Distr.
LIMITED
E/ESCWA/STAT/1995/15
9 August 1995
ORIGINAL: ENGLISH

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

REGIONAL TRAINING WORKSHOP ON STATISTICAL DATA PROCESSING ON THE PC

Cairo, 4 - 8 June 1995

Final Report

United Nations
New York, 1995

95-0398

Introduction

1. The Economic and Social Commission for Western Asia (ESCWA), in collaboration with the United Nations Statistical Division (UNSD) and the United Nations Population Fund (UNFPA), organized a Regional Training Workshop on Statistical Data Processing on PCs, which was held in Cairo, from 4 to 8 June 1995. The objective was to strengthen the capacity of the national experts and organizations in the ESCWA region in using computer software for collecting, processing, presenting and disseminating socio-economic and other relevant data.

2. ESCWA invited UNSD to provide two resource persons from the UNFPA-funded Computer Software and Support for Population Activities project to conduct regional training on PC-Edit, Xtable and PopMap for 10 working days. UNSD agreed to fund one person for five days. However, when the number of expected participants rose to 23, the project requested UNFPA to fund a second resource person.

3. The Cairo Demographic Center (CDC) was the site of the workshop, and 19 nationals from 9 countries in the region participated. ESCWA received funding for some participants from the German Agency for Technical Cooperation and UNFPA-Jordan. The League of Arab States sent two participants.

4. A statistician from ESCWA was the workshop coordinator. Participants found the software packages useful and planned to use them for entering, editing, processing and disseminating socio-economic data. The PopMap software elicited special interest, and participants indicated their intention to enhance the country applications upon their return. The participants were informed of future technical support and continued dialogue on software development activities.

The Workshop

5. His Excellency Mr. Maher Mahran, Minister of Population and Family Planning, opened the workshop. In his opening remarks he stressed the importance of computer technology in supporting the work activities in the area of population, health, and environmental issues. He also mentioned the important contributions of software in monitoring these activities as well as data presentation and dissemination and the need to share data between producers and users of information.

6. The Chief of the ESCWA Statistics Division welcomed the participants and pointed out the progress that had been made so far on the use of micro computers and software. He emphasized their practical use in data processing, storage and retrieval and in graphic presentation. He also expressed the wish that participants would benefit from this workshop and make use of software applications.

7. Mr. Hesham Makhlouf, Director of the CDC, welcomed the participants and expressed the wish that they would enjoy themselves in Cairo. He added that choosing the CDC for the

workshop was an indication of the good relations between ESCWA and the CDC and participants should consider the event as an opportunity for enhancing their computer skill and knowledge.

Facilities

8. The Cairo Demographic Centre has two computer labs: one, on the top floor, has eleven 486 PCs, a SummaSketch 12x18 digitizer, overhead projector and a computer projection panel. The other computer lab, on the ground floor, has the same facilities except for four fewer 486 PCs. A scanner was also available, as were several printers.

9. CDC installed all the software prior to the workshop, but the computers had to be reconfigured to provide sufficient memory for PopMap. The day prior to the workshop, the project staff and the ESCWA statistician met at CDC to test all the computers for the start of the workshop.

10. The participants were provided with transportation from the hotel to CDC at 8:00 a.m. and from CDC to the hotel at 4:30 p.m. The daily trip took about 45 minutes in each direction.

Training Material

11. In view of the short duration of the workshop and to prepare well for it, the training materials were sent in advance to the participants. The project prepared 25 sets of the training materials, computerized tutorials, hand-outs on various related topics, the workshop programme, guidelines for preparing the essential material (with sample country maps and data) needed for the project work, and a special slide presentation that provided more information on PC-Edit, Xtable and PopMap. All the software manuals were sent directly to CDC. A few weeks before the workshop, the participants were reminded to bring along the country statistical and map data for the project work.

Training Schedule

12. As the workshop covering three software programs was only five days long, the schedule had to be condensed and several topics had to be excluded. The duration became even shorter as translation became necessary, especially on PC-Edit and Xtable. Morning sessions were held from 9 a.m. to 12:30 p.m. with a 10-minute break; afternoon sessions were held from 1 to 4 p.m. There was a 30-minute lunch breaks but this could not be observed regularly.

