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UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA
Multidisciplinary Regional Advisory Group

REPORT OF AN ADVISORY MISSION ON COMPUTER NEEDS ASSESSMENT
FOR THE AFRICAN INSTITUTE FOR ECONOMIC
DEVELOPMENT AND PLANNING

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Summary

1. The Director of the African Institute for Economic Development and Planning (IDEP), requested a mission from the Multidisciplinary Regional Advisory Group (MRAG) to advise IDEP on its imminent computerization, with special attention to the needs of the library, e-mail connectivity, the IDEP computer curriculum and gender issues in information. The report reviews planned computerization activities at IDEP, makes recommendations for acquisition of equipment and software programs. The establishment of a LAN and an e-mail system is also recommended for sharing information and minimizing telecommunication costs within a Local Area Network 10BaseT Ethernet link with a Network Interface Card, twisted pair cable (Registered Jack - RJ-45). The report concludes by making recommendations for application and utility software programs.

Justification

2. By telex dated 10 March 1995 sent to the ECA Deputy Executive Secretary, the Director of IDEP, Dr. Jegaan Senghor, requested a mission from the Multidisciplinary Regional Advisory Group (MRAG) on needs assessment in the field of computerization. Previous PADIS involvement with IDEP had included a mission advising on the computerization of IDEP undertaken by Mr. Herbert Girkes in 1990, while Mr. Van den Reysen was Director of IDEP, and the visit of Ms. Hafkin to IDEP to follow up on Mr Girkes report, in the course of another mission to Dakar in 1993. At those times, however, the funds were not available to implement the recommendations. In view of the rapidity of change in the information technology area, a new visit was necessary to update the recommendations in view of available resources, new needs and changes in technology.
3. The mission was undertaken from 15-19 May 1995 by Mr. Makane Faye, Regional Adviser in Information Systems, and Ms. Nancy J. Hafkin, Senior Economic Affairs Officer, Information Systems Development at ECA.

Objectives

4. The main objective of the mission was to assist IDEP in developing a computerization plan bearing in mind the need to incorporate gender issues.

The specific objectives of the mission were as follows:

- to assist IDEP on e-mail connectivity in the framework of the PADISnet programme;
- to assess new technology needs;
- to carry out needs assessment for the computerization of the library;

- to advise in the setting up of a computer unit;
- to give advice for the improvement of the computer courses delivered at IDEP;
and
- to make recommendations for procurement of computer equipment and use.

Meetings at IDEP

5. Meetings were held with Dr. Philip Quarcoo, Chief of Training, at IDEP, for briefing on the IDEP's situation regarding computerization, preliminary work that had been done (an outline of computer equipment to be purchased had been put up by the African Regional Centre for Technology, Dakar) and resources available to effect any proposed plan. Meetings were also held together and individually with all concerned section personnel, including Mr. Fakhfakh, head of Administration; Mr. Samuel Odoteye, Chief Librarian; Mrs. Traore, computer section; Dr. Aisha Iman, gender and development programme officer; Prof. Seck, computer instructor and other staff members from Administration, including Finances and Registry. It was noted that one of IDEP's major concerns was operationalizing e-mail, for which the telephone system of the Institute had to be upgraded.
6. The mission drew up its observations and presented them in the form of recommendations to a meeting of the concerned personnel on 18 May. The recommendations were amended following the comments of IDEP staff.

Observations

Computerizaion of IDEP

7. IDEP is about to launch a project of computerization that will greatly improve upon its present facilities in this area. Funds for this operation are coming largely from extra-budgetary sources, and then direct the placement of much of the equipment. However, it is recommended that these purchases be complemented with additional equipment which will greatly increase the value of the computerization investment for the Institute.
8. Under the computerization project, the major beneficiaries of computerization will be the computer lab, for the benefit of all students at the Institute, the gender and development programme (utilizing its own funding), the Library and the Finance section.

Equipment

9. The mission reviewed recommended equipment lists drawn up in consultation largely with the African Regional Centre for Technology. The Gender and development programme drew up its own list. All of these lists have been very competently done. However, as change in the information technology field is very rapid and the price-performance ratio is constantly falling, advantage should be taken to get the most computer power, speed and useful peripherals at the time of purchase.
10. The mission recommended buying in Dakar, instead of from dealers abroad, even at a cost premium of 30-40%. It was our experience that local dealers can be called upon to service and replace, when necessary, malfunctioning equipment while with remote dealers, this is very difficult and the cost of non-functioning units this raise the overall purchase price to beyond that of local expenditure.

