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PROGRAMME BUDGET FOR THE BIENNIUM 1978-1979

Establishment of an information services unit in
the Department of International Economic and
Social Affairs

Report of the Secretary-General

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* A/33/150.

CONTENTS

LIST OF ABBREVIATIONS AND ACRONYMS

ACABQ	Advisory Committee on Administrative and Budgetary Questions
ACC	Administrative Committee on Co-ordination
AGRIS	International Information System for Agricultural Sciences and Technology
ARL	Association of Research Libraries
CDPPP	Centre for Development Planning, Projections and Policies
CELADE	Centro Latinoamericano de Demografía (Latin American Demographic Centre)
CLADES	Centro Latinoamericano de Documentación Economica y Social (Latin American Centre for Economic and Social Documentation)
CPC	Committee for Programme and Co-ordination
CSDHA	Centre for Social Development and Humanitarian Affairs
DEBSIS	Development Sciences Information System
ECA	Economic Commission for Africa
ECLA	Economic Commission for Latin America
EDPIS	Electronic Data Processing and Information Systems Service
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
IAEA	International Atomic Energy Agency
ICC	International Computing Centre
IESA	Department of International Economic and Social Affairs
IFLA	International Federation of Library Associations
ILO	International Labour Organisation
INIS	International Nuclear Information System
INRES	Information Referral System

IOB	Inter-Organization Board for Information Systems and Related Activities
IRS	International Referral System
ISB	Information Systems Board
ISIS	Integrated Set of Information Systems
ISU	Information Services Unit
OECD	Organisation for Economic Co-operation and Development
OETO	Ocean Economics and Technology Office
OST	Office for Science and Technology
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNISIST	Programme of International Co-operation in Scientific and Technical Information

I. BACKGROUND

1.   This document has been prepared in response to General Assembly resolution 32/212 which requested the Secretary-General to submit to the General Assembly, at its thirty-third session, a progress report on the work carried out in 1978 by ISU in IESA, "so that the Assembly can pronounce itself on whether computerization should be undertaken". 1/

2.   The proposal to establish the Unit originated in a deeply felt need for an improved method of managing and utilizing information generated as well as collected by IESA. It was substantiated by a feasibility study prepared in January 1976, 2/ and was first presented to CPC at its sixteenth session in connexion with the 1978-1981 medium-term plan under "Interdivisional subprogramme 2: information systems" in the Department of Economic and Social Affairs. 3/

3.   The activities proposed for the Unit were designed to accomplish essentially the following three objectives:

    (a) To make the bulk of the Department's project- and research-oriented information readily accessible to technical experts in the field, regional commissions, Member Governments and the staff of the Department;

    (b) To co-ordinate the sectoral information services established in various units of the Department in response to mandates of legislative bodies and assist these units in the technical aspects of information retrieval and dissemination;

    (c) To assist Member States in identifying their information needs and establishing linkages with appropriate international information systems and services within the substantive areas of interest to the Department.

4.   CPC "found the idea contained in this subprogramme an interesting one, but felt that further information was necessary before the establishment, on a permanent basis, of a system for the storage and retrieval of the Department's documentation could be considered". 4/

5.   In responding to the Committee's expression of the need for more information, the Secretary-General, in December 1976, prepared a report, including a work programme and details of financial requirements (A/C.5/31/69), for consideration

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    1/ General Assembly resolution 32/212, sect. V, para. 4.

    2/ "Creation of an information systems unit in ESA: report from a feasibility study in January 1976" by Svein Nordbotten, 26 January 1976.

    3/ Official Records of the General Assembly, Thirty-first Session, Supplement No. 6A (A/31/6/Add.1), vol. I.

    4/ Report of the Committee for Programme and Co-ordination on the work of its sixteenth session, 10 May-11 July 1976 (A/31/38), para. 102.

by the General Assembly during its thirty-first session. The cost of the programme was to be met from extrabudgetary resources for 1977, 1978 and 1979 and from the regular budget of the United Nations beginning with the biennium 1980-1981.

6.   However, the Fifth Committee decided, at its 57th meeting on 20 December 1976, to defer consideration of the Secretary-General's report (A/C.5/31/69) until its thirty-second session.