13. The project staff found the workshop difficult to conduct in five days. It was necessary to work after the sessions to prepare and adjust the topics for the next day.

PC-Edit (1-1/2 days)

14. The software features were presented. A case-study featuring a sample, population and housing census questionnaire with two record types (household and residents) was used for practice. A data entry screen was designed, and edit rules for range checks as well as consistency and structure checks were implemented. Some of the time was devoted to discussion and clarification of concepts of data processing, edit rules and error correction.

Xtable (1/2 day)

15. The software features were presented. Participants produced frequency tables on the same PC-Edit layout and data entered from the sample data as well as from the Popland case-study that contained census data with a layout file and a data file more than 2 MB in size. Frequency tables were produced; category-sets for different fields and cross-tabulations were defined and produced; and computations on the tables were executed.

16. The PopMap upgrade version was installed. The limited time compelled the project staff to make quick presentations. Participants immediately engaged in the hands-on practice sessions. Two classes were held to provide sufficient space for the project work. The hands-on practice proved very useful in familiarising the participants with PopMap's many features and user interface.

17. There were only four participants who brought country data for the project work; eight came with country maps. In preparation for participants who might not bring country data, the project collected country statistical data and maps before leaving for the workshop. Despite the limited time, most of the participants were able to use PopMap to develop the statistical and cartographic databases and display thematic map outputs. Since this operation was the most time-consuming during the three-day session, a quick overview was done on the other features, such as creating slide presentations drawing icons and entering/importing/exporting data through the spreadsheet.

Workshop Outputs

PC-Edit and Xtable

18. All participants were able to use PC-Edit. The project provided a sample mini-census questionnaire to illustrate how to create a layout file of multiple record types with editing rules for a range check, a consistency check between fields and s tructure check. This sample questionnaire was used to design a data entry/editing screen, enter sample data, and apply the data verification and modification features.

19. Xtable was used to produce frequency tables with data entered for the mini-census questionnaire, define and produce cross tabulations with the layout and data file of the Popland example provided by the project, perform computation on cross tabulations, and save results into a Lotus-123 file for further manipulation.

20. The few participants with data-processing experience easily followed and used PC-Edit and Xtable. The participant from Bahrain used Xtable to test country data and produce frequencies and sample tables.

PopMap

Almost all the participants completed the hands-on practice using Metaland, the case-study in the manual. Those who came with country maps completed the application; those without used the maps provided by the project staff. The third day had to be shortened for the closing remarks and presentation of training certificates. The participants produced the following applications:

Bahrain

- Country map with 12 regions (four administrative levels to be completed)
- Statistical database with 1991 population data, density, household size and fertility

Egypt

- Country map with 4 regions and 25 governorates
- Statistical database with 1986 population, male/female literacy rates

Iraq

- Country map with 18 governorates
- Statistical database with 1987 labour force data, 1993 hospital data, 1994 population and data on schools. Participant wanted to see different time series.

Jordan

- Country map with 8 governorates
- Statistical database with 1994 population data

League of Arab States

- The project's Arab State application was used and modified to include 22 countries and areas:
  Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Mauritania, the Comoros, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, the Sudan, the Syrian Arab Republic, Tunisia, the United Arab Emirates and Yemen.
- The project's statistical database was applied. The participant would later enhance this and a copy would be sent to the project.

Middle East and North Africa (UNICEF-MENA)

- UNICEF-MENA used and modified the project's Arab State application to include these countries and areas: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, the Sudan, the Syrian Arab Republic, Tunisia, the United Arab Emirates and Yemen.
- The project's statistical database was applied. UNICEF would communicate with the project about the MENA application.

Palestine

- Map of the West Bank with three regions and eight districts

Saudi Arabia

- The project's country application was used

Syrian Arab Republic

- The project's country application was used

Yemen

- Country map with 18 governorates
- Indicators were declared but no data entered; the time was spent drawing the country map

(see annex III for the PopMap sample outputs)

Evaluation Questionnaires

Evaluation questionnaires were distributed the day before the closing of the workshop. The evaluation report is attached (annex IV).