Added peripherals

11. It is recommended that three of the new computers to be purchased be purchased with internal fax modems (few machines are available with modems only). This will avoid all problems of cables. These should be at the highest speed available locally - if they are new model machines it is unlikely that the speed will be lower than 19,200 bps. Of these, it is essential that one of these is in the library, one in the gender and development programme and one in the training programme. Administration will have direct access to the machine in the registry, as will the Director. Through the process outlined above working with Mrs. Traore, all staff with basic knowledge of and access to a computer will also have access to e-mail.

Computer applications

CD ROM

12. The mission supports strongly the recommendation to purchase computers for the gender and development programme and for the library with CD-ROM drives. It is particularly important that at least one of these computers be accessible to students. Given the paucity of recent materials (from the '90's in the Library) and the small budget available for library acquisitions (perhaps \$5000 for the next year for general library materials), many important materials can be acquired on CD-ROM. These include World Bank and IMF statistics, encyclopedias, and material on women and development. Several international organizations already have their public databases on CD-ROM (e.g. UNESCO) and make them available free of charge to other international organizations. The mission will supply IDEP with lists CD-ROMS that would be useful to its collection and which are available without charge or at relatively low cost.

13. The Library is also urged to contact the American Association for the Advancement of Science which has an African Journals Program and a CD-ROM program for research libraries; under both of these AAAS supplies journal and CD-ROM subscriptions. (Ms. Liz Levey, American Association for the Advancement of Science, 1333 "H" Street, Washington, D.C. 20005 USA;llevey@aaas.org).

Local Area Network (LAN)

14. The importance of proceeding with the installation of a LAN was agreed upon, in that it would greatly facilitate informing sharing as well as electronic communication (e-mail would then be available to all users on the LAN precluding the need for individual modems on stand alone machines).

Electronic communications

15. As it is about to acquire a goodly number of up-to-date computers, it is highly recommended that IDEP embark in earnest of the utilization of electronic communication, becoming full participants in the Information Age which is beginning to make its impact felt in Africa. IDEP is particularly well situated to do this because of its association both with Senegal and with ECA. Senegal is one of the leading countries in Africa in recognizing the imperative for Africa to participate in the Information Age (without which all of its development efforts will be more isolated from the globalization of the world economy), while ECA houses the only region-wide programme based in the Africa region to promote electronic communication as a tool for economic and social development.
16. It is highly recommended that IDEP adopt e-mail for much of its administrative correspondence. The mission observed that IDEP encounters many bottlenecks in its operations because it is removed from the place where decisions are made about its operations and that many matters are stalled until the necessary decision or action is communicated. These include ECA in Addis Ababa, Van Breda in Brussels, UN and UNDP Headquarters, and headquarters of donors. If e-mail messages were sent to resolve matters which are stalled, IDEP would profit greatly. Additionally, the fact that this medium can be used to send faxes (fax by e-mail) at far lower cost than faxes by normal means (sometimes cutting costs by a factor of 20 or more).

Operation of e-mail

17. Until other points are obtained, Mme Traore will be trained in the use of e-mail by Moussa Fall and she in turn will train the man in charge of the Registry in its operation. She will also give a brief training (one hour would suffice) to staff who show interest in using e-mail. Staff wanting to access e-mail can send her diskettes with the file saved in ASCII format and the e-mail address of the recipient indicated. She can then verify the

polling times on the ENDA system, send files to correspond with those times and prepare mail for distribution. The actual distribution would be done by the Registry.

18. In the course of the mission, the mission arranged for the CABECA consultant Moussa Fall to install a total of four e-mail points at IDEP, with no increase in the monthly fee. (IDEP would continue to pay one single fee of 5000 CFA, plus 100 CFA per KB of message.

