barbados appears to be fairly unfavourable. Apparently, the major emphasis of information units is centered on the amount of time available to users in relation to the services offered, since of the total number of units studied, a high percentage (92%) remain open for 40 or more hours a week. Of the rest of the variables, only the circulation service presents a better picture, with 36% of the units in a position to make available to users 100 or more volumes a week.

With respect to the variety of the services available to outside users and the geographic reach of inter-library loans, only slightly more than 25% of the units surveyed reaches or surpasses the defined minimal thresholds. The position of reference consultations is very weak as are the variety and volume of informative publications, both in the types of programs considered for promoting these services and the activities related to profile studies of users, areas in which at most 10% of the units reach the minimum standards. Completing the picture of this unfavourable situation, there are no information units concerned with training activities for users.

(ii) Resources. The study of the resources available to the information units in this country reveals that they have not yet reached the required minimum levels in most of the units studied with respect to the variables analysed.

In effect, it would seem that, although the information units have been concerned with contracting staff with good professional training in a significant proportion (67%), the amount considered as a necessary minimum is sufficient only in 48% of the cases.

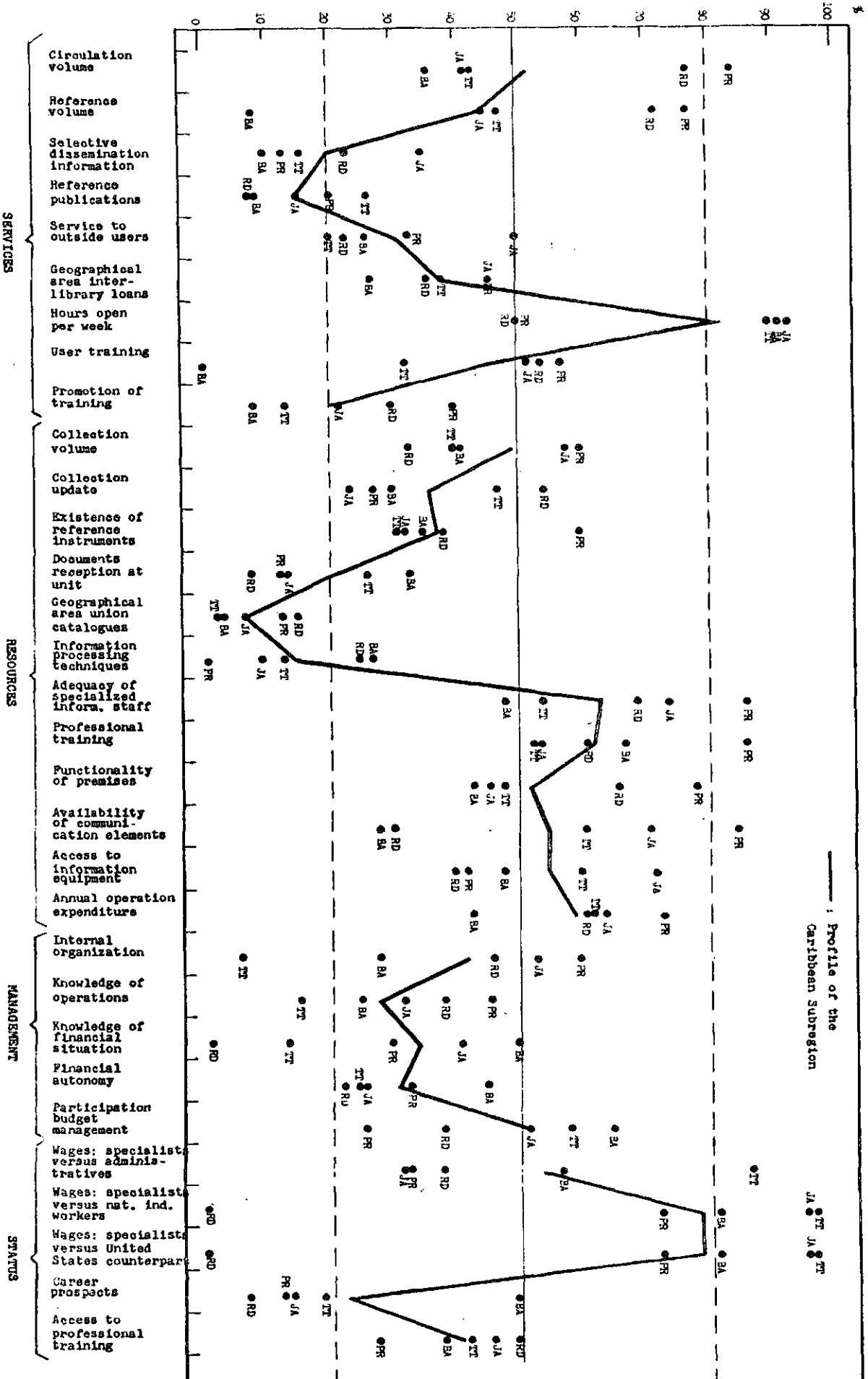
The supply of basic equipment available to outside users is also sufficient in the same proportion of units.

The behaviour of the variables dealing with the size of document collections is somewhat inadequate; this is true of the degree of independence of the functional areas within the premises of the units and in the annual operational expenditures compared with the minimal national standard of expenditures, aspects in which no more than 43% of the units reach or surpass the minimum thresholds in each case. The first two indicators mentioned have the disadvantage of a relatively deficient counterpart, which significantly influences the situation described. First of all, the above mentioned document collections, themselves moderate in size, have an inadequate growth rate in 70% of the units studied, while the physical channels of communication are insufficient in the same proportion, which naturally affects the efficiency of providing available services.

19/ This section is based on the profile of points (BA) of graph No. 2 .

Graph 2

CARIBBEAN SUBREGION: RELATIVE POSITION OF THE INFORMATION UNITS OF BARBADOS (BA), JAMAICA (JA),
COMMONWEALTH OF DOMINICAN REPUBLIC (DR), DOMINICAN REPUBLIC (RD) AND TRINIDAD AND TOBAGO (TT)
WITH RESPECT TO DEFINED MINIMAL THRESHOLDS



In respect of the activities related to the strengthening of the collections and the opening to outside users, the situation ranges from unfavourable to deficient. Actually, only a little more than one-third of the information units studied have registers and directories for a referral and consultation service; a similar proportion of information units regularly receives publications prepared and/or published by the bodies to which they belong, and an even smaller number, 27%, use information processing techniques conducive to post-co-ordinated searches. Finally, there are almost no possibilities for participation in co-operative schemes for union catalogues of periodical publications with other institutions in the country.

(iii) Management. The capacity for management in the information units in Barbados is somewhat inconsistent. On the one hand, we have a relatively poor situation with regard to the degree of internal organization of the units in terms of programming their activities in accordance with administrative procedure manuals, considering that only 29% of them are acting in accordance with the stipulated minimum standards. The knowledge of operation statistics is in a similar position; this is an area in which only one of every four information units studied claims to know about them. On the other hand, a good proportion of units, 50%, say they know the origin and destination of budgetary funds, whereas 46% say they have opportunities to obtain funds from sources outside the bodies to which they are attached; in addition, more than 65% of the units claim to exceed the minimum thresholds in their participation in the formulation of the budget.

(iv) Status. In respect of the wage and salary level of the specialized staff in charge of substantive activities, the status of the information function in Barbados may be considered propitious, since the difference between the average salary of an information professional and that offered to an administrative staff member when he enters the institution, in 57% of the information units studied, surpasses or equals the defined minimum standards. On the other hand, it is probable that information specialists are in an adequate position in 82% of the units, if we compare the average salaries with the national industrial salary and with the level of salaries of these specialists in relation to the buying power of identical professionals in the United States.

It is also important to point out that this favourable situation is supported by good career prospects for the staff working in the information centres of this country, an area in which half of the information units studied said they could reach or surpass the established minimal thresholds. If we include the possibility for staff training, we see an adequate situation in 39% of them.

(v) Conclusions. In summary, it may be said that the situation of the information units in Barbados corresponds to that of a new information infrastructure, where there are obvious deficient areas to be overcome.

Thus, there is obviously a need to strengthen the infrastructure of the information services being currently offered in order to project them with more vitality to both inside and outside users. There appears to be an absence of promotion policies and specially of efforts to train users, which are currently non-existent.

As for resources, although the volume of document collections is acceptable, the rate of acquisition of new material and the participation in plans for union catalogues with other institutions, of which there are practically none at the moment, should be vitalized. A greater effort should also be made to use information processing techniques leading to post-co-ordinated searches, and to improve the supply of instruments to help the unit offer better services of information guidance. Greater importance should also be given to sending to the units informative publications published in the same entities.

In the area of the management of the information units, it is fundamentally important to incorporate administrative procedures to optimize the level of internal management and motivate interest in understanding the general operating statistics of

the institution. A greater concern for this area would increase the effectiveness of the administrators' capacity to participate in financial management and in the development of the annual budget of the entity.

Finally, the favourable situation of the status of the information function in Barbados, specifically in wage levels and opportunities for staff promotion, could be complemented by strengthening the training programmes for staff members.

2. Jamaica

(a) The sample

Considering the actual coverage of the sample, it may be said that, proportionately, the representation of Jamaica compared with the other countries of the Caribbean subregion is adequate, especially considering its third place (42%), among the countries considered. Moreover, the institutions from which information was obtained appear to reflect in large measure the reality of the socio-economic information infrastructure in this country.

(b) Origin, location and orientation of the units

An analysis of the available information shows a concentration of all the units surveyed in Kingston, the capital of Jamaica.

As for the pattern of establishment or period of origin of the units, we can see a peak in the information infrastructure in Jamaica since the 1960s, noting that two-thirds of the units studied correspond to this period. As for the legal-administrative nature, the information units studied are mainly located in public sector institutions, both centralized and decentralized, in a shared proportion of 32%, and they preferentially support the function "government".

The users are predominantly researchers (39%) and teachers and students (31%). The subject areas are mainly oriented towards "public administration", "political and administrative sciences, and law" (22%) and "natural resources" (17%). (See table 9.)

(c) Evaluation of the information infrastructure in Jamaica 20/

A look at the diagram of minimal thresholds which indicate the relative position of the units in Jamaica shows that the information infrastructure of this country presents a picture with quite a few deficient areas which should be corrected. In effect, it may be seen that of the total number of variables considered in the analysis, only 13 of them, or 42%, rise above the conventional mean equivalent to 50% of the total range. The 18 remaining variables, equivalent to 58% behave irregularly, although six of them, or 19%, have better prospects.

Seen from another angle, 19 of the 31 variables considered, equivalent to 62%, rise above the subregional averages, in favourable or adequate positions. In this context the area in the most favourable situation would be that of management, with 80%, followed by services, status and resources, with 67, 60 and 50%, respectively.

(i) Services. The detailed evaluation by areas presents a services sector in an acceptable but not very favourable position, although six of the nine variables rise above the subregional average. Actually, even though the services offered within the unit, that is, volume of circulation and reference, do not exceed the discreet limit -no more than 45% of the units exceed the defined minimal thresholds in both cases- the situation of the amount of time available to users is very favourable, since almost all of the units studied (93%) are open more than 40 hours a week. With respect to the opening of the services to outside users, the situation, which is somewhat irregular, is fairly acceptable. Thus, we have a sufficient situation in an average proportion of 48%, in terms of the variety of services made available to outside users and the geographical reach of exchange of information with units of other institutions in the country.

20/ This section is based on the profile of points (JA) of graph No.2 , included earlier in this chapter.

On the other hand, while the methodologies used in the development of users profiles is adequate in only 36% of the units studied, the activities for training users are in a favourable position in 54% of them.

Finally, the situation is decidedly poor in the variety and volume of informative publications--only 15% of the units have an adequate system of publications--and in the interest in promoting the information services available (22%).

(ii) Resources. An examination of the resources available to the information infrastructure in Jamaica presents a clearly ambivalent situation, in that half of the variables considered in the analysis of the units show poor behaviour, while the other 50% are in a favourable position. In effect, the size of the document collections is adequate in 58% of the information units, which is indicative of a favourable situation, but, however, the rate of growth in the acquisition of new material is only 24%, which obviously reflects a problem area. The behaviour of the human resources variables, for their part, strike a positive balance since, although the level of professional training of staff hired is adequate in only 55% of the units, the supply of this staff is sufficient--in accordance with the defined minimal thresholds--in 74% of the cases.

In the area of the degree of independence of the functional areas on the premises, and of basic support equipment, the situation can be considered appropriate, although only 46% of the units reach or surpass the basic standards in the first area. Nevertheless, more than 70% of the units have adequate physical channels of communication and microform readers and reproduction equipment at the minimal necessary level. This is in accordance with a favourable situation in the amount of annual operating expenditure compared with a minimal standard of national expenditure, considering that 64% of the units exceed the defined minimal threshold. On the other hand, with respect to the strengthening of the collection and the opening to outside users through an adequate use of the available information resources, the situation is somewhat worse. For example, only 32% of the units have sufficient registers and directories for a consultation and information service, and from 7 to 14% of the establishments automatically receive publications and reports of a restrictive nature from the entities to which they are attached; they participate in co-operative union catalogue systems for periodic publications or use information processing techniques allowing for post-co-ordinated searches.

(iii) Management. A study of the diagramme of minimal thresholds depicting the relative position of the information units in Jamaica for the various indicators considered this area shows irregular behaviour in the administration of the establishments insofar as the quality of administrative and financial management is concerned. On the one hand these in charge appear to be in a good position regarding the degree of internal organization--in terms of programming their activities in accordance with administrative procedure manuals--and in participation in the drawing up of the annual budget, areas in which more than 52% of the units claim to be in a situation in accordance with the minimum standards, and, on the other hand, this is evidently offset in respect of the degree of knowledge of the general operating situation of their entities, where only 32% of the units surpass the corresponding minimum thresholds. Also unfavourable is the opportunity for those in charge of the units to obtain resources from sources outside of the entities to which they are attached, since only 26% of the units show an acceptable situation. However, the situation is a little better in respect of the knowledge these staff members have of the distribution, origin and destination of budgetary funds, considering that more than 40% of the units claim to have this information.

(iv) Status. The behaviour of the indicative variables relative to the status of professionals in the information units in Jamaica offers a contrasting picture, taking into account the different prospects considered in the analysis. First, the level of the average salary of a professional and that paid to the administrative staff member at the entry level is adequate in only 32% of the information units studied. However, these specialists are in an acceptable situation in almost all of the information units studied (96%) if we compare their average wages with the average national industrial wages or with the level of salaries of the same specialists in terms of buying power of identical professionals in the United States, according to the established minimum standards in this respect.

In the other hand, this very special situation in the area of wages is equally unique in the area of opportunities for promotion and training of staff. Concretely, scarcely 14% of the units analysed say there are opportunities for staff members to increase their income by 1 1/2 times during the course of their career, while 46% of these units say they have participated in training courses -which combine the characteristics considered in the minimum thresholds- in the country or abroad.

(v) Conclusions. In brief, the situation of the information units in Jamaica is that of a new information infrastructure, where certain characteristics of leadership in the subregion coexist with weak aspects to be strengthened.

For example, the information services should be projected outside more actively, at the same time giving greater weight to information promotion mechanisms. As for available resources, in the first place budgetary funds should be better allocated and should be significantly channelled towards the acquisition of new bibliographical material, to update the document collections at an adequate rate, as according to the required standards.

A better flow of publications from the entities to which the units are attached should also be encouraged, as well as a more active participation in the programmes of co-operative agreements for union catalogues of periodic publications and, when necessary, more active policies aimed at encouraging the use of information processing techniques which would allow for post-co-ordinated searches.

In the area of management also, those in charge of the units should be encouraged to take a greater interest in knowing the general operation statistics of their establishments, which would obviously have an influence on obtaining funds more quickly, including those from sources outside of their institutions.

Lastly, while the parameters applied to determine the economic status of the professional staff of the information units are adequate, the inconsistency of a possible current imbalance between an adequate professional staff training policy and the rare opportunities for career advancement should be analysed.

3. The Commonwealth of Puerto Rico

(a) The sample

The coverage of the sample of information units in Puerto Rico is the most discreet of the Caribbean subregion, considering that information was obtained from one-third of the units surveyed.

(b) Origin, location and orientation of the units

In the light of the available information (see table 9), it can be seen that the information units surveyed in Puerto Rico are totally concentrated in the area of San Juan, its capital.

As for its pattern of establishment, the information units in this country have a certain tradition, considering that about 65% of the total were established before 1960.

As for the legal-administrative nature of the units, they are mainly (80%) in "descentralized public institutions" and support primarily the function "education and culture" in a proportion equivalent to 60%, displacing the function "government" to second place, since only one-third carry out this mission. Thus it is not surprising that two-thirds of the users are "teachers and students" while the rest (27%) are "researchers"; the subject of area specialization in the units is preferentially oriented towards "public administration" and "political and administrative sciences and law" in a proportion of 42%.

(c) Evaluation of the information infrastructure in Puerto Rico 21/

The overall evaluation of the diagramme of minimal thresholds in terms of the relative position of the information units in Puerto Rico presents a favourable picture in many areas of the information infrastructure, but it is also very unfavourable in basic aspects of the present informative task. In effect, it is easy to see that of the total variables analysed, 58% are found above the regional average, although the totally irregular behaviour of the curve has a favourable or unfavourable displacement with respect to 50% of the conventional mean.

From another angle, a detailed analysis finds the services area in the best relative position, with 78% above the subregional average; this is followed by resources, with 67%, and finally management, with 60%. The status area, on the other hand, does not register any position above the average, although it shows a good score in two of the five variables considered.

(i) Services. The sectoral evaluation shows a fairly well-defined situation in regard to services. In effect, it is clear that the information units have centred their concern on the volume of reference consultation and circulation, aspects where they satisfy the minimum values considered in 85 and 77% of the units, respectively. These services are offered in convenient hours to the public in 50% of the units.

Second, the promotional activities of the services offered nevertheless show weaknesses, since only 40% of the units make their activities known through informative bulletins and talks, while 57% carry out training activities for users according to the minimum established standards.

As for the supply of services to outside users, 47% of the units say they participate in programmes of interlibrary loans at the local or regional level within the country.

Finally, we have a clearly deficient area in the utilization of techniques for developing users' profiles, an aspects in which only 13% of the units comply with the stipulated rules in respect of the variety and volume of informative publications and the combination of services made accessible to outside users. The situation is fairly poor if we consider that only 27 and 33%, respectively, of the units comply with the required minimal standards in each case.

(ii) Resources. The high level of economic resources available to the information units in Puerto Rico in terms of the funds allocated to them by the annual operation expenditures -73% of the establishments reach or exceed the minimum threshold- apparently have an overall favourable impact on the situation in this area of resources. Actually, the first aspect to draw the attention is the size of the collection of documents, which

^{21/} This section is based on the profile of points (PR) of graph No.2 included earlier in this chapter.

is adequate in 60% of the information units. It is unfortunate that the rate of growth of the bibliographical collections is not equally extensive, for scarcely 27% of the units show the required solvency.

The situation of human resources is a good one in 87% of the cases, both in amount and in level of professional training.

By examining the characteristics of the physical infrastructure of the premises of the units, we can see that Puerto Rico has functional areas at a high level in about 80% of the establishments, a figure which rises to 86% in prevision for minimal physical channels of communication.

Slightly more discreet (43%), but still fairly hopeful, is the situation of the availability of basic information equipment to which outside users have access. The last aspect of this area in which the situation is favourable is in the availability of registers and directories for a good information and consultation service, which 60% of the units have. Very poor, on the other hand, is the area for automatically receiving informative publications prepared and published in the main units, as well as the participation in co-operative schemes for union catalogues of periodical information at the national level, in which no more than 13% of the units reach the minimal standards.

Finally, in the units studied in Puerto Rico, there is a lack of use of information processing techniques to facilitate post-co-ordinated searches.

(iii) Management. The situation of the level of administrative and financial management of information units in Puerto Rico is ambivalent, since on the one hand we have a very favourable position in that the administrators programme their activities in accordance with technical guidelines for administrative procedure in 60% of the cases, and they know the general operational statistics in 47% of the cases; and, on the other hand, we have an inadequate situation in approximately 70% of the units in the unawareness of the origin and distribution of funds, in the possibilities for obtaining financial resources from sources outside the bodies to which they are attached, and in terms of participating in the formulation of the budget of their establishments.

(iv) Status. The status situation of the information function in Puerto Rico is equally contradictory. On the one hand, we have a favourable situation in 73% of the information units studied in terms of the wage level of information specialists compared with the buying power of wages and salaries of their counterparts in the United States. On the other hand, the average wage of national information specialists relative to that offered to administrative staff members at entry level is clearly insufficient in two-thirds of the information units studied.

However, we see that the singular situation in more than 87% of the units consistent with the few opportunities for wage increases in more than 87% of the units during the course of the staff members' career and with the equally scarce prospects for staff development, considering that this aspect was adequate in only about 30% of the units surveyed. Perhaps the professional level required at the entry level would explain this situation.

(v) Conclusions. There is still doubt whether the conservative and traditional character of the information units in Puerto Rico is a factor of stability in the amount and quality of the information infrastructure in this country or whether, on the contrary, this is an impediment to the adoption of innovations in the basic areas of the informative task. But, until this is elucidated, by the parties involved, we believe it is imperative to reformulate the service policies, mainly in terms of selective dissemination of information through encouraging the development of users' profiles, publication of bibliographical bulletins and extension of the services available to users, to mention only the weakest aspects.

As for resources, the accent could be placed on increasing the flow of internal documentation originating in the institutions themselves to the units; on extending the opening towards outside users through a better participation in co-operative schemes union catalogues of periodic publications, and on incorporating into the information system of the units information processing techniques conducive to post-co-ordinated searches.

In the area of administrative and financial management, there should obviously be a change of attitude in order to make those responsible for the units more interested not only in knowing the operating statistics of their institutions but also in budgetary and financial matters.

Finally, it will be necessary to reformulate the policies for professional staff incentives in the information units, by increasing wage prospects and professional development.

4. The Dominican Republic

(a) The sample

If we examine the coverage of the sample of information units in the Dominican Republic, compared with the other countries of the Caribbean subregion, we can say that it is quantitatively one of the most modest, considering that information was obtained from only 38% of the units surveyed. It is hoped, nevertheless, that the sample -considered acceptable- reflects the Dominican reality in the field of socio-economic information.

(b) Origin, location and orientation of the units

On examining the information available in table 9, it can be seen that the information units for the Dominican Republic are found mainly -in 85% of the cases- in Santo Domingo, the capital of the Republic.

In relation to their pattern of origin or establishment, we note that the information infrastructure in this country was practically non-existent a decade ago. In fact, since 75% of the information units were established after 1970, the information structure has the inherent characteristics of a formative stage of development. It can also be seen that the users are mainly "teachers and students" (75%) and "planners" (16%). The development function supported by the entities is a similar proportion of 46% both in "government" and in "education and culture", even when they do not have areas of concentration in the legal-administrative areas nor in the predominant subject area of their collections.

(c) Evaluation of the information infrastructure in the Dominican Republic 22 /

An observation of the diagram of minimal thresholds determining the relative position of the information units in this country shows that the information infrastructure presents one of the most modest situations in the subregion.

Proportionally, of the total number of variables considered in the analysis only 10 of them, or 32%, rise above the conventional mean of 50% of the total range. The 21 remaining variables (68%) reveal a clearly deficient situation in most of the indicators considered in the analysis. The two variables which show more promising prospects can hardly compensate for this situation.

In other words, only 14 of the 31 variables considered, or 45%, exceed -in the context of their irregular behaviour- the subregional averages in the whole spectrum.

In any case, the most deficient areas are obviously management and status, in that order.

(i) Services. A detailed analysis by areas shows us a services sector where we must recognize the effort being made within most of the units to provide adequate circulation and reference services in more than 75% of the establishments.

A readiness may also be seen in a certain number of units (50%) to offer a wide range of hours open to users (40 hours or more per week). Some attempts have also been made to train users, although about 55% of the information units have developed this activity below the stipulated conditions. However, we cannot ignore the poor situation which exists in the other critical dimensions of the study. For example, there is little interest shown by the information units in extending themselves to outside users through

22 / This section is based on the profile of points (RD) of graph No.2 included earlier in this chapter.

a service of selective dissemination of information or in making available to outside users the variety of services offered, areas in which only 23 of the establishments show an adequate position. What is more, even fewer informative publications are prepared; this work is not being done in more than 90% of the units.

The effort in the area of exchange of information with units of other institutions at the national level is scarcely more favourable. A similar situation exists in the promotion policies for services offered, considering that about two-thirds of the units surveyed do not contemplate these activities.

(ii) Resources. An inventory of the resources available to the information infrastructure in the Dominican Republic shows that in the short period of existence of most of the units, although they do not exhibit a clearly satisfactory position, they have surpassed the minimum levels required in most of the critical dimensions considered in the study. Thus it is easy to conclude that the economic resources allocated to pay the annual operational expenditures probably surpass the minimum standard of national expenditure in 62% of the units and that the low volume of document collections, acceptable in only 33% of the units, would probably be overcome by a sustained effort to make new acquisitions in 55% of the cases. The staff would be adequate both qualitatively and quantitatively in 69 and 62% of the units respectively; similarly, the quality of the physical infrastructure, in terms of degree of independence of the functional areas, would be adequate in 67%. This is to a certain extent in accordance with accessibility to available basic support equipment (40%) and to a lesser extent with the availability of the minimal elements of communication, although only 31% comply with the established standards.

On the other hand, the number of instruments for offering information and orientation services is much less favourable, considering that only 39% of the units say they have registers and directories. The following should still be encouraged: the use of information processing techniques conducive to post-co-ordinated searches; the participation in agreements for union catalogues with other institutions, and the creation of a reception programme for documents generated by the entities to which the units are attached, aspects which show an evidently deficient situation.

(iii) Management. The situation of those in charge of information units in the Dominican Republic is somewhat dissimilar in the area of management capacity. On the one hand, they seem to be making a considerable effort in the area of internal organization, taking into account that in 46% of the units they are programming activities in accordance with technical guidelines of administrative procedure, as indicated by their participating in the development of the annual budget in about 40% of the establishments and also having a similar level of knowledge of the general operation of their entities. However, it cannot be considered adequate that only 22% of the information units of this country have opportunities for obtaining financial resources outside of the bodies to which they are attached, and there is also no evidence of a capacity for financial and budgetary management on the part of the personnel of these entities.

(iv) Status. An examination of the behaviour of the indicative variables related to the status of the information function in the Dominican Republic shows a deficient and deplorable picture, given the perhaps unique absence of incentives in its staff situation.

In the first place, the difference between the average wage of the professional and that offered to the administrative staff member at entry level is acceptable in only 39% of the information units surveyed.

Secondly, the comparative situation of salaries in terms of the averages earned by information specialists in comparison with those in the national industrial sector, on the one hand, and with the salary level of the same specialists in terms of buying power of identical professional in the United States, on the other, is absolutely deficient, since in none of these two critical dimensions are there any information units which surpass the defined minimal standards.

In respect of the opportunities for career advancement for staff members in charge of the information units, there are practically no incentives, since only 8% of the units would satisfy the acceptable minimal standards. The fact that we observe a stimulus for staff training programmes in 50% of the information units studied in the Dominican Republic would suggest an effort by qualified information professionals to change attitudes, given the unfavourable wage situation in more than 60% of the units studied.

(v) Conclusions. In brief, we could infer, from the analysis that the situation of information units in the Dominican Republic is that of an information infrastructure which, while it does not necessarily comply with the present standards, is one of the youngest in the subregion.

The area survey concludes that, except for the concern with keeping the conventional services open to the public for a sufficient period of time, including some activities for training users, it is imperative to encourage the projection of these services to outside users through an effective promotion policy.

For its part, once an improvement has been made in the independence of the information unit within the premises, and without ignoring an adequate policy of contracting the necessary and suitable staff or the rate of up-dating the collection, it is imperative to channel resources and efforts towards the other deficient aspects, such as using modern techniques of information processing, attempting to obtain the documentation produced by the entities, participating in agreements for union catalogues of periodic publications and improving the reference system for offering services of information and informative orientation.