1. Based on this experience, it is recommended that the duration of training workshops should be sufficient to present fully and cover the features of PopMap, PC-Edit and Xtable, especially when some translation is necessary. It is important that participants are well trained to gain the expertise necessary to use the software confidently and conduct some training; it is also important that discussions are held on other important topics relevant to the activities handled by the software.

2. In order to ensure that the right candidates are selected, it is important for the Software Development Project and the organizers to review the application form completed by the participants. This would allow a better screening of the qualifications and work experience of the candidates.

3. The organizers should have the opportunity (a week or two before the workshop) to communicate

with participants and obtain assurance that essential country statistical and map data are available and would be brought to the workshop. This is very important to ensure that participants return with meaningful country applications that can be shared with colleagues and other users in the country.

4. Follow-up is essential to obtain information on how the participants are applying and sharing their newly acquired technical expertise and software knowledge within and outside their organizations. Contact should be maintained not only with the trainees but with the heads of their units/organizations.

5. ESCWA and the Software Development Project will maintain contact and try to update each other on relevant developments both in software activities and data collected in the region. This will help update and enhance the project's application.

6. To follow up the rogress at the country level, ESCWA will send letters to the participants asking them to report on the area that has been selected for implementation.

Annex I

List of Workshop Participants

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Aymen Gaafer, Programmer

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Annex II

Workshop Training Schedule

Sunday, 4 June 1995

8.30 a.m. Workshop registration

9.15-9.45 a.m. Opening ceremony

9.45-10.30 a.m. Reception - coffee break

10.45-11 a.m. Workshop overview

Part A. Data Entry, Editing and Tabulation

11 a.m.-1.30 p.m. Session A1: Data entry and editing

- Concepts of data entry and editing (15 minutes)
- Introduction to PC-Edit's main characteristics (15 minutes)
- Mini-census questionnaire: structure, data entry rules (15 minutes)
- [F1]: Definition of layout file MINICENS.LAY with range check rules (1-3/4 hours)

1.30 -2 p.m. Lunch break

2-4.30 p.m. Session A2: Data entry and editing (continuation)

- [F10]: Definition of data entry screen (30 minutes)
- [F2]: Data entry (15 minutes)

  [F1], [F3]: Modify layout file to include verified fields. Data verification (15 minutes)

  Data editing strategy. [F1], [F8]: Modify layout file to include batch editing rules. Data batch editing and errors list file (30 minutes)
- [F4]: Data modification with errors listing file (15 minutes)

  Making modification on layout: deleting field, adding field, copy edit rules, ... (30 minutes)

  Distributed data entry using [F6]: File statistics and [F7]: System parameters (15 minutes)

Monday, 5 June 1995

9-11 a.m. Session A3: frequency distributions and cross-tabulations

- Concepts of frequency and cross-tabulation (15 minutes)
- Introduction to Xtable: main characteristics of the software (15 minutes)

- [F3]: Define category-set for pre-coded questions, automatic category-set generation (1 hour)
- [F-2]: Create and modify computed fields (30 minutes)

11-11.15 a.m. Coffee break

11.15 a.m.-1.30 p.m. Session A4: frequency distributions and cross-tabulations (MINICENS)

- [F4]: Produce frequencies (30 minutes)
- [F5]: Define cross-tables (30 minutes)
- [F6]: Produce cross-tabulations (15 minutes)
- [F7]: Format, print/export tables (30 minutes)
- [F8]: Sum table to next level (15 minutes)

1.30-2.p.m. Lunch break

2-4 p.m. Session A5: data entry, editing and tabulations (review and practice session)

- Data entry with PC-Edit using Look-up list (Xtable labels) (30 minutes)
- Compute codes for provinces and districts (20 minutes)
- Produce tables using composite variables (40 minutes)

  Exchange data files with other software packages (ASCII, dBASE, SPSS-PC). PC-Edit [F5], [F8], [F9] functions: Fixed-length records, set blank fields to zero, batch editing, partial editing (30 minutes).

