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UNEP(OCA)/MED WG.2/INF.7
15 August 1988

Original: ENGLISH

MEDITERRANEAN ACTION PLAN

First Meeting of the
Socio-Economic Committee

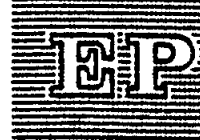
Athens, 27-29 September 1988

TRANSFER OF BLUE PLAN DATABASE
TO THE CO-ORDINATING UNIT (ATHENS)

UNEP

Athens, 1988

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JOINT MEDU/BP REPORT
TO THE FIRST MEETING OF
THE SOCIO-ECONOMIC COMMITTEE
(27-29 September 1988, Athens)

August 1988

1. PURPOSE

The decision of transferring BP data to MEDU had been taken at the 5th Ordinary Meeting of the Contracting Parties. For this purpose, series of contacts and correspondence have been made, and PC-based solution has been selected for the transfer of the BP database residing on DEC VAX/730 mainframe computer.

During an internal consultation meeting between BP/RAC and MAP Co-ordinating Unit, which was held in Athens on 13 April 1988, it was further decided that the MAP computer operations officer would pay two visits to Blue Plan Centre. The first mission should aim the planning and organization of the transfer through consultations and technical discussions with the BP computer manager Mr. Giraud, whereas the second should finalize the work. On this line, Mr. Aksel, the MAP computer operations officer visited Blue Plan for a 3-day mission during 24-28 April 1988.

Following the detailed technical discussions on the current/future configurations and the related transfer procedures of the Blue Plan database, the undertaken task has been accelerated, continuous direct contacts and co-operation has been established on technical level between the two computer officers. A report -regarding the transfer- has been produced jointly by Mr. Aksel and Mr. Giraud, and was presented to the meeting of Steering Committee of the Blue Plan (21-22 June 1988, Sophia Antipolis), upon its request.

Below given second report -prepared also jointly by Mr. Aksel and Mr. Giraud- aims to present the overall view to the Blue Plan database, its organization, transfer planning, and the current status of the transfer task to the First Meeting of the Socio-Economic Committee (27-29 September, 1988.)

2. THE BLUE PLAN DATABASE AND DATA PROCESSING APPLICATIONS

Thorough investigation of the below topics (particularly item c) has been necessary for a successful transfer planning :

- a. Blue Plan Data (types, sources, scan periods, quantity, structure, and coding),
- b. Computerization Steps (chronology, equipment, database design, organization, and components),
- c. Database Operations, Its Functional Use and Applications (data manipulation, query, statistical analysis, graphical and on-map presentations).

a. Blue Plan has been collecting data (mainly on the Mediterranean region) for last eight years. Data has been categorized into groups of activities, environment, and macro-economy. Various sources have been used of which national statistical yearbooks of the countries, various UN and World Bank reports, and Blue Plan originated data (either combined from various sources or through consultant works) occupy the largest portion. The data scans a period of about 1950 to 2025, depending on the criterion. Projections are mainly taken from the UN sources, or from the BP scenarios.

Currently, around 100,000 data exist in the computerized form, mostly from activities group. Few environment data has been computerized, and macro-economic data processed in Geneva, is being received regularly, but not added to the database. About 10,000 new data per year is to be entered to the database, not to mention the need for regular maintenance due to the continuous acquisition of the updated information.

The structure for most of the data is identical, and general composition is as shown below :

- Criterion (type of information)
- Source (origin of information, reference)
- Place (city, country, or region of information)
- Year
- Value
- Unit
- Remarks

Two exceptional compositions are the Population Pyramid -where CRITERION and VALUE exist in pairs to represent the ranges-, and the Bilateral Trade - where two PLACES exist for a single data- structures. Blue Plan has coded all the data components, with the exception of YEAR and VALUE information. Currently, codes exist for 600 criteria, 65 sources, 4000 places, 77 units, and 109 remarks. Coding is numeric for the SOURCES, UNITS, PLACES and REMARKS; but mainly French language originated alphanumeric strings for the CRITERIA.

b. Computerization of the Blue Plan data has started in parallel with the acquisition of the data, and gradually developed. Mr. Laffond (1980-1985) and Mr. Giraud (1983-present) designed, established the database; and created various software tools for manipulation, query, statistical analysis, scenarios, and graphical/on-map presentations of the data.