Another area of concern is that of unit management. Obviously, under certain conditions, moderate levels of management capacity or possibilities of participating in developing the annual budget on the part of those in charge of the information units could be accepted, but it is very harmful for the very existence of these units that they do not know the general operations situation and do not have the capacity for budgetary management, especially when there are very few opportunities for the flow of resources from outside the bodies to which these information units belong.

Finally, on the basis of the parameters applied to determine the status of personnel, it is difficult to conceive how we can conciliate a possible concern for contracting the quantitatively necessary staff, having the professional qualifications required, with an absolute lack of professional and economic incentives in the course of their staff career.

5. Trinidad and Tobago

(a) The sample

The examination of the coverage of the sample of information units in Trinidad and Tobago, compared with the other countries of the Caribbean subregion, shows that this is the best sample, in relative terms. In effect, 63% of the information units surveyed allow us to suppose that the sample shows adequately the reality of the information infrastructure in the socioeconomic field in this country.

(b) Origin, location and orientation of units

From examining the available information on information units in Trinidad and Tobago, we can see some significant results. For example, the information units of this country are mainly located (77%) in Port of Spain and adjacent areas.

With respect to their pattern of origin or establishment, the information infrastructure was practically non-existent in this country 20 years ago, since most of the units, or 79%, were established after 1960.

Thirty-nine per cent of the users are teachers and students and, in a lower proportion, planners (27%).

The specialization which stands out most in the information units, although not preponderant, is "economy and commerce" (19%), a percentage which is displaced by diversified collections in 26% of the units.

In legal-administrative mission and nature, the units essentially support the functions "government" (38%) and "research and consultation" (22%), and they are inserted in "centralized public bodies" (31%) and in "international public bodies" (25%). (See table 9).

(c) Evaluation of the information infrastructure in Trinidad and Tobago 23/

The diagramme of minimal thresholds determining the relative position of the information units in Trinidad and Tobago shows that the information infrastructure of this country, along with the Dominican Republic, presents one of the most modest situations in the subregion. Proportionally, of the total variables considered in the analysis, only 10 of them, or 32%, surpass the conventional mean equivalent to 50% of the total range. The 21 remaining variables, or 68%, show a deficient situation in most of the indicators considered in the analysis. The six variables which show a better picture -reflecting an acceptable situation in more than 40% of the sample- scarcely offset this situation.

In other words, only 13 of the 31 indicators rise above the relative positions of the subregional average. The overall evaluation by areas shows the most favourable relative situation in the area of status, although it shows the reverse in the other three variables.

(i) Services. The picture of the services area shows a contrasting situation if we observe that the favourable situations may only be attributed to the effort which no more than 48% of the units are making, within their premises, to provide the essential services of circulation and reference.

In addition, the number of hours open for the attention of users exceeds 40 hours a week in 90% of the units. However, it is unquestionable that the units are in an unfavourable situation in the other critical dimensions analysed. Only the 38% which maintain programs of co-operative agreements for exchange of information with other institutions at the national level compensate to some extent, for this situation. Much remains to be done in the other aspects relative to the opening of the services to outside users, for example in terms of procuring a selective service of information dissemination through the development of users' profiles and of disseminating informative publications or offering basic information services, given the small number (under 20%) of units which cross the defined minimal thresholds, and considering the little importance given to the promotion of the services available in more than 85% of the units.

Finally, the situation described is consistent with the absence of any initiative towards carrying out activities to train users.

(ii) Resources. The inventory of the resources available to the information infrastructure in Trinidad and Tobago reveals that the situation in this area is a little more favourable than that described in services.

This evaluation can be summarized in the favourable position of the indicator referring to the situation of annual operating expenditures, where 63% of the information unit satisfy the required minimal standards.

Thus, for example, there is an interest, although not outstanding, up-dating bibliographical collection -at an adequate rate- in 48% of the units, although the size of the document collections is still inadequate in 60% of the premises. Furthermore, in the area of human resources, the supply of personnel is adequate both quantitatively and qualitatively in 55% of the units. In terms of physical infrastructure, the quality of the premises, is adequate according to the degree of independence of the various functional areas in about 50% of the cases, and according to the availability of minimum physical channels of communication in 61%, a similar proportion to that of the sufficient availability of basic support equipment offered to outside users.

23/ This section is based on the profile of points (TT) in graph No.2 included earlier in this chapter.

However, the diagnostic study also provides information on the existence of deficient areas in the information infrastructure being analysed, such as the lack of co-operative programmes for exchanging information with other similar institutions at the national level; the lack of use of information processing techniques conducive to post-co-ordinated searches -an activity which only 14% of the units studied have adopted; the lack of adequate programmes for receiving documents produced by the bodies, which only 27% of the units presently have, and, finally, the very discreet situation related to the existence of directories and registers of the information and consultation services available, an activity where only 31% of the units comply with the stipulated requirements.

(iii) Management. A simple observation of the diagramme provided for the analysis is sufficient to show that there is a fairly poor situation in relation to the means for carrying out administrative management available to those responsible for the information units of Trinidad and Tobago.

Thus, it is difficult to understand how those responsible for most of the information units of this country (60%) can have opportunities for participating in drawing up the annual budget of the bodies to which they are attached, when the situation is decidedly unfavourable in the rest of the complementary areas, which are fundamental for good administrative management in the unit. In effect, in only 6% of the cases are activities planned in accordance with technical guidelines of administrative procedure; in more than 85% the administrators are unaware of the general operating statistics of the institutions; in a similar proportion they are unaware of the origin and distribution of funds; while in no more than 25% of the cases are there possibilities of receiving any support from sources outside the institutions to which the units are attached.

(iv) Status. In respect of economic and professional incentives for the specialized staff in charge of substantive activities, the status of the information staff in the institutions of Trinidad and Tobago shows a fairly favourable situation, considering the newness of the established units and the difficulties they are undergoing, as described previously. In effect, the major impact on this favourable diagnostic study is made by the category wages and salaries, as is clear from the existing situation in the area of average wage of information professionals and that of the administrative staff member at the entry level, which is adequate in 88% of the information units studied. On the other hand, this same wage, compared with the average national industrial salary and with the buying power of the wage received by identical professionals in the United States, is adequate in almost all the information units, that is, in 97% of them.

It is probable that the scanty prospects for salary increases during the course of the staff member's career in more than 80% of the information units is due to normal maladjustments in a newly developing activity which have to be overcome in the short run.

Finally, it would appear encouraging but subject to improvement that staff training is available for the professional personnel in more than 40% of the units.

(v) Conclusions. In brief, repeating some concepts mentioned in the overall evaluation of the situation described, for example with respect to the newness of the units in Trinidad and Tobago and of the mission of an information infrastructure inserted in Port of Spain and adjacent areas, it should be clear that the information services should be strengthened in the deficient areas of the four headings and, in particular, in relation to: an opening of the services to outside users; incorporation of modern techniques for information processing and its selective dissemination; the development of registers and directories for a better information and consultation service. This should be accompanied by a more dynamic policy of incentives and support for the information function, particularly focused on improving the organizing capacity of those in charge of the units, who should assume greater responsibility and take more interest in achieving a better knowledge of the general operating situation of their institutions and in effectively participating in the financial-budgetary decisions.

V. DIAGNOSIS OF THE REGIONAL INFORMATION INFRASTRUCTURE

Analysis of the information infrastructure of the countries and subregions of Latin America and the Caribbean calls for an overview of the region. Structured in the same way as the chapters preceding it, this chapter attempts to make a preliminary interpretation of the overall results on the basis of the direct experience of CLADES with regard to the situation of information in the region.

A. THE SAMPLE

Statistically, approximately 20% of the total information-for-development units existing in the region were included in the sample. This percentage, however, represents an average in respect of a situation which differed in the various subregions and in the countries within the subregions. With regard to the subregions, it should be pointed out that while the representativeness of Central America and Mexico, the Andean region of South America and the Caribbean subregion appears to be reasonable -30%, 33% and 46%, respectively, the Atlantic subregion of South America, with only 10%, is in a less favourable situation.

The representation of Brazil and Mexico, which account for a very high percentage of the total number of units -which naturally had an unfavourable effect on the representativeness of the sample- was only 2.2% and 5.7%, respectively.

If these limitations are borne in mind, the following analysis may be made.^{24/}

B. ORIGIN, LOCATION AND ORIENTATION OF THE UNITS IN THE REGION

The information provided in the first line of table 10 indicates that close to 40% of the units in Latin America were established prior to 1961. The proportion of units located in the centres with the largest population is also high -77% of the total- although this figure may well be slightly lower since in many cases it was difficult to conduct the survey in cities at a distance from the metropolis. As for the development functions they support, the units are to be found predominantly in the categories of "education and culture" and "government" in percentages which are close to 30% in both cases. As regards their legal and administrative nature, the majority of the units are located in the "decentralized public" sector (46%) and the "centralized public" sector (27%), figures which in global terms indicate that 3 out of 4 of them belong to the public sector. Moreover, the leading users of the information units in the region would seem to be "teachers and students" (55%). Finally, a slight preference is shown for units specializing in "economics and trade" as a development topic and those which offer "miscellaneous" data, i.e., those in which no particular topic of specialization prevails.

The figures as a whole reflect characteristics which to some extent were to be expected in view of the pattern of economic and social development of the region: the high concentration of services in the principal cities; the central role of the public sector as a component of the information-for-development infrastructures; the importance of the "government" function in supplying inputs in support of information; the high predominance of users involved in the educational processes, etc. It is, however, noteworthy that although more units were established prior to 1961 than at any other time, interest in establishing information units is growing, 30% of all units having been founded in the past seven years.

^{24/} Statistics relating to the regional infrastructure for each of the various indicators may be found in annex 6.

Table 10

LATIN AMERICA AND THE CARIBBEAN: DATE OF ESTABLISHMENT, LOCATION AND ORIENTATION OF THE UNITS
(Predominant percentages)

	Period of establishment of units	Geographic location	Function of development	Legal- administrative category	Predominant group of users	Development subject of specialization
Region	37.0 (pre-1961) *	77.2 (in the capital)	32.5 (Educ. and Cult.) 31.3 (Govt.)	45.5 (pub. decent.) 26.5 (pub. cent.)	54.5 (Teach. and Stud.) *	16.9 (Econ., Com.) 16.6 (Miscell.)
Atlantic subregion	48.6 (pre-1961)	63.5 (in the capital)	39.0 (Govt.) 26.4 (Educ. and Cult.)	52.2 (pub. decent.) 36.8 (pub. cent.)	53.6 (Teach. and Stud.) 20.8 (Research)	25.6 (Inf. and Doc., Educ.) 15.4 (Nat. Res., Env.)
Andean subregion	35.3 (1961-1970) 33.5 (post-1970)	75.9 (in the capital)	37.2 (Educ. and Cult.) 22.5 (Res., Cons., Ext.)	43.1 (pub. decent.) 26.3 (Private, prof. making)	55.3 (Teach. and Stud.) 21.8 (Planners, Adm., Entrep.)	18.6 (Econ., Com.) 16.8 (Miscell.)
Subregion of C. America and Mexico	43.3 (pre-1961) *	35.9 (in the capital)	33.6 (Educ. and Cult.) 30.8 (Govt.)	50.0 (pub. decent.) 26.0 (pub. cent.)	59.6 (Teach. and Stud.) 19.9 (Planners, Adm., Entrep.)	16.9 (Econ., Com.) 16.9 (Miscell.)
Caribbean subregion	36.7 (post-1970) 34.9 (1961-1970)	92.0 (in the capital)	47.4 (Govt.) 27.6 (Educ. and Cult.)	36.2 (pub. decent.) 29.3 (pub. cent.)	47.1 (Teach. and Stud.) 25.0 (Research)	22.4 (Law, pub. adm.) 19.4 (Miscell.)

* Indicates that the percentages are equally distributed among the various categories.

Naturally, as may be gathered from table 10, this situation varies to a greater or lesser extent from subregion to subregion. It should be borne in mind that a separate breakdown for each of them is contained in the previous chapters.

C. EVALUATION OF THE SITUATION IN THE INFORMATION UNITS IN THE REGION

In graph 3, which shows the relative position of the information units vis-à-vis the minimum thresholds defined for each indicator, mountains and valleys may be observed; i.e., the curve oscillates in respect of each one of the items analysed. Observation of the movement of the graph in the various areas shows, however, that "management" and "status" are always below the 50% dividing line so that they constitute sectors of need. The "services" area is in an ambivalent situation in that most of the indicators are below 50%. The "resources" area, on the other hand, is more balanced in that the number of indicators to be found above or just below the 50% dividing line tend to offset those found in the lower areas of the diagram.

(i) Services area

With regard to this area, attention is drawn first to the fact that the indicators in the highest positions are those which might be said to be the more obvious or conventional indicators, such as circulation, reference and hours of attention per week. In addition service to users would appear to be higher when they come to the premises of the information units to judge by the degree to which the services are open and extended to requests for information from outside or from within the entities in which the units are located. Here two service areas (selective dissemination of information and promotion of services to users) stand out as being in an exceptionally low position (21%). The positions of preparation of publications and access of users outside the services are also very low, at about 25%. Also the position of geographical scope of inter-library loans and activities related to user training does not appear very favourable in that they are located between about 35% and 38%.

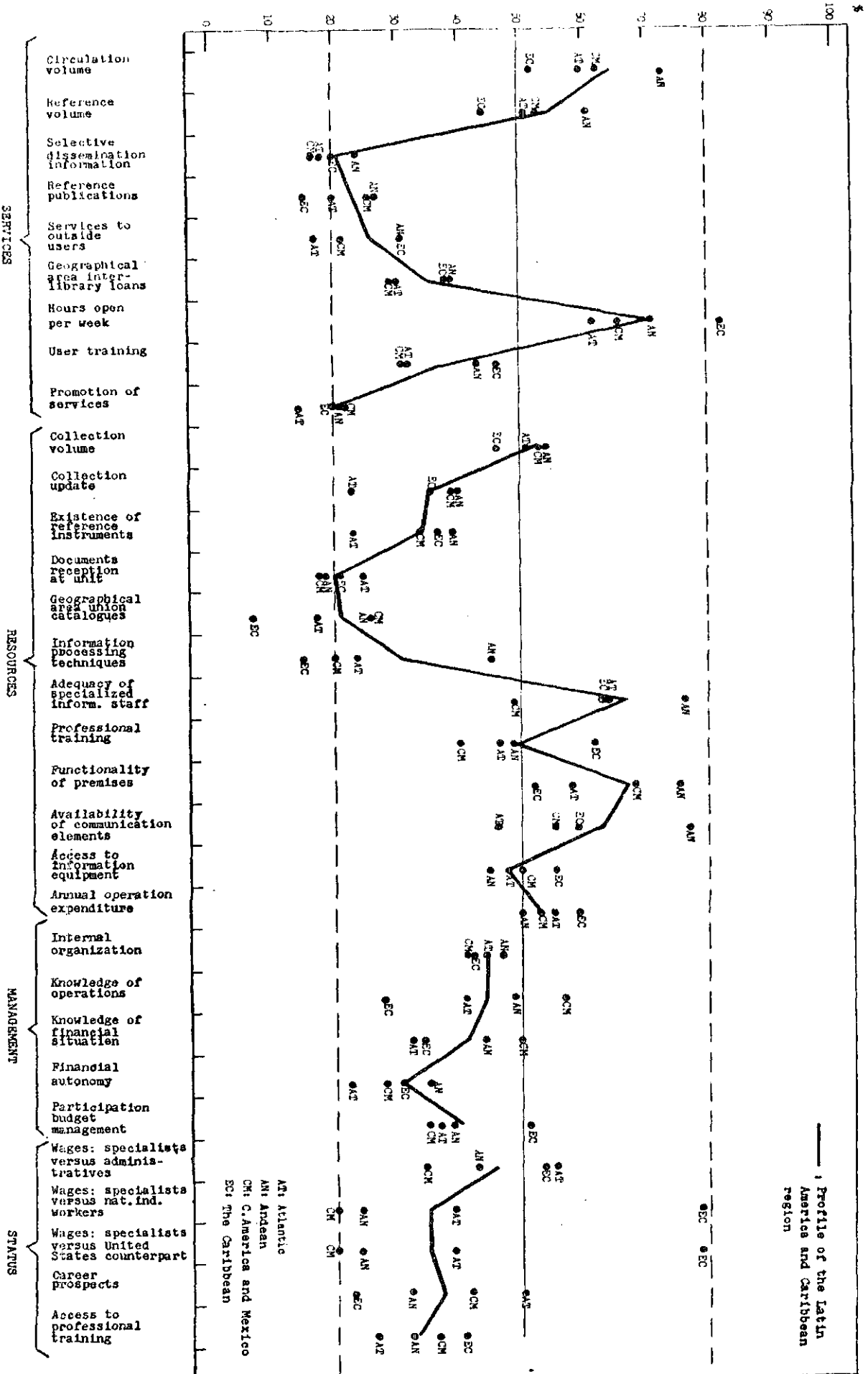
(ii) Resources area

The curve for this area looks rather peculiar. It starts off by describing a valley, the trough of which is represented by receipt of documentation produced internally by the entities to which the information units belong and by participation in catalogues of periodicals, both of which stand at about 20%. Further on this situation reverses itself until very positive positions are reached in the area of staffing, functional independence of the areas of the premises and availability of communications facilities, all of which are located in the area of 65%. Finally, the profile falls again to close to the 50% line to reflect the position of access to equipment and annual operational expenditure.

If we study the graph more closely, it may be observed that the collections are probably not on a good footing since, with the exception of the size of the documents collection whose minimum threshold is exceeded by about 52% of the units, all the figures are lower than 50%. A particularly depressing situation exists with regard to the pattern of acquisitions of bibliographical material, the availability of directories and other reference tools and access to documents through post-co-ordinated search facilities. As has already been pointed out, however, the most alarming figures are those achieved in connexion with the integration of the units within their institutions, considering the poor showing of the categories relating to receipt of internal documentation produced by the institution, openness to the exterior and participation in union catalogues of periodical publications, for which the figure shown is about 20%.

With regard to staff, it is noteworthy that over 65% of the units have the quality and quantity of staff considered to be the minimum for providing an adequate information service. It should, however, be pointed out that this threshold reflects only a preliminary attempt to assess the minimum requirements since they should change in accordance with the number of users to be served.

LATIN AMERICA AND THE CARIBBEAN: RELATIVE POSITION OF THE INFORMATION UNITS OF THE REGION WITH RESPECT TO DERIVED MINIMAL THRESHOLDS



The other indicators of resources, whose position appears hopeful in that it is close to the 50% line, are not altogether favourably located since the graph also shows that about 50% of the units are below the minimum standard. In this connexion, attention should be drawn to professional training of experts in information, the limited access of this regional infrastructure to the basic equipment in the field of information and the amount of the annual expenditure incurred by the information units by comparison with a performance regarded as minimal in the countries where they are located. The fact that only 53% of the units exceed the threshold established is another way of saying that 47% fall below the minimum financing required to ensure the operation of an information unit.

(iii) Area of management

This area appears to be in rather bad shape in all the information units in the region in that all the percentages corresponding to the different indicators are lower than 50%, with the lowest percentage corresponding to the item relating to the tapping of income from other institutions (31%). The low level of management observed in the information infrastructures in general should be a matter of particular concern; indeed, only 45% of the units appear to exceed the minimum threshold identified for these indicators. Substantial improvements also seem to be called for in connexion with statistical data relating to operations and financing and with participation in budget management, the latter indicator being one in which barely 40% of the units are shown as having opportunities for any influence. It goes without saying that these indicators of management are not only important per se but also in that they have a direct or indirect impact on the quality and efficiency envisaged for the services and in the management of possibilities for obtaining the resources used by the information units in meeting requests for information.

(iv) Area of status

In this area too the information function is shown to be in a very unfavourable situation in view of the fact that the whole profile corresponding to the area is located below the 50% dividing line. The situation with regard to the average salaries of information experts as compared with that both within and outside the institutions where they are employed would appear to be especially weak by comparison with the salaries earned by industrial workers in the same countries and by information experts in developed countries, it being estimated that not more than 46% and 35% of the units exceed the respective thresholds in this regard. The access of information experts to advanced training programmes is also very low, with only about 33% of the units exceeding the threshold.

(v) Conclusions

The global analysis presented shows us a regional information-for-development infrastructure composed of units of a conventional kind, in so far as they are subordinate units which play a relatively passive role, are poorly endowed with the minimum amount of resources for the performance of the services they offer and are staffed by specialists with little incentive to perform their duties.

On average the units seem to centre on themselves and to sit back and wait for the users to consult them instead of displaying aggressiveness and a will to maintain direct contact with them. In addition to their somewhat one-sided contact with the users, there are other evidences of intra- and inter-institutional isolation as demonstrated by the analysis which showed that few internal documents were received by the units and that few of them participated in information networks.

There would appear to be a vicious circle which may be described as being one of conventional information units with a poor service performance in which they halfheartedly meet requests for information. They are not considered to be important by the institution to which they belong, which is reflected in a lack of support by those institutions in terms of resources and staff incentives for the units and which perpetuates or increases the weakness of the information services.

The reasons for this situation must be sought, among other places, in the anachronistic idea, held by information specialists and by the user-generators of information alike, of what an information unit should be.

The specialists seem to hang on to their notions of conventional librarianship according to which the information professional is an expert in preserving and organizing material and waits to be consulted. His marked orientation towards the technical processes also seems to cause him to neglect other abilities which are necessary in the performance of supervisory functions.

Moreover, the user-generators of information, and particularly those which define the information policy in each institution and allocate resources for the information unit, would seem to have little interest in making the unit more dynamic. It would seem that many of them have the idea that the unit is a place for the preservation of documents and that it is run by staff who do not require a high level of training and do not need to keep their knowledge up to date by means of advanced training courses. Consequently, they feel that the remuneration received by people performing "routine" functions should not differ greatly from that received by the administrative staff, which of course implies a failure to recognize the specialized intellectual nature of the work of information specialists and the constant demands put upon it in an area of rapid technological change.

The results also suggest the existence of a certain paternalism on the part of the entities in that they consider the information units as just one more internal service which must be content with small allocations which only occasionally cover their minimum needs and are adopted without the professional responsible for managing the information unit having any say at all in the matter.

On the other hand, it would seem that some notions which are regarded as basic to the present concept of information have not been very well defined, such as, for example, the ideas that (i) the units should participate actively in the mechanisms for control and internal circulation of the documents produced or sponsored by their entity and (ii) that the units should maintain outside contacts with the objective of facilitating inter-agency exchanges of information.

There are other defects which are more difficult to interpret than the ones mentioned above. For example, the poor performance in the selective dissemination of information or in the preparation of reference publications may be due to a variety of factors or combinations of such factors, including (i) lack of knowledge of the staff of the unit, (ii) lack of motivation of that staff, (iii) absence of human resources or man-hours for the performance of such work and (iv) lack of interest in the service on the part of the users.

Although it is true that the description of the "average situation" presented above does not do justice to the exceptions existing in the region, i.e., to the units which have assumed a leading role in the future of their institutions, it is no less true that a large number of units operate far below their real potential. The promotion of their awakening must be a matter of concern and future action.

FINAL OBSERVATIONS AND STUDY PROJECTIONS

Up to this point an exposition has been made of a valid approach to a diagnosis of the situation regarding information units in the region; this approach has been applied to different geographical environments and a preliminary conclusion has been that some areas seem to require attention on the part of the institutions involved.

Not much has been said, however, concerning possible ways of putting this diagnosis into a broader context -that of the planning of development information systems- so as to turn the methodology and the established data base into a instrument for enhancing the information infrastructures. It is obvious that failure to do this might keep the project at the level of a mere academic exercise with no potential for projection in terms of action.

With this in mind, some thoughts on a broad concept of "information infrastructure" are noted below. This diagnosis is then placed within that conceptual framework, and ways in which it might be associated with joint action, in the short, medium and long term in the field of information are suggested.

A. A BROAD CONCEPT OF INFORMATION INFRASTRUCTURE

The CLADES project set out with the same goal as that of the majority of the studies of this kind carried out in the region: to make a survey of information units for purposes of determining their resources and some of the characteristics of the information services offered by them. In this sense, its mission was initially conceived as similar to that of any survey or census for measuring the existing situation in an area of economic and social activity.

However, as the team responsible for the study made contact with the national and regional institutions and found that many exercises had already been conducted -most of them had been unplanned and incomplete, and the findings had been filed away as mere reference material- the central concern began to be that of discovering the reason for the weak impact of such efforts. By looking back over the maturation process undergone by CLADES and putting it into perspective, discover some points which were of basic importance in detecting certain factors which held it back.

For one thing, at an initial stage in the formulation of the project in the course of technical discussions with information specialists of the region, it was noted that the studies were usually not designed to take an integral view of the information units. For example, while the detection of shortcomings in data collection, staff training and the range of available services was considered to be necessary for setting a diagnostic study, it was not regarded as sufficient reason for doing so. This gave rise to the proposed approach to diagnosis which to a large extent surmounts these limitations.^{25/}

It was, however, during the stage of project promotion and data collection in the countries (and primarily through the national seminars which were held) that some of the major difficulties involved in presenting the diagnosis in terms of concrete institutional reality became apparent. In the opinion of CLADES, it is this which determined the impact of a study.

The observations we wish to make in this respect are still in an intermediate stage of maturation and systematization. It is, however, hoped that they will constitute guidelines for orienting this and future studies towards mechanisms which may facilitate the action which is so necessary in this field.

In this study an information infrastructure has been represented as being a series of information units under the jurisdiction of different institutions in the

^{25/} A critical self-evaluation on the advantages and limitations of the approach is presented in annex 7.

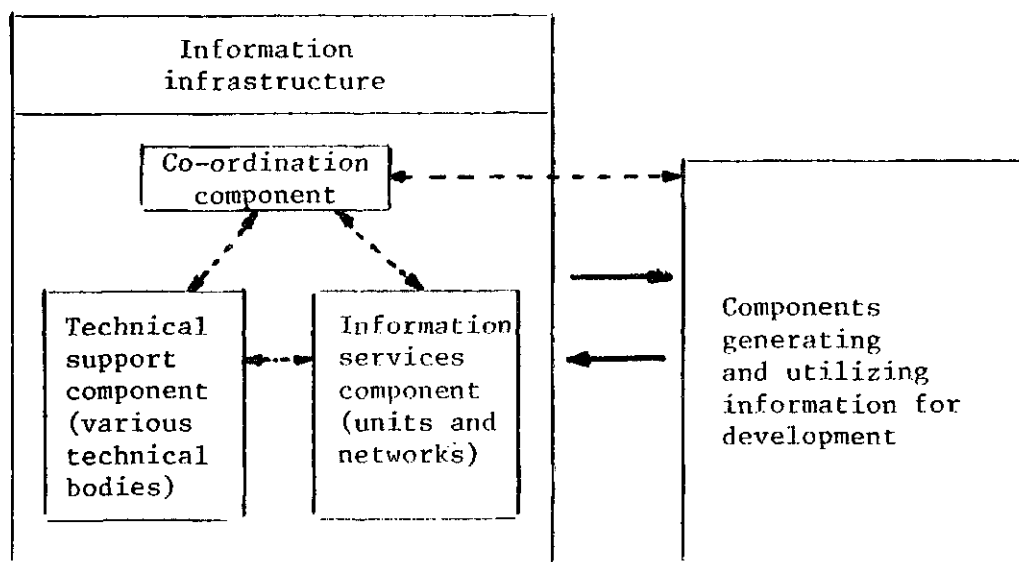
field of development. These units may work in isolation from each other or in conjunction, through co-operative mechanisms such as information networks. Their job is to provide information services in support of the work of specialized communities of users engaged in the formulation and execution of development plans and projects, the conduct of studies and research, decision-taking, the execution and monitoring of action for the promotion of development, etc.

An information infrastructure, whatever its scope -national, subregional or regional- is, however, considerably more than that. Since they are responsible for processing and disseminating information, it is true that the units constitute its central nucleus. Consideration must, however, also be given to other components engaged in (i) the provision of technical support to information units and networks to ensure their continuous growth and adaptation to the conditions of their external environment; (ii) the generation and utilization of information, a function which, being peripheral to the units and networks of the information infrastructure itself, is therefore constantly interacting with it, and (iii) co-ordination of the infrastructure -the task of ensuring the harmonious operation of the whole system.