Tuesday, 6 June 1995

Part B. Geographic Information and Mapping

9-11 a.m. Session B1: introduction to PopMap

- Overview of the software (30 minutes demonstration)

  Software installation, user-interface and exploration of the main options (15 minutes)
- Use of existing applications (1 hour)
- Computer-based training tutorial (15 minutes)

11-11.15 a.m. Coffee break

11.15 a.m.-1.30 p.m. Session B2: statistical database and use of PopMap Database Editor (Metaland)

- The concept of the application (15 minutes)

  Statistical database structure: geographical structure, statistical variables, community-based facilities (1 hour)
- Data entry for area statistics and community-based facilities (1 hour)

1.30-2 p.m. Lunch break

2-4 p.m. Session B3: cartographic database and use of PopMap Map Editor (Metaland).

Concepts of map data: sources of cartographic data, administrative base maps, map preparation (15 minutes)

Map Editor menus and tools, and drawing base maps with the mouse and/or the digitizing tablet as input devices (15 minutes)

- Drawing geographical unit boundaries (1 hour)
- Assigning references for geographical units (15 minutes)
- Locating community-based services (15 minutes)
- Point and shoot data preparation

Wednesday, 7 June 1995

9-11 a.m. Session B4: database access and use of retrieval system (Metaland)

- Thematic mapping and available options (30 minutes)

  Integrated spreadsheet: computing new variables, merging and exchanging data, graphics (30 minutes)
- Output (20 minutes)
- PopMap utilities (20 minutes)

11-11.15 a.m. Coffee break

11.15 a.m.-1.30 p.m Session B5: statistical databases

- Creation
- Update and maintenance, use of external data

1.30-2 p.m. Lunch break

2-4 p.m. Session B6: cartographic databases

- Drawing maps with Map Editor

  Reuse of existing maps and sub-national maps, import/export geographic coordinates
- Additional map parts/features: routes, rivers, other layers
- Special areas: islands, lakes, small areas
- Multiple-page maps
- Drawing multiple maps of different scales

Thursday, 8 June 1995

9-11 a.m. Session B7: applications - thematic mapping

- Thematic mapping and available options

  Integrated spreadsheet: computing new variables, merging and exchanging data, graphics,

11-11.15 a.m. Coffee break

11.15 a.m-1.30 p.m. Session B8: software development project

- Creation
- Update and maintenance, use of external data

1.30-2 p.m. Lunch break

2-3 p.m. Session B9: PopMap country strategy - toward integrated data systems

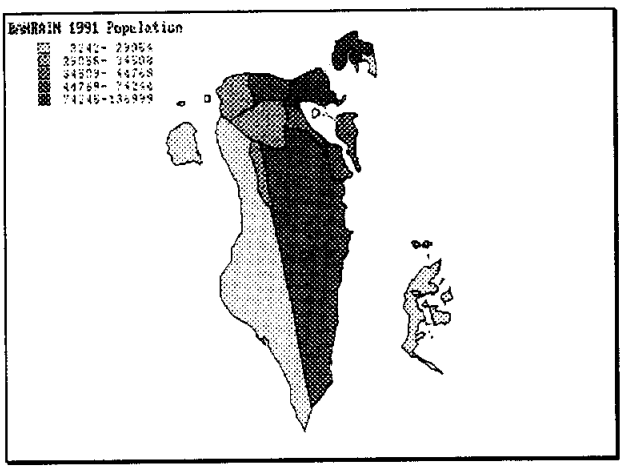
- Data dissemination with PopMap retrieval system
- Country technical supports and national resources
- PopMap national experiences and GIS applications

