

**HEALTH MANAGEMENT IMPROVEMENT  
PROJECT ASSESSMENT**

**Submitted To:  
UNITED STATES AGENCY  
FOR INTERNATIONAL DEVELOPMENT  
Rabat, Morocco**

**December, 1984**

**SUBMITTED BY**

**university research corporation**

**URC**

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Submitted to:

United States Agency for International Development  
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Submitted by:

University Research Corporation  
5530 Wisconsin Avenue  
Chevy Chase, Maryland 20815

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## TABLE OF CONTENTS

	<u>PAGE</u>
Acknowledgements	i
Evaluation Team Composition	ii
Acronyms	iii
Evaluation Report	
I. Executive Summary	1
II. Project Background	6
III. Evaluation Methodology	8
IV. External Factors	10
V. Key Project Assumptions	11
VI. Progress Since Last Evaluation	13
VII. Inputs	15
VIII. Outputs	16
IX. Purpose	38
X. Goal	38
XI. Beneficiaries	39
XII. Unplanned Effects	39
XIII. Lessons Learned	39
XIV. Special Remarks	40

### ANNEXES

1. PP Log Frame
2. Evaluation Team Scope of Work
3. Agencies and Key Individuals Interviewed
4. Bibliography of Documents Consulted
5. Detailed Discussions
  - A. BMM
  - B. Pilot/"Extension" Projects
  - C. PACD/Contract Extension
  - D. MIS Development
  - E. Evaluation Indicators
6. Checklists, Tableaux de Bord, etc., developed under the HMIP
7. List of Trainees

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## ACRONYMS

AID	:	Agency for International Development
BMM	:	Bureau of Management and Methods
CEB	:	Contrôle d'Engagements des Dépenses
CND	:	Centre National de Documentation
DAA	:	Direction des Affaires Administratives
DAT	:	Direction des Affaires Techniques
DOTI	:	Division d'Ordonnement et de Traitement Informatique
DP	:	Data Processing
DS	:	Division de la Statistique (MOP)
EDP	:	Electronic Data Processing
ENAP	:	Ecole Nationale d'Administration Publique
GOM	:	Government of Morocco
HB	:	Honeywell-Bull
HC	:	Host Country
HMIP	:	Health Management Improvement Project
HP	:	Hewlett Packard
HR	:	Human Resources
LOP	:	Life of Project
LTTA	:	Long Term Technical Assistance
MOF	:	Ministry of Finance
MOH	:	Ministry of Health
MOP	:	Ministry of Plan
MIS	:	Management Information System
MSH	:	Management Sciences for Health
ONT	:	Office Nationale des Transports
PACD	:	Project Activity Completion Date
PHC	:	Primary Health Care
PID	:	Project Identification Document
PIS	:	Personnel Information System
SEM	:	Service d'Exploitation Mechanographique
SG	:	Secrétaire Général
SPSS	:	Statistical Package for the Social Sciences
SOW	:	Scope of Work
STTA	:	Short Term Technical Assistance
USAID	:	AID Mission/Rabat
VDMS	:	Visite Domicile de Motivation Systematique
WHO	:	World Health Organization
WFS	:	World Fertility Survey

## I. EXECUTIVE SUMMARY

The Health Management Improvement Project (608-0151) was designed to introduce major changes in the Ministry of Health's (MOH): 1) organizational and management functions at all levels; and 2) specific administrative sub-systems, i.e., personnel, pharmaceutical logistics, information systems/data processing, financial/accounting systems, and transport logistics.

According to the project paper, the project strategy emphasized three major activities: a) the establishment of a technical resource within the Ministry to provide program and management analyses. This unit would b) work with respective administrative divisions and operational programs to identify plans and carry out administrative improvements. Finally, the design emphasized c) formal and on-the-job training at all levels of the health system as a major means of institutionalizing these operational management and administrative changes and improvements.

The status of these activities is summarized below:

- a) Implementation realities are such that the organizational unit and staff which the Ministry has provided are a shadow of that with which the project designers assumed the contract team would work. The only such full-time technical resources have been the contract team aided by two junior Ministry staff people, plus a more senior Moroccan since early 1984; and supplemented by technical working groups representing the various sub-systems of the MOH. The "resource" is not "established" in any formal, definitive sense.
- b) Given these working constraints and short-falls, the project has made remarkable progress in moving forward in all of the areas originally targeted:

### 1. Human Resources:

- The computer-based PIS is operational in the Medical Personnel Bureau, and has become an integral part of the system for processing administrative actions for medical personnel and to produce special reports sought by management. The planning for its extension to the far larger Paramedical Personnel Bureau is well in process.
- A personnel administration guide is completed. It will serve the four sections of the Personnel Division in Rabat. A version for provincial personnel administration is in preparation.
- A beginning has been made in development of a methodology for manpower needs projections.