Figure 2, which illustrates the concepts outlined above, shows the infrastructure with its three internal components and the external generation-utilization system with which it interacts.

Figure 2

INFORMATION INFRASTRUCTURE



These conceptual elements are considered in detail below.

1. Technical support component

This component is responsible for supplying the information units and networks with know-how, methods, technical guidelines and human resources which permit their operation and adaptation. It is composed of institutions of various kinds which perform one or more of the following functions:

- (a) Training of professionals specialized in information science and related disciplines

Tasks normally carried out by institutions at university level, such as schools of library science and similar bodies which award degrees in disciplines related to

information and sponsor programmes of long duration for the integral training of the human resources components of information.

(b) Training of information specialists

A function carried out by co-ordinating centres of sectoral networks, national systems, associations of librarians, etc. The role of these centres is to add to material relating to the know-how and techniques which specialists in information units must handle. They are not academically equipped to award degrees or diplomas at the higher education level and operate by means of courses, workshops, seminars, in-service training, guided tours, etc., for the transmission of techniques and operational know-how required by the information units.

(c) Formulation of standards and standardized instruments

Activities carried out by a number of institutions in order to facilitate the exchange of information among information units and networks. Includes the study and formulation of standards of information handling, terminology, data processing and transmission systems, etc.

(d) Technical advisory services

Support institutions generating and using information in the establishment of information units or networks; make it possible to modernize, expand or restructure existing information units and networks; by definition, these services function in a climate of change and work through the usual stages of problem-solving, including the definition of the problem itself, the identification of alternative solutions and the selection of the one which accords with clearly established criteria and the application of the solution selected, culminating in the institution of a new unit or network.

(e) Information science research and related efforts

Activities involving empirical studies of concrete problems affecting information units and networks, such as how to absorb and apply theoretical knowledge generated by the international scientific community in this field. These activities are performed primarily by the academic departments of schools of library science and regional information programmes.

2. Information generation/utilization system

This system comprises vast range of individual experts, national, subregional and regional institutions and international institutions with headquarters in the region, and covers a variety of areas on economic and social development. It operates both through regular action programmes and through specific projects carried out either on an individual basis or by a number of institutions working together.

3. Co-ordination component

The activities involved in co-ordinating the work of infrastructure and its interaction with the generation/utilization system may be channelled through formal legislative institutions and systems or through flexible mechanisms which make it possible to spread activities out among different institutions. This component performs a number of functions:

(a) Co-ordination, which is performed in the perspective of three functions:

(i) "planning" or the rational orientation of the information infrastructure towards some future stage which has been set as a goal; (ii) "animation", which includes the implementation of plans, strategies and policies as well as the exercise of the ability to persuade, negotiate and obtain the financial resources needed in this connexion and (iii) "evaluation" of the co-ordinating function itself involving a detailed examination of the successes and failures of the concerted action and seeing that the necessary adjustments are made in good time. These functions are to large extent performed by the institutions which plan and co-ordinate information systems and networks.

(b) Financing, which makes it possible to allocate, obtain and distribute the financial resources needed to operate the units and networks and to establish new services or modernize existing ones through specific projects.

(c) Regulation and defense of the information profession, a task performed by a number of bodies made up of professionals in fields related to information, such as associations and councils of librarians, documentalists, and members of related professions.

It may be pointed out that the same institution can perform one or more functions. For example, a school of library science, may, in addition to training professionals, conduct research, give technical assistance and prepare information standards and standardized instruments. A co-ordinating centre in the regional network may process data, train personnel, formulate standards, provide technical assistance, conduct research, co-ordinate and finance information activities, etc.

B. CONTRIBUTION OF THIS DIAGNOSIS IN TERMS OF INFORMATION INFRASTRUCTURE DEVELOPMENT

In the light of the ideas presented above, this diagnosis must seem somewhat limited since on the one hand it does not cover the whole information infrastructure, and on the other, it touches only partially on the information generation/utilization system.

As regards the information infrastructure, the co-ordination and technical support components have not been considered, and, within the information services components, the technical archives and statistical data banks, among other information units, have not been examined.^{26/}

It must also be acknowledged that the diagnosis described the availability of information services but throws little light on the way in and extent to which these services could meet the demand of the information generation/utilization system. In particular, a need is felt to determine the extent of the unsatisfied demand of the many institutions in the region which do not have an internal unit capable of providing them with minimal information services.

However, although it is true that all these factors limit the applicability of the diagnosis, it must at the same time be borne in mind that, to judge by the data available in CLADES, an integral diagnosis has still not been achieved for any institution in this region at least and perhaps not in other regions. Therefore, attention has been drawn to some of the factors limiting the development of the initiative more in an attempt to suggest some approaches to take in future exercises than to cast doubt on the validity of the present one.

In this context, the question then arises how to project this experience into the future. Here a distinction must be made between two temporal perspectives in which it is possible to conceive action which give continuity or additional scope to this study.

On the one hand, consideration should be given to the short run during which it may be supposed that no change will occur in the present institutional characteristics of Latin America and the Caribbean in the field of information, those characteristics being (i) an almost total absence of mechanisms for co-ordinating the information infrastructure in countries, subregions and regions. (ii) Few links among the information units involved and between them and the elements making up the technical support component and the system for the generation and utilization of knowledge.

^{26/} It may also be observed that the diagnosis presented considers the individual information unit as a "unit of analysis", leaving the "networks" or systems of units out of the picture. This is only because the information discussed in this report was not organized in accordance with networks or sectors, job which, in principle can easily be carried out. (see annex 8).

In these circumstances, an effort would be made to supply the information generated by the diagnosis to all those institutions and entities, at both their supervisory and operational levels, in an attempt to induce them to initiate action leading to change. This period would have to be short because of the rapid rate at which information obtained in the region becomes obsolete.

On the other hand, it is possible to think in terms of a medium or long run in which the findings obtained in this exercise could be placed in a framework of growing co-ordination among countries, subregions or regions. This would be the future of the survey/diagnosis action within the framework of concerted regional action. There follows a discussion in some detail of activities which could be implemented in both of these temporal perspectives.

1. Possible action in the short term: An illustration at regional level

In the absence of a regional mechanism for co-ordinating action in the field of information, an attempt will be made to demonstrate a way of linking the results of the diagnosis of the region as a whole (as shown in chapter VIII) with those institutions with a potential for promoting change within their spheres of action identified in the first section of these final observations. It is hoped that this approach will also be useful to national or subregional institutions engaged in the co-ordination of information infrastructures. Such institutions, with their excellent knowledge of the institutional context of each country of the subregion, will be able to interpret the data contained in the diagnosis and perhaps can go very much further in the determination of concrete programmes of action.

By government mandate, CEPAL is one of the regional institutions with programmes in the field of information. This puts it in a position to be able to make some pronouncements (through CLADES, its specialized body) with respect to areas lacking in information infrastructure and to identify those institutions which might have a potential for greater intervention in the promotion of change. CEPAL is not, however, the only regional agency competent to speak out in this field. Thus, the ideas expressed below must be viewed as only preliminary suggestions for discussion among regional institutions in the future.

The central idea is to communicate specific results of the diagnosis to the various components of the information infrastructures with capacity to promote the desired changes. This will give rise to activities to be taken both separately and jointly.

With the context of the findings of the diagnosis, those shortcomings which are most apparent in the regional development information infrastructure have been chosen. This has been done on the basis of a simple criterion involving the percentage of information units which have succeeded in crossing the "minimum thresholds" defined for the various indicators, with particular emphasis placed on those cases of obvious failure which fall below the dividing line of 50%.

Infrastructural shortcomings are grouped in accordance with the areas covered by the diagnosis: services, resources, management and status. They lie in the following ten areas, where action is needed:

Services	{	1. Promotion of the use of information (selective dissemination of information, referral publications, promotional services, user training)
	{	2. Openness to other institutions (availability of services to external user, inter-library loans)
Resources	{	3. Strengthening of collections (acquisition of printed materials, receipt of internal documentation produced by the entity)
	{	4. Incorporation into networks (participation in union catalogues, adoption of processing techniques suitable for networks)
	{	5. Strengthening of human resources training
	{	6. Access to basic information equipment
Management	{	7. Internal organization (programming of activities and knowledge of the unit's internal situation)
	{	8. Possibilities for financial management (knowledge of financial situation, access to sources of external financing and participation in the drafting of the unit's budget)
Status	{	9. Internal or external pay situation
	{	10. Opportunities for advanced training

These areas of need are of varying degrees of interest for the different regional institutions which comprise the information infrastructure and may be classified in the following groups:

Information generation/ utilization component	{	(i) Institutions generating and using information
Information services component	{	(ii) Data processing institutions
Technical support component	{	(iii) Professional education institutions
	{	(iv) Training institutions
	{	(v) Technical assistance institutions
	{	(vi) Institutions which establish information standards and standardized instruments
	{	(vii) Research institutions in information science and related disciplines
Co-ordination component	{	(viii) Co-ordination institutions
	{	(ix) Financing institutions
	{	(x) Institutions for the regulation and support of the information profession

Out of the possible ways of combining the 10 areas of need and the 9 types of regional institutions, we have chosen some in which it is suggested that action be taken in the immediate future. When these suggestions are considered by the institutions referred to, they might provide a basis for the formulation in detail of specific plans and projects.

Regional institutions which generate and use information, such as development banks, research institutes, integration agencies and machinery for regional co-ordination, will probably be interested in some of the areas of need. Obviously, these institutions are concerned whether the corresponding national and subregional entities are able to receive data from them and also if those entities can supply them with data needed in the performance of their regional role. The possibilities of exchanging information are largely restricted by shortcomings in areas Nos. 2 (openness to other institutions) and 4 (incorporation in networks).

Moreover, some aspects of the content of information exchanges would be of interest to regional institutions generating and using information. One of these would be the existence (in the units) of the internal documentation produced by each of the corresponding institutions. Thus, it is possible that the regional institutions might suggest to their national counterparts that they establish information units where none are available and formulate an information policy which is more open to the exchange of information by having these units participate in union catalogues and by intensifying inter-library loans for sending originals or copies of documents across national borders. They might also be able to direct their counterparts in the definition of policies relating to the publication and circulation of internal documentation which would take into account active participation on the part of information units.

It is, however, likely that regional data-processing institutions will adopt another position with regard to the areas of need, primarily because of their relationship to units participating in or co-operating with the network and to other similar units which do not belong to it. Furthermore, institutions which normally work as co-ordinating centres of an information network may demand a large and efficient system of services so that their work can be disseminated throughout the region. Here, both promotion (No. 1) and openness to the exterior (No. 2) will be of interest as will human resources of the component units (No. 5) and their accessibility to the basic information equipment (No. 6). Also the strengthening of collections (No. 3) is of priority for a better service as is the way in which data is processed which will determine the entry of new units into the network (No. 4). Thus, it may sometimes be advisable for data-processing units to carry on a dialogue with the entities to which the co-operating units belong in furtherance of their information exchange policies and so that they can allocate more resources for the operation of those units.

Regional institutions for professional education will be interested in those qualitative features which have an effect on the content, emphasis and orientation of curricula. In the first place, needs in areas Nos. 1 and 2 concerning services make it necessary to refocus curricula so that a more dynamic attitude to service is transmitted to the users and technical know-how is strengthened in such areas as selective dissemination of information, preparation of publications, user training and the marketing of information services. In addition, the obvious managerial weakness of those responsible for information units (Nos. 7 and 8) make it advisable for these institutions to study the possibilities of instituting broader and deeper courses on the management of information units, particularly in the fields of the programming of activities, effective statistical monitoring of the operation of the services and design management of information budgets.

The training centers, for their part, might wish to consider operational systems which make it possible to strengthen the long-term training efforts undertaken by professional training institutions. Such systems, might, for example, be geared towards training in the areas of specific selective dissemination services, the preparation of publications, user training, marketing and the promotion of information services for users.

However, the area of need referred to in No. 4, which is an indication of incompatibility among the different units where data-processing techniques are concerned (an impediment to prompt incorporation into information networks) should be of central

concern. Consideration should be given to meeting these needs through training in the use of standardized methods together with the application of processing techniques which allow for post-co-ordinated searches.

Regional institutions which establish information standards or standardized instruments should ensure that processing techniques are compatible with those employed by international networks and institutions (No. 4). An ad-hoc analysis of a sample of questionnaires of the survey has revealed that standards for information handling in use vary tremendously.

Regional technical assistance institutions, of which there do not seem to be many in the region, should be aware of some regional environmental limitations at the time when the establishment of new information systems or the modernization of existing systems was under consideration. Shortcomings in management (Nos. 7 and 8) together with the internal and external pay situation (No. 9) may constitute real barriers to the operation of the new systems because of lack of managerial capacity or staff motivation.

The regional institutions engaged in research in information science and related disciplines might lay stress on the examination of some problems related to the improvement of the information services. In particular, it seemed desirable to have access to theoretical or methodological knowledge concerning what has been called promotion of the use of information (No. 1) and the strengthening of collections (No. 3), especially in so far as that relates to a search for mechanisms to monitor the internal documentation generated by the entities in which the units are located. Thus, these regional institutions should perhaps promote, among other things, the study of techniques for the preparation of user profiles which may eventually lead to the establishment of systems for the selective dissemination of information; the analysis of alternative systems which may assist units in the reception and monitoring of the internal documentation generated by the institutions in which they are located; the design of policies relating to classified materials and, naturally, the study on user-training techniques.

Regional institutions for co-ordination in the field of information and regional bodies which finance information activities have a potential relationship with each of the ten areas of need identified in the regional diagnosis. Of those 10, there will, however, be some in which short-term action appears more suitable -for example, the strengthening of collections (No. 3) by supporting the acquisition of bibliographical material; the purchase of photocopy machines and basic document reproduction equipment for use in connexion with the performance of information activities and the granting of scholarships (No. 10) for advanced training of personnel. Financial operations might also attempt to acquaint those responsible for units receiving financial support with techniques which would enable them to efficiently handle the financial resources granted.

Finally, the professional institutions in the region might be able to undertake some action to improve the situation as regard the shortcomings in the area of status. The deterioration in salaries both internally and externally (No. 9) might suggest the need for efforts to increase the salaries of information specialists with respect to those paid in other professions and occupations at both national and international levels. Moreover, the rare opportunities which now exist for advanced training (No. 10) might persuade these institutions, especially in the absence of national bodies for the co-ordination of information, to promote and organize advanced training programmes. Those programmes should cover the managerial needs of those responsible for the units as well as the needs of the personnel engaged in information handling.

2. Possible action in the medium and long term: the "survey diagnosis" action in the context of concerted regional action

The suggestions made above will probably give rise to a large variety of information programmes and projects. There is also reason to think that the current lack of action in many of the areas referred to will not necessarily result in duplication and inconsistencies in the work of the regional institutions involved in the field of information.

It must however also be recognized that it will not be possible to focus for long on the solution of specific problems through the adoption of relatively short term action. It will be necessary to create conditions and mechanisms which will promote an increase in the number of concerted activities and give global coherence to the different efforts.

Concerted regional action is viewed as "a rational effort to transform the present situation -in which a large number of national, subregional, regional and international institutional information systems coexist with no co-ordination- into a situation in which efforts are more closely harmonized and there is a more intense exchange and flow of information among the systems and between them and the user communities they serve" (CLADES, 1980).

Concerted action may include the stages of formulation and of execution. The formulation of a joint plan of action itself includes various phases, among which attention may be drawn to: (1) diagnosis in which an attempt is made to communicate as accurately as possible the facts relating to the existing situation with regard to the system, the courses of that situation and the trends in the direction of change; (2) determination of objectives and goals, which basically reflect the situation desired for the future; (3) strategy, which consists in a set of principles and basic characteristics, the adoption of which may facilitate the selection and subsequent application of specific instrumental mechanisms and, finally, (4) identification of policies in which the central purpose identified for the system is broken down into more specific objectives (i.e., information services policy, technical assistance policy, etc.).

The diagnosis is therefore one of the key features of any joint action.

It should also be pointed out that within the vast range of activities envisaged under this new approach, many levels of co-ordination must be identified (for example, co-ordination among national institutions, among subregional bodies, etc.). One area in which it might be possible to come to a closer relationship in the medium term is that of activities carried out by intergovernmental agencies with information programmes.

Within this framework a set of possible projections of this study is emerging and should be taken into account in inter-agency relations and especially in relations among the intergovernmental agencies referred to. They relate to the methodological aspects of the diagnosis and to the handling and use of the data base of information units.

(a) Action relating to methodology

There are a number of methodological facets in this study both conventional or innovative. Moreover, the fact that these methodologies have been applied in a context of such enormous problems and in such an extensive geographical area makes them especially interesting for the region.

As has been pointed out in various sections of this report, however, both the questionnaire and the approach to the data analysis could be improved in various ways (see annexes 4 and 7). Neither CLADES nor any other institution responsible for a study of this kind can impose its own analytical methods and techniques. However, the Centre has no hesitation about attaching a great deal of importance to the exchange of experiences and to a critical discussion concerning the statements made in this study.

Great value is attached to the achievement of a consensus on the whys and wherefors of these studies so as to avoid costly repetitions of methodological errors

and the production of studies with such dissimilar bases as to make it impossible to compare them and to accumulate experience.

(b) Action relating to the data base of information units

One of the first steps which should be attempted is the decentralization of the existing data base. Naturally this effort must be based on a strategy which takes into account the different processing capacities which exist in countries, in respect of both software and hardware. In any case, the existence of such capacity in various countries in general and in the national focal points in particular makes it feasible to initiate the data transfer so that the institutions are able to handle the data base independently. There is no doubt of the advantages derived when countries and subregional institutions have such information available to them since having it closer to hand they will be able to act more rapidly in meeting requests for information concerning organized sources available in specific areas, such as the provision of services and access to their document collections.

A second kind of action which may be taken at more or less the same time as the preceding step involves expanding the coverage and up-dating the data base. This is a big task for a single institution but one which can be conceived of as feasible provided that it is performed by means of a co-operative system. In such a system, each national focal point would be responsible for obtaining and processing data from existing information units in a country and would send that information to a regional centre responsible for setting up a complete file on the region, a copy of which would be sent to each participating focal point.

The geographical and institutional coverage of the present data base could certainly stand improvement. This is especially true of countries like Brazil and Mexico where the survey was very incomplete. In all the remaining countries, however, an attempt could be made to collect, to a greater or lesser extent, information regarding the units which did not participate. It would also seem important to incorporate those countries which were unable to participate in this project. All this will raise the present percentages of country representation and the representation of the region which at that time was relatively low considering that it amounted to only 20% of the estimated total.

With regard to the up-dating of the information compiled, it should be borne in mind that it is already four years old, which is close to the advisable limit in terms of relevance. It would perhaps be advisable for participating countries in around 1982 to attempt to bring the data up to date since there can be no doubt that the units are very dynamic in terms of structural internal changes, transfers of personnel and collections.

Finally, a third step would be to utilize the data base. It may be used (i) to offer referral or orientation services to organized sources of information with the potential capability of issuing listings or data on a given subject and (ii) to prepare diagnostic reports in support of information programmes and projects. To make through use of the available information should be central in the next few years on the part both of regional and subregional bodies working in the field of development information systems and of the relevant national institutions.^{27/}

This need is felt in particular with regard to the establishment of sectoral information networks at the national, regional or subregional level. The use of this instrument is of key importance during the stages when previous agreements are adopted to accommodate the establishment of the network since it makes it possible to identify those centres which are potentially better suited to the network and to determine how they will participate -whether they will be actively committed or will have the capacity

^{27/} The discussion on different possibilities for the use of data is contained in annex 8.

of affiliates-, to locate an outstanding centre which might be able to function as a co-ordinating centre and, from the inception of the network, to ensure that a real mechanism is available for the connexion and exchange of information. There is, however, another area where referral action or action involving diagnosis of information infrastructure may be taken. This is the area of joint inter-agency action at regional level in connexion with projects or agreements between national institutions and the activities of regional bodies in general. Actually, before initiating any project involving research or an exercise in co-ordination in any substantive area, and as, for example, industrial planning, or the environment consideration should be given to the information infrastructure existing in that area and to its potential for supporting not only the project while it is under execution but also any future activities and policies which might be introduced in that field.

In both instances it may be seen that there is a great advantage in having a broad, and preferably an exhaustive, regional data base because only in that way is it possible to extract, group together and compare different subsets of units as necessary and to avoid duplicating partial, incomplete or incompatible surveys.

3. Challenges for the region: conclusions

The combination of background material, proposals and findings contained in this report represents a challenge to the institutions of the region. It is felt that in many areas progress has been made while in others all that has been done is to describe problems to be dealt with in the future.

After this exercise begun about four years ago, CLADES hopes to help to put development information problems into a priority position so that the action underway is even further intensified and impetus is given to the work being done by those institutions where this dimension is rather weak.

The national and subregional institutions now have a series of findings on which they must express their views. The practitioners and scientists in information have before them a conceptual frame of reference which we hope will provoke criticism and new contributions.

The biggest challenge however, is perhaps the need not to lose sight of the contacts and agreed proposals which resulted from the action conducted jointly by the focal points and CLADES and the imperative that the governments maintain or increase the support to their focal points and strengthen the machinery of intergovernmental co-operation in such a way that efforts in the region can be gradually co-ordinated.

The field of information is in a favourable position in terms of opportunities for horizontal co-operation. Substantial technical capacity and valuable resources are there for the countries in the region to share. There is new awareness of the importance of information. It is hoped that Latin America and the Caribbean will awaken to it during the new few years.

ANNEXES

PUBLICATIONS GENERATED BY THE PROJECT ^{1/}

1. Informative documents

Inventario de unidades y redes de información socio-económicas en América Latina y el Caribe. Santiago, agosto 1976. 4 p.

The Inventory of Economic and Social Information Units and Networks in Latin America and the Caribbean. Santiago, August 1976. 4 p. d

Posible esquema de distribución de responsabilidades entre la(s) instituciones patrocinantes nacionales y CLADES. Santiago, agosto 1976. 4 p. d

National Inventory of Socio-economic Information Units. Possible Scheme of Distribution of Responsibilities among the National Sponsor Institutions and CLADES. Santiago, August, 1976. 4 p.

2. Documents on methodology and information policy

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^{1/} The letter "d" indicates that copies are available in CLADES

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d

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d

Directorio de unidades de información para el desarrollo en El Salvador.
Santiago, 1978. 59 p.

Directory of Development Information Units in Trinidad and Tobago.
Santiago, 1978. 59 p.

Directory of Development Information Units in Barbados.
Santiago, 1978. 43 p.

Directorio de unidades de información para el desarrollo en Guatemala.
Santiago, 1978. 1 v.

d

Directorio de unidades de información para el desarrollo en Paraguay.
Santiago, 1978. 1 v.

Directorio de unidades de información para el desarrollo en Colombia.
Santiago, 1978. 125 p.

Directorio de unidades de información para el desarrollo en México.
Santiago, 1978. 66 p.

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(sector educación). Santiago, 1978. 87 p.

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(sector económico). Santiago, 1978. 75 p.

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Santiago, 1978. 116 p.

d

Directorio de unidades de información para el desarrollo en Brasil.
Santiago, 1978. 58 p.

d

Directorio de unidades de información para el desarrollo en Ecuador.
Santiago, 1978. 52 p.

d

Directorio de unidades de información para el desarrollo en Venezuela.
Santiago, 1978. 93 p.

Directorio de unidades de información para el desarrollo en Uruguay.
Santiago, 1978. 40 p.

Directorio de unidades de información para el desarrollo en el Estado
Libre Asociado de Puerto Rico. Santiago, 1978. 42 p.

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Directorio de unidades de información para el desarrollo en Costa Rica.
Santiago, 1978. 66 p.

Directorio de unidades de información para el desarrollo en República Dominicana. Santiago, 1978. 36 p.

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Annex 2

LIST OF INFORMATION UNITS SURVEYED

ARGENTINA

BAHIA BLANCA

- * Universidad Nacional del Sur
Biblioteca Central

BUENOS AIRES

- * Centro de Investigación y Acción Social
Centro de Investigaciones Educativas
- * Ministerio de Cultura y Educación
Dirección Nacional de Investigación, Experimentación y Perfeccionamiento (DIEPE)
Centro Nacional de Documentación e Información Educativa
- * Ministerio de Cultura y Educación
Consejo Nacional de Educación
Biblioteca Nacional de Maestros
- * Subsecretaría de Educación y Cultura
Municipalidad de Buenos Aires
Dirección de Bibliotecas
- * Universidad de Buenos Aires (UBA)
Facultad de Filosofía y Letras
Instituto de Ciencias de la Educación
Biblioteca
- * Universidad del Salvador
Biblioteca Central
Biblioteca "Padre Guillermo Furlong S.J."
- * Administración Nacional Aduana
Biblioteca
- * Banco Central de la República Argentina (BCRA)
Gerencia de Investigaciones Económicas
Departamento de Biblioteca y Publicaciones
- * Banco de la Nación Argentina
Biblioteca "Manuel Belgrano"
- * Banco Nacional de Desarrollo
Biblioteca Central
- * Caja Nacional de Ahorro y Seguro
Biblioteca "Domingo Faustino Sarmiento"
- * Casa de Moneda
Sociedad del Estado
Biblioteca
- * Comisión Nacional de Valores
Biblioteca
- * Comisión Técnica Mixta de Salto Grande
Centro de Documentación
- * Consejo Agrario Nacional
Biblioteca

ARGENTINA (Cont.)

BUENOS AIRES

- * Dirección General Impositiva (DGI)
Departamento de Asuntos Técnicos y Jurídicos
Biblioteca
- * Dirección Nacional de Vialidad
División Biblioteca
- * Empresa Nacional de Correos y Telégrafos (ENCOTEL)
Biblioteca y Museo
- * Empresas de Obras Sanitarias de la Nación
Biblioteca
- * Entidad Binacional Yaciretá
Centro de Documentación
- * Ferrocarriles Argentinos
Sistema y Estudios Especiales
Gerencia de Area Planeamiento
Centro de Documentación y Publicaciones
- * Gas del Estado
Biblioteca General
- * Instituto Forestal Nacional
Biblioteca
- * Instituto Nacional de Planificación Económica
Biblioteca
- * Instituto Nacional de Reaseguros
Biblioteca
- * Instituto Nacional de Tecnología Agropecuaria (INTA)
Biblioteca y Archivo Documental
- * Instituto Nacional de Tecnología Industrial (INTI)
Secretaría de Desarrollo Industrial
Centro de Investigación Documentaria
- * Junta Nacional de Carnes de la República Argentina
Biblioteca
- * Junta Nacional de Granos
Gerencia de Estudios Económicos
Biblioteca
- * Secretaría de Comercio y Negociaciones Económicas Internacionales
Dirección General de Coordinación, Organización y Control
Centro de Información
- * Secretaría de Comunicaciones
Instituto ENTEL de Capacitación
Centro de Información y Documentación
- * Secretaría de Estado de Agricultura y Ganadería de la Nación
Subsecretaría de Economía Agraria
División Nacional de Política Agropecuaria
Biblioteca Central
- * Secretaría de Estado de Comunicaciones
Subsecretaría Técnica
Centro de Información Técnica

ARGENTINA (Cont.)