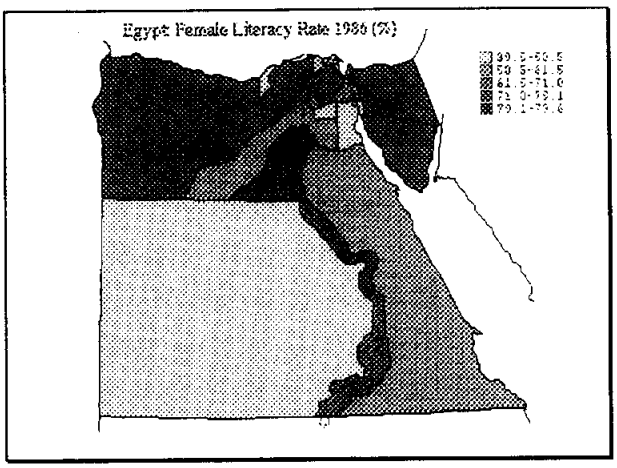
3-4 p.m. Closing Ceremony

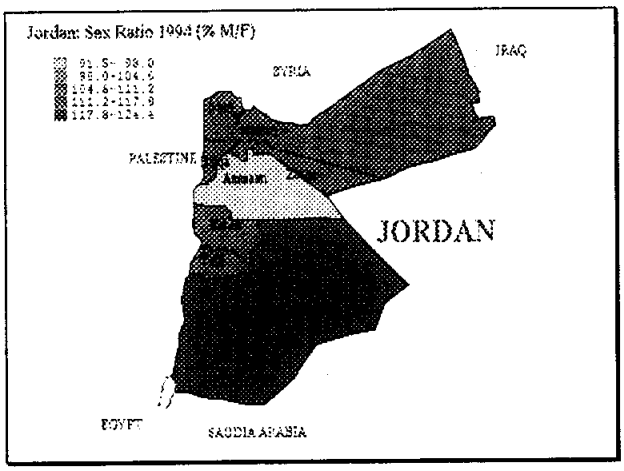
- Evaluation questionnaire
- Workshop closing