7.   When the report was considered by the Fifth Committee, together with the report of ACABQ (A/32/256), under agenda item 100: "Proposed programme budget for the biennium 1978-1979", at its 27th and 28th meetings on 26 and 27 October 1977, a request was made for the Secretary-General to revise and bring the document up to date.

8.   A note by the Secretary-General (A/C.5/32/47) was thus prepared, taking into account the discussion of the proposal at the 27th and 28th meetings of the Fifth Committee, and was submitted to the General Assembly on 18 November 1977.

9.   In December 1977, the Secretary-General's note (A/C.5/32/47), together with the report of ACABQ (A/32/256/Add.1), were considered by the Fifth Committee. The recommendation for the "establishment of an information services unit in the Department of Economic and Social Affairs" was endorsed by the General Assembly at its 110th plenary meeting on 21 December 1977 in resolution 32/212: "Questions relating to the programme budget for the biennium 1978-1979", section V.

II. PROGRESS ACHIEVED

10. The Information Services Unit was established in mid-March in the Office of the Under-Secretary-General of IESA. This report outlines the progress made in the five months between mid-March and mid-August when the present report was prepared. Activities have mainly been focused on two areas: (a) the development of a departmental information storage and retrieval system: Development Information System, 1/ and (b) the co-ordination with substantive units relating to information analysis and dissemination activities.

1. Establishment of the Development Information System

11. The work plan takes fully into account the recommendations of ACABQ which advocated a step-by-step approach to systems development. It also allows flexibility so that the work will not be unduly slowed down by the administrative changes following the restructuring of the economic and social sectors called for by General Assembly resolution 32/197 which altered the organizational composition and responsibilities of IESA. The tasks relating to information collection, thesaurus (list of retrieval and indexing terms), storage and retrieval device and input preparation (inventory) have been the principal activities undertaken for the development of the information system during the period covered by this report.

(a) Information collection

12. Five organizational units of IESA were selected for an initial inventory, CSDHA, the Population Division, OETO, OST and CDPPP were asked to search their files for information considered to be of value to technical experts in the field, regional commissions, Member Governments and the staff of the Department. The information selected was mostly contained in studies, technical papers, manuals and mission reports. The nature of the information considered of value was essentially surveys, original research, methodological studies and commentaries that cannot be found elsewhere.

13. Sales, General Assembly and Economic and Social Council documents were excluded as other forms of bibliographic access exist for these materials. For the time being, the length or quality of writing was not considered to be exclusionary criteria. Provision of timely access to the unpublished and highly fugitive materials generated within the United Nations is viewed as the essential objective of this system.

14. Approximately 1,000 items thus selected have been received by the Unit for possible inclusion in its information system.

1/ Approved on 23 June 1977 as the Development Information System by ISB, which was established pursuant to General Assembly resolution 31/208 on 22 December 1976.

(b) Thesaurus

15. A key factor which ensures compatibility among information systems is the
commonality of terms used in describing information stored within systems.
Therefore, lists of terms currently used by various information systems relevant to
economic and social sectors were first studied before commencing the task of
compiling an IESA list of terms. It became evident that the Macrothesaurus: A
Basic List of Economic and Social Development Terms, developed by OECD, had the
widest measure of support within the United Nations family. 2/ Subsequently, a
decision was made to co-operate with OECD and others 3/ in their effort to revise
the Macrothesaurus so that it would represent fully the information on economic
and social development. Based on the examination of the contents of approximately
1,000 documents selected, terms included in Macrothesaurus were evaluated for their
appropriateness for indexing IESA literature. Gaps in coverage were identified and
additional new terms, together with alternatives to already selected terms, were
submitted for inclusion in the revised version to be published by OECD in the fall
of 1978. For this collaborative effort, a computer printout of its most recent
version was obtained from OECD to be used in indexing IESA literature.
Consequently, a considerable number of work months was saved by not duplicating
work already accomplished, and the list of descriptors to be used for the
Development Information System would thus be compatible with those used by ECLA,
UNIDO, UNEP, UNDP, ILO, OECD and others.

(c) Storage and retrieval device

16. Another key element which is critical to the compatibility among information
systems is the compatibility of data elements selected for storing and retrieving
information. When these data elements are selected according to guidelines and
standards widely accepted for use by international information systems, it
increases the possibility for the newly developed system to be compatible with
those systems using the same guidelines and standards.