BUENOS AIRES

- * Secretaría de Estado de Desarrollo Industrial
 - Departamento de Despacho
 - Biblioteca
- * Secretaría de Estado de Hacienda
 - Superintendencia de Seguros de la Nación
 - Gerencia Técnico Normativa
 - Biblioteca
- * Secretaría de Estado de Minería
 - Servicio Geológico Nacional
 - Biblioteca
- * Secretaría de Estado de Programación y Coordinación Económica
 - Departamento Biblioteca
- * Secretaría de Estado de Programación y Coordinación Económica
 - Departamento Información Legislativa y Documental
- * Secretaría de Estado de Programación y Coordinación Económica
 - Dirección General de Información Económica
- * Instituto Nacional de Estadística y Censos
 - Biblioteca
- * Secretaría de Transporte y Obras Públicas
 - Subsecretaría de Planeamiento Ambiental (SSPA)
 - Dirección Nacional de Ordenamiento Ambiental
 - Departamento de Relaciones Técnicas
- * Secretaría General de Agua y Energía Eléctrica
 - Biblioteca
- * Servicios Eléctricos del Gran Buenos Aires S.A. (SEGBA)
 - Biblioteca y Hemeroteca
- * Subsecretaría de Coordinación y Políticas
 - Secretaría de Estado de Transporte y Obras Públicas
 - Biblioteca
- * Subsecretaría de Recursos Hídricos
 - Información, Publicaciones y Biblioteca
- * Tribunal de Cuentas de la Nación
 - Departamento de Biblioteca y Difusión
- * Tribunal Fiscal de la Nación
 - Biblioteca
- * Yacimientos Carboníferos Fiscales (YCF)
 - División Secretaría y Despacho
 - Biblioteca Sede Central
- * Yacimientos Petrolíferos Fiscales (YPF)
 - Departamento de Investigación y Desarrollo
 - Centro de Información Documental
- * FIAT-CONCORD
 - Planes y Estudios - Administración y Finanzas
 - Centro de Información y Documentación
- * Centro Argentino de Referencia en Ingeniería Sanitaria (CARIS)
 - Instituto Nacional de Ciencia y Técnicas Hídricas (INCYTH)
 - Centro de Documentación y Difusión Técnica

ARGENTINA (Cont.)

BUENOS AIRES

- * Instituto de Teconología del Uso del Agua (ITUA)
Biblioteca
- * Comisión Nacional de Energía Atómica
Biblioteca
- * ESSO
Departamento de Producción
Biblioteca

CARLOS PAZ

- * Centro de Investigación Hídrica de la Región Semi-Arida (CIHRSA)
Biblioteca

CIPOLETTI

- * Universidad Nacional de Comahue
Facultad de Ciencias de la Educación
Biblioteca
- * Hidroeléctrica Norpatagonia S.A. (HIDRONOR)
Corporación de Empresas Nacionales
Centro de Documentación

CORDOBA

- * Secretaría Ministerio de Educación y Cultura
Dirección General de Enseñanza Media, Especial y Superior
Instituto Superior de Psicopedagogía y Educación Diferenciada
"Dr. Domingo Cabred"
- * Secretaría de Estado de Cultura y Educación
Dirección de Planeamiento
División de Documentación e Información Educativa
- * Jefatura de Estudios y Proyectos Zona Centro
Agua y Energía Eléctrica
Centro de Información y Biblioteca
- * Universidad Nacional de Córdoba
Facultad de Ciencias Exactas, Físicas y Naturales
Biblioteca
- * Ministerio de Obras Públicas
Dirección Provincial de Hidráulica
Departamento de Estudios y Proyectos
Biblioteca Técnica
- * Empresa Obras Sanitarias de la Nación
Biblioteca
- * Empresa Provincial de Energía de Córdoba (EPEC)
Biblioteca Especializada

CORRIENTES

- * Ministerio de Educación y Cultura
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Centro Provincial de Documentación e Información Educativa
- * Ministerio de Educación y Cultura
Consejo General de Educación
Biblioteca del Maestro

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Departamento de Planeamiento Educativo
Centro de Documentación e Información Educativa
- * Universidad Nacional del Nordeste
Facultad de Recursos Naturales Renovables
Biblioteca

LA PAMPA

- * Ministerio de Gobierno, Educación y Justicia
Subsecretaría de Educación y Cultura
Dirección General de Educación
Oficina de Perfeccionamiento Docente
- * Ministerio de Gobierno, Educación y Justicia
Subsecretaría de Educación y Cultura
Dirección General de Educación
Centro de Documentación e Información Educativa

LA PLATA

- * Ministerio de Educación
Subsecretaría de Educación
Centro Provincial de Información Educativa
- * Universidad Nacional de la Plata
Facultad de Humanidades y Ciencias de la Educación
Biblioteca
- * Universidad Nacional de la Plata
Biblioteca Pública
Centro de Documentación
- * Universidad Nacional de la Plata
Biblioteca Pública

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- * Ministerio de Gobierno e Instrucción Pública
Subsecretaría de Cultura y Educación
Centro Provincial de Documentación e Información Educativa
- * Universidad Provincial de La Rioja
Instituto de Investigación de la Realidad Riojana
Centro de Información y Documentación

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Biblioteca

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- * Universidad Nacional de Cuyo
Escuela Superior del Magisterio
Biblioteca

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- * Departamento General de Irrigación
Biblioteca "Ingeniero Pedro N. Rosas"

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Consejo Provincial de Educación
Centro Provincial de Documentación e Información Educativa

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Biblioteca
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Dirección de Servicios Educativos
Centro de Educación e Información Educativa
- * Universidad Nacional de Entre Ríos
Facultad de Ciencias de la Educación
Centro de Documentación e Información Educativa

POSADAS

- * Consejo General de Educación
Departamento de Planeamiento Integral de la Educación
Centro de Documentación e Información Educativa

RAWSON

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Dirección de Planeamiento Educativo
Departamento de Documentación e Información Educativa

RESISTENCIA

- * Ministerio de Gobierno, Justicia y Educación
Dirección de Documentación e Información

SALTA

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Secretaría de Estado de Educación y Cultura
Centro de Documentación e Información Educativa de Salta (CDIESA)
- * Ministerio de Gobierno
Dirección General de Cultura
Biblioteca Provincial "Dr. Victorino de la Plaza"
- * Universidad Católica de Salta
Biblioteca
- * Universidad Nacional de Salta
Departamento de Humanidades
Biblioteca de Humanidades

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Unidad de Planeamiento de la Educación
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Dirección de Asuntos Técnicos
Centro de Documentación e Información Educativa
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Escuela Normal Superior Mixta "Juan Bautista Alberdi"
Biblioteca Nicolás Avellaneda

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Biblioteca

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Consejo General de Educación
Biblioteca Central Pedagógica

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Subsecretaría de Educación
Centro Provincial de Documentación e Información Educativa
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Consejo General de Educación
Biblioteca Provincial Pedagógica "D.F. Sarmiento"
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Instituto de Limnología
Biblioteca
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Facultad de Ciencias Agrarias
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Biblioteca Central

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Consejo Provincial de Educación
Centro de Documentación e Información Educativa
- * Secretaría de Planeamiento
Centro Provincial de Documentación e Información

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BRIDGETOWN

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Barbados Statistical Services
Library
- * Caribbean Conference of Churches (CCC)
Christian Action for Development in the Caribbean (CADEC)
CADEC Documentation Service
- * Central Bank of Barbados
Research Department
Library
- * Ministry of Finance and Planning
Inland Revenue Department
Library
- * Ministry of Agriculture, Food and Consumer Affairs
Library

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- * Ministry of Education and Culture
Public Library Services
- * Ministry of Finance and Planning
Rates and Taxes Department
Library
- * Supreme Court
Law Library

CAVE HILL

- * University of the West Indies
Faculty of Law Library
- * University of the West Indies
Library ISER
- * University of the West Indies
Main Library

ST. JAMES

- * Caribbean Meteorological Institute
Library

ST. MICHAEL

- * Barbados Light and Power Co. Ltd.
Commercial Information Centre
- * Barbados Institute of Management and Productivity
Library
- * Caribbean Development Bank
Library
- * Government of Barbados
Government Training Division
- * Ministry of Education and Culture
Department of Archives
- * Ministry of Education and Culture
Erdiston Teachers Training College
Library
- * Ministry of Education and Culture
Samuel Jackman Prescod Polytechnic Library
- * Ministry of Finance and Planning
Library
- * Ministry of Health and National Insurance
Library
- * Ministry of Health and National Insurance
National Nutrition Centre
Nutrition Centre of Barbados
Resource Centre
- * Ministry of Health and National Insurance
Queen Elizabeth Hospital
Medical Library

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ST. MICHAEL

- * PAHO/WHO
Library
- * University of the West Indies (Cave Hill Campus)
Extra Mural Department

ST. PHILIP

- * Barbados Worker's Union Labour College
Library

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COCHABAMBA

- * Centro Pedagógico y Cultural de Portales
Biblioteca

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- * Banco Central de Bolivia
Biblioteca
- * Ministerio de Relaciones Exteriores
Biblioteca y Centro de Documentación
- * Ministerio de Relaciones Exteriores
Biblioteca y Centro de Documentación
- * Yacimientos Petrolíferos Fiscales Bolivianos (YPFB)
Dirección Servicios Generales y División de Educación
Biblioteca
- * Universidad Mayor de San Andrés (UMSA)
Facultad de Humanidades y Ciencias de la Educación - Biblioteca
- * Instituto Nacional de Estadísticas (INE)
Biblioteca
- * Instituto Superior de Administración (ISAP)
Biblioteca
- * Ministerio de Planeamiento y Coordinación
Biblioteca
- * Universidad Mayor de San Andrés (UMSA)
Biblioteca de Servicio Social
- * Universidad Católica Boliviana
Biblioteca
- * Universidad Mayor de San Andrés (UMSA)
Biblioteca Especializada de Derecho y Sociología
- * Universidad Mayor de San Andrés (UMSA)
Biblioteca Especializada de Economía
- * Consejo Nacional de Educación Superior (CNES)
Biblioteca y Centro de Documentación
- * Servicio Geológico de Bolivia
Centro de Documentación
- * Ministerio de Minería
Centro de Documentación Minero-Metalúrgico
- * Ministerio de Industria, Comercio y Turismo
Dirección General de Normas y Tecnología
Servicio de Información Técnica Industrial

BOLIVIA (Cont.)

LA PAZ

- * Ministerio de Asuntos Campesinos y Agropecuarios
Subsistema Nacional de Información Agrícola
Biblioteca del Ministerio de Agricultura
- * Centro Nacional de Documentación Científica y Tecnológica (CNDCT)
- * Centro de Información para el Desarrollo Económico y Social (CIDES)

POTOSI

- * Universidad Tomás Frías
Departamento de Bibliotecas
Biblioteca Central Universitaria y Periféricas

SUCRE

- * Universidad de San Francisco Xavier
Facultad de Ciencias Sociales
Carrera de Derecho
Instituto de Sociología Boliviana (ISBO)

TRINIDAD

- * Universidad Boliviana "Mariscal José Ballivian"
Facultad de Ciencias Puras y Naturales
Biblioteca Central

BRASIL

BRASILIA

- * Instituto de Planejamento Economico e Social (IPEA)
Instituto de Planejamento (IPLAN)
Setor de Documentação
- * Ministerio do Interior
Superintendencia Adjunta de Planejamento
Coordenação de Informatica
Biblioteca
- * Congresso
Camara dos Deputados
Centro de Documentação e Informação
- * Instituto de Planejamento Economico e Social (IPEA)
Centro de Treinamento para o Desenvolvimento Economico (CENDEC)
Biblioteca

PORTO ALEGRE

- * Ministerio do Interior
Superintendencia Adjunta de Planejamento
Coordenação de Informatica
Divisao de Documentação

RECIFE

- * Instituto Joaquim Nabuco de Pesquisas Sociais
Departamento de Procesamiento de Dados e Documentação (DEPROD)
- * Superintendencia de Desenvolvimento Economico do Nordeste (SUDENE)
Coordenação de Informatica
Divisao de Documentação

RIO DE JANEIRO

- * Banco Nacional do Desenvolvimento Economico (BNDE)
Biblioteca

BRASIL (Cont.)
RIO DE JANEIRO

- * Programa de Estudos Conjuntos sobre Integração Latinoamericana (ECIEL) Biblioteca
- * Centrais Elétricas Brasileiras (ELETROBRAS)
Núcleo de Documentação Técnica
- * Instituto de Planejamento Econômico e Social (IPEA)
Instituto de Pesquisas (INPES)
Setor de Documentação
- * Companhia Siderúrgica Nacional
Vicepresidência de Planejamento
Biblioteca

RIO DE JANEIRO

- * Petróleo Brasileiro (PETROBRAS)
Centro de Pesquisas e Desenvolvimento Leopoldo A. Miguez de Mello (PETROBRAS/CENPES)
Divisão de Informação Técnica e Propriedade Industrial (DINEP)
- * Confederação Nacional do Comércio
Serviço de Documentação e Informação (SDI)
- * Companhia Vale do Rio Doce
Divisão de Informações Técnicas
- * Ministério de Fazenda
Departamento de Administração
Divisão de Documentação
- * Fundação Getúlio Vargas
Instituto de Documentação
Biblioteca Central
- * Financiadora de Estudos e Projetos (FINEP)
Departamento Administrativo
Biblioteca
- * Ministério das Minas e Energia
Furnas Centrais Elétricas S.A. (ELETROBRAS)
Departamento de Documentação
Divisão de Biblioteca
- * Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPQ)
Instituto Brasileiro de Informação em Ciência e Tecnologia (IBICT)

SAO PAULO

- * Banco de Desenvolvimento do Estado de São Paulo (BADESP)
Centro de Informações Técnicas

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- * Companhia Siderúrgica Nacional
Gerência Geral de Serviços Gerais
Biblioteca

COLOMBIA

BOGOTA

- * Departamento Nacional de Planeación (DNP)
Biblioteca
- * Corte Suprema de Justicia
Biblioteca
- * Colegio Mayor de Nuestra Señora del Rosario
Biblioteca
- * Centro de Investigación y Educación Popular (CINEP)
Biblioteca
- * Universidad de Los Andes
Facultad de Economía
Centro de Estudios sobre Desarrollo Económico (CEDE)
Biblioteca
- * Departamento Administrativo Nacional de Estadística (DANE)
Banco Nacional de Datos
- * Escuela Superior de Administración Pública (ESAP)
Biblioteca
- * Fundación para la Educación Superior y el Desarrollo (FEDESARROLLO)
Biblioteca
- * Fundación Universidad de Bogotá "Jorge Tadeo Lozano"
Biblioteca
- * Instituto Colombiano de Cultura (COLCULTURA)
Instituto Colombiano de Antropología
Biblioteca de Antropología
- * Instituto Colombiano de Energía Eléctrica (ICEL)
Biblioteca
- * Instituto Colombiano de Reforma Agraria (INCORA)
Biblioteca
- * Instituto de Desarrollo de los Recursos Naturales Renovables y del Ambiente (INDERENA)
- * Instituto de Investigaciones Tecnológicas (IIT)
Biblioteca
- * Universidad Javeriana
Instituto Geofísico
Biblioteca
- * Instituto Geográfico "Agustín Codazzi"
Dirección de Investigación y Divulgación
Biblioteca
- * Ministerio de Justicia
Biblioteca
- * Ministerio de Salud Pública
Biblioteca
- * Universidad de Santo Tomás de Aquino
Biblioteca Central

COLOMBIA (Cont.)

BOGOTA

- * Universidad Externado de Colombia
Biblioteca
- * Comando de las Fuerzas Militares
Escuela Superior de Guerra
Biblioteca Central
- * Instituto Colombiano de Bienestar Social (ICBF)
Biblioteca Central
- * Universidad de San Buenaventura
Biblioteca Central
- * Universidad Nacional de Colombia
Biblioteca Central
- * Pontificia Universidad Javeriana
Biblioteca General
- * Universidad de los Andes
Biblioteca General
- * Banco de la República
Biblioteca "Luis Angel Arango"
- * Biblioteca Nacional de Colombia
- * Instituto Interamericano de Ciencias Agrícolas (IICA)
Biblioteca "Rodrigo Pena"
- * Universidad Pedagógica Nacional
Departamento de Bibliotecología y R. Educativas
Biblioteca Universitaria
- * Banco de la República
Departamento de Investigaciones Económicas
Biblioteca y Hemeroteca
- * Asociación Nacional de Instituciones Financieras (ANIF)
Centro de Documentación
- * Corporación Centro Regional de Población (CCRP)
Centro de Documentación
- * Instituto Colombiano de Comercio Exterior (INCOMEX)
Centro de Documentación
- * Instituto Colombiano para el Fomento de la Educación Superior (ICFES)
Centro de Documentación
- * Ministerio de Educación Nacional
División de Documentación e Información Educativa
Centro de Documentación e Información Educativa
- * Universidad Pedagógica Nacional
Centro de Documentación Educativa
- * Instituto de Fomento Industrial (IFI)
Centro de Documentación Industrial (IFICELDI)
- * Instituto Geográfico "Agustín Codazzi"
Centro de Información Geográfica
- * Ministerio de Obras Públicas y Transporte
Centro Nacional de Información del Transporte (CENAIT)

COLOMBIA (Cont.)

BOGOTA

- * Cámara de Comercio de Bogotá
Centro de Informática Económica de Bogotá (CIEB)
- * Centro Nacional de Estudios de la Construcción (CENAC)
Centro Nacional de Documentación sobre Desarrollo Urbano y Vivienda (CENDUVI)
- * Universidad de la Gran Colombia
Departamento de Bibliotecas
- * Fondo Colombiano de Investigaciones Científicas y Proyectos Especiales Francisco José Caldas (COLCIENCIAS)
División Biblioteca y Documentación
- * Instituto Colombiano de Fomento para la Educación Superior (ICFES)
División de Documentación y Fomento Bibliotecario
- * Organización de Estados Americanos (OEA)
Centro Interamericano de Promoción de Exportaciones (CIPE)
Proyecto de Información Comercial Internacional
- * Fondo de Promoción de Exportaciones de Colombia (PROEXPO)
Punto Central de Información
- * Instituto de Investigaciones Tecnológicas
Servicio de Información Técnica para la Industria de Alimentos (SINTAL)
- * Corporación Nacional de Investigación y Fomento Forestal (CONIF)
Servicio de Información y Documentación Forestal (SEIDAL)

BUCARAMANGA

- * Universidad Industrial de Santander (UIS)
Biblioteca

- CALDAS * Federación Nacional de Cafeteros de Colombia (FEDERACAFE)
Centro Nacional de Investigaciones del Café (CENICAFE)
Biblioteca y Centro de Documentación en Café

CALI

- * Universidad de San Buenaventura
Seccional Cali
Biblioteca
- * Universidad del Valle
Departamento de Bibliotecas
- * Banco Popular
Programa de Desarrollo Industrial
Departamento de Información

MEDELLIN

- * Escuela de Administración, Finanzas y Tecnología (EAFIT)
Biblioteca
- * Cámara Colombiana de la Construcción (CAMACOL)
Biblioteca
- * Asociación Nacional de Industriales (ANDI)
Vicepresidencia Administrativa
Biblioteca

COLOMBIA (Cont.)

MEDELLIN

- * Universidad Autónoma Latinoamericana
Biblioteca
- * Universidad Nacional de Colombia
Seccional Medellín
Biblioteca Central
- * Universidad Pontificia Bolivariana (UPB)
Biblioteca Central
- * Universidad de Medellín
Biblioteca de Facultades, "Eduardo Fernández Botero"
- * Universidad de "San Buenaventura"
Seccional Medellín
Biblioteca "Jorge Vélez Ochoa"
- * Instituto Colombiano de Productores de Cemento (ICPC)
Centro de Documentación

MOSQUERA

- * Instituto Colombiano Agropecuario (ICA)
Biblioteca Agrícola de Colombia (BAC)

PALMIRA

- * Universidad Nacional de Colombia
Seccional Palmira
Facultad de Ciencias Agropecuarias
Biblioteca
- * Centro Internacional de Agricultura Tropical (CIAT)
Biblioteca y Servicios de Documentación

POPAYAN

- * Universidad del Cauca
Departamento de Biblioteca y Publicaciones

COSTA RICA

ARANJUEZ

- * Caja Costarricense de Seguro Social
Hospital "Doctor Rafael A. Calderón Guardia"
Biblioteca Médica

CARTAGO

- * Instituto Tecnológico de Costa Rica
Centro de Información Tecnológica

SAN JOSE

- * Asamblea Legislativa
Departamento Servicios Técnicos
Biblioteca
- * Instituto Geográfico Nacional
Biblioteca
- * Banco Popular y de Desarrollo Comunal
Archivo, Documentación y Biblioteca
- * Instituto Costarricense de Electricidad (ICE)
Biblioteca

COSTA RICA (Cont.)

SAN JOSE

- * Caja Costarricense de Seguro Social
Centro de Documentación
- * Universidad de Costa Rica
Facultad de Ciencias Sociales
Escuela de Trabajo Social
Programa de Publicaciones y Documentación
- * Hospital Nacional de Niños
Centro de Docencia e Investigación
Biblioteca Médica
- * Universidad de Costa Rica
Facultad de Arquitectura
Biblioteca "Teodorico Quiroz"
- * Corte Suprema de Justicia
Biblioteca Judicial
- * Centro de Promoción de Exportaciones e Inversiones (CENPRO)
Departamento de Información Comercial
- * Cámara Nacional de Artesanía y Pequeña Industria (CANAPI)
Biblioteca
- * Junta de Protección Social
Biblioteca Médica "Jorge Vega Rodríguez"
- * Oficina de Planificación Nacional y Política Económica (OFIPLAN)
Centro de Documentación
- * Centro Interamericano de Adiestramiento en Comunicaciones para
Población y Planificación Familiar (CIACOP)
Biblioteca y Centro de Documentación
- * Ministerio de Economía, Industria y Comercio (MEIC)
Oficina Nacional de Normas y Unidades de Medida
- * Centro Latinoamericano de Demografía (CELADE)
Biblioteca
- * Confederación Universitaria Centroamericana (CSUCA)
Programa Centroamericano de Ciencias Sociales
Centro de Documentación
- * Universidad de Costa Rica
Facultad de Ciencias Sociales
Instituto de Investigaciones Sociales
Centro de Documentación
- * Banco de Costa Rica
Biblioteca
- * Cámara de Industrias de Costa Rica
Biblioteca
- * Instituto Centroamericano de Administración Pública (ICAP)
Biblioteca
- * Ministerio de Salud
Biblioteca

COSTA RICA (Cont.)

SAN JOSE

- * Instituto de Fomento y Asesoría Municipal (IPAM)
Biblioteca "Ronald F. Venezia"
- * Biblioteca Nacional Costa Rica
- * Banco Central de Costa Rica
Biblioteca "Alvaro Castro J."
- * Cámara de Comercio de Costa Rica
Biblioteca
- * Universidad de Costa Rica
Facultad de Derecho
Biblioteca
- * Ministerio de Obras Públicas y Transportes (MOPT)
Dirección General de Planificación
Biblioteca
- * Museo Nacional de Costa Rica
Biblioteca de Humanidades
- * Dirección General de Estadística y Censos
Centro de Información y Biblioteca
- * Colegio de Trabajadores Sociales
Biblioteca
- * Banco Anglo Costarricense
Biblioteca
- * Universidad de Costa Rica
Facultad de Ciencias
Escuela de Geología
Biblioteca

CHILE

ANTOFAGASTA

- * Universidad del Norte
Dirección General de Investigaciones y Desarrollo Tecnológico
Centro de Documentación e Información (CEDOC)
- * Universidad del Norte
Servicio de Biblioteca e Información
- * Universidad de Chile - Sede Antofagasta
Servicio Nacional de Salud
Biblioteca de Medicina
- * Universidad de Chile - Sede Antofagasta
Servicio Nacional de Salud
Biblioteca de Medicina
- * Universidad de Chile - Sede Antofagasta
Vicerrectoría
Biblioteca Central

ARICA

- * Universidad de Chile - Sede Arica
Biblioteca (BUCHAR)

CHILE (Cont.)

COQUIMBO

- * Universidad del Norte
Centro de Investigaciones
Biblioteca
- * Universidad del Norte
Centro de Investigaciones Submarinas
Biblioteca

LA SERENA

- * Museo Arquelógico de la Serena
Biblioteca
- * Universidad Técnica del Estado Sede La Serena
Biblioteca

OSORNO

- * Universidad de Chile - Sede Osorno
Biblioteca

PUNTA ARENAS

- * Instituto de la Patagonia
Biblioteca Central

QUILLOTA

- * Universidad Católica de Valparaíso
Escuela de Agronomía
Biblioteca

SANTIAGO

- * Banco Central de Chile
Biblioteca
- * Banco Hipotecario de Chile
Departamento de Estudios
Servicio de Documentación
- * Biblioteca Nacional de Chile
- * Centro de Investigación y Desarrollo de la Educación
Servicio de Documentación (CIDE)
- * Centro Interuniversitario de Desarrollo Andino (CINDA)
Centro de Documentación
- * Comisión Económica para América Latina (CEPAL)
Biblioteca CEPAL/ILPES
- * Comisión Económica para América Latina (CEPAL)
Centro Latinoamericano de Demografía (CELADE)
Biblioteca "Giorgio Mortara"
- * Comisión Económica para América Latina (CEPAL)
Centro Latinoamericano de Demografía (CELADE)
Sistema de Documentación sobre Población en América Latina
(DOCFAL)
- * Comisión Económica para América Latina (CEPAL)
Centro Latinoamericano de Documentación Económica y Social
(CLADES)

CHILE (Cont.)

SANTIAGO

- * Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)
Dirección de Información y Documentación
Biblioteca
- * Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)
Centro Nacional de Información y Documentación (CENID)
- * Comisión Nacional de la Reforma Administrativa (CONARA)
Centro de Documentación e Información
- * Compañía de Teléfonos de Chile
Gerencia Técnica
Departamento Presupuesto de Inversión
División Administración y Métodos
Biblioteca Técnica
- * Congreso Nacional
Biblioteca
- * Corporación Nacional del Cobre (CODELCO)
Centro de Documentación Técnica
- * Museo Pedagógico de Chile
Biblioteca
- * Dirección Meteorológica de Chile
Biblioteca Técnica
- * Empresa Nacional de Computación e Informática Ltda. (ECOM)
Biblioteca Técnica
- * Empresa Nacional de Minería (ENAMI)
Biblioteca
- * Empresa Nacional de Petróleo (ENAP)
Secretaría General
Biblioteca Técnica
- * Empresa Nacional de Telecomunicaciones S.A. (ENTEL)
Biblioteca Técnica
- * Instituto de Desarrollo Agropecuario (INDAP)
Biblioteca
- * Instituto de Investigaciones Agropecuarias (INIA)
Biblioteca Central
- * Instituto de Investigaciones de Recursos Naturales (IREN)
Centro de Información
- * Instituto de Investigaciones Tecnológicas (INTEC)
Area de Información y Documentación
- * Instituto de Promoción de Exportaciones de Chile (PROCHILE)
Servicio de Información Comercial
- * Instituto Forestal
Biblioteca Centro de Documentación
- * Instituto Latinoamericano del Hierro y el Acero (ILAPA)
Unidad de Tecnología
Biblioteca
- * Instituto Nacional de Capacitación Profesional (INACAP)
Centro de Documentación, Información y Difusión (CDID)

CHILE (Cont.)

SANTIAGO

- * Manufacturas de Cobre S.A. (MADECO)
Sub-gerencia, Secretaría General
Biblioteca Técnica
- * Instituto Nacional de Estadísticas (INE)
Biblioteca
- * Ministerio de Educación
Centro de Perfeccionamiento, Experimentación e Investigaciones
Pedagógicas
Centro de Documentación "Capitán de Corbeta Eduardo Cabezón
Contreras"
- * Ministerio de Hacienda
Dirección de Presupuestos
Biblioteca
- * Ministerio de Obras Públicas
Dirección de Planeamiento
Biblioteca de Planeamiento y Urbanismo
- * Ministerio de Obras Públicas
Dirección General del Metro
Biblioteca Técnica
- * Ministerio de Vivienda y Urbanismo
Biblioteca Central
- * Ministerio de Trabajo y Previsión Social
Superintendencia de Seguridad Social
Biblioteca
- * Oficina de Planificación Agrícola (ODEPA)
Biblioteca
- * Oficina de Planificación Nacional (ODEPLAN)
Biblioteca
- * Oficina Internacional del Trabajo (OIT)
Programa Regional del Empleo para América Latina y el Caribe
(PREALC)
Biblioteca
- * Organización de Estados Americanos (OEA)
Centro Interamericano de Enseñanza de Estadística (CIENES)
Biblioteca
- * Organización de las Naciones Unidas para la Educación, la Ciencia
y la Cultura (UNESCO)
Oficina Regional de Educación de la UNESCO para América Latina
y el Caribe
Servicios de Biblioteca y Documentación
- * Servicio Agrícola y Ganadero (SAG)
División Protección Pesquera
Biblioteca
- * Sociedad Nacional de Agricultura (SNA)
Biblioteca

CHILE (Cont.)