Library computerization

19. Particular attention to the Library in this process is well justified. In the past the Library has been regrettably marginalized, despite its pivotal role to IDEP as a training institution. In this plan the Library is regarded as central. It is felt that the Library requires a minimum of 3 computers, two for student (with staff assistance) use in the main reading room and one in the library office. It is highly desirable that one of these computers be a Pentium machine, with a CD-ROM drive and between 500 MB and 1 GB storage capacity. This amount of storage capacity in one computer (a maximum of 1.65 GB) would allow the library to store material in volume equal to or greater than the current holdings of the library.
20. The mission found that the Library had made a start on its computerization, with the creation of two data bases in 1992-1993, one with nearly 2000 entries of library general holdings and one with more than 600 items on women and development. Apparently the structures were developed by Mr. Assane Gueye, then of African Regional Centre for Technology, and entries done by Mme Fatima Santos, then with the Library and now with the Administration. The indexing on the women and development bibliography was done by Mrs. Elizabeth Ebot.
21. The library can continue on the beginning of its computerization immediately, with Mr. Bara, who joined the library on 18/5 as a library assistant, and Mrs. Ebot. Mr. Bara is well trained in CDS/ISIS and has experience in developing databases. His experience in working with AAWORD/AFARD to develop their database on women and development will be useful to the project on Strengthening gender in development capacity in Africa. Mrs. Ebot has done a two year diploma in documentation at EBAD. It is recommended that Mr. Bara train her in CDS/ISIS (she is taking introductory courses in computer use on her own) so that she can do indexing, abstracting and entry using the program. It would also be helpful if Mrs. Santos could return to the Library, where she worked very ably in data entry. For a beginning on the bibliography on regional integration in Africa, ECA/PADIS will supply a diskette (in CDS/ISIS and WordPerfect formats) and print copy (in Word Perfect format) of the entries it has in its databases on this topic (estimated at about 250 entries). This can be the base of the IDEP Library's bibliography on this subject, which can then be continued from this point, adding materials which the IDEP

Library has but which PADIS does not. PADIS will also supply (sending them by pouch) copies of materials included in this bibliography from PADIS' documents delivery service.

22. Once Mrs. Ebot completes work on the bibliography on regional integration, it is felt that she could continue work on other special topic bibliographies needed for the IDEP courses and research projects. This would be completed by Mr. Bara continuing to work on the CDS/ISIS computer entry of all the library materials (presently estimated at 20,000). It is highly recommended that as a matter of priority all material produced by IDEP be indexed and abstracted in the database. This would allow IDEP to extract whenever needed this database of its published materials, which could be used in bibliographies, for project documents, for promotional materials, etc. These materials should include students' theses, papers and other publications produced by research projects, publications prepared by IDEP staff and any other papers and documents produced by staff or visiting professors and researchers at IDEP. This bibliographic effort would also be supplemented by work on adding to the women and development bibliography (through updating and acquisition of additional materials) by funds from the project on Strengthening gender in development capacity in Africa.
23. Mr. Bara could also develop additional modules for the library's computerization using CDS/ISIS, e.g. a model for acquisitions that would include pricing information and a listing of vendors; a module for lending. As soon as an additional computer is available for library users, the database of holdings, as well as the subject specific databases should be mounted on it. Information sheets should be prepared (in English and French) to assist students in the most basic techniques of searching for materials in these databases and saving to a file or diskette the results of their searches, when desired. At the start, it would be necessary for the library staff to assist users with this process. The same computer could also be used for other information searches by students - CD-ROM databases and information acquisition by e-mail.
24. Once an e-mail point is installed in the Library, PADIS will supply IDEP with materials on acquiring information on topics related to economic development and planning in Africa by e-mail. When the ECA/PADIS/MRAG Advisor on Information Systems comes to IDEP, at the annual invitation of the Director of IDEP, to deliver modules on information technology and the information age, he can train the library staff in the acquisition of information by e-mail.

Further library computerization

25. The recommendation to proceed immediately with library computerization along the lines already begun is regarded as an interim measure so as not to lose momentum and to take immediate action towards computerization of the library, coinciding with the arrival of Mr. Bara. However, it would be desirable for the library to acquire a commercial

integrated library management software programme designed for small and medium size libraries, that will handle all aspects of the library's operations including acquisitions (whether by purchase or gifts), lending, catalogues and bibliographies. Such programmes are available in the range of US\$200, and could be purchased directly from the United States and sent to IDEP through the pouch, at no risk to the Institute. PADIS will recommend to the Institute the name and supplier of a programme which could be used, taking into account a programme which will accept the records already entered in CDS/ISIS (probably in ASCII format) to avoid redoing work which has already been done.