17. In the field of information systems and libraries, two categories of standards
have been developed; one for information systems, spearheaded by UNESCO and its
UNISIST programme, and one for libraries, spearheaded by IFLA and the Library of
Congress of the United States of America. Traditionally, information and
documentation centres have been primarily concerned with rapid access to information
while libraries have been primarily concerned with the physical arrangements of
library materials and providing broad subject access to these materials.

18. Information systems development within the United Nations system has chosen to
follow the former set of standards, emphasizing the retrieval of information
rather than the organization and retrievel of physical documents. This can be seen
in (a) the international systems such as AGRIS of FAO and INIS of IAEA, (b) the

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2/ Information Systems Within the United Nations Family: Report by the
Administrative Committee on Co-ordination (E/AC.51/90), 27 April 1978, para. 53.

3/ Such as FAO, ILO, UNIDO, UNEP and ECLA, as well as institutions in
Argentina, Guatemala, Peru, Uruguay and Venezuela.

software systems developed within the United Nations family such as ISIS being used by ECLA, UNIDO, UNEP, UNDP, ILO, UNESCO and others, and (c) the tools developed for information retrieval such as the Macrothesaurus. The United Nations organizations, in their search for compatible information storage and retrieval systems and methodologies needed to support them, have been joined by numerous national and regional organizations as well.

19. In selecting the tools necessary to develop the IESA Development Information System, an effort was made to utilize tools commonly used by relevant international information systems which adhere to accepted international standards. For example, in addition to the adoption of the Macrothesaurus, the worksheet designed for DEVSIS 4/ was selected for use in recording bibliographic and subject information. The worksheet was selected for its conformity to UNISIST standards and for the possibilities it provides for retrieving information according to a variety of parameters.

(d) Input preparation (inventory)

20. As can be seen from the sample worksheet contained in the annex, an average of 10 to 15 retrieval elements such as author, organization, title, subject areas covered, country or region, language, project value and date have been assigned and an abstract of 100-150 words was prepared for each document. The data is recorded on the worksheet so that it not only describes the information content fully, but also serves as a key to retrieve information contained in each document.

21. These retrieval keys have been carefully selected so that they are capable of producing outputs which reflect the needs of potential users. Anticipated outputs might be the retrievel of information by single or multiple data elements such as country names, subjects or authors.

22. In keeping with the endorsement of the General Assembly that "the information be processed in such ways as to be computer-ready", approximately 600 worksheets representing the contents of 600 reports, studies and papers have been completed and are ready for processing at this writing. Preparation of worksheets for remaining documents continues at the rate of approximately 10 documents per day.

2. Co-ordination with substantive units relating to information analysis and dissemination activities

23. In recent years, increasing emphasis has been placed by intergovernmental bodies on the importance of the United Nations active participation in programmes

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4/ DEVSIS: Preliminary design of an international information system for the development sciences, International Development Research Centre, Ottawa, Canada, 1975.

to improve access to information in the fields of natural resources, 5/ human
settlements, 6/ ocean economics, 7/ population 8/ and science and technology. 9/
This increased the need for a mechanism to provide co-ordination within IESA of
these sectoral information activities as well as the need for a resource on which
substantive experts may draw when planning and undertaking information analysis and
dissemination activities. Similarly, the importance of co-ordination among
international organizations, both within and outside the United Nations system,
participating in information systems-related activities is increasingly recognized.
The economic gain to be achieved by collaboration and co-operation among relevant
information systems-related activities has encouraged various organizations to work
together toward common goals. Consequently, at least one third of the total
resources allocated for ISU in 1978 was directed towards addressing this objective.

(a) Co-ordination with substantive divisions of IESA

24. The Departmental Information Systems Task Force, created in 1977, continues to
provide a mechanism for intra-departmental co-ordination and collaboration.

25. The Task Force consists of one substantive officer from each division, office
or centre designated by its director. Serving as the focal point for the division,
office or centre they represent, the Task Force members are responsible for
improving communication among those staff members who are engaged in information
systems and related activities. They also participate in the inventory of
information generated and collected in their offices and forward the selected
materials to ISU for processing. Preparation of IOB survey questionnaires and other
activities intended for interorganizational co-ordination are also handled by the
Task Force members.