SANTIAGO

- * Superintendencia de Educación Pública
Centro de Documentación Pedagógica
- * Universidad Católica de Chile
Biblioteca de Agronomía
- * Universidad Católica de Chile
Biblioteca de Arquitectura y Arte
- * Universidad Católica de Chile
Biblioteca de Ciencias e Ingeniería
- * Universidad Católica de Chile
Biblioteca de Ciencias Sociales
- * Universidad Católica de Chile
Biblioteca de Medicina y Ciencias Biológicas
- * Universidad Católica de Chile
Escuela de Arquitectura
Centro de Estudios y Documentación Fisiognómica
- * Universidad Católica de Chile
Facultad de Bellas Artes
Escuela de Teatro, Cine y Televisión
Biblioteca
- * Universidad Católica de Chile
Facultad de Ciencias Económicas y Administrativas
Biblioteca
- * Universidad Católica de Chile
Vicerrectoría Académica
Biblioteca Central
- * Universidad Católica de Chile
Instituto de Ciencia Política
Centro de Documentación Política
- * Universidad Católica de Chile
Instituto de Planificación del Desarrollo Urbano (CIDU-IPU)
Biblioteca
- * Universidad Católica de Chile
Programa Interdisciplinario de Investigaciones en Educación
(PIIE)
Biblioteca y Centro de Documentación
- * Universidad de Chile
Departamento de Geología
Biblioteca
- * Universidad de Chile
Departamento de Ciencias de la Administración
Biblioteca
- * Universidad de Chile
Departamento de Economía
Biblioteca

CHILE (Cont.)

SANTIAGO

- * Universidad de Chile
Departamento de Planificación Urbano y Regional (DEPUR)
Biblioteca
- * Universidad de Chile
Departamento de Salud Pública y Medicina Social
Biblioteca
- * Universidad de Chile
Facultad de Ciencias Económicas y Administrativas
Biblioteca Central
- * Universidad de Chile
Facultad de Ciencias Económicas y Administrativas
Carrera de Administrador Público
Biblioteca
- * Universidad de Chile
Facultad de Ciencias Físicas y Matemáticas
Biblioteca Central
- * Universidad de Chile
Facultad de Ciencias Físicas y Matemáticas
Departamento de Ciencia de los Materiales (Ex IDLEM)
Biblioteca
- * Universidad de Chile
Facultad de Ciencias Físicas y Matemáticas
Departamento de Estudios Humanísticos
Biblioteca
- * Universidad de Chile
Facultad de Ciencias Físicas y Matemáticas
Departamento de Industrias
Biblioteca
- * Universidad de Chile
Facultad de Ciencias Físicas y Matemáticas
Departamento de Obras Civiles
Biblioteca
- * Universidad de Chile
Facultad de Ciencias Físicas y Matemáticas
Departamento de Obras Civiles
Centro de Información y Referencia en Ingeniería Sanitaria
y Ciencias del Ambiente (CIRISCA)
- * Universidad de Chile
Facultad de Educación
Departamento de Educación Básica
Biblioteca
- * Universidad de Chile
Facultad de Medicina Veterinaria y Ciencias Pecuarias
Biblioteca

CHILE (Cont.)

SANTIAGO

- * Universidad de Chile
Facultades de Agronomía y Ciencias Forestales
Biblioteca "Rector Ruy Barbosa"
- * Universidad de Chile
Instituto de Estudios Internacionales
Biblioteca
- * Universidad de Chile
Instituto de Nutrición y Tecnología de los Alimentos
Biblioteca
- * Universidad de Chile
Sede Oriente
Biblioteca Central
- * Universidad Técnica del Estado
Biblioteca Central
- * Facultad Latinoamericana de Ciencias Sociales (FLACSO)
Biblioteca

TALCA

- * Universidad de Chile - Sede Talca
Biblioteca

TALCAHUANO

- * Universidad Católica de Chile
Vice-dirección Académica, Sede Talcahuano
Biblioteca

TEMUCO

- * Instituto de Desarrollo Indígena
Archivo General de Asuntos Indígenas

VALPARAISO

- * Dirección General de Bibliotecas, Archivos y Museos
Biblioteca Pública N°1 "Santiago Severín" de Valparaíso
- * Universidad Católica de Valparaíso
Biblioteca Central
- * Universidad Católica de Valparaíso
Biblioteca de Geografía
- * Universidad Católica de Valparaíso
Departamento de Análisis de Información y Servicios
Especiales (DAISE)
- * Universidad Católica de Valparaíso
Dirección de Servicios Bibliotecarios
- * Universidad Católica de Valparaíso
Escuela de Comercio
Biblioteca
- * Universidad Católica de Valparaíso
Escuela de Derecho
Biblioteca

CHILE (Cont.)

VALPARAISO

- * Universidad Católica de Valparaíso
Escuela de Pesquerías y Alimentos
- * Universidad Católica de Valparaíso
Instituto de Ciencias Sociales y Desarrollo
Biblioteca
- * Universidad de Chile - Sede Valparaíso
Facultad de Ciencias Jurídicas, Económicas y Sociales
Departamento de Ciencias Humanas y Desarrollo Social
Biblioteca
- * Universidad de Chile - Sede Valparaíso
Facultad de Ciencias Jurídicas, Económicas y Sociales
Departamento de Ciencias Jurídicas
Biblioteca
- * Universidad de Chile - Sede Valparaíso
Facultad de Educación y Letras
Biblioteca "Oscar Guzmán E"
- * Universidad de Chile - Sede Valparaíso
Facultad de Matemáticas y Ciencias Naturales
Departamento de Geografía
Biblioteca
- * Universidad Técnica Federico Santa María
Dirección de los Servicios Bibliotecarios

VINA DEL MAR

- * Universidad Católica de Valparaíso
Escuela de Arquitectura
Biblioteca
- * Universidad Católica de Valparaíso
Unidad Documentación Pedagógica (UDPE)
Biblioteca de Educación
- * Universidad de Chile - Sede Valparaíso
Departamento de Administración y Economía
Biblioteca
- * Universidad de Chile - Sede Valparaíso
Departamento de Estudios Históricos y Filosóficos
Biblioteca
- * Universidad de Chile - Sede Valparaíso
Departamento de Oceanología
Biblioteca "Parmenio Yáñez"

ECUADOR

CUENCA

- * Universidad de Cuenca
Facultad de Jurisprudencia
Biblioteca
- * Centro Interamericano de Artesanía y Artes Populares
Biblioteca y Centro de Documentación

ECUADOR (Cont.)

DURAN TAMBO

- * Instituto Nacional de Investigaciones Agropecuarias (INIAP)
Estación Experimental Boliche
Biblioteca

ESMERALDAS

- * Universidad Técnica Luis Vargas Torres
Biblioteca General

GUAYAQUIL

- * Comisión de Estudios para el Desarrollo de la Cuenca del Río Guayas (CEDEGE)
Biblioteca
- * Universidad Estatal de Guayaquil
Facultad de Ciencias Económicas
Biblioteca
- * Junta Nacional de Planificación Matriz (Quito)
Biblioteca
- * Escuela Superior Politécnica del Litoral (ESPOL)
Biblioteca General
- * Universidad Estatal de Guayaquil - Biblioteca General

QUITO

- * Servicio Ecuatoriano de Capacitación Profesional (SECAP)
Dirección Administrativa y Financiera
Biblioteca y Centro de Documentación
- * Instituto Latinoamericano de Investigaciones sociales (ILDIS)
Fundación Friedrich Ebert
Biblioteca
- * Junta Nacional de Planificación y Coordinación Económica (JUNAPLA)
Biblioteca
- * Ministerio de Recursos Naturales y Energéticos
Biblioteca
- * Programa de las Naciones Unidas para el Desarrollo (PNUD)
Biblioteca
- * Instituto Nacional de Investigaciones Agropecuarias (INIAP)
Estación Experimental Boliche
Biblioteca
- * Corporación Estatal Petrolera Ecuatoriana (CEPE)
Relaciones Industriales
Biblioteca
- * Instituto Geográfico Militar
Biblioteca
- * Superintendencia de Bancos
Biblioteca
- * Banco Central del Ecuador
Biblioteca General
- * Pontificia Universidad Católica del Ecuador
Biblioteca General

ECUADOR (Cont.)

QUITO

- * Universidad Central del Ecuador
Biblioteca General
- * Biblioteca Nacional de Ecuador
- * Centro Internacional de Estudios Superiores de Periodismo para América Latina (CIESPAL)
Centro de Documentación
- * Instituto Ecuatoriano de Normalización
Centro de Documentación
- * Facultad Latinoamericana de Ciencias Sociales (FLACSO)
Centro de Documentación y Biblioteca
- * Escuela Politécnica Nacional
Centro de Información
- * Centro de Desarrollo Industrial del Ecuador (CENDES)
Departamento de Información y Tecnología

EL SALVADOR

EL SALVADOR

- * Asamblea Legislativa El Salvador
Biblioteca
- * Asociación Salvadoreña de Industriales
Biblioteca
- * Banco Hipotecario de El Salvador
Biblioteca
- * Centro de Información de las Naciones Unidas para Centro América y Panamá
Biblioteca
- * Centro Nacional de Productividad
Biblioteca
- * Ministerio de Planificación y Coordinación del Desarrollo Económico y Social
Departamento Administrativo
Biblioteca
- * Ministerio de Agricultura y Ganadería
Departamento de Información Agropecuaria
Biblioteca
- * Dirección General de Fomento y Cooperación Comunal (FOCCO)
Biblioteca
- * Ministerio de Agricultura y Ganadería
Dirección General de Recursos Naturales Renovables
Biblioteca
- * Escuela de Trabajo Social
Biblioteca
- * Ministerio de Hacienda
Biblioteca
- * Ministerio de Trabajo y Previsión Social
Biblioteca

EL SALVADOR (Cont.)

EL SALVADOR

- * Universidad Centroamericana "José Simeón Cañas"
Biblioteca
- * Comisión Ejecutiva Hidroeléctrica del Río Lempa (CEL)
Biblioteca Central CEL
- * Instituto Salvadoreño del Seguro Social - Biblioteca Central
- * Universidad de El Salvador
Secretaría de Extensión Universitaria
Biblioteca Central
- * Compañía Salvadoreña de Café S.A.
Biblioteca del Café "Ing. Félix Choussy"
- * Administración Patrimonio Cultural
Biblioteca Especializada
- * Ministerio de Relaciones Exteriores
Dirección de Estudios e Investigaciones
Biblioteca "José Gustavo Guerrero"
- * Banco Central de Reserva de El Salvador
Biblioteca "Luis Alfaro Durán"
- * Biblioteca Nacional de El Salvador
- * Instituto Tecnológico de San Salvador
Biblioteca "Sakura"
- * Facultad de Jurisprudencia y Ciencias Sociales
Biblioteca Sarbelio Navarrete
- * Instituto Salvadoreño de Fomento
Biblioteca Técnica Industrial
- * Asociación Demográfica Salvadoreña
Centro de Documentación en Población, Planificación Familiar
y Educación Sexual
- * Ministerio de Educación
Departamento de Estadística
Oficina de Planeamiento y Organización ODEPOR
Centro de Documentación
- * Instituto Salvadoreño de Comercio Exterior
Centro de Información Comercial
- * Dirección de Televisión Educativa
Centro de Materiales Docentes

SANTA TECLA

- * Centro Nacional de Tecnología Agropecuaria
Biblioteca
- * Instituto Salvadoreño de Investigaciones del Café
Biblioteca Ing. Félix Choussy

SOYAPANGO

- * Dirección General de Ganadería
Unidad de Divulgación Técnica
Biblioteca de Ganadería

GUATEMALA

ANTIGUA GUATEMALA

- * Banco de Guatemala
Biblioteca (Antigua Guatemala)
- * Biblioteca Nacional de Guatemala
Biblioteca Popular "Francisco Antonio Fuentes y Guzmán"

CIUDAD DE GUATEMALA

- * Banco de Guatemala
Biblioteca (Ciudad de Guatemala)
- * Banco de Guatemala
Biblioteca Central
- * Banco de Guatemala
Biblioteca "Alberto Velásquez"
- * Centro Nacional de Promoción de las Exportaciones (GUATEXPRO)
Servicio de Información Comercial
- * Congreso Nacional de la República
Biblioteca "Enrique Gómez Carrillón"
- * Dirección General de Estadística
Centro Nacional de Información (CENI)
- * Instituto Centroamericano de Investigación y Tecnología Industrial (ICAITI)
División de Documentación e Información
- * Instituto del Patrimonio Cultural
Seminario de Integración Guatemalteca
- * Instituto Guatemalteco de Turismo
Departamento Financiero Administrativo
Biblioteca
- * Instituto Nacional de Administración para el Desarrollo (INAD)
Biblioteca
- * Instituto Técnico de Capacitación y Productividad (INTECAP)
Servicio de Información Industrial
- * Biblioteca Nacional de Guatemala
- * Biblioteca Nacional de Guatemala
Biblioteca Popular "Domingo Morales"
- * Biblioteca Nacional de Guatemala
Biblioteca Popular "Justo Rufino Barrios"
- * Hemeroteca Nacional de Guatemala
- * Ministerio de Educación Pública
Instituto Indigenista Nacional
- * Ministerio de Salud Pública y Asistencia Social
Dirección de Servicios de Salud
Biblioteca
- * Municipalidad de Guatemala
División de Educación y Cultura
Biblioteca "Antonio de Larrazaval"
- * Secretaría Permanente del Tratado General de Integración Económica Centroamericana (SIECA)
Departamento Financiero y Administrativo
Centro de Documentación e Información

GUATEMALA (Cont)

CIUDAD DE GUATEMALA

- * Universidad de San Carlos de Guatemala
Biblioteca
- * Universidad Francisco Marroquín
Consejo Administrativo
Biblioteca
- * Universidad Mariano Gálvez de Guatemala
Biblioteca
- * Universidad Rafael Landívar
Biblioteca
- * Organización Panamericana de la Salud (OPS)
Instituto de Nutrición de Centroamérica y Panamá (INCAP)
Biblioteca
- * Universidad de San Carlos de Guatemala
Facultad de Ciencias Económicas
Instituto de Investigaciones Económicas y Sociales
Biblioteca

ESCUINTLA

- * Banco de Guatemala
Biblioteca

QUETZALTENANGO

- * Banco de Guatemala
Biblioteca

RETALHULEU

- * Biblioteca Nacional de Guatemala
Biblioteca Popular

SAN ANTONIO SACATEPEQUE

- * Biblioteca Nacional de Guatemala
Biblioteca Popular "25 de junio"

HONDURAS

TEGUCIGALPA

- * Biblioteca Nacional de Honduras
- * Secretaría de Recursos Naturales
Centro de Documentación e Información Agrícola
- * Dirección General de Comercio Exterior
Centro de Información Comercial
- * Universidad Nacional Autónoma de Honduras
Centro de Información Industrial
- * Universidad Nacional Autónoma de Honduras (UNAH)
Sistema Bibliotecario

JAMAICA

HOPE GARDENS

- * Ministry of Mining and Natural Resources
Mines and Geology Division
Library

KINGSTON

- * Ministry of Industry and Commerce
Jamaica Industrial Development Corporation (JIDC)
Library
- * Ministry of Finance and Planning
Town Planning Department
Library
- * Ministry of Justice
Attorney General's Department
Library
- * Ministry of Mining and Natural Resources
Library
- * Ministry of Mining and Natural Resources
Natural Resources Conservation Department (NRCD)
Data Branch
- * Jamaica Bauxite Institute (JBI)
Library
- * Scientific Research Council (SRC)
Technical Information Section
- * Ministry of Works
Directorate of Technical Services
Library and Plan Registry
- * Myers Fletcher & Gordon, Manton & Hart
Library
- * Gleaner Company Ltd.
Reference Department
- * University of the West Indies
Library
- * United Nations Development Programme (UNDP)
Library
- * Agency for Public Information
Library
- * Caribbean Food and Nutrition Institute
Library
- * Jamaica Broadcasting Corporation
Reference Library
- * Jamaica Bureau of Standards
Library
- * Ministry of Agriculture
Data Bank and Evaluation Division
Library
- * Ministry of Education
Jamaica Library Service

JAMAICA (Cont.)

KINGSTON

- * Ministry of Justice
Supreme Court
Library
- * National Housing Trust
Library
- * University of the West Indies
Institute of Social and Economic Research Library (ISER)
- * University of the West Indies
School of Education
Documentation Centre
- * University of the West Indies
Department of Library Studies
Library Laboratory
- * National Library of Jamaica
West India Reference Library
- * Ministry of Finance and Planning
National Savings Committee
Library
- * National Literacy Programme (JAMAL Foundation)
Library and Information Centre
- * Ministry of Finance and Planning
Survey Department
Records and Technical Information Services
Technical Reference Library
- * Jamaica Development Bank
Library

KIRKVINE

- * ALCAN Jamaica Limited
Central Engineering Group
Technical Information Centre

MEXICO

MERIDA

- * Universidad de Yucatán
Biblioteca Central

MEXICO DF.

- * Banco Nacional de Comercio Exterior (BANCOMEXT)
Jefatura del Departamento de Estudios Económicos
Biblioteca
- * Centro de Estudios Monetarios Latinoamericanos (CEMLA)
Biblioteca
- * Comisión Económica para América Latina (CEPAL) Mexico
Biblioteca
- * Banco de México S.A.
Subdirección de Investigación Económica y bancaria
Oficina de Divulgación
Biblioteca Hemeroteca

MEXICO (Cont.)

MEXICO DF.

- * Universidad Autónoma Metropolitana (Iztapalapa)
Biblioteca
- * Universidad Autónoma Metropolitana (Azcapotzalco)
Secretaría de la Unidad Azcapotzalco
Coordinación de Servicios de Información
Biblioteca Central
- * Universidad La Salle
Biblioteca
- * El Colegio de México
Biblioteca "Daniel Gossio Villegas"
- * Instituto Tecnológico Autónomo de México
Biblioteca Lic. Raúl Bailleres, Jr.
- * Universidad Nacional Autónoma de México (UNAM)
Instituto de Investigaciones Sociales
Biblioteca
- * Universidad Nacional Autónoma de México (UNAM)
Instituto de Investigaciones Económicas
Biblioteca Mtro. "Jesús Silva Herzog"
- * Biblioteca Nacional de México
- * Hemeroteca Nacional de México
- * Universidad Nacional Autónoma de México (UNAM)
Facultad de Ciencias Políticas y Sociales
Biblioteca
- * Compañía Nacional de Subsistencias Populares (CONASUPO)
Centro de Documentación
- * Consejo Nacional de Ciencia y Tecnología (CONACYT)
Centro de Información de Política Científica y Tecnológica
(CIPCYT)
- * Servicio Nacional ARMO (Adiestramiento Rápido de Mano de Obra)
Centro de Información y Documentación
- * Instituto Politécnico Nacional (IPN)
Centro de Investigación y de Estudios Avanzados
- * Secretaría de Programación y Presupuesto
Dirección General de Estudios del Territorio Nacional
Subdirección Técnica
Oficina de Documentación
- * Instituto Nacional de Antropología e Historia (INAH)
Centro de Investigaciones Superiores
Secretaría de Libros y Documentos
- * Consejo Nacional de Fomento Educativo
Unidad de Planeación y Evaluación Socio-económica
Servicio de Información y Documentación
- * Instituto del Fondo de Vivienda para los Trabajadores (INFONAVIT)
Servicio de Información Documental
- * Banco Nacional de México S.A. (BANAMEX)
Centro de Información

MEXICO (Cont.)

MONTERREY N.L.

- * Instituto Tecnológico y Estudios Superiores de Monterrey
Vice-Rectoría de Enseñanza Profesional y de Graduados
Biblioteca
- * Universidad de Monterrey
Biblioteca
- * Universidad Autónoma de Nueva León
Facultad de Economía
Biblioteca "Consuelo Meyer L."

SAN LUIS DE POTOSÍ

- * Universidad Autónoma de San Luis de Potosí
Biblioteca

VERACRUZ

- * Universidad Veracruzana
Facultad de Economía
Biblioteca

NICARAGUA

MANAGUA

- * Universidad Nacional Autónoma de Nicaragua
Recinto Universitario "Rubén Darío"
Biblioteca
- * Universidad Centroamericana
Biblioteca "Carlos Cuadra Pasos"
- * Corte Suprema de Justicia, Poder Judicial
Biblioteca
- * Biblioteca Nacional de Nicaragua
- * Banco Central de Nicaragua - Biblioteca y Centro de Información
- * Banco Nacional de Nicaragua
División de Estudios Económicos
Biblioteca
- * Instituto Centroamericano de Administración de Empresas (INCAE)
Rectoría
Biblioteca

PANAMA

PANAMA

- * Universidad Santa María La Antigua
Biblioteca
- * Universidad de Panamá
Biblioteca
- * Contraloría General
Dirección de Estadística y Censo
Biblioteca de Estadística y Censo
- * Biblioteca Nacional de Panamá
- * Ministerio de Relaciones Exteriores
Departamento de Información
Biblioteca
- * Instituto de Recursos Hidráulicos y Electrificación
Biblioteca

PANAMA (Cont.)

PANAMA

- * Centro Interamericano de Administradores Tributarios (CIAT)
Biblioteca
- * Organización de los Estados Americanos (OEA)
Sala de Lectura "Carlos Dávila"

PARAGUAY

ASUNCION

- * Universidad Nacional de Asunción
Instituto Dr. A. Barbero, Dirección General
Biblioteca
- * Ministerio de Industria y Comercio
Biblioteca de Información
- * Programa Alimentación y Educación Nutricional (PAEN)
Secretaría de Relaciones Públicas y Biblioteca
- * Dirección General de Estadística y Censos
Biblioteca
- * Ministerio de Educación y Culto
Programa de Producción de Material Educativo
Biblioteca y Documentación
- * Universidad Nacional de Asunción
Facultad de Derecho y Ciencias Políticas y Sociales
Biblioteca "Carlos A. López"
- * Universidad Nacional de Asunción (UNA)
Facultad de Derecho y Ciencias Sociales
Biblioteca "Juan José Soler"
- * Instituto Nacional de Tecnología y Normalización (INTN)
Departamento de Administración
Biblioteca
- * Universidad Nacional de Asunción
Escuela de Bibliotecología
Biblioteca
- * Centro Paraguayo de Estudios de Desarrollo Económico y Social (CEPADES)
Biblioteca
- * Centro Paraguayo de Estudios Sociológicos
Centro Paraguayo de Documentación Social (CPDS)
- * Universidad Nacional de Asunción
Biblioteca Central
- * Centro Paraguayo de Estudios Sociológicos
Biblioteca
- * Oficina del Congreso Nacional de Progreso Social
Departamento de Documentación y Publicación
- * Ministerio de Hacienda
Secretaría Técnica
Biblioteca

PARAGUAY (Cont)

ASUNCION

- * Ministerio de Agricultura
Dirección de Comercialización
Biblioteca
- * Ministerio de Industria y Comercio
Centro de Promoción de las Exportaciones (CEPEX)
Biblioteca de Información Comercial y Centro de Documentación
- * Administración Nacional de Telecomunicaciones (ANTELCO)
Instituto Paraguayo de Telecomunicaciones
Biblioteca y Servicio de Documentación
- * Centro Paraguayo de Estudios de Población
Centro de Documentación
- * Universidad Católica Nuestra Señora de la Asunción, Rectorado
(Administración Central)
Biblioteca "Pablo VI"
- * Banco Central del Paraguay
Biblioteca

SAN LORENZO

- * Ministerio de Educación y Culto
Centro Regional de Educación "Saturio Ríos"
Biblioteca "Presidente Carlos A. López"
- * Universidad Nacional de Asunción
Facultad de Ciencias Económicas, Administrativas y Contables
Biblioteca

PERU

AREQUIPA

- * Universidad Nacional "San Agustín"
Sistema de la Universidad Peruana
Biblioteca Central

CALLAO

- * Compañía Nacional de Cerveza S.A.
División de Logística y Servicios
Departamento de Información y Documentación

CHICLAYO

- * Instituto Nacional de Planificación
Oficina Regional del Norte (ORDEN)
Centro de Documentación (CENDO)
- * Universidad Nacional Pedro Ruiz Gallo
Dirección de Evaluación Pedagógica y Servicios Académicos (UNPRG)
Biblioteca y Hemeroteca

LIMA

- * Ministerio de Alimentación
Instituto de Investigaciones Agro-Industriales
Biblioteca
- * Instituto Nacional de Administración (INAP)
Oficina de Comunicación e Información - Biblioteca

PERU (Cont.)
LIMA

- * Escuela de Administración de Negocios para Graduados (ESAN)
Centro de Documentación (CENDOC)
- * Instituto Nacional de Planificación
Centro de Documentación
- * Instituto de Investigación Tecnológica Industrial y de Normas
Técnicas (ITINTEC)
Centro de Información Técnica
- * Industrias del Perú (INDUPERU)
Centro de Información y Documentación
- * Ministerio de Transporte y Comunicaciones
Dirección General de Transportes Terrestres - Bibliotecas
- * Empresa Minera del Perú (Minero-Perú)
Biblioteca
- * Electrolima
Oficina de Documentación
- * Asociación Latinoamericana de Instituciones Financieras de
Desarrollo (ALIDE)
Centro de Documentación CEDOM/ALIDE
- * Asociación de Exportadores
Centro de Información y Documentación
- * ADELA Compañía de Inversiones S.A.
Biblioteca
- * Sociedad de Industrias
Biblioteca
- * Universidad Particular Ricardo Palma
Biblioteca
- * Universidad Nacional Mayor de San Marcos
Dirección Universitaria de Bibliotecas y Publicaciones
Biblioteca de Ciencias Económicas
- * Universidad Nacional Mayor de San Marcos
Dirección Universitaria de Bibliotecas y Publicaciones
Bibliotecas de Ciencias Sociales
- * Ministerio de Integración
Dirección General de Asuntos Especiales e Investigación
Biblioteca
- * Minero Peru Comercial
Biblioteca
- * Junta del Acuerdo de Cartagena (JUNAC)
Biblioteca
- * Compañía Peruana de Teléfonos, S.A.
Secretaría General
Departamento Trámite Documentario y Archivo
Biblioteca
- * Cámara de Comercio de Lima
Biblioteca

PERU (Cont.)

LIMA

- * Ministerio de Alimentación
Centro Regional de Investigaciones Agropecuarias (LA Molina)
Biblioteca
- * Banco Minero del Perú
Biblioteca
- * Banco Industrial del Perú
Biblioteca
- * Seguro Social del Perú
Oficina de Comunicación e Información
Biblioteca
- * Oficina Nacional de Apoyo a la Movilización Social
Oficina de Administración Documentaria, Dirección Superior
Biblioteca
- * Banco Agrario del Perú
Biblioteca
- * Banco Central de Reserva del Perú
División de Estudios Económicos
Centro de Información y Documentación
- * Banco de la Nación
Biblioteca
- * Cooperativa de Crédito Santa Elisa Limitada N°39
Biblioteca José Arroyo Ristra
- * Ministerio de Alimentación
Dirección General de Informática y Estadística
Centro de Información Estadística Sectorial
- * Ministerio de Relaciones Exteriores del Perú
Biblioteca
- * Universidad de Lima
Biblioteca "Carlos Cueto Fernandini"
- * Universidad Nacional Agraria "La Molina"
Biblioteca Agrícola Nacional
- * Programa de las Naciones Unidas para el Desarrollo (PNUD)
Biblioteca
- * CIT
Oficina Regional para las Américas
Biblioteca
- * Oficina Nacional de Evaluación de Recursos Naturales (ONERN)
Biblioteca
- * Ministerio de Industria y Turismo
Biblioteca Central
- * Ministerio de Energía y Minas
Oficina Sectorial de Planificación
Biblioteca
- * Ministerio de Pesquería
Oficina de Trámite Documentario
Biblioteca

PERU (Cont.)