Continuing relations with PADIS

26. It is recommended that IDEP strengthen its relationship with PADIS, through on-going relations between the Programme and the Library. The suggested participation of the ECA/PADIS/MRAG Advisor in the Programme has already been noted. It is urged that IDEP revitalize its membership as an institutional participating centre in the PADIS network by rejoining the work of the Standing Committee on the Harmonization and Standardization of Information Systems in Africa, of which it is a member by virtue of being an institutional participating centre in the PADIS network. (Mr. Sam Odoteye attended the 1992 meeting in Addis Ababa; IDEP did not attend the 1994 meeting; it is hoped that it will attend the November 1996 meeting). Students and researchers using the library could then have access to PADIS' databases in a number of ways: once new computer equipment arrives for the Library, PADIS' bibliographic databases could be copied onto the hard disk of the computer and used for searches. Additionally, this year PADIS is developing a facility for e-mail searching of its databases (including databases from other organizations which participate in the network). Queries could be sent by e-mail from the Library to do this, with search results returned by e-mail as well.
27. PADIS (through the Standing Committee) is also developing a CD-ROM of African development information, containing databases of participating institutions. For this PADIS would expect IDEP to contribute the database of materials it has produced. Once this is produced in 1996, it will be supplied free of charge to IDEP.

Other meetings

28. The mission also held meetings with Mr. Omar Diop, consultant to PADIS to assess progress made on the IDRC-sponsored study of the Impact of electronic networking on development in Senegal, with Mr. Jacques Buignicourt, Director Enda-Dakar and Mr. Moussa Fall of Enda-Dakar to discuss matters related to Mr. Fall's work as a consultant for West Africa development under the IDRC-sponsored Capacity building for Electronic Communication in Africa project (CABECA) and with Ms. Marie-Helene Mouton Sylla, about a proposal for a workshop on electronic communication for women in francophone

West Africa in preparation for the Beijing Conference on Women and Development in November 1995.

General recommendations

Equipment purchase policy

29. As change in the information technology field is very rapid and the price-performance ratio is constantly falling, advantage should be taken to get the most computer power, speed and useful peripherals at the time of purchase.
30. Equipment should be purchased in Dakar, instead of from dealers abroad, even at a cost premium of 30-40%.

Equipment

31. Three of the new computers to be purchased be purchased with internal fax modems at speeds not be lower than 19,200 bps. Of these, it is essential that one of these is in the library, one in the gender and development programme and one in the programme. The fourth e-mail point will remain in the Registry where it will be accessible to all users in the house. Administration will have direct access to the machine in the registry, as will the Director.
32. The central e-mail facility can be operated by Mme Traore who can further train the Registry man. Mr. Moussa Fall of ENDA will supply whatever additional Mme Traore needs. She will then hold one or more one hour briefing/ sessions for all IDEP staff who want to access e-mail.
33. Computers purchased for the gender and development programme and for the library should have CD-ROM drives to supplement at relatively low cost the currently very limited library acquisitions budget.
34. The Library should contact the American Association for the Advancement of Science which has an African Journals Program and a CD-ROM program for research libraries (address in accompanying report).
35. IDEP adopt e-mail for as much as possible of its administrative correspondence to get beyond current bottlenecks which greatly impede Institute operations.

At this time, there is one e-mail point at IDEP (5:7711/1.67) managed under the registry with assistance from the Chief of Training and the Computer assistant. However in view of the fact that there are 5 potential e-mail points in IDEP, it is recommended to:

- set up additional 4 nodes at:
 - Library
 - Gender
 - Director's Office

This would allow 4 new points thus increasing IDEP's connectivity and possibility in accessing information resources. Connection of the 4 above points would be undertaken when the new telephone system is installed.

Library computerization

To be able to run appropriate data base development software such as CDS/ISIS 3.0+, the library needs the following equipment:

a. For e-mail and CD-ROM search by users

- One Pentium 120 microprocessor, 32 MB RAM, 1GB Hard disc, Quadruple speed CD ROM, MultiSound card and Speakers, Dual floppy Drives (3.5"/5.25"), 19" Colour monitor SGA, Modem/Fax card installed, 24-bit adaptor video RAM of 4 MB, Multimedia accelerator card, SCSI Controller, EISA Data Bus, Internal tape streamer 500 MB

b. For retrieval of information from IDEP library by users

- One 486 DX2 PC with 8 MB RAM

c. For data input by IDEP library assistant

- One 486 DX2 PC with 8 MB RAM

d. For management of acquisition, circulation and data validation by IDEP librarian