26. In addition to ensuring consistent and ongoing intra-departmental co-ordination,
the task of ISU is to provide substantive assistance and guidance in information
systems and related fields to various IESA units. ISU activities which have served
this purpose include:

(a) Participation in the Population Division's effort to produce a population
thesaurus and a list of terms for indexing and retrieving population materials,
which would be compatible with the Macrothesaurus, adopted for use by the
Development Information System;

(b) Assistance to OETO in their effort to collaborate with the UNEP IRS, which
identifies and disseminates information about environmental information sources
including the OETO areas of responsibility;

5/ Economic and Social Council resolution 2014 (LXI).

6/ General Assembly resolutions 31/109 and 31/116.

7/ Economic and Social Council resolution 2099 (LXIII).

8/ Economic and Social Council resolution 2052 (LXII).

9/ General Assembly resolutions 3507 (XXX), 31/183 and 32/178.

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(c) Participation in the OST efforts to follow up General Assembly resolutions 3507 (XXX), 31/183 and 32/178 for the establishment of a network on the exchange of technological information, and

(d) Assistance to the Centre for Housing, Building and Planning 10/ in its efforts to serve as a catalyst in the establishment of the Human Settlements Information Network.

27. The basic issues concerning "current technology", "users' needs", "relevant activities of other organizations" as well as the "impact on regional and national efforts" being dealt with in section 3 on "Computerization" have served as the basis for the way substantive support was provided to each IESA unit. It is hoped that the approach thus taken will produce a well co-ordinated result which complements relevant ongoing efforts and minimizes the possibility of unnecessary overlaps among these sectoral information systems and services.

(b) Co-ordination with regional economic commissions

28. Having identified the need for improved access to information rapidly accumulating at their headquarters, some of the regional economic commissions have begun to initiate actions to address this need. Requests for co-operation and assistance have also been received by ISU to supplement the expertise needed at regional commissions.

29. In responding to these requests, meetings were held with the Executive Secretaries of ECA and ESCAP in an attempt to identify appropriate methods of addressing their needs.

30. Although still at a preliminary stage, plans are being made to co-operate with these and other regional commissions to expand their capacity to efficiently utilize information they generate, as well as to facilitate active exchange among commissions and IESA of information relevant to their activities. Conversely, special attention is being paid to ensure compatibility with those relevant sectoral information systems already established and maintained by the regional commissions.

31. It is hoped that as the means of clarifying and meeting the specific needs of the staff of the regional commissions and those of their member States, the information systems and services being developed within the economic and social sectors will also serve as a vehicle for information dissemination as well as a feedback mechanism to receive inputs from users in the regions. These inputs consist of information generated by these users as well as system preferences identified by them.

(c) Consultation with other organizations

32. Much advanced work has already been accomplished by other international organizations both within and outside the United Nations system to achieve improved

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10/ Recently incorporated into the new Centre for Human Settlements: Habitat.

access to information and to promote international exchange of information. The
question of compatibility among systems and the ways to encourage collaboration
among relevant systems are being seriously considered by these organizations.
Therefore, participation in the ACC Working Party on Indexing Documents, which
promotes the use of compatible indexing vocabularies, as well as the Earthwatch
Working Group of the Environmental Co-ordination Board has not only provided ISU
with the opportunity of co-operating in the task of the United Nations system-wide
co-ordination, but has also given the Unit the opportunity to devise ways to
collaborate when such collaboration could produce efficient and economical results.

33. Since evaluation of information systems and services is within its competence,
UNESCO has expressed its willingness to participate in the evaluation exercise of
the Development Information System envisaged for 1979.

34. Given the limited resources for travel, a modest beginning has been achieved
by collaborating with OECD and others in the creation of a list of common indexing
terms (Macrothesaurus), with UNEP in their IRS programme as well as the UNESCO
UNISIST programme, which will be followed up in 1979 for more concrete results.