LIMA

- * Bolsa de Valores de Lima
 - Centro de Información y Documentación
- * PETROPERU
 - Departamento Investigación Operativa
 - Gerencia Investigación y Desarrollo U.C.
 - Centro de Información Tecnológica (CIT)
- * Corporación Financiera de Desarrollo (COFIDE)
 - Centro de Documentación e Información
- * Centro Nacional de Capacitación e Investigación para la Reforma Agraria (CENCIRA)
 - Presidencia Ejecutiva
 - Centro de Documentación del Sector Agrario (CEDSA)
- * Ministerio de Trabajo
 - Oficina de Comunicaciones
 - Biblioteca General
- * Ministerio de Educación
 - Instituto Nacional de Investigación y Desarrollo de la Educación (INIDE)
 - Subdirección de Documentación Educacional
- * Centro Nacional de Productividad (CENIP)
 - Dirección de Investigaciones
 - Servicio de Información y Difusión (SID)
- * Universidad del Pacífico
 - Servicio de Biblioteca
- * Universidad Católica
 - Biblioteca Central
 - Sección Ciencias Sociales
- * Ministerio de Comercio
 - Dirección General de Comercio Exterior
 - Oficina de Información Comercial
 - Centro de Documentación
 - Biblioteca

TACNA

- * Universidad Nacional de Tacna
 - Biblioteca Central

PUERTO RICO

HATO REY

- * Departamento de Instrucción Pública
 - Area de Planificación y Desarrollo Educativo
 - Centro de Lectura Profesional

RIO PIEDRAS

- * Universidad de Puerto Rico
 - Escuela Graduada de Administración Pública
 - Biblioteca
- * Universidad de Puerto Rico
 - Escuela Graduada de Bibliotecología
 - Biblioteca

PUERTO RICO (Cont.)

RIO PIEDRAS

Rio Piedras

- * Universidad de Puerto Rico
Centro de Investigaciones Sociales
Biblioteca
- * Universidad de Puerto Rico
Biblioteca General "José M. Lázaro"
- * Universidad de Puerto Rico
Biblioteca General "José M. Lázaro"
Biblioteca y Hemeroteca Puertorriqueña
- * Universidad de Puerto Rico
Escuela Graduada de Trabajo Social
Biblioteca
- * Universidad de Puerto Rico
Escuela Graduada de Planificación
Biblioteca
- * Universidad de Puerto Rico
Facultad de Derecho
Biblioteca

SAN JUAN

- * Departamento de Hacienda
Biblioteca
- * Biblioteca Regional del Caribe/Caribbean Regional Library/
Bibliothèque Regionale Des Caraïbes
- * Compañía de Fomento Industrial
Administración de Fomento Económico
Biblioteca
- * Asamblea Legislativa del Estado Libre Asociado
Oficina de Servicios Legislativos
Biblioteca Legislativa
- * Instituto de Cultura Puertorriqueña
Archivo General de Puerto Rico
- * Biblioteca General de Puerto Rico

SANTURCE

- * Instituto para Desarrollo de Personal
Oficina Central de Administración de Personal (OCAP)
Biblioteca
- * Departamento de Salud
Secretaría Auxiliar para Administración
Biblioteca

REPUBLICA DOMINICANA / DOMINICAN REPUBLIC

BONAO

- * Centro Educacional de Bonao
Biblioteca

SAN PEDRO DE MACORIS

- * Universidad Central del Este (UCE)
Biblioteca

REPUBLICA DOMINICANA/DOMINICAN REPUBLIC/

SANTO DOMINGO

- * Universidad Nacional "Pedro Henríquez Ureña"
Biblioteca
- * Biblioteca Nacional de la República Dominicana
- * Compañía Financiera Dominicana
Biblioteca
- * Secretaría de Estado de Educación, Bellas Artes y Cultos
Sección de Bibliotecas "Cervantes"
- * Universidad Autónoma de Santo Domingo (UASD)
Vice-rectoría Docente
Servicios Bibliográficos
- * Secretaría de Estado de Salud Pública y Asistencia Social
Educación para la Salud
- * Instituto Tecnológico de Santo Domingo (INTEC)
División de Investigación y Divulgación Científica
Biblioteca
- * Centro Dominicano de Promoción de Exportaciones (CEDOPEX)
Centro de Documentación
- * Oficina Nacional de Planificación (ONAPLAN)
Centro de Información y Biblioteca
- * Secretaría de Estado de Interior y Policía
Centro Taller Regional de Restauración y Microfilmación de
Documentos para el Caribe y Centroamérica (CENTROMIDCA)
- * Instituto Técnico Pedagógico
Centro de Información y Documentación Pedagógica
- * Banco Central de la República Dominicana
Departamento de Estudios Económicos
Biblioteca

TRINIDAD Y TABAGO/TRINIDAD & TOBAGO

CENTENO

- * Ministry of Agriculture, Lands and Fisheries
Central Experiment Station Centeno
Library

PORT OF SPAIN

- * Central Bank of Trinidad and Tobago
Research Library
- * Ministry of Education, Culture and Community Development
Trinidad and Tobago National Commission for UNESCO
- * Ministry of Finance (Planning and Development)
Library
- * Ministry of Industry and Commerce
Library
- * Trinidad and Tobago Management Development Centre
Library
- * Ministry of Education, Culture and Community Development
Trinidad Public Library

TRINIDAD Y TABAGO/TRINIDAD & TOBAGO (Cont.)
PORT OF SPAIN

- * Caribbean Development and Co-operation Committee (CDCC)
Economic Commission for Latin America, Office for the Caribbean
Caribbean Documentation Centre
- * Parliament Department
Parliament Library
- * Ministry of Industry and Commerce
Trinidad and Tobago Bureau of Standards - Library
- * Ministry of Industry and Commerce
Industrial Development Corporation
Library
- * Trinidad and Tobago Oil Co. Ltd. (TRINTOC)
Library
- * Express Newspaper Trinidad Ltd.
Library
- * Ministry of Legal Affairs
Law Commission
Library
- * Caribbean Epidemiology Centre (CAREC)
Library
- * Ministry of External Affairs
Research Library
- * Ministry of Education, Culture and Community Development
Central Library of Trinidad and Tobago
- * Trinidad and Tobago Electricity Commission (TYTEC)
Reference Library
- * Ministry of Health
General Hospital
Medical Library
- * Central Statistical Office
Library
- * United Nations Information Centre (UNIC)
- * Industrial Court of Trinidad and Tobago
Library
- * Ministry of Petroleum and Mines
Library

ST. AUGUSTINE

- * Council of Legal Education
High Wooding Law School
Library
- * University of the West Indies
Library
- * University of the West Indies
Institute of International Relations
Documentation Centre

TRINIDAD Y TABAGO/TRINIDAD AND TOBAGO (Cont.)

ST. AUGUSTINE

- * University of the West Indies
Caribbean Agricultural Research and Development Institute (CARDI)
Economic Statistics and Information (ESIN)
- * University of the West Indies
Caribbean Industrial Research Institute (CARIRI)
Technical Information Services
- * University of the West Indies
School of Education
Library
- * University of the West Indies
Institute of International Relations
Library
- * University of the West Indies
Seismic Research Unit
Library

VALSAYN

- * Cipriani Labour College
Library

URUGUAY

MONTEVIDEO

- * Universidad de la República
Facultad de Química
Departamento de Documentación y Biblioteca
- * Universidad de la República
Facultad de Ingeniería
Instituto de Agrimensura
Biblioteca
- * Universidad de la República
Facultad de Humanidades y Ciencias
Departamento de Documentación y Bibliotecas
- * Universidad de la República
Facultad de Ciencias Económicas y de Administración
Instituto de Estadística
Biblioteca
- * Universidad de la República
Facultad de Ciencias Económicas y de Administración
Instituto de Economía
Biblioteca
- * Universidad de la República
Facultad de Ciencias Económicas y de Administración- Instituto de
Biblioteca Administración
- * Universidad de la República
Facultad de Agronomía
Departamento de Documentación y Biblioteca

URUGUAY (Cont.)

MONTEVIDEO

- * Universidad de la República
Escuela Universitaria de Servicio Social
Biblioteca
- * Universidad de la República
Escuela Universitaria de Psicología
Departamento de Documentación y Biblioteca
- * Universidad de la República
Escuela Universitaria de Bibliotecología y Ciencias Afines
"Ing. F. Capurro"
Biblioteca
- * Universidad de la República
Facultad de Arquitectura - Departamento de Documentación y Biblioteca
- * Universidad de la República
Facultad de Agronomía - Estación Experimental de Paysandú
Biblioteca
- * Universidad de la República
Escuela Universitaria de Enfermería "Dr. Carlos Nery"
Biblioteca
- * Universidad de la República
Facultad de Ingeniería
Departamento de Documentación y Biblioteca
- * Universidad de la República
Facultad de Medicina
Hospital de Clínicas
Biblioteca
- * Universidad de la República
Facultad de Veterinaria
Departamento de Documentación y Biblioteca
- * Universidad de la República
Facultad de Derecho y Ciencias Sociales
Biblioteca
- * Universidad de la República
Facultad de Ciencias Económicas y de Administración
Departamento de Documentación y Biblioteca. Bib. Central

VENEZUELA

BARQUESIMETO

- * Fundación para el Desarrollo de la Región Centro Occidental de Venezuela (FUDECO)
Centro Regional de Información

CARACAS

- * Contraloría General de la República
Biblioteca
- * Oficina Central de Coordinación y Planificación (CORDIPLAN)
Dirección de Administración
Biblioteca

VENEZUELA (Cont.)

CARACAS

- * Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICIT)
Biblioteca
- * Ministerio del Desarrollo Urbano
Dirección General de Desarrollo Urbanístico
Biblioteca
- * Ministerio de Educación
Dirección General de Educación Superior
Biblioteca
- * Oficina Metropolitana de Planeamiento Urbano (OMPU)
División de Información
Biblioteca
- * Universidad Central de Venezuela
Facultad de Economía
Escuela de Sociología
Biblioteca
- * Fundación para la Capacitación e Investigación Aplicada a la Reforma Agraria (CIARA)
Biblioteca
- * Ministerio de Agricultura y Cría
Biblioteca
- * Ministerio de Fomento
Oficina Sectorial de Información y Relaciones Públicas
Biblioteca
- * Fundación para el Desarrollo de la Comunidad y Fomento Municipal (FUNDACOMUN)
Oficina de Información y Relaciones
Departamento de Biblioteca
- * Universidad Católica "Andrés Bello" (UCAB)
Biblioteca Central
- * Centro Gumilla
Biblioteca
- * Banco Central de Venezuela
Biblioteca "Ernesto Peltzer"
- * Federación de Cámaras de Comercio y Asociaciones de Comercio y Producción (FEDECAMARAS)
Biblioteca
- * Ministerio de Energía y Minas
Biblioteca General
- * Universidad de Central de Venezuela
Facultad de Ciencias Económicas y Sociales
Biblioteca "Salvador de La Plaza"
- * Banco Industrial de Venezuela
Biblioteca y Documentación
- * Instituto Nacional de Cooperación Educativa (INCE)
Biblioteca y Documentación

VENEZUELA (Cont)

CARACAS

- * Corporación Venezolana de Fomento (CVF)
 - Gerencia de Administración y Supervisión de Cartera
 - Centro Bibliográfico
- * Ministerio de Educación
 - Dirección General de Planificación y Presupuesto
 - Centro de Documentación
- * Dirección General de Estadísticas y Censos Nacionales
 - Centro de Documentación e Información
- * Instituto Venezolano de Productividad
 - Centro de Documentación e Información Técnica (CEDOINPRO)
- * Fondo de Inversiones de Venezuela
 - Centro de Documentación Financiera
- * Oficina de Planificación del Sector Universitario (OPSU)
 - Centro de Documentación Nacional de Educación Superior
- * Corporación de Turismo
 - Oficina de Planificación, Programación y Presupuesto
 - Centro de Documentación Turística
- * Instituto de Comercio Exterior de Venezuela
 - Centro de Información
- * Fundación "Universidad de los Trabajadores de América Latina" (UTAL)
 - Centro de Información y Documentación (CIDUTAL)
- * Centro de Investigaciones en Ciencias Sociales (CISOR)
 - Departamento de Información para el Desarrollo Social (DIDES)
- * Instituto de Estudios Superiores de Administración (IESA)
 - Biblioteca "Lorenzo Mendoza F."
- * Universidad Central de Venezuela
 - Dirección de Biblioteca, Información, Documentación y Publicaciones
 - Salas de Ciencias Sociales (I y II)
- * Corporación Venezolana de Guayana
 - Biblioteca
- * Instituto Nacional de la Vivienda
 - Gerencia de Planificación y Presupuesto
 - Centro de Investigación
 - Unidad de Información y Documentación
- * Universidad Central de Venezuela
 - Dirección de Planeamiento
 - Unidad de Información y Documentación

GUAYANA

- * Corporación Venezolana de Guayana
 - División de Relaciones Públicas
 - Departamento de Información
 - Biblioteca Ciudad Guayana

MARACAIBO

- * Consejo Zuliano de Planificación y Coordinación (CONZUPLAN)
 - Biblioteca

VENEZUELA (Cont.)

MARACAIBO

- * Universidad de Zulia
 - Facultad de Arquitectura
 - Centro de Investigaciones Urbanas y Regionales (CIUR)
 - Biblioteca
- * Universidad de Zulia
 - Facultad de Ciencias Económicas y Sociales
 - Biblioteca - Hemeroteca "Dr. Salvador de La Plaza"
- * Corpозulia
 - División de Coordinación
 - Biblioteca

MARACAY

- * Fondo Nacional de Investigaciones Agropecuarias (FONAIAP)
 - Centro Nacional de Investigaciones Agropecuarias
 - Unidad de Comunicaciones Agrícolas
 - Biblioteca

MERIDA

- * Universidad Católica de Venezuela
 - Facultad de Agronomía
 - Instituto de Economía Agrícola y Ciencias Sociales
 - Servicios de Documentación e Información en Economía Agrícola y Ciencias Sociales
- * Universidad de Los Andes
 - Facultad de Economía
 - Biblioteca "José Rafael Pena Rondon"
- * Universidad de Los Andes
 - Biblioteca Central "Tulio Fabres Corder"

Annex 3

EVALUATION OF THE DESIGN OF THE QUESTIONNAIRE

Now that the information has been analyzed, it is possible to attempt an overall evaluation of the quality of the questionnaire.

In the first place, it was unanimously agreed in the region that the questionnaire was well structured and that it provided sufficient coverage of all the problems within the information units. However, the suggestions received and a critical self-examination carried out by the CLADES team itself have made it possible to identify some areas in which the questionnaire should be improved with a view to use in future inventories in the region. These areas may be summarized as follows:

(a) Length and format of the questionnaire. It is obviously advisable to reduce the size of the questionnaire with a view to:

- (i) Reducing the time needed by the recipient to reply and lessening the chances of an adverse psychological reaction;
- (ii) limiting transport costs and making it easier to handle;
- (iii) reducing the time needed for processing.

This reduction should, however, be affected in such a way as to leave the descriptive and explanatory elements in.

(b) Formulation of the questions. It should be pointed out that, as shown in table 14, most of the replies to the 127 questions in the questionnaire were incorporated in the directories or diagnostic reports, at both the national and regional levels. However, as is also indicated in the table, there were some errors in the formulation of certain questions. Actually, a total of 26 questions -20.4% of the total number of questions- had to be carefully reformulated so that they could be incorporated in the analysis since the replies were incomplete or inconsistent as a result of unclear formulation of the questions or of their incorrect interpretation. It should also be pointed out that there were 10 questions -representing 7.8% of the total- which were omitted from the analysis because they had been formulated very vaguely or did not fit the context in which they were used, which made them very difficult to understand. Failure to reply or inadequate replies to some questions seemed to have a direct connexion with the degree of training of the specialists who filled in the form. Although an attempt was made to reduce technical jargon to a minimum, in some cases the result was very uneven in terms of the quantity and quality of the replies provided by the staff of the units. This represents an obstacle which will be virtually insurmountable until those responsible for information units are provided with a minimum framework of ideas they can share.

(c). Defects in the questionnaires. Generally speaking, the design was qualified as providing balanced coverage of the various areas of information which are ordinarily dealt with in a diagnosis.

Attention was, however, drawn to the need for some questions in addition to those formulated. For example, it would have been very useful to know the size of the community of users served by the units. In addition, some sections are weaker than others and need to be improved. For example, the final section, on users could be dealt with in greater depth and descriptive detail; the same is true of the section to be used in studying the dissemination and promotion activities of the units within and outside the institution to which they belong. In this connexion, the need has been felt to consider in greater detail user training activities, which are now considered to be decisive in the operation of information units.

Table 11

USE OF QUESTIONS INCLUDED IN THE QUESTIONNAIRE

Section of the questionnaire	Total number of questions in the section	USED			NOT USED		
		No coding and interpretation problems	Some coding and interpretation problems	Total used	Pending (for possible coding later on)	Eliminated (poorly presented or useless)	Total not used
1. Identification	6	1	3	4	2	0	2
2. Administrative parent bodies	5	2	3	5	-	-	-
3. Staff administration	15	12	3	15	-	-	-
4. Human resources	6	5	1	6	-	-	-
5. Financial resources	9	7	2	9	-	-	-
6. Dissemination and promotion	2	2	-	2	-	-	-
7. Publication of the information unit	12	9	3	12	-	-	-
8. The collection	14	10	4	14	-	-	-
9. Acquisitions	7	4	-	4	-	3	3
10. Premises and equipment	7	5	1	6	-	1	1
11. Processing of books and documents	7	4	1	5	-	2	2
12. Processing of periodicals	5	4	1	5	-	-	-
13. Circulation and reference services	6	3	1	4	-	2	2
14. Special information services	10	7	1	8	-	2	2
15. Co-operative activities	11	11	-	11	-	-	-
16. Users	5	3	2	5	-	-	-
<u>Totals</u>	127	89	26	115	2	10	12

METHOD USED IN ESTIMATING THE REPRESENTATIVENESS OF THE SAMPLE

Details are given here concerning the method used in calculating the figures corresponding to the representativeness of the sample of information units. The annex has been set up in accordance with the order followed in the tables contained in chapter II.

- a/ Argentina: This figure represents the total number of units covered in partial inventories: (i) education sector: 55 units; (ii) economic programming sector: 45 units and (iii) environment sector: 19 units.
- b/ Argentina: In this country surveys have been carried out which various degrees of institutional coverage. (Cuiffra, 1967) (Matijevic, 1967) (Matijevic, 1970) (Argentina, Secretaría de Planeamiento, 1979) (Universidad de Buenos Aires, 1970) (Universidad Nacional del Sur, 1976). The total number of information units was estimated on the basis of the most recent survey, i.e., the one conducted by the Secretaría de Planeamiento, which covers institutions where information is available, whether or not they are formally set up for the provision of information services. Unfortunately, this survey, and none of the others mentioned, was exhaustive so the estimates must be regarded as being rough and preliminary, and it must be borne in mind that may say not do justice to the real situation.
- However, the inventory of the Secretaría de Planeamiento has, in addition to its topicality, the great advantage of very extensive geographical and institutional coverage. It contains information relating to some 748 institutions. By reviewing the contents of each register and rigorously applying the criteria formulated in the CLADES inventory for the identification of information units, it was possible to detect 546 units which met those criteria. However, since the Secretaría de Planeamiento was known to have dispatched 860 questionnaires initially, there is reason to believe that some of those which did not reply fall into the periphery of this inventory. The 546 units which qualify as information units represent 72.4% of the 748 units surveyed. By taking this proportion of the 860 units initially identified, we arrived at the figure of approximately 627 units believed to represent the total number of "development information units" in the country.
- c/ Brazil: The number of units surveyed represents a small sample of those institutions which are permanently and intensively engaged in exchanging information with the Planning Institute (IPEA) with headquarters in Rio de Janeiro.
- d/ Brazil: It was impossible to take an exhaustive census of information units in this country. Only partial inventories of the national situation, none of them up-dated, were found. (Brazil. IBRD, 1969) (Brazil. Instituto Nacional do Livro, 1969) (University of Sao Paulo, 1973) (Associacao Paulista de Bibliotecarios, 1974). This made it necessary to resort to an indirect method of calculation comprising the following steps:
- (i) Determination of the proportion of information units in the field of economic and social development existing in different institutional sectors: This involved the use of an extensive inventory containing information on 799 specialized libraries (Brazil. IBRD, 1969). Of these libraries, 461 turned out to belong to the university and higher education sector and the rest to other institutional sectors of development. A more thorough study of the characteristics of each of the units listed on the basis of the criteria set forth in this study made it possible to determine that about 64% of the information units in the university and higher education sector and about 63.6% of those in other sectors could be qualified as "development information units".

- (ii) Determination of the total number of units in 1971 and 1974: By consulting an international source of library statistics (UNESCO, 1977), it was possible to verify the following information:

Years	1971	1974
Number of units University and higher education sector	437	613
Other sectors	362	572
Total	799	1185

- (iii) Estimation of the total number of units in 1977: On the assumption that the number of information units belonging to the two groups of sectors under consideration grew at the same rate between 1974 and 1977 as the rate recorded for the period 1971-1974, it could be estimated that in 1977 there were 789 libraries in the university and higher education sector and 782 in other sectors.

- (iv) Estimation of the number of development information units in 1977: On the assumption that the development information units structure was the same in 1977 as in 1979, the figures sought may be calculated by using the formula $0.64 \times 789 + 0.636 \times 782$. This works out to the final figure of 1003 units.

- e/ Paraguay: Figure estimated during field work conducted by CLADES personnel working in conjunction with Paraguayan information experts.
- f/ Uruguay: Information units belonging exclusively to services within the Universidad de la República.
- g/ Uruguay: Figure estimated during field work carried out by CLADES personnel working in conjunction with Uruguayan information experts.
- h/ Bolivia: Estimate reached by examining an existing inventory (Universidad Mayor de San Andrés, 1973) carried out in the light of the criteria on the basis of which information units were selected for this study.
- i/ Chile: Figure reached on the basis of an existing inventory (Chile, National Commission for Scientific and Technological Research, 1975) and a census conducted in 1977. The estimate was made in the following steps:

- (i) Determination of the number of development information units in 1975: Detailed review of the information contained in the inventory showed that 273 of the 397 specialized information units surveyed (69%) qualified as development information units.

- (ii) Determination of the number of development information units in 1977: In consultation with CENID officials responsible for bringing the 1975 directory up to date, it was estimated that in 1977 there were about 408 specialized information units. On the assumption that the share of development information units in the total number of specialized units was the same in 1977 as in 1975, the figure sought may be found by multiplying 408×0.6876 (= 280 units).

- j/ Colombia: In Colombia some existing directories were identified (Instituto Colombiano de Fomento de la Educación Superior (ICFES), 1969) (Fondo Colombiano de Investigaciones Científicas (COLCIENCIAS), 1976) (Chamber of Commerce of Bogotá, 1978). On the basis of the COLCIENCIAS directory, which has the best topical and geographical coverage and contains information on 317 units, and by applying the criteria formulated in connexion with the present study, a total of 238 development information units were identified. This is probably a slight underestimation since it does not take account of any units which might have been established between the years 1976 and 1977.

k/ Ecuador: In this country it was impossible to find directories of existing information units. It was therefore necessary to ask the national focal point to put together a provisional register of units. This register was completed later on by the CLADES staff on the basis of visits to the field and meetings of Ecuadorian information specialists. The 55 units referred to include institutions in Quito, Guayaquil, Cuenca and other locations.

l/ Peru: In this country a survey was conducted of those information units which are members of the Agrupación de Bibliotecas para la Integración de la Información Socio Económica (ABIISE). The institutional, topical and geographical coverage of this organization however, represents only one part of the national infrastructure of information units. For this reason and because this national infrastructure had not been exhaustively registered, it was necessary to examine various directories at both the national and the sectoral levels (ABIISE, 1972) (Peru, Consejo Nacional de Investigación, 1977) (Peru, Instituto Nacional de Educación, 1978), and international directories in which information concerning Peruvian information units are registered (Federacao Internacional de Documentacao/Comissao Latinoamericana (FID/CLA), 1970) (Federacao Internacional de Documentacao/Comissao Latinoamericana (FID/CLA), 1971) (Malugani, María Dolores, 1969). On the basis of these sources, sectoral scenarios were constructed which may be aggregated to find an approximate figure for the total number of development information units existing in the country.

The contribution of each of the sources was as follows:

- (i) Socio-economic units: The ABIISE directory (ABIISE, 1972) provides information on 106 units, 91 of which meet the criteria used for defining "development information units". At that time, however, ABIISE was able to identify 130 units. If the proportion of "qualified" units in the total is assumed to remain the same when the total is 130, it may be deduced that in this field there were about 112 units ($91 \times 130/106$).
 - (ii) Educational information units: By consulting the study carried out by the Instituto Nacional de Investigación y Desarrollo de la Educación (Peru, Ministry of Education, 1978) and applying the criteria used in the present study, 43 information units were identified.
 - (iii) Agricultural information units: In the IICA directory (Malugani, 1969) 18 agricultural information units are mentioned which are not registered in the other directories consulted.
 - (iv) Other units: An other 27 information units were discovered by consulting the FID/CLA studies of 1970 and 1971.
- Simple addition of these figures leads to the final figure of 190 development information units. Naturally, this figure is a preliminary assessment since no comparison has been made to see whether the units referred to in publications of previous years actually existed in 1977. Nor was the information available in time to estimate how many units had come into being since those publications were issued.

m/ Venezuela: In this country it was particularly difficult to estimate the total number of development information units since neither a national register of units nor any directories with full coverage could be located. The only directories found were works produced by the Socio-Economic Information Network (REDINSE) which dealt exclusively with the members of that network, that covered no more than 46 units existing in the entire country (REDINSE, 1974) (REDINSE, 1978). In the absence of a national reference work, recourse was had to a simple model, on the basis of which a very rough estimate of the number of information units was made. It was assumed that the existing ratio between the number of development information units and total population was the same for Venezuela as for the other Andean countries. The total number of units in the Andean countries with the exception of Venezuela was obtained by adding the estimates already noted in this annex. Thus, it was possible to make the following tabulation:

	Number of development information units 1977	Total population 1977 */ (In thousands)
Bolivia	66	5.150
Colombia	238	25.003
Chile	280	10.550
Ecuador	55	16.364
Peru	190	10.550
	<u>829</u>	<u>67.617</u>
	====	=====

*/ Source: CEPAL, Latin American Statistical Yearbook, 1978, CEPAL, Santiago, 1979.

Since in 1977 the population of Venezuela was 13,536 millions the estimated number of development information units was obtained by multiplying $829 \times 13,536 / 67,617$ which works out to 174 information units.

- n/ Costa Rica: This estimate was made on the basis of a directory of specialized information units with ample institutional and geographical coverage. (Costa Rica. CONICIT, 1975). This directory contains information on a total of 140 units, 107 of which had the characteristics of development information units according to the criteria set forth in this document. This figure probably represents a slight underestimation in that account is not taken of any units which might have been established in the period 1975-1977.
- o/ El Salvador: The data on which this figure is based was collected in a survey carried out by Salvadorian information specialists during the preliminary phases of this study and on the criteria established by CLADES.
- p/ Guatemala: This figure is based on an assessment made by Guatemalan information specialists using the criteria established by CLADES.
- q/ Honduras: Estimate resulting from field visits made by CLADES officials and consultations with Honduran information specialists.
- r/ Mexico: The units surveyed represent a selective sample of the total number of development information units. It was required that the units should not only correspond to the criteria suggested by CLADES but that a large proportion of their collections should be made up of material included in item 300 of the Dewey Decimal System or its equivalent in other classification systems and that they should contain "over 5 000 volumes". (Quijano, 1977.)
- s/ Mexico: The account made by the national focal point on the basis of the exacting criteria described above eliminated all but 68 units, to which the questionnaire was submitted. In order to align the estimate of the total number of development information units in Mexico with those made for other countries, however, it was necessary to refer to some existing directories and to estimate the number of units on the basis of the broad criteria formulated by CLADES (Barberena, 1967) (Mexico, CONACYT, 1978) (Mexico, Secretaría de Educación Pública, 1979). Of all these works, the most recent and the one with the broadest coverage is that issued by the Ministry of Public Education. It contains information on 1 835 information units, 756 of which are specialized units of the higher education, government, private, centralized agencies and international agencies sectors. A careful consideration of those units led to the conclusion that there were about 526 development information units in Mexico in 1978.