- One 486 DX2 PC with 8 MB RAM

e. Software

- Windows, Micro CDS/ISIS, Dbase for windows

f. Scanner

- One grey scanner

- One colour scanner

g. Printer

- One matrix printer
- One laser jet printer
- One deskjet printer

e. UPS

- Four UPS of 600 VA

Funds would come from the Gender project but in the meantime because of the need to continue data base development activities which was previously carried out in an outdated PS/2 machine with low memory capacity and in view of the fact that the CDS-ISIS version 3.07 cannot run under such a machine, it is recommended to borrow:

- One 286 PC from Computer unit for use by the Library assistant for data input and circulation

36. The Library requires a minimum of 3 computers, two for student (with staff assistance) use in the main reading room and one in the library office. It is highly desirable that one of these computers be a Pentium machine, with a CD-ROM drive and between 500 MB and 1 GB storage capacity.
37. The Library should continue immediately the start it made on its computerization, with the creation of two data bases in CDS/ISIS in 1992-1993. Mr. Bara can continue to catalogue the overall holdings of the library using CDS/ISIS and can train Mrs. Ebot in CDS/ISIS so that she can work on the database on regional integration (PADIS will immediately supply to IDEP the materials on this topic from its databases). If possible, Mrs. Fatima Santos should return to the Library, where she worked very ably in CDS/ISIS data entry.
38. All material produced by IDEP be indexed and abstracted in the IDEP CDS/ISIS database. This would allow IDEP to extract whenever needed this database of its published materials, which could be used in bibliographies, for project documents, for promotional materials, etc. These materials should include students' theses, papers and other publications produced by research projects, publications prepared by IDEP staff and any other papers and documents produced by staff or visiting professors and researchers at IDEP.
39. For compatibility with PADIS data bases, the library should use PADIS methodology for data base development. A copy of the structure of PADIS data base was handed over to

the Assistant Librarian to enable him prepare conversion programs between the existing IDEP data base and that of PADIS.

40. Mr. Bara could also develop additional modules for the library's computerization using CDS/ISIS, e.g. a model for acquisitions that would include pricing information and a listing of vendors; a module for lending. As soon as an additional computer is available for library users, the database of holdings, as well as the subject specific databases should be mounted on it.
41. These actions are preliminary to the Library's acquisition of a commercial but low cost (about \$200) integrated automated library management programme designed for small and medium size libraries, that will handle all aspects of the library's operations including acquisitions lending, catalogues and bibliographies. There would be portability with the records from the CDS/ISIS database.

Administration

42. No sustainable e-mail connectivity can be undertaken without a solid telephone infrastructure basis in an institution. Hence IDEP needs to acquire up to date telephone facilities if it wants to take part in information exchange activities which are currently taking place around the world. The following telephone specifications were prepared by the mission and submitted for approval by IDEP:

Telephone switchboard for 20 extensions with:

- 12 volts battery assisted power supply
- 2 external lines
- 1 operator extension

Option: - Taxation card and printer

The taxation option would enhance control of abuse on telephone use by printing the following information:

- identification of the extension
- telephone number called
- duration of the call

Offer was made by a telephone sales company in Dakar called ITS. The brand of the switchboard offered is Telcom 25 SE at a price of 2.500.000 CFA which can handle up to:

- 20 external lines; and
- 96 extensions
- waiting music
- 8 hours power autonomy

(The above price assumes that IDEP has 20 existing telephone extension boxes available for use by the new system and that also the existing cable are in good conditions). With the above system, direct e-mail access from the extension to the national node based at ENDA is possible without the assistance of the operator. Furthermore, the Telcom 25 SE can be upgraded for additional external lines and extension by further acquisition of cards to be slotted in the system. There is also possibility of opening access from selected extensions by the switchboard operator hence enabling control of outgoing telephone calls.

43. In view of the urgency to have such a system available for facilitation of e-mail and other communications, it is recommended that:
- the Telcom 25 be purchased now;
 - the Taxation card and printer be purchased whenever additional funds are available.