3. Computerization as a vehicle for implementation of the Development Information System

35. In deciding whether or not computerization is appropriate for maintaining and
utilizing a bibliographic file such as the one being proposed, it might be useful
to consider the following factors:

  (a) Costs;

  (b) Current technology;

  (c) Users' needs;

  (d) Information systems activities of other organizations relevant to economic
and social development;

  (e) Impact on regional and national efforts to improve access to development
information.

(a) Costs

36. Within the past decade, electronic data processing equipment has developed
capabilities to effectively and economically replace most manual operations. Today,
many manual operations are no longer considered cost-effective due to advances in
computer technology, particularly as it is applied to the processing of
bibliographic and textual information 11/ such as that being processed for the IESA

11/ The Future of Card Catalogs; minutes of the eighty-fifth meeting of ARL,
18 January 1975, Chicago, Illinois, pp. 32-33.

information system. For example, a manually prepared bibliography containing
30 citations could cost at least $8 for typing alone, while a similar list could be
produced within seconds by computer for $0.80. Once a data base is established
within a computer, the costs of its use for information search as well as
compilation of bibliographies, indexes, and lists become insignificantly small in
comparison to costs of the same tasks performed manually. The initial proposal to
utilize the computer for the IESA system is based on this assumption. An estimate,
therefore, of $39,800, provided by EDPIS, for establishing, maintaining and using
a bibliographic data basis of 4,000 documents was considered appropriate. This
includes 65 hours of computer time, systems programming costs, as well as storage
of files and rental of a terminal, 12/ allowing users to conduct on-line searches
at least several hundred times a year and the system to generate specialized lists
as frequently as once a week.

37. A computerized system allows users to obtain, within seconds, the information
they seek by scanning the entire file and selecting items appropriate to their
needs. In anticipation of users' needs, it can be designed to produce lists of
papers, reports and studies arranged by any desired retrieval elements, such as
author, organization, title, discipline, or geographical area. Such lists can be
prepared in response to individual requests as well as on a scheduled basis for
wider distribution.

38. A similar system, if manually operated, would be more costly to maintain and
operate and at the same time, would have a number of limitations such as
(a) slowness in preparing output (at a ratio of 1:125 compared with the computer's
output), (b) limiting users' access to the file through broad subject approach and
eliminating abstracts as additional source of information, (c) difficulty in
providing simultaneous access to the file by a number of users, (d) complexity in
bringing up to date and revising the file, and (e) difficulty in providing the file
for wider use by other organizations.

(b) Current technology

39. Since the advent of a variety of inexpensive computers capable of handling
most of the large-scale information processing tasks, the economics of using a
large central machine have become much less obvious. The fact that it is no longer
necessary to depend solely on expensive hardware in order to have access to
automated systems has made the application of computer technology to information
systems for international development more feasible than ever.

40. However, the costs of software or programmes, which enable one to make use
of the computer hardware and information it processes, have not yet declined in
appreciable proportion. Therefore, some international organizations, both within
and outside the United Nations family, have invested resources in developing
software and making it available to international organizations and their member

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12/ Programme Budget for the Biennium 1978-1979: establishment of an
information services unit in the Department of Economic and Social Affairs:
note by the Secretary-General (A/C.5/32/47), 18 November 1977, p. 5.

States without charge. 13/ Those who took advantage of the offer have also benefited from the training programmes which are provided by these organizations.

41. An information storage and retrieval system such as that being proposed by IESA could also benefit from taking advantage of a similar offer. The gains to be derived from it would be: (a) elimination of software purchase cost, (b) compatibility with systems utilizing the same software, thus facilitating automatic exchange of information, and (c) global availability of trained personnel as training accompanies dissemination of software as a rule.

(c) Users' needs

42. Basic to the decision in the selection of an appropriate system is the extent to which it can meet the users' needs. Critical consideration should be given to whether or not a system is capable of producing outputs immediately useful to their potential users in a cost effective manner. However, another important reason for the development of an information system is to provide the users with an educational instrument from which they can learn to identify their needs more precisely and obtain more comprehensive information than they are accustomed to retrieving through conventional systems. At a relatively small cost, a computerized information system can not only provide its users with what they perceive to be their needs, but also draw their attention to the existence of information previously unknown to them and its potential benefits.