- t/ Nicaragua: Figure taken from existing documentation. (López Adaros, 1976.) This figure represents the number of university libraries, libraries in ministries and autonomous and other entities which are members of the Asociación de Bibliotecas Universitarias y Especializadas de Nicaragua and meet the CLADES criteria for a development information unit.
- u/ Panama: Figure estimated on the basis of a study conducted in the field by CLADES staff in conjunction with Panamanian information specialists. Almost the same figure (13) is recorded in existing documentation covering the same period (Dextre, 1977).
- v/ Bahamas: A very rough estimate based on data provided by various sources. UNESCO notes the existence of three libraries in the higher education sector in 1974 (UNESCO, 1979). In addition, a register of libraries in the CEPAL Office for the Caribbean in Port-of-Spain contains information referring to three units belonging, respectively, to the Ministry of Agriculture and Fisheries, the House of Representatives and the Chamber of Commerce of the Bahamas.
- w/ Barbados: Figure estimated on the basis of field visits conducted by CLADES staff with the assistance of national information specialists.
- x/ Belize: It was impossible to obtain full information from published sources. The unit referred to is the national library (UNESCO, 1979) (Collins, 1978).
- y/ Cuba: Existing documentation (Biblioteca Nacional "José Martí", 1970) was consulted. This referred to 229 information units, 116 of which were shown to meet the criteria defined by CLADES for identifying development information units. In addition, an exhaustive inventory carried out in the country at the request of UNESCO (UNESCO, 1977) indicates that the total number of information units in 1971 was 232. Assuming that both estimates were made in conditions such that it may be said that the variation in one year represents a real growth rate in the number of units, by projecting this rate to 1977, the figure representing the number of information units of all kinds would be 250. Assuming also that the share of development information units in the total is the same in 1977 as in 1970, the figure 126 may be reached by multiplying $116 \times 250/229$.
- z/ Grenada: Figure obtained from existing documentation (Collins, 1978).
- a'/ Guyana: Figure obtained by examining existing documentation (Stephenson, 1978) and from field visits conducted by CLADES staff and consultations with Guyanan information specialists.
- b'/ Haiti: Figure obtained from study of existing documentation (Betrand and Devesin, 1975), field visits conducted by CLADES staff and consultations with Haitian information specialists.
- c'/ Jamaica: Data obtained by analysing an exhaustive census carried out previously by the National Council of Libraries, Archives and Documentation Services (NACOLADS) and through field visits and a number of consultations with information specialists of Jamaica.
- d'/ Puerto Rico: Figure obtained as a result of field visits conducted by CLADES and advisory services provided by Puerto Rican information specialists, particularly those working in the Regional Library of the Caribbean.
- e'/ Dominican Republic: Figure obtained as the result of field visits and the co-operation extended by specialists in the National Library and the Association of Dominican Librarians.
- f'/ Suriname: A very rough figure obtained as a result of a rapid visit by CLADES staff.
- g'/ Trinidad and Tobago: Figure obtained as a result of a number of consultations with information specialists of Trinidad and Tobago and field visits conducted by CLADES staff.

Annex 5

METHODS USED IN ESTIMATING THE FINANCIAL INDICATORS

There follows an explanation of procedures to build the way in which certain complicated estimates or constructions; all the information needed to test their validity is also provided.

It should be pointed out that the procedures used in formulating the indicators are described on the basis of a brief presentation of their basic elements. It is felt that although the information provided here is sketchy, it is sufficiently clear to provide an understanding of the methods used and a means of verifying their usefulness in future investigations.

5.1 Procedure for estimating the "annual operating expenditure"

One problem which affected the majority of the surveys of information units conducted in the region was the great difficulty in obtaining complete and reliable information in the financial area. Some of the innumerable factors responsible for this were that in the institutions concerned, no one administrative office was responsible for keeping the accounts, there were no prebudgetary and internal financial controls whatsoever confidential information was safeguarded.

Anticipating this situation, the CLADES questionnaire, in addition to asking for the information directly, sought to estimate the amount of the expenditure on the basis of certain questions inserted in different parts of the document. The method used to estimate the annual operating expenditure was based on the following equation:

$E = SA + BI + OM + ME$, when:

E = total expenditure

SA = salary payments

BI = purchase of bibliographical material

OM = purchase of office material

ME = expenditure related to maintenance of equipment

It should be noted that this equation relates only to specific direct expenses of the information unit and excludes general expenses such as those related to rent, building maintenance, electricity, telephone, postage, etc.

It is, however, estimated that the general expenses normally amount to between about 10% and 20% of the direct operating expenses of an information unit.^{1/}

Details concerning the procedure of estimating each of the components in the equation in cases where no figure is available for them are given below:

(a) Estimation of "salary payments" (SA)

The salary payments component was selected on the basis of the following equation:

$$SA = s_j \cdot 1 + s_{sp} \cdot n_{sp} + s_a \cdot n_a$$

when:

s_j = salary of the chief of the unit

s_{sp} = average salary of the information specialists

^{1/} Information regarding the general expenses of the units was not requested since such data are normally difficult to obtain.

n_{sp} = number of full-time information specialists

s_a = average salary of the administrative staff of the unit

n_a = number of full-time administrative staff

It should be noted that in this equation no allowance has been made for part-time staff or staff with contracts of less than one year's duration because the necessary figures were not available. This would not, however, appear to be of much consequence since in the replies to the questionnaire such staff are rarely cited as part of the staff of a unit.

In estimating the unit salary, it was difficult to relate different salaries to the different categories of personnel considered since the questionnaire asked for the following information only: (i) maximum salary an information specialist could obtain; (ii) salary at which information specialists are hired at the lowest income grade, and (iii) salary at which administrative staff is hired at the lowest income grade.

For these purposes the following criteria were established:

- (i) The highest salary a professional can obtain was taken as being the salary of the chief of the unit (probably an overestimation).
- (ii) The information specialists were assigned a salary halfway between the highest salary professionals can obtain in a unit and the salary at which they are hired at the lowest income grade.
- (iii) The salary at which administrative staff are hired at the lowest income grade was taken as representing the salary of the secretarial, auxiliary and other staff (probably an underestimation).

The salary payments could be calculated only in cases where data was available on the size of the staff of the unit. In cases where figures relating to salaries were not available for the different categories of staff, they were estimated on the basis of the average corresponding salaries paid in units belonging to entities of a similar institutional nature in the same country. For this task, the classification of development institutions (centralized and decentralized public agencies, private agencies, etc.) was used.

(b) Estimation of "Bibliographical expenditure" (BI)

The bibliographical expenditure was obtained on the basis of the following equation:

$BI = \text{purchases of books} + \text{purchases of unconventional documents} + \text{purchases of periodicals}.$

The monetary values of the purchases of each kind of document were then estimated on the basis of the following statement:

$$\text{Purchases} = V_a \cdot C \cdot P$$

when:

V_a = physical volume of bibliographical acquisitions in 1975.

C = unit cost of each type of document.

P = average percentage of purchases of bibliographical material in the acquisitions made in the period 1973, 1974 and 1975.

The bibliographical expenditure could be calculated only when figures were available for V_a and P .

The unit prices, however, were estimated on the basis of the following assumption:

Cost of one book = 2 times the cost of one unconventional document = 0.25 of the cost of one year's subscription to a periodical.

(c) Estimation of the "other components of the expenditure" (OM and ME)

According to the data collected in the questionnaires the purchase of office material and the expenditure for maintenance of equipment has little weight. On the basis of the percentages which these components represent in the total expenditure of those units which supplied full information on the amount and structure of the expenditure, the following values were assigned:

Purchase of office material (OM) = 1.5% of total expenditure

Expenditure on maintenance of equipment (ME) = 3% of the total expenditure

(d) Validity of the estimates

The reliability of the data estimated following this procedure may be assessed by comparing them with the figures supplied by the units which provided full information on the amount and structure of the expenditure.

Thus, it may be shown that the estimated data were, on average, about 20% lower than the more reliable data available.

5.2 Calculation of the amount of the "Minimum national expenditure"

The amount of the minimum national expenditure was calculated in the following stages:

(a) Estimation of minimum volume of financial resources

It will be assumed that a unit should as a minimum; have sufficient financial resources available to it annually to cover the following needs:

(i) Pay a librarian and an assistant.

(ii) Purchase 100 books, 150 unconventional documents and 50 subscriptions to periodicals.

(b) Estimation of salaries and prices

It will be assumed that payment for the human and bibliographical resources should be made in accordance with international standards.

In this connexion it is assumed that:

(i) A librarian should enjoy a standard of living equivalent to that of a counterpart in an industrialized country. The base used was a gross annual salary of US\$ 12 000 for the librarian and US\$ 8 400 for his assistant.

(ii) It has been assumed that the costs ^{2/} of acquiring bibliographical material, including mailing and customs clearance costs, were roughly as follows:
book - US\$ 10; unconventional document - US\$ 5, and a subscription to periodical - US\$ 40.

(c) Conversion of international salaries to national salaries with equivalent purchasing power expressed in dollars

In this connexion, use has been made of the factors of conversion (fc) used in connexion with monthly living expenses to which international experts within the United Nations system in the different countries are entitled. The (fc) values are indicated in the first column of Table 12.

(d) Conversion of values expressed in dollars to national currency

The exchange rates used are based on the average rates in the second quarter of 1977, a period which corresponds roughly to the period in which information was collected in the various countries. These exchange rates have been recorded in the second column of the table

(e) Calculation of the amount of the minimum national expenditure

The following formula, in which i represents each of the countries, was used:

^{2/} 1977 prices.

$$E_i^* = SA_i^* + BI_i^* + OM_i^* + ME_i^*$$

when:

$$SA_i^* = \text{Minimum salaries} = 1700 \left[\frac{\text{US\$}}{\text{month}} \right] \cdot fc_i \cdot ar_i \left[\frac{\text{Local currency}}{\text{US\$}} \right]$$

$$12 \left[\frac{\text{months}}{\text{year}} \right]$$

$$BI_i^* = \text{Minimum bibliographic purchases} = 3750 \text{ US\$} \cdot ar_i$$

Table 12

CALCULATION OF AMOUNTS OF MINIMUM NATIONAL EXPENDITURE

	fc_i 1/	ar_i 2/ $\frac{nc}{\text{US\$}}$	E_i 3/ nc
South America (Atlantic Subregion)			
Argentina	0.47	390.50	5,453,912
Brasil	0.66	14.35	258,660
Paraguay	0.42	126.00	1,625,200
Uruguay	0.84	4.65	101,695

1/ Source: UNDP, Maximum Monthly Stipend Rates, VI, Rev. 1 (FO. 37, New York, Nov. 1977).

2/ Source: International Monetary Fund. International Financial Statistics, 33(2), Feb. 1980.

3/ Note : Calculated on the basis of the ratio of the monthly stipend for each country expressed in dollars and the monthly stipend estimated for United Nations Headquarters in New York.

Table 12-a

CALCULATION OF AMOUNTS OF MINIMUM NATIONAL EXPENDITURE

	fc_i 1/	ar_i 2/ $\frac{nc}{\text{US\$}}$	E_i 3/ nc
South America (Andean Subregion)			
Bolivia	0.80	20.00	420,314
Colombia	0.24	36.65	331,806
Chile	0.58	20.59	335,951
Ecuador	0.74	25.00	493,351
Peru	0.65	79.89	2,422,960
Venezuela	0.85	4.29	94,739

1/, 2/, 3/ See sources and note for table 12.

Table 12-b

CALCULATION OF AMOUNTS OF MINIMUM NATIONAL EXPENDITURE

	fc_i 1/	ar_i 2/ $\frac{nc}{US\$}$	E_i 3/ nc
<u>Subregion of Central America and Mexico</u>			
Costa Rica	0.67	8.57	156,306
El Salvador	0.48	2.50	35,450
Guatemala	0.66	1.00	18,025
Honduras	0.45	2.00	27,506
Nicaragua	0.72	7.03	135,727
Panama	0.86	1.00	22,297
Mexico	0.62	22.99	394,753

1/, 2/, 3/ See sources and note for table 12.

Table 12-c

CALCULATION OF AMOUNTS OF MINIMUM NATIONAL EXPENDITURE

	fc_i 1/	ar_i 2/ $\frac{nc}{US\$}$	E_i 3/ nc
<u>The Caribbean Subregion</u>			
Barbados	0.60	2.04	34,157
Jamaica	0.60	1.10	18,418
Puerto Rico	1.00	1.00	25,288
Dominican Republic	0.93	1.00	23,793
Trinidad and Tobago	0.46	2.40	33,007

1/, 2/, 3/ See sources and note for table 12.

5.3 Industrial salaries by country and subregion in national currency

The national industrial salaries compared with the average salaries of the information specialists of each of the units surveyed are shown in tables 13.

Table 13

ATLANTIC SUBREGION: INDUSTRIAL SALARY EXPRESSED IN
NATIONAL CURRENCY OF EACH COUNTRY

Atlantic Subregion <u>1/</u>	Industrial salary	(National currency 1977)
Argentina	21 436	pesos
Brazil	3 848	cruzeiros
Paraguay	13 216	guaraníes
Uruguay <u>2/ a/</u>	601	pesos (nuevos)

Sources: 1/ Unless otherwise indicated, the figures have been taken from the ILO Yearbook of Labour Statistics 1978, Geneva, 1978. In order to express all figures in the national currency and at the monthly rate, it was necessary to convert salaries expressed in the national currency at the hourly, daily or weekly rate, and for this purpose the following equivalencies were adopted:

1 month = 4 weeks = 20 days = 160 hours

Figures for 1975 or 1976 were adjusted on the basis of the consumer price index contained in the same yearbook.

2/ Dirección General de Estadística y Censos: Aumento anual de producción; sector industrial año 1977, Montevideo, September 1978.

a/ No published figures relating to the industrial salary were found for Uruguay. The figure used is a very rough estimate calculated on the basis of the data contained in the Encuesta Anual de Producción del Sector Industrial para 1977. The estimate was made by dividing the total annual remunerations received by workers in the industrial sector by the total number of workers employed in 1977. Since the remunerations amounted to 1 333 321 000 new pesos and industrial employment was 184 600 persons, the ratio is 7 222 N\$/year, or 601 N\$/month.

Table 13-a

ANDEAN SUBREGION: INDUSTRIAL SALARY IN NATIONAL CURRENCY OF
EACH COUNTRY

Andean Subregion 1/	Industrial salary	(National currency 1977)
Bolivia	2 083	pesos
Colombia	3 363	pesos
Chile	2 288	pesos
Ecuador	3 427	sucres
Peru	7 888	soles
Venezuela	1 444	bolívars

Source: See source 1/ of table 13.

Table 13-b

SUBREGION OF CENTRAL AMERICA AND MEXICO: INDUSTRIAL SALARY IN
NATIONAL CURRENCY OF EACH COUNTRY

Subregion of Central America and Mexico 1/	Industrial salary	(National currency 1977)
Costa Rica	1 445	colones
El Salvador	277	colones
Guatemala	87	quetzales
Honduras	194	lempiras
Nicaragua	830	córdobas
Panama	204	balboas
Mexico	5 619	pesos

Source: See source 1/ of table 13.

Table 13-c

CARIBBEAN SUBREGION: INDUSTRIAL SALARY IN NATIONAL CURRENCY OF EACH COUNTRY

Caribbean Subregion <u>1/</u>	Industrial salary	(National currency 1977)
Barbados	414	Barbadian dollars
Jamaica <u>2/ a/</u>	275	Jamaican dollars
Puerto Rico	454	dollars
Dominican Republic	148	pesos
Trinidad and Tobago <u>3/ b/</u>	460	Trinitarian dollars

Sources: 1/ See source 1/ of table 13.

2/ Department of Statistics: Employment, Earnings and Homes in Large Establishments 1977, Kingston, May 1978.

3/ Central Statistical Office: Quarterly Economic Report. October-December 1977, Republic of Trinidad and Tobago, Port of Spain, 1978.

a/ In Jamaica this variable had to be estimated since no official published figures could be found. The figure provided by the survey of large establishments in 1977 was substituted for the industrial salary. In that survey, J\$ 66.68 is given as the average weekly wage for all types of workers. This is the equivalent of J\$ 274.70 a month.

b/ No official figures have been published in Trinidad and Tobago either. Instead the quotient of the total monthly remunerations received in May 1977 by manual workers in the industrial and commercial sector of the public administration (TT\$ 92 000) and the number of such workers (200) was used. This amounts to a monthly salary of TT\$ 460.

5.4 National salary of information specialists with equivalent purchasing power

The national salary of information experts with purchasing power equal to that of the specialists in the public administration of the United States was calculated on the basis of the following formula:

$$NSEPPI = 750 \text{ (US\$)} \cdot r_i \left[\frac{nc}{US\$} \right] \cdot fi$$

when:

NSEPPI = National salary with equivalent purchasing power in country i.
[in national currency]

r_i = dollar rate of exchange in country i.

fi = cost of living conversion factor in country i.1/

1/ The same amounts were used as in this annex

Table 14

ATLANTIC SUBREGION: NATIONAL SALARY WITH EQUIVALENT PURCHASING POWER

Atlantic Subregion	ri $\frac{nc}{U\$}$	fi	NSEPPi = $750 \cdot \frac{ri}{nc} \cdot \frac{fi}{fi}$ (nc 1977)
Argentina	0.47	390.50	137 651
Brasil	0.66	14.35	7 103
Paraguay	0.42	126.00	39 690
Uruguay	0.84	4.65	2 929

Table 14-a

ANDEAN SUBREGION: NATIONAL SALARY WITH EQUIVALENT PURCHASING POWER

Andean Subregion	ri $\frac{nc}{U\$}$	fi	NSEPPi = $750 \cdot \frac{ri}{nc} \cdot \frac{fi}{fi}$ (nc 1977)
Bolivia	0.80	20.00	12 000
Colombia	0.24	36.65	6 597
Chile	0.58	20.59	8 957
Ecuador	0.74	25.00	13 875
Peru	0.65	79.89	38 946
Venezuela	0.85	4.29	2 735

Table 14-b

SUBREGION OF CENTRAL AMERICA AND MEXICO: NATIONAL SALARY WITH
EQUIVALENT PURCHASING POWER

Subregion of Central America and Mexico	ri $\frac{nc}{U\$}$	fi	NSEPPi = 750 . ri . fi (nc 1977)
Costa Rica	0.67	8.57	4 306
El Salvador	0.48	2.50	900
Guatemala	0.66	1.00	495
Honduras	0.46	2.00	690
Nicaragua	0.72	7.03	3 796
Panama	0.86	1.00	645
Mexico	0.62	22.99	10 690

Table 14-c

THE CARIBBEAN SUBREGION: NATIONAL SALARY WITH EQUIVALENT PURCHASING POWER

The Caribbean Subregion	ri $\frac{nc}{U\$}$	fi	NSEPPi = 750 . ri . fi (nc 1977)
Barbados	0.60	2.04	918
Jamaica	0.60	1.10	495
Puerto Rico	1.00	1.10	750
Dominican Republic	0.93	1.00	697
Trinidad and Tobago	0.46	2.40	828

Annex 6

STATISTICAL TABLES

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Table 1

LATIN AMERICA AND THE CARIBBEAN: PERIOD OF ESTABLISHMENT OF THE INFORMATION UNITS, 1977

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Period of establishment</u>										
Prior to 1961	272	35.3	84	46.2	96	29.4	61	41.8	31	26.7
Between 1961 and 1970	234	30.4	44	24.2	112	34.3	40	27.4	38	32.8
After 1970	230	29.8	45	24.7	105	32.1	40	27.4	40	34.5
No information available	35	4.5	9	4.9	14	4.3	5	3.4	7	6.0
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: CEPAL/CLADES, on the basis of information collected through inventory of Socio-economic units in Latin America and the Caribbean conducted in 1977.

Table 2

LATIN AMERICA AND THE CARIBBEAN: GEOGRAPHICAL LOCATION OF THE INFORMATION UNITS, 1977

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Geographical location</u>										
Capital city (metropolis)	579	75.1	113	62.1	246	75.2	116	79.5	104	89.7
Other cities	171	22.2	65	35.7	78	23.9	19	13.0	9	7.8
No information available	21	2.7	4	2.2	3	0.9	11	7.5	3	2.6
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 3

LATIN AMERICA AND THE CARIBBEAN: DEVELOPMENT FUNCTION OF THE ENTITY TO WHICH THE
INFORMATION UNITS BELONG, 1977

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Function</u>										
Government	240	31.1	71	39.0	70	21.4	44	30.1	55	47.4
Financing, development	53	6.9	6	3.3	25	7.6	18	12.3	4	3.4
Production marketing, distribution of goods	37	4.8	18	9.9	13	4.0	2	1.4	4	3.4
Social development action	31	4.0	1	0.5	15	4.6	10	6.8	5	4.3
Education and culture	249	32.0	48	26.4	121	37.0	48	32.9	32	27.6
Research, consultation and extension	142	18.4	38	20.9	73	22.3	19	13.0	12	10.3
International co-operation	14	1.8	-	-	8	2.4	2	1.4	4	3.4
No information available	5	0.6	-	-	2	0.6	3	2.1	-	-
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 4

LATIN AMERICA AND THE CARIBBEAN: LEGAL-INSTITUTIONAL NATURE OF THE ENTITIES TO WHICH THE
INFORMATION UNITS BELONG, 1977

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Legal-institutional classification</u>										
Centralized public entities	204	26.5	67	36.8	65	19.9	38	26.0	34	29.3
Decentralized public entities	351	45.5	95	52.2	141	43.1	73	50.0	42	36.2
Non-profit-making private entities	122	15.8	10	5.5	86	26.3	17	11.6	9	7.8
Profit-making private entities	32	4.2	8	4.4	11	3.4	5	3.4	8	6.9
Intergovernmental international entities	40	5.2	1	0.5	14	4.3	6	4.1	19	16.4
Non-governmental international entities	19	2.5	1	0.5	9	2.8	5	3.4	4	3.4
No information available	3	0.4	-	-	1	0.3	2	1.4	-	-
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 5

LATIN AMERICA AND THE CARIBBEAN: DEVELOPMENT AGENTS SERVED BY THE INFORMATION UNITS, 1977

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Main user groups</u>										
Planners, administrators and entrepreneurs	144	18.7	34	18.7	64	19.6	28	19.2	18	15.5
Research workers	144	18.7	35	19.2	62	19.0	21	14.4	26	22.4
Teacher and students	391	50.7	90	49.5	168	51.4	84	57.5	49	42.2
Miscellaneous	38	4.9	9	4.9	10	3.1	8	5.5	11	9.5
No information available	54	7.0	14	7.7	23	7.0	5	3.4	12	10.3
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 6

LATIN AMERICA AND THE CARIBBEAN: DEVELOPMENT TOPICS WHICH SUPPORT THE
INFORMATION UNITS, 1977

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Topics</u>										
Geography, history, etc.	35	4.5	7	3.8	12	3.7	13	8.9	3	2.6
Law, public administration, etc.	94	12.2	13	7.1	38	11.6	21	14.4	22	19.0
Economics, trade, etc.	113	14.7	23	12.6	52	15.9	23	15.8	15	12.9
Social welfare, sociology, etc.	46	6.0	6	3.3	18	5.5	13	8.9	9	7.8
Information and documentation, education, etc.	94	12.2	40	22.0	28	8.6	15	10.3	11	9.5
Natural resources, environment, etc.	82	10.6	24	13.2	39	11.9	9	6.2	10	8.6
Industry, enterprises, etc.	36	4.7	9	4.9	17	5.2	5	3.4	5	4.3
Town planning, housing, etc.	25	3.2	3	1.6	17	5.2	3	2.1	2	1.7
Psychology, anthropology, etc.	34	4.4	9	4.9	12	3.7	11	7.5	2	1.7
Miscellaneous	111	14.4	22	12.1	47	14.4	23	15.8	19	16.4
No information available	101	13.1	26	14.3	47	14.4	10	6.8	18	15.5
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See Table 1.

Table 7

LATIN AMERICA AND THE CARIBBEAN: POSITION OF THE INFORMATION INFRASTRUCTURE, 1977
SERVICES: WEEKLY VOLUME OF CIRCULATION

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Volumes circulated per week</u>										
Over 2 000	66	8.6	6	3.3	31	9.5	22	15.1	7	6.0
751 - 2 000	68	8.8	18	9.9	36	11.0	8	5.5	6	5.2
251 - 750	147	19.1	32	17.6	75	22.9	27	18.5	13	11.2
101 - 250	138	17.9	33	18.1	59	18.0	26	17.8	20	17.2
Fewer than 101	224	29.1	59	32.4	74	22.6	49	33.6	42	36.2
No information available	128	16.6	34	18.7	52	15.9	14	9.6	28	24.1
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 8

LATIN AMERICA AND THE CARIBBEAN: POSITION OF THE INFORMATION INFRASTRUCTURE, 1977
SERVICES: MONTHLY VOLUME OF REFERENCES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Number of inquiries answered per month</u>										
Over 500	94	12.2	23	12.6	45	13.8	18	12.3	8	6.9
101 - 500	179	23.2	39	21.4	82	25.1	39	26.7	19	16.4
51 - 100	87	11.3	16	8.8	47	14.4	11	7.5	13	11.2
Fewer than 51	197	25.6	45	24.7	76	23.2	37	25.3	39	33.6
No reference service	98	12.7	29	15.9	34	10.4	23	15.8	12	10.3
No information available	116	15.0	30	16.5	43	13.1	18	12.3	25	21.6
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 9

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977
 SERVICES: SELECTIVE DISSEMINATION OF INFORMATION

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Techniques used for constructing user profiles</u>										
Surveys and indirect methods	61	7.9	15	8.2	31	9.5	8	5.5	7	6.0
Surveys only	84	10.9	14	7.7	41	12.5	15	10.3	14	12.1
Indirect methods only	13	1.7	3	1.6	6	1.8	2	1.4	2	1.7
no profiles constructed	146	18.9	30	16.5	66	20.2	20	13.7	30	25.9
No selective dissemination service offered	454	58.9	114	62.6	178	54.4	101	69.2	61	52.6
No information available	13	1.7	6	3.3	5	1.5	-	-	2	1.7
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 10

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

SERVICES: PREPARATION OF REFERENCE PUBLICATIONS

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Number and type of reference publication issued</u>										
Over 500 copies:										
(A); (B); (R); (O)	61	7.9	17	9.3	29	8.9	8	5.5	7	6.0
Over 500 copies:										
(A); (B); (R)	107	13.9	18	9.9	50	15.3	30	20.5	9	7.8
Over 500 copies:										
(A)	102	13.2	21	11.5	50	15.3	24	16.4	7	6.0
Over 500 copies:										
(O)	25	3.2	6	3.3	16	4.9	3	2.1	-	-
Fewer than 500 copies:										
(O)	242	31.4	53	29.1	107	32.7	38	26.0	44	37.9
Reference publication not prepared	179	23.2	60	33.0	45	13.8	39	26.7	35	30.2
No information available	55	7.1	7	3.8	30	9.2	4	2.7	14	12.1
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Note: (A) = List of recent acquisitions.

(B) = Bibliographies.

(R) = Abstracts.

(O) = Others.

Table 11

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

SERVICES: SERVICES AVAILABLE FOR EXTERNAL USERS

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Combination of services available for external users</u>										
A+B+C+D	65	8.4	12	6.6	31	9.5	8	5.5	14	12.1
A+B+C	131	17.0	18	9.9	69	21.1	23	15.8	21	18.1
A+B	232	30.1	56	30.8	109	33.3	47	32.2	20	17.2
A	125	16.2	25	13.7	54	16.5	32	21.9	14	12.1
Other combinations	117	15.2	37	20.3	35	10.7	12	8.2	33	28.4
Services offered only to internal users										
	80	10.4	24	13.2	23	7.0	23	15.8	10	8.6
No information available	21	2.7	10	5.5	6	1.8	1	0.7	4	3.4
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

(A): Circulation service.