Blue Plan has been working with DEC VAX series mainframe computers on contract basis for on-line usage, and storage. They had access to ARLAB VAX/780 during the 1980-1984 period; and have been using PRINCIPIA VAX/730 computer since 1985, their contract will terminate in the end of June 1988. There is a missing gap of computer usage for nearly one year in the 1984-85 period. Certain hardware were also purchased for either accessing to the mainframes or for further processing of the data :

- Three DEC VT terminals (two graphical, one being colour),
- One DEC graphics matrix printer,
- One Tektronix digitizer tablet, and
- One DEC Rainbow PC (currently out of order due to the power supply problem).

Recently two IBM PC/AT compatibles have also been included :

- Sanyo 17+, 6/8MHz., 512KB RAM, 40MB HDD, 1.2MB FDD, EGA, enhanced colour monitor, and serial/parallel ports (purchased in December 1987), and
- Sanyo 17+, similar to the above with the difference of 20MB HDD, and CGA (rented in February 1988 for 6 months for the transfer).

The database has been designed mainly on the interaction of CRITERION-SOURCE pair and the PLACE information. Database consists of 65 coded indexed files, each of them being referred by a source. Code description support files complete the picture. Fortran 77 programming language and DEC database product DATATRIEVE were employed for all software operations, and entire work has been carried out in French language.

c. Basic data manipulations such as data entry, modification, and deletion are carried out through either DATATRIEVE or batch by means of a series of programmes. Database queries need user specification of the CRITERION-SOURCE pair, PLACE, and YEAR parameters. Therefore, one should be fully aware of the database contents and the coding (since most of the information is coded).

On the contrary, much effort has been put on the statistical analysis and the presentation of a query result. Correlation, regression, main component analysis can be applied, certain scenarios, tendencies, and modelling can be carried out on a single/multi variable query output. Various graphical presentation options exist (such as histograms, curves, pie-charts, and pyramids) and these can be combined with maps to produce a detailed product.

Three different types of background maps have been prepared at Blue Plan. Physical Mediterranean map (1) consisting of coastline, rivers, bathymetry, and cities enables graphical and point-symbol presentations. Political Mediterranean map (2) and thirteen country maps -by littoral regions- (3) enable only area shading presentations. Map drawing is based on a reference frame/reference coordinates approach and points have been digitized by means of the Tektronix digitizer tablet. Maps are not very detailed and serve solely for presentations. Final product can be viewed on the screen, and also be drawn on a Benson 3-pen plotter, or on a graphics matrix printer (only background maps 2 and 3); saving it to a file is also a valid choice.

3. TRANSFER, RE-ORGANIZATION, AND FUNCTIONAL USE OF THE DATABASE - PC BASED SOLUTION

The transfer of the data has been solved by the utilization of a communication software called KERMIT supplied to Blue Plan by the PRINCIPIA center. Two different versions of this package -one running on the VAX/730, and the other on the PC- enables the transfer in ASCII text format. The transfer of complete database would not take a long time.

Planning of the below given objectives was made :

- a. Re-organization of the Data on the PC,
- b. The Database Operations, and
- c. Applications Regarding to the Use of Data.

a. It had been agreed before that Dbase III+ PC software would be employed for the database organization and operations. On this line, MAP provided various software products to Blue Plan in February 1988, and Mr. Giraud did some preliminary work on the rented PC.

Initially, three difficulties had to be dealt with and agreed upon on their handling : Grouping of the data which originally resides in 65 files, coding which creates difficulty, and the language problem (use of mainly French descriptions mixed with some English). These considerations are necessary not only for the convenience of the user; but also for a thorough design, organization, manipulation of the data, not to mention future additions.