43. Further, the abundance of readily accessible data bases within and outside the United Nations system today makes it imperative that a new system being developed within the United Nations provides its users the opportunity of exploring relevant information sources created by other organizations. If a manual system were adopted, it would not be possible for its users to exploit fully these readily available data bases. A computerized system based on shared software and a common indexing vocabulary would guarantee cost effective sharing of these resources.

(d) Information systems activities of other organizations relevant to economic and social development

44. As is evident from the Directory of United Nations Information Systems and Services recently published by IOB, various organizations of the United Nations family have developed computerized information systems which promote international

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13/ The Directory of United Nations Computer Facilities indicates that "ISIS", developed by ILO and UNESCO, for example, is currently being used by ICC, UNESCO, ILO, FAO and ECLA. Among other ISIS users are: Statskontoret (Sweden), International Development Research Centre (Canada), which has adapted ISIS for use in a minicomputer, Industrial Development Centre for Arab States (Egypt), the Polish Management Development Institute (Poland), Centre national de documentation agricole (Tunisia), Central Institute for Scientific and Technical Information (Bulgaria), Instituto de Cultural Hispanica (Spain) and Centre national de documentation scientifique et technique (Senegal).

exchange of information for economic and social development. Usefulness of the newly developed system would be greatly increased if it is capable of communicating or linking with other relevant systems. A few examples of immediate relevance to IESA are ISIS of ILO, which provides, _inter alia_, current awareness information in subjects in agricultural economics, industry and trade, public administration and government and other topics germane to economic and social development: the system being established by CLADES which provides computer-assisted access to socio-economic information for development; the Latin American Population Documentation System, co-ordinated by CELADE Latin American Demographic Centre, which provides ready access to regional demographic information generated and collected in Latin America; INRES, established by UNDP, which provides referral information on the "capacities of developing countries that are available for technical co-operation programmes, projects and activities with other developing countries, through bilateral or multilateral arrangements", 14/ and IRS of UNEP.

45. In addition to the subject coverage, methodologies, standards and guidelines applied in the design of these information systems should also influence the choice of software and the design of any new system such as the one being proposed to ensure compatibility between the new and existing systems. This will increase the possibility of the new systems becoming a part of the network of systems which facilitate economical and rapid exchange of information.

(e) Impact on regional and national efforts to improve access to development information

46. A new development information system being established by the United Nations should take into account the impact it will have on the regional and national efforts directed towards the improvement of access to development information. Development of an isolated information system would not only pose difficulties for co-ordination and compatibility of systems, but also limit its ultimate usefulness. Unless care is taken in prior planning, taking into account the efficiency and economy achieved through co-ordinated efforts among activities with similar objectives, costly duplication of efforts could occur. Acceleration of activities addressing development information problems in aggregate command a sizable amount of resources.

47. Further, since information necessary for international development is not usually contained in commercial publications, but frequently found in unpublished reports, studies and other materials difficult to locate, a development information system which provides meaningful access to these fugitive materials would have the most direct impact on national and regional activities for development.

48. In establishing a new development information system, one should also take into account the fact that the efforts of many Governments to improve their capacity to utilize information they generate and collect has increased the possibility of fostering regional exchange of information useful for development. At the same

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14/ _Directory of Services for Technical Co-operation Among Developing Countries_, United Nations Development Programme, June 1978, p. vi.

time, demand for improved methods for processing information as well as effective education and training programmes for information specialists, particularly in developing countries, have also increased in recent years. Successful implementation of a pilot effort such as the Development Information System can serve as a vehicle for demonstration and training which could support and supplement activities like the UNESCO UNISIST programme designed to promote information systems compatibility and harmonization in assisting member States.

49. Obviously, the advantages to be gained by the computerization of the Development Information System are many. However, when the decision is made to utilize electronic data processing equipment, it is equally important to ascertain that its implementation would take into account all key issues delineated in the foregoing paragraphs concerning the software, systems compatibility, international guidelines and standards, and co-operation with relevant systems.

Annex
DEVSIS WORKSHEET

	New	Changed	Deleted	Revise	Withdraw	Standard	Report	Bibliography	Directory	Dictionary	Conference	Thesis	Computer Programme	Statistical	Survey only	Map, Atlas	Filr, Slide	Sound Recording	Machine Passible	Microcopy	Non Conventional
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	X

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