(B): Information and consultation service.

(C): Documents reproduction service.

(D): Others (selective dissemination of information, translations, etc.).

Table 12

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF INFORMATION INFRASTRUCTURE, 1977

SERVICES: GEOGRAPHICAL SCOPE OF INTER-LIBRARY LOANS

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Geographical location of institutions inter-library loans</u>										
International:										
LA; TC; RW	51	6.6	4	2.2	15	4.6	15	10.3	17	14.7
National: Rg; Cy	200	25.9	45	24.7	105	32.1	27	18.5	23	19.8
City in which unit located	267	34.6	60	33.0	137	41.9	43	29.5	27	23.3
Does not participated in inter-library loans	197	25.6	54	29.7	49	15.0	58	39.7	36	31.0
No information available	56	7.3	19	10.4	21	6.4	3	2.1	13	11.2
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Note: LA = Latin America; TC = The Caribbean; RW = Resto of the world; Rg = Region (within the same country); Cy = City.

Table 13

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

SERVICES: SERVICE TO THE PUBLIC (HOURS PER WEEK)

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Number of hours per week</u>										
Over 40 hours	339	44.0	75	41.2	138	42.2	63	43.2	63	54.3
40 hours	167	21.7	25	13.7	88	26.9	31	21.2	23	19.8
26 - 39 hours	169	21.9	48	26.4	72	22.0	33	22.6	16	13.8
Under 26 hours	49	6.4	13	7.1	19	5.8	15	10.3	2	1.7
No information available	47	6.1	21	11.5	10	3.1	4	2.7	12	10.3
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 14

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

SERVICES: USER TRAINING

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Frequency of training activities</u>										
Periodic	88	11.4	14	7.7	41	12.5	21	14.4	12	10.3
Sporadic	166	21.5	37	20.3	83	25.4	23	15.8	23	19.8
Not conducted	408	52.9	106	58.2	165	50.5	97	66.4	40	34.5
No information available	109	14.1	25	13.7	38	11.6	5	3.4	41	35.3
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 15

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

SERVICES: EXTENSION AND PROMOTION OF SERVICES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Means of promotion</u>										
Pamphlets, talks, others	105	13.6	16	8.8	50	15.3	21	14.4	18	15.5
Pamphlets, talks	35	4.5	8	4.4	13	4.0	11	7.5	3	2.6
Pamphlets only	209	27.1	49	26.9	102	31.2	37	25.3	21	18.1
Talks only	61	7.9	11	6.0	19	5.8	17	11.6	14	12.1
Other	82	10.6	26	14.3	26	8.0	22	15.1	8	6.9
Services not promoted	223	28.9	56	30.8	92	28.1	36	24.7	39	33.6
No information available	56	7.3	16	8.8	25	7.6	2	1.4	13	11.2
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 16

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: SIZE OF THE COLLECTIONS

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Number of books and unconventional documents</u>										
100 000 or more	28	3.6	4	2.2	13	4.0	8	5.5	3	2.6
10 001 - 100 000	73	9.5	19	10.4	34	10.4	14	9.6	6	5.2
2 501 - 10 000	133	17.3	26	14.3	65	19.9	23	15.8	19	16.4
1 001 - 2 500	78	10.1	22	12.1	33	10.1	11	7.5	12	10.3
1 000 or less	133	17.3	24	13.2	61	18.7	28	19.2	20	17.2
No information available	326	42.3	87	47.8	121	37.0	62	42.5	56	48.3
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 17

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: TOPICALITY OF THE COLLECTIONS

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion		(a)	(b)	(a)	(b)
	(a)	(b)	(a)	(b)	(a)	(b)				
<u>Number of acquisitions and growth rate of collection</u>										
Over 10% and 1 000 docs. or more	86	11.2	11	6.0	40	12.2	23	15.8	12	10.3
Between 7% and 10% and 250 to 1 000 docs.	121	15.7	19	10.4	61	18.7	25	17.1	16	13.8
Between 4% and 7% and 250 to 1 000 docs.	61	7.9	6	3.3	34	10.4	10	6.8	11	9.5
Less than 4% and 250 to 1 000 docs.	88	11.4	24	13.2	37	11.3	12	8.2	15	12.9
Fewer than 250 docs.	223	28.9	71	39.0	77	23.5	51	34.9	24	20.7
No information available	192	24.9	51	28.0	78	23.9	25	17.1	38	32.8
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 18

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: ELEMENTS AVAILABLE FOR AN INFORMATION AND CONSULTATION SERVICE

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Availability of reference tools</u>										
DINST.: DEXP.: OTHERS	108	14.0	22	12.1	50	15.3	16	11.0	20	17.2
DINST. and DEXP.	157	20.4	21	11.5	79	24.2	34	23.3	23	19.8
DINST. or DEXP.	265	34.2	43	38.5	132	40.4	58	39.7	42	36.2
No reference tools	201	26.1	69	37.9	64	19.6	37	25.3	31	26.7
No information available	3	0.4	-	-	2	0.6	1	0.7	-	-
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Note: DINST. - Directories of institutions.

DEXP. - Directories of experts.

Table 19

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: RECEIPT OF DOCUMENTS ISSUED BY THE PARENT ENTITY

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Documents received</u>										
PUB.; REP.; DOC.	100	13.0	25	13.7	37	11.3	20	13.7	18	15.5
PUB.; REP.	40	5.2	14	7.7	17	5.2	5	3.4	4	3.4
PUB.	211	37.4	30	16.5	108	33.0	44	30.1	29	25.0
Others (all)	109	14.1	24	13.2	47	14.4	19	13.0	19	16.4
Others (same)	187	24.3	42	23.1	87	26.6	34	23.3	24	20.7
<u>Documents of the entity</u>										
no received	43	5.6	21	11.5	3	0.9	10	6.8	9	7.8
No information available	81	10.5	26	14.3	28	8.6	14	9.6	13	11.2
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Note: PUB. = Publications prepared or sponsored by the entity.

REP. = Reports with limited distribution.

DOC. = Documents submitted to meetings by members of the entity.

Table 20

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: UNION CATALOGUE AGREEMENTS

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Geographical coverage of the agreement</u>										
International:										
LA; TC; RW	17	2.2	3	1.6	7	2.1	5	3.4	2	1.7
National: Rg; Cy.	147	19.1	29	15.9	78	23.9	34	23.3	6	5.2
City in which unit located	135	17.5	32	17.6	81	24.8	18	12.3	4	3.4
Does not participate	416	54.0	95	52.2	144	44.0	88	60.3	89	76.7
No information available	56	7.3	23	12.6	17	5.2	1	0.7	15	12.9
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.Note: LA = Latin America.

TC = The Caribbean.

RW = Rest of the world.

Rg = Region within the country.

Cy = City.

Table 21

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: TECHNIQUES USED

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Techniques used</u>										
Mechanized post-co-ordinated	14	1.8	4	2.2	6	1.8	4	2.7	-	-
Manual post-co-ordinated	183	23.7	30	16.5	118	36.1	21	14.4	14	12.1
Pre-co-ordinated	371	48.1	91	50.0	138	42.2	72	49.3	70	60.3
Others	63	8.2	18	9.9	9	2.8	28	19.2	8	6.9
No information available	140	18.2	39	21.4	56	17.1	21	14.4	24	20.7
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 22

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: SIZE OF STAFF

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Number of information specialists</u> (Librarians, documentalists, etc.)										
4 or more	168	21.8	51	28.0	72	22.0	25	17.1	20	17.2
2 or 3	155	20.1	30	16.5	87	26.6	25	17.1	13	11.2
1 plus another unspecialized employee	186	24.1	35	19.2	90	27.5	22	15.1	39	33.6
1 only	63	8.2	15	8.2	31	9.5	9	6.2	8	6.9
No information specialists	192	24.9	49	26.9	45	13.8	65	44.5	33	28.4
No information available	7	0.9	2	1.1	2	0.6	-	-	3	2.6
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 23

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: STAFF TRAINING

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Educational experience of information specialists</u> (librarians, documentalists, etc.)										
Librarians with post graduate education	198	25.7	39	21.4	87	26.6	31	21.2	41	35.3
Librarians with advanced training courses	131	17.0	35	19.2	63	19.3	19	13.0	14	12.1
Librarians without advanced training courses	215	27.9	46	25.3	124	37.9	26	17.8	19	16.4
Library assistants	45	5.8	16	8.8	10	3.1	15	10.3	4	3.4
Only courses in the field	83	10.8	22	12.1	19	5.8	32	21.9	10	8.6
No courses in the field	99	12.8	24	13.2	24	7.3	23	15.8	28	24.1
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 24

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: CHARACTERISTICS OF THE PREMISES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Characteristics of the functional areas</u> (administration; reading rooms and shelves; technical facilities)										
Independent	170	22.0	31	17.0	92	28.1	32	21.9	15	12.9
Semi-independent	316	41.0	67	36.8	143	43.7	65	44.5	41	35.3
Conglomerated	189	24.5	58	31.9	64	19.6	30	20.5	37	31.9
Subjected to interference	51	6.6	11	6.0	12	3.7	14	9.6	14	12.1
No information available	45	5.8	15	8.2	16	4.9	5	3.4	9	7.8
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 25

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: AVAILABILITY OF COMMUNICATIONS FACILITIES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Communications facilities</u>										
Telephone, postal facilities, telex	165	21.4	26	14.3	75	22.9	34	23.3	30	25.9
Telephone, postal facilities or telex	306	39.7	56	30.8	168	51.4	50	34.2	32	27.6
Telephone only	237	30.7	82	45.1	61	18.7	50	34.2	44	37.9
No telephone but other facilities available	46	6.0	14	7.7	18	5.5	9	6.2	5	4.3
No information available	17	2.2	4	2.2	5	1.5	3	2.1	5	4.3
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 26

LATIN AMERICAN AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: USE OF AND ACCESS TO BASIC INFORMATION EQUIPMENT

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Equipment (reproduction equipment)</u>										
Own photocopier and access to graphic reproduction equipment	95	12.3	21	11.5	38	11.6	16	11.0	20	17.2
Access to photocopier and graphic reproduction equipment	194	25.2	40	22.0	73	22.3	44	30.1	37	31.9
Access to photocopier only	270	35.0	53	29.1	124	37.9	49	33.6	44	37.9
Access graphic reproduction equipment only	36	4.7	13	7.1	11	3.4	11	7.5	1	0.9
No access to basic information equipment	176	22.8	55	30.2	81	24.8	26	17.8	14	12.1
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 27

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

RESOURCES: ANNUAL OPERATING EXPENDITURE

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Percentage of annual operating expenditure in respect of the minimum national annual expenditure</u>										
200% or over	177	23.0	40	22.0	72	22.0	37	25.3	28	24.1
100% - 199%	91	11.8	23	12.6	35	10.7	16	11.0	17	14.7
1% - 99%	138	17.9	37	20.3	55	16.8	23	15.8	23	19.8
No difference	6	0.8	1	0.5	2	0.6	2	1.4	1	0.9
-1% to -99%	359	46.6	81	44.5	163	49.8	68	46.6	47	40.5
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 28

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

MANAGEMENT: DEGREE OF INTERNAL ORGANIZATION

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Ways of programming activities</u>										
Programming and use made of organizational chart and handbook	101	13.1	19	10.4	46	14.1	23	15.8	13	11.2
Programming and use made of organizational chart or handbook	244	31.6	62	34.1	108	33.0	38	26.0	36	31.0
Programming and information regarding organization conveyed in written or oral directive only	255	33.1	60	33.0	106	32.4	62	42.5	27	23.3
No programming	107	13.9	32	17.6	41	12.5	16	11.0	18	15.5
No information available	64	8.3	9	4.9	26	8.0	7	4.8	22	19.0
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 29

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

MANAGEMENT: AVAILABILITY OF STATISTICS ON RESOURCES AND SERVICES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Availability of statistics on operations</u>										
100%	134	17.4	30	16.5	60	18.3	30	20.5	14	12.1
90% - 99%	209	27.1	45	24.7	100	30.6	45	30.8	19	16.4
80% - 89%	218	28.3	48	26.4	97	29.7	42	28.8	31	26.7
70% - 79%	83	10.8	22	12.1	25	7.6	16	11.0	20	17.2
70% or less	127	16.5	37	20.3	45	13.8	13	8.9	32	27.6
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 30

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

MANAGEMENT: AVAILABILITY OF FINANCIAL DATA

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Degree of availability of information on the total expenditure</u>										
Origin, destination and amount of expenditure known	217	28.1	35	19.2	92	28.1	61	41.8	29	25.0
Origin and destination of expenditure known	56	7.3	14	7.7	29	8.9	8	5.5	5	4.3
Only origin and amount of expenditure known	201	26.1	52	28.6	87	26.6	35	24.0	27	23.3
Only origin of funds known	157	20.4	44	24.2	58	17.7	27	18.5	28	24.1
Other combinations	28	3.6	6	3.3	7	2.1	6	4.1	9	7.8
No information available	112	14.5	31	17.0	54	16.5	9	6.2	18	15.5
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 31

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

MANAGEMENT: DEGREE OF FINANCIAL INDEPENDENCE

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Percentage of resources derived from outside the entity</u>										
50% or more	49	6.4	15	8.2	19	5.8	8	5.5	7	6.0
10% - 49%	76	9.9	10	5.5	40	12.2	16	11.0	10	8.6
1% to 10%	71	9.2	9	4.9	36	11.0	15	10.3	11	9.5
Resources from parent entity only	447	58.0	115	63.2	173	52.9	97	66.4	62	53.4
No information available	128	16.6	33	18.1	59	18.0	10	6.8	26	22.4
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 32

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

MANAGEMENT: PARTICIPATION IN BUDGET MANAGEMENT

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Degree of participation in budget management</u>										
May increase budget and change its structure	151	19.6	39	21.4	66	20.2	20	13.7	26	22.4
May increase budget or change its structure	147	19.1	27	14.8	58	17.7	31	21.2	31	26.7
Kept informed of budgetary situation but have no say in it	210	27.2	63	34.6	83	25.4	38	26.0	26	22.4
Unaware of budgetary situation	239	31.0	48	26.4	109	33.3	55	37.7	27	23.3
No information available	24	3.1	5	2.7	11	3.4	2	1.4	6	5.2
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 33

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

STATUS: DIFFERENTIAL BETWEEN SALARIES OF INFORMATION SPECIALISTS AND THOSE
OF THE ADMINISTRATIVE STAFF

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Difference between average salary of specialists and salary at which administrative staff hired</u>										
250% and over	137	17.8	44	24.2	47	14.4	21	14.4	25	21.6
200% - 249%	71	9.2	18	9.9	33	10.1	6	4.1	14	12.1
150% - 199%	150	19.5	40	22.0	62	19.0	24	16.4	24	20.7
100% - 149%	191	24.8	30	16.5	102	31.2	35	24.0	24	20.7
50% - 99%	159	20.6	40	22.0	58	17.7	41	28.1	20	17.2
1% - 49%	56	7.3	10	5.5	21	6.4	17	11.6	8	6.9
0% or less	7	0.9	-	-	4	1.2	2	1.4	1	0.9
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 34

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

STATUS: DIFFERENTIAL BETWEEN SALARIES OF INFORMATION SPECIALISTS AND
NATIONAL INDUSTRIAL SALARY

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Difference between average salary of infor. staff and average national industrial salary</u>										
200% or over	189	24.5	96	52.7	48	14.7	34	23.3	11	9.5
150% - 199%	90	11.7	21	11.5	36	11.0	18	12.3	15	12.9
100% - 149%	114	14.8	17	9.3	42	12.8	35	24.0	20	17.2
50% - 99%	167	21.7	14	7.7	103	31.5	38	26.0	12	10.3
1% - 49%	96	12.5	15	8.2	41	12.5	16	11.0	24	20.7
No difference	3	0.4	-	-	2	0.6	-	-	1	0.9
-1% - -49%	20	2.6	1	0.5	13	4.0	5	3.4	1	0.9
-50% - -99%	92	11.9	18	9.9	42	12.8	-	-	32	27.6
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 35

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

STATUS: DIFFERENTIAL BETWEEN THE PURCHASING POWER OF THE SALARIES OF
NATIONAL INFORMATION SPECIALISTS AND THAT OF THEIR
COUNTERPARTS IN INDUSTRIALIZED COUNTRIES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Difference between purchasing power of the average salary of national infor. specialists and that of their counterparts in the United States</u>										
100% or more	30	3.9	12	6.6	4	1.2	2	1.4	12	10.3
50% - 99%	49	6.4	14	7.7	12	3.7	3	2.1	20	17.2
1% - 49%	190	24.6	43	23.6	64	19.6	24	16.4	59	50.9
No difference	4	0.5	2	1.1	-	-	1	0.7	1	0.9
-1% - -49%	234	30.4	42	23.1	88	26.9	86	58.9	18	15.5
-50% - -99%	264	34.2	69	37.9	159	48.6	30	20.5	6	5.2
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 36

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

STATUS: INFORMATION SPECIALISTS OPPORTUNITIES FOR PROMOTION

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Prospects for salary increase in the course of the working career</u>										
200% and above	195	25.3	58	31.9	75	22.9	41	28.1	21	18.1
150% - 199%	90	11.7	33	18.1	30	9.2	21	14.4	6	5.2
100% - 149%	150	19.5	33	18.1	61	18.7	31	21.2	25	21.6
50% - 99%	204	26.5	38	20.9	104	31.8	26	17.8	36	31.0
1% - 49%	125	16.2	20	11.0	53	16.2	24	16.4	28	24.1
No prospects for salary increase	7	0.9	-	-	4	1.2	3	2.1	-	-
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Table 37

LATIN AMERICA AND THE CARIBBEAN: THE POSITION OF THE INFORMATION INFRASTRUCTURE, 1977

STATUS: STAFF ATTENDANCE IN ADVANCED TRAINING COURSES

(a) Number of units established; (b) Percentage of total

Category	Total region		South America				Central America and Mexico		The Caribbean	
			Atlantic subregion		Andean subregion					
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
<u>Foreign component of courses attended</u>										
6 months or more abroad	68	8.8	13	7.1	24	7.3	17	11.6	14	12.1
1 to 6 months abroad	122	15.8	20	11.0	53	16.2	25	17.1	24	20.7
6 months or more in country	47	6.1	9	4.9	23	7.0	10	6.8	5	4.3
1 to 6 months in country	142	18.4	48	26.4	54	16.5	28	19.2	12	10.3
1 month or less in country	186	24.1	27	14.8	106	32.4	35	24.0	18	15.5
No participation	148	19.2	40	22.0	51	15.6	26	17.8	31	26.7
No information available	58	7.5	25	13.7	16	4.9	5	3.4	12	10.3
<u>Total</u>	<u>771</u>	<u>100.0</u>	<u>182</u>	<u>100.0</u>	<u>327</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>	<u>116</u>	<u>100.0</u>

Source: See table 1.

Annex 7

ADVANTAGES AND LIMITATIONS OF THE "MINIMUM THRESHOLD" METHOD

The method proposed in this study is assessed by describing both its advantages and its limitations. This will certainly be of interest to research workers, methodologists and specialists in the evaluation of information systems in that it will make it easier for them to make their own assessment and will call attention to certain specific areas.

1. Advantages

In this connexion it should be stated in the first place that the minimum threshold method has proved useful in making a diagnosis in that it has turned out to be a sensitive tool for detecting the areas of need and those areas in a relatively advantageous position in different information infrastructures. The accurate identification of the position of each factor and the seriousness of its state vis-a-vis that of other indicators is certainly of great practical value in formulating information policy and establishing programmes and projects to strengthen information systems.

Secondly, it should be noted that the way in which the indicators have been conceived provides full flexibility in the application of the methodology within a series of infrastructures ranging from that of the region as a whole to all the various individual units. It may even be said that the assessment of individual units is useful in deciding what action to take within a given institution and also in revealing which units will be information centres (those which are shown to exceed all or most of the minimum thresholds).

Thirdly, attention should be drawn to the objectivity of the method. This is reflected in two ways: (i) it supplies all the information needed to construct the indicators, which means that the research can be duplicated by any expert or institution in the future and (ii) it provides a common yardstick against which any infrastructure can be evaluated regardless of its institutional sector or geographical location.

Fourthly, the variety of indicators provides a wealth of material for diagnosis and comes close to reflecting the multi-faceted nature of the information infrastructures.

Finally, it must be borne in mind that the methodology facilitates a comprehensive overview of the information infrastructure in that it conveys a concept which transcends the sum of the individual parts and at the same time enhances each of those parts by putting them squarely into a larger context.

2. Limitations

The application of the minimum threshold method to various aspects of information in the region has given rise to some questions or doubts which seem to call for full consideration.

In the first place, there may be questions regarding the selection of the indicators. This is basically a question of whether some important indicators may have been omitted or, conversely, whether some of those included may make only a marginal contribution to a diagnosis. Naturally, the choice of 31 specific indicators and 6 global indicators may seem rather arbitrary, and it will never be known whether they are really distributed in accordance with the four areas used in the analysis -services, resources, management and status.

Another problem -of much greater relevance than the preceding one- has to do with the significance and content of each indicator. Do they measure what they are intended to measure? Is the present distribution of indicators (qualitative indicators as opposed to quantitative indicators) appropriate? The choice between quality and

quantity is certainly a difficult one. For example, to say that a unit dispenses over 100 publications a week says nothing about the intrinsic quality of those publications or about whether their content meets the requirements of the users. Furthermore, a selective dissemination service provided on the basis of the same user profiles will have a different impact depending on the makeup of the community of users served. The ideal will be to have indicators for each aspect of information which covered quantity and quality at the same time. It is thought that this limitation can be gradually eliminated as better ways of measuring critical dimensions are developed. Thus, these problems cannot be attributed to the minimum threshold method itself although they do suggest the need to rearrange its components.

Secondly, some observations may be made regarding the measurement of the minimum threshold because it must be acknowledged that, at least at this stage, the minimum thresholds are determined somewhat arbitrarily. Actually, thresholds which are universally valid or, in any case, universally accepted, do not appear to exist. Thus, in most cases, the thresholds used must be regarded as working hypotheses.

It is also clear that the minimum thresholds should be defined in terms of different types of information units and combinations of the socio-economic, political and administrative factors which are more faithful to the local climate in which each unit functions. Naturally, the logical question to ask in connexion with the table of minimum thresholds is whether they may be applied with equal validity to, for example, central libraries of universities, documentation centres of research institutions and information centres of regional organizations and international organizations with headquarters in the region. It may therefore be advisable to begin to look for machinery which will make it possible to reach a consensus among different institutions and experts so that the parameters adopted can be adjusted to meet each specific situation more effectively.

In addition, the basic criterion for evaluation, which is the requirement that the units must come up to or surpass the minimum thresholds is perhaps too simple. It would certainly also be of value to know what percentage of the units are in the upper or lower extremes of the categories with which each indicator is measured. The method employed does not take into account the degrees to which the different units fall below or surpass the minimum thresholds. This, however, results from the to simplify the methodology and could be surmounted by indicating these deviations through the use of a system of positive or negative points which could be computed, with those units which surpassed the threshold being awarded in proportion to their distance from it and, by analogy, those which are located beneath the thresholds being sanctioned.

Thirdly, weighting may present a problem in that not all the units in an infrastructure have the same impact on communities in development nor are all the areas and aspects of equal importance within an information infrastructure. In this report it has simply been assumed that every kind of unit, area and aspect is of equal importance. This problem is, however, easy to solve by making simple adaptations and through the numerical manipulation of the evaluation profiles. In order to do this, all that is needed for those responsible for a specific diagnosis to agree is what weight to assign.

Annex 8

POSSIBILITIES FOR USING THE REGIONAL DATA BASE FOR INFORMATION UNITS

This annex contains a discussion of the possibilities of using a typical regional data base such as the one established in the course of this study. It is the feeling of CLADES that this discussion may will be useful in showing different situations in which the valuable information obtained may be used.

1. "Analysis type"

Reference is made to the way of handling and presenting the findings of a survey. This would include the following approaches:

- (i) Conventional statistical analysis based on marginal distribution of each the indicators.
- (ii) Conventional statistical analysis aimed at the study of relations among indicators (cross tabulations).
- (iii) Statistical analysis based on evaluation profiles.

In this report an analysis has been carried out by using the latter approach, which in some ways is a variant of the approach described as item (i). It is felt that an immense range of possibilities for analysis has remained unexplored, particularly in so far as the examination of statistical relations among variables (points of intersection) is carried out.

2. "Empirical field"

This refers to the geographical and institutional coverage of those units which can be examined, either collectively or individually. The "empirical fields" are derived from the combination of geographical facets (region, subregion, country, province, city) and institutional facets (development function, juridical/administrative type, field of specialization, year of establishment).

Figure 3 is presented in order to clarify these concepts. In that figure, the geographical facets are illustrated with concentric circles and the institutional facets with a line which cuts through these circles longitudinally.

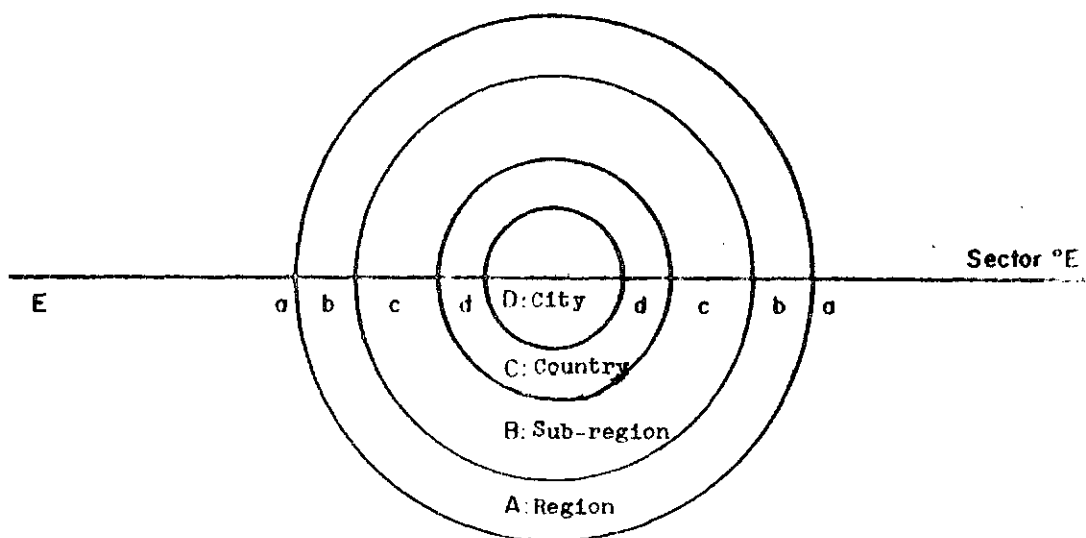
The spaces between the concentric circles are labelled as follows: area A which includes the units existing in the region; area B which includes the units in a subregion; area C which includes the units in a country and, finally, area D which includes the units in a city. An institutional facet represented by the line EE has been depicted. In this manner, it is possible to locate various empirical areas in respect of which an attempt can be made to diagnose the information infrastructures by, for example, conducting:

- (i) a sectoral-regional analysis covering the area from a to a as for example, the study of the regional infrastructure of units specializing in the environmental sector;
- (ii) a sectoral subregional analysis, which would be represented in the figure by the section b-b and would deal, for example, with units belonging to offices and ministries of planning in the Caribbean;
- (iii) a sectoral-national analysis, which would be represented by the section c-c and would deal, for example, with the information infrastructure of the socio-economic sector of the universities in Colombia.

The many different combinations which can be constructed from "analysis types" and "empirical fields" suggest the significant potential offered by the data base for

describing the many facets of the information infrastructure. It is of the greatest interest to CLADES that the virtually unexplored possibilities offered by this data base may be tapped, at minimum cost, by the different national or regional.

Figure 3



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