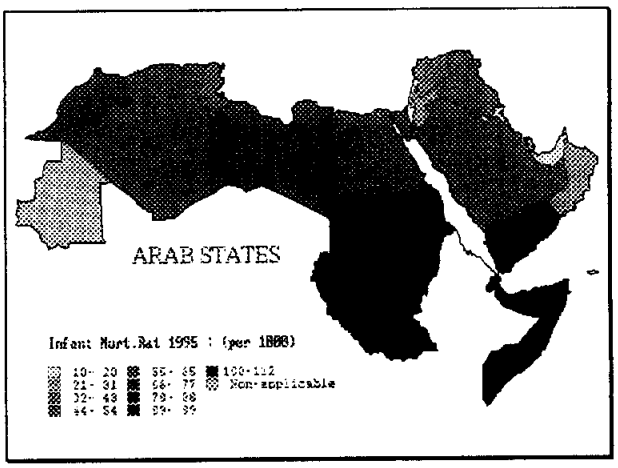
Annex III

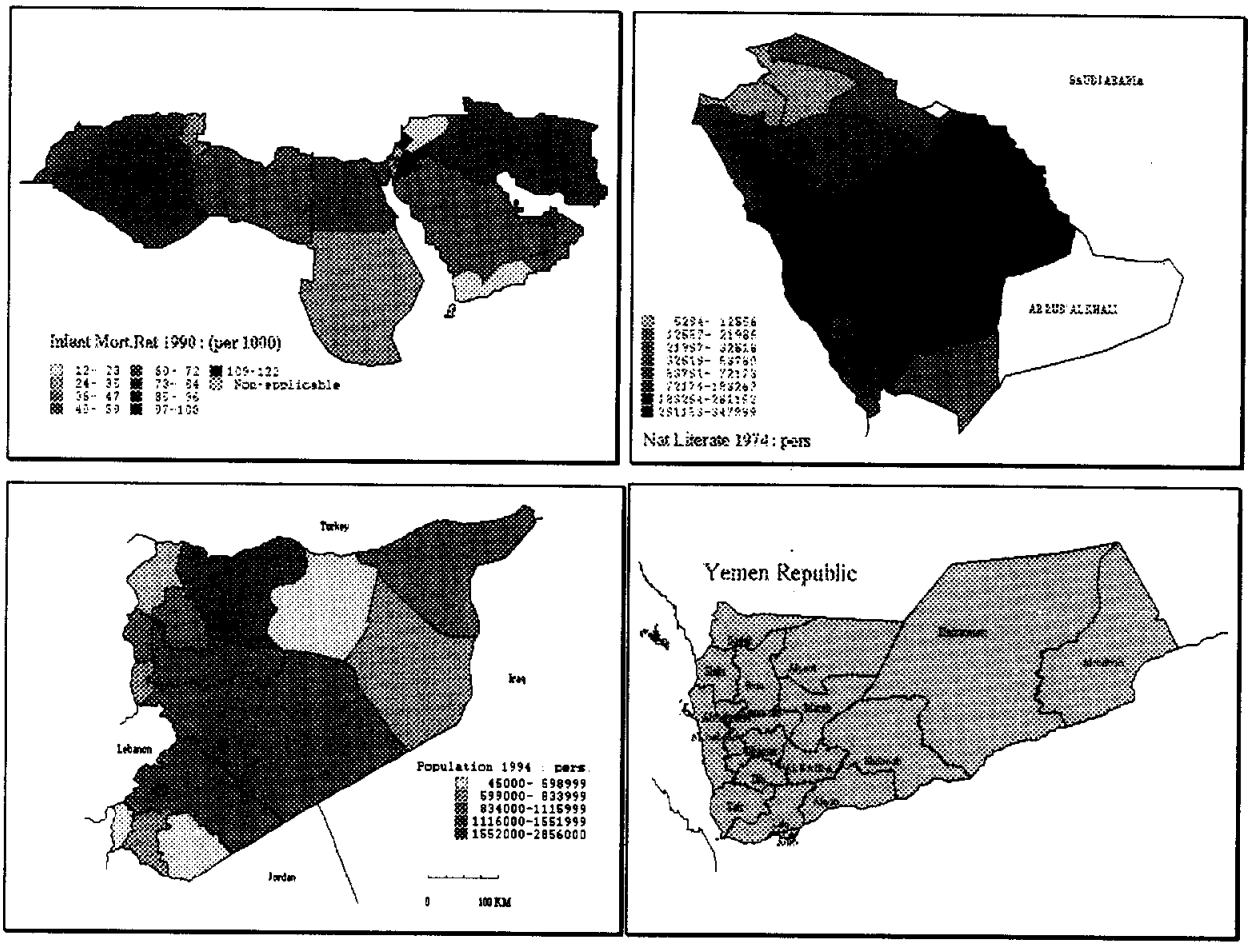
Selected Output from the PopMap Project Work of the Participants










Infant Mort.Rat 1990 : (per 1000)
12- 23
24- 35
36- 47
48- 59
60- 72
73- 84
85- 96
97-108
109-121
Non-applicable
SAUDI ARABIA
ABYUD ALKHALI
Not Literate 1974 : pers
Turkey
Iraq
Lebanon
Jordan
Population 1994 : pers
45000- 598999
599000- 833999
834000-1115999
1116000-1551999
1552000-2856000
0
100 KM
Yemen Republic

Annex IV

Workshop Evaluation Report

The regional training workshop on statistical data processing on PCs that covered PC-EDIT, XTABLE, POPMAP for five working days had 19 participants that completed the evaluation questionnaires, the results of which are as follows:

Background of the participants

75% is involved in data collection — 59% in data processing — 88% in analysis — 69% in data dissemination.

39% often use word processing — 58% spreadsheets — 47% databases — 73% statistical packages — 63% graphics presentation — 26% mapping/GIS.

17% had never used a word processor, spreadsheet or database — 26% statistical packages — 37% graphics presentation — 37% mapping/GIS.

The workshop

100% stated they had benefited from workshop.

Participants benefited more from the practical project work (47%) than the formal teaching (21%). However, 32% of the participants benefited from both.

95% found the workshop relevant to their current work.

In rating the different aspects of the workshop on a scale of 1 to 5 [1-Poor, 5-Excellent], the mean scores are:

Content of teaching	4.37(good/very good: 79%)
Quality of teaching	4.26(good/very good: 90%)
Help received during project work	4.47(good/very good: 89%)
Relevance of teaching for project work	4.71(good/very good: 71%)

The majority of the participants (95%) rated the level of the workshop "about right", 5% found it "too simple", 63% found the duration of the workshop "about right", 32% wanted a longer workshop (about 3 weeks).