Data -grouped according to the reference sources- can be rearranged in such a way that it can be classified. Fourteen categories were identified. Similarly, coding can be fully numerized systematically. Both of the changes, of course, would cause certain extra time-consuming tasks. The effect of this case to the work schedule is further discussed, later in the report. Language problem has been settled down; it was decided that descriptions will be reorganized and kept in both languages (in separate files). Programmes will be made in two copies, each aiming one of the two languages for user interaction. In the case of keeping the previous coding, a cross-reference listing will be created, for English/French code mapping.

Data types, compositions, and file organization were further discussed and complete picture configured. Indexed file approach was adopted, and index structures were specified.

b. The database operations were divided into two main modules : Basic data manipulations, and query/reporting. It was agreed that each would be kept separately. Decision was taken that the related software would be prepared in Dbase III+ programming language, and be user-friendly. Following our discussions on the programming details of both modules, we arrived to a customized menu-driven interactive system. Final formatted output of such a system will be viewable on the screen, printable on a printer, or saved on a ASCII text file for further processing.

c. Statistical analysis, projections, graphical and on-map presentations are the immediate applications on the extracted data. We agreed to utilize the commercially available PC packages for this purpose. Such products are : SPSS, STATGRAPHICS, SYSTAT, CHART (for statistical analysis, projections, and graphical presentations). It was decided that both sides would search for an advanced mapping software in the market, at a reasonable price. (Currently, only a few products on this line exist, at high prices.). Similar search would also be carried out for the alternative graphical presentation software packages, although this was not a high priority.

4. WORK SCHEDULE

Following our detailed discussions on the current/future configurations and the related software of the Blue Plan database, final issue was the schedule regarding the steps of transfer. Main objectives were :

- Should re-organization and grouping of the data be done or not,
- Should the coding be redesigned and implemented or not, and
- Setting the priorities concerning software developments.

Blue Plan has concentrated heavily on the completion of the final report, therefore the limited time period must be used effectively for a successful work. Various alternative approaches were discussed.

Transfer of the database alone -without making any changes to its current organization, or to the coding- can be completed by the beginning of June 1988. (This excludes the preparation of related PC software.)

Following the transfer, data manipulations and basic query/reporting software modules can be prepared by the end of June 1988. Further applications (advanced query/reporting, statistical analysis, graphical presentation) can be carried out subsequently during the Summer-Autumn 1988 period.

The complete re-organization of the data and implementing a new coding scheme certainly would cause extra delays, but sooner or later should be carried out. However, it was agreed that it could be done later in the future.

It was decided that the matter would be further presented to MEDU, and Mr. Giraud be informed on the schedule of the transfer. Shortly after, the following transfer schedule was specified :

- Full transfer of the data to be completed by 10 June 1988,
- Data manipulations and basic query/reporting software to be completed by the end of June 1988,
- Other applications to follow thereafter.

5. PRESENT STATUS AND FUTURE WORK

The transfer, and re-organization of the Blue Plan database from DEC VAX/730 mainframe computer to personal computer has been completed as scheduled. Data manipulation, and basic query/reporting software modules have also been prepared.

In parallel, the STATGRAPHICS and SYSTAT statistics/graphical presentation software packages have been acquired. Furthermore, various other software tools, including new database and manipulation products have been added to the available facilities, and will be utilized in due course.

Various contacts have also been made for the acquisition of an advanced mapping software package. Currently, several options exist on this matter, including the purchase of a commercial software from half a dozen present packages. The result is expected to be achieved in very near future.

Future work has been planned as following :

- Completion of advanced, user-friendly query/reporting software modules,
- Integration of the statistical/graphical presentation facilities to the system, and
- Integration of the on-map presentation tools.

The complete transfer of the Blue Plan database to MEDU is expected to be achieved by the end of 1988.

6. FINAL WORD

Blue Plan is equipped with all the hardware and software tools to complete the job. With co-operation, and continuous direct contact between MEDU and Blue Plan, this task can be achieved with a complete and satisfactory result.

The second visit for the finalisation of the work will follow in October 1988 . During this period, direct contacts should be kept regulary and MEDU should be informed about the progress, as before.

Once the full transfer is accomplished, continuous update of the database will be needed for the functional and effective use of the database. Therefore, decision on this issue should be taken.