Finance Section

44. IDEP has already started computerization of its accounts using Dbase 4 software in relation with Quattro Pro. To be able to run accounting packages such as DBASE4, the finance section needs the following equipment:
- One 486 DX4 PC with 12 MB RAM
 - One 486 DX2 PC with 8 MB RAM
 - Windows, ACCPAC, Quattro Pro, Microsoft Office, Dbase for window
 - One matrix printer
 - Two UPS

In view of the urgency to have finances section operational it is recommended to borrow:

- One 386 PC from Computer unit; and
- One dot matrix printer for use by the Finance staff

Courses on computer techniques and information information technology/systems

45. In today's world it is accepted that computer techniques should be part and parcel to any sound planner. Hence the course on computer applications should be continued with at

least the following main software programs: WordPerfect, Excel and Dbase. In addition it is recommended to improve the module by the introduction of new elements to make the trainees get exposed to the Information Society. In this regard, a course on the new information technologies and information policies would be started by ECA in the context of Section 20 resources. The ECA/PADIS/MRAG Adviser will be invited each year to deliver a two week module on Information Technology and the Information Age in the Master of Arts Degree in Economic Development and Planning. The course will be delivered twice a year for one week in each semester programme.

Membership in PADIS network

46. IDEP should revitalize its membership as an institutional participating centre in the PADIS network by rejoining the work of the Standing Committee on the Harmonization and Standardization of Information Systems in Africa. It should contribute IDEP-produced materials to the PADIS databases and can in turn receive copies of PADIS' databases for access by IDEP students and researchers. IDEP should strengthen its relationship with PADIS, through on-going relations between the Programme and the Library.

Supplies and accessories

47. Some points that should not be overlooked were noted - that budget lines should be made available for paper, diskettes, toner and fax paper, among other supplies - without which the computerization would not be operational. It was also stressed that among the first purchases to be made should be the LAN server and a UPS, to maximize its use. As a matter of priority, the computer training room should be provided with air conditioning.

Recommendations for a Local Area Network

48. Due to its popularity and maintainability a LAN based on Ethernet protocol is recommended. Unshielded twisted pair connection with a hub (10BaseT star) configuration should be used. 10BaseT would prevent fault on a one cable or node from affecting the rest of the network. A client server architecture would be preferable to a peer-to peer based on the size of the office and departmental requirements within IGADD. This architecture would allow staff to access files, information and communication tools with a better security and independent distributed access to departmental files. The server software would provide centralized administration, security and control to access shared resources through configurable users accounts.
49. The computer to be used as a server should be as redundant and fault tolerant as possible to provide high level of reliability. This architecture would also provide better resource management and security.

50. Both LAN hardware and software should be acquired to set up the network. One hub and a full set of LAN to serve 25 users should be acquired. 10BaseT Ethernet link requires a Network Interface Card, twisted pair cable (Registered Jack - RJ-45) and concentrator hubs.
51. For improving reliability, reducing maintenance costs and increasing information access, the following equipment could be added:
 - Streaming tape drive - QIC format for small systems, DAT format on large hosts.
 - CD-ROM drives - Single drive, up to dozens for multiple database access.
 - Power regulation & UPS - 15 minutes battery
 - Backup hardware - duplicates of current system components.

Expected results

52. From the above recommendations, it is expected that IDEP will have a modern and functional telephone system, a fully operational computer unit, an automated library and a full scale e-mail system for the benefit of users, staff members and member States. Communications with member States will be enhanced while communication costs will be reduced and at the same time published outputs will be improved. Downloading of files from PADIS and exchange of on-line information with ECA and the various UN offices including the UNDP gender and development programme will now be possible. Training in computer use will be enhanced with the new technology while the trainees will be exposed to various aspects related to approval and modification of national information policies and the access to new information tools such as gophers, Listservs and INTERNET.

Follow up

53. The plan and specifications included in the report can only yield positive results if properly implemented. IDEP has requested a follow up mission to monitor the wiring of the computer unit, the cabling of the new telephone system, the generalization of e-mail in the relevant offices and the initial training in the use of the system. In order to make successful ECA's support to IDEP activities, the requested follow up should be carried out in due course when procurement of equipment will be finalized by IDEP.
54. Furthermore, IDEP will send a request to ECA to enable the Regional Adviser in Information Systems Development to deliver twice a year, the course on new information technologies and national information policies. During the course, one additional week

could be used to assist IDEP in building and optimizing the use of its computer system (e-mail, library, computer unit).