63% of the participants found the balance between formal teaching and practical work good, and 32% found that too much time was spent on project work.

79% of the participants rated the workshop facilities adequate, 21% inadequate.

Ideas, suggestions, comments and criticisms, that could help improve similar workshops in the future

- Too short. Time was too limited on topics and their different issues (9)

- Excessive working hours (2)
- Too many topics introduced (1)
- Schedule too condensed (1)
- Space too crowded (1)
- The workshop was very successful, but I expected more practice on using PC-Edit (1)

The software packages

In rating the different aspects of the software, the same scale of 1 to 5 was applied, and the mean scores were:

	PC-EDIT	XTABLE	POPMAP
Ease of use	4.32	4.37	4.00
Easy to learn	4.53	4.47	4.21
Performance	4.28	4.28	4.22
Tutorial	4.28	4.22	4.29
Documentation	4.31	4.35	4.38

The participants evaluated the usefulness of the different software packages for future work as follows:

Software	Very Useful	Useful	Not Useful
PC-Edit	36.8%	52.6%	10.5%
Xtable	47.3%	47.3%	5.3%
PopMap	66.7%	27.8%	5.5%

In general

- "Useful and very interesting for my work (4), Help in preparing my Ph.D" (1)
- "The workshop enriched knowledge in data processing, beside the training of my colleagues I am planning to do in the near future when I go back home"
- Training (1)

PC-Edit/Xtable

- Very useful in helping Governments to perform statistical analysis (1)
- Improve data entry (1)

PopMap

- Useful as a monitoring tool, especially if more attributes of health and development indicators could be added, and the effect of distance and accessibility (i.e. needs more elaborate details of roads and terrain at the community level) made available. (1)
- Gives the capability to visualize the census and survey results. The future PopMap versions with more powerful graphical functions should greatly enhance the productivity and diversity of applications.
- Create enumeration districts in conducting censuses and surveys (1)

The participants gave the intended use of the software packages as follows:

PC-EDIT and XTABLE for data processing

- Data entry, editing and tabulation for small survey, household surveys and censuses (12)

- Training (2)

POPMAP

- Depict indicators on maps for analysis (3), preparing and manipulating statistical and demographic maps (3)
- Mapping system, map link database in different forms using health, social, family planning statistics (3)
- Demographic and population atlases (2)
- GIS for the Arab region, for sub regions and governorates (2)
- Database structure and training (2)
- Display census results (1)
- Epidemiological monitoring and evaluation (1)

88% felt comfortable enough to provide training and technical support on use of PC-Edit and Xtable, and 83% for PopMap.

Suggestions on topics for future workshops

The participants would like to see the following topics included in future workshops:

- More time for data analysis (1)
- Enumerate problems encountered in censuses and the solutions (1)
- Introduction to GIS (1)
- A detailed case-study relating the 3 packages together (1)
- Address more advanced topics in more detail (1)
- More statistical training on SPSS (Statistical Package for Social Sciences) and SAS (Statistical Analysis Software) packages (1)

Other suggestions on the organization of future workshops

- Duration should be 2 to 3 weeks (2)
- Training time could be extended so long as facilities are close to the hotel or both are in one location (2)
- Better facilities (2)
- More accurate standards for selecting the participants (1). The participants should have a solid background in computing (1)
- State clear objectives for the workshop and make these objectives clear to the participants (1)
- Follow-up on how the participants are benefiting from the workshop (1)

Software used in the office for statistical data processing

1. Spreadsheets: Lotus (4), Excel (5), Quattro Pro (1)
2. Databases: dBASE (1), FoxPro (1), Oracle 7 (2)
3. Integrated packages: Epi-Info (3), IMPS (3), ISSA (2)
4. Statistical packages: SPSS-PC (9), SAS-PC (2), Minitab (1), StatGraphics (1), BMDP (1)
5. Other software: PAS and other demographic software (2), Deeds (1), Epid (1), Idrisi (1)