### 2. Pharmaceutical Logistics

- Early in the project, the pharmaceutical logistics survey analysis suggested several areas for project attention. The result was an expanded agenda for this project element.

- A version of drug nomenclature containing drug lists by level of care is nearing completion.
- A methodology for estimating provincial drug requirements is being developed and field tests are planned.
- Development of standardized diagnostic treatment protocols for rural paramedical personnel is underway. Field tests are planned.
- Recommendations for improvement of stock management and the requirements of a forecasting and ordering system have been prepared.

### 3. Vehicle/Transport Logistics

- The data base, standard nomenclature, respective codes, and sources from which to input the data have been identified.
- Data describing the basic characteristics and the operating experience and costs each of the first six months of 1984 for the 183 vehicles making up the fleets in five pilot provinces have been computerized.
- Design of reporting forms is underway (for use by provinces).
- Extension nation-wide is anticipated.

### 4. Finance

- Development of the "Tableau de Bord" as a means of putting before the Medecin Chef de Province and his colleagues information relating expenditures to accomplishments in terms of health services is underway.
- Field testing has been done in one province.
- Application in several pilot provinces is anticipated.

### 5. Informatique/Data Processing

- Eleven micro-computers purchased and in-use (for personnel administration; analytical data input and processing in the Infrastructure/ Planning Division; applications development and training at SEM; management, analysis and training at BMM); two additional micro (HP 150) will arrive shortly.
- Up-date of PIS data base in process.
- Development of car park data base in process.
- Drug nomenclature survey processed.
- General monitoring of PIS pilot is on-going; and reporting is available.

- Preparations for the PIS extension are underway.
  - Training in the use of Lotus 1-2-3 for SEM staff is on-going; as is applications development and OJT for dBase II.
  - The HP 3000 Mini-Computer arrived in Morocco. Training is being provided.
- c) Considerable formal and OJT have been provided under the project, and more is anticipated. However, while training is essential for institutionalization of new management and administrative procedures, training alone is not sufficient. A focal point for the provision of applications development, general technical support, overall coordination, etc., must be assured and assumed by the MOH for institutionalization to be realized. The working assumption among those concerned with the project has been that SEM would do this, but the administrative and technical management revisions that this implies are not taking place. They are essential if the benefits of this project are to continue after project termination.

The MSH strategy for the remaining months of the project is to focus primarily on activities that result in increasing MOH ability to install, extend and maintain systems now in or near the pilot introduction stage. This will mean technical assistance, formal and informal training, and, most importantly, building project implementation capacity by deliberately not stepping into a coordination or follow-up role for systems introduction. It will be necessary that the MOH assume effective responsibility for these tasks.

#### RECOMMENDATIONS

(Listed here are major recommendations. Those marked (\*) are considered essential for the short term project extension (to April, 1985) and those marked (\*\*), for the long term extension (to January, 1987). See Annex 5 for detailed listing and discussion.)

1. The contract should be extended as proposed by USAID. The project's contract extension should define contractor inputs in a manner which ensures their focus on: 1) the transfer of knowledge and responsibility to Moroccans; and 2) the management uses of information and systems developed by the project. (See Annex 5(C) for specific negotiating suggestions.)
2. The PACD should be extended by two years as proposed by USAID. (See Annex 5(C) for discussion.)
3. To derive full benefit from training investments, the MOH will need to undertake the changes in organizational processes which will permit optimal deployment of trained personnel. (See Recommendations 5 and 6 below.)

4. Planning for any final evaluation should lay the groundwork for eventual impact assessment by the MOH. It should focus on uses of information for management decision and actual effect of these decisions on administrative efficiency and support of field service (health delivery) performance (see Annex 5(E)).
5. BMM/BMM-functions:
  - \*a. The MOH should name a Moroccan to be in charge of the existing BMM.
  - \*b. As a basis for 5(a) above, the MOH should develop a job description for the chief of BMM and for other staff that: a) delineates which tasks and responsibilities are to be transferred from the contractors to Moroccan personnel; and b) ensures provision of both general management and day-to-day implementation support for all project activities.
  - c. It is also recommended that the MOH develop a function and task description for an additional BMM staff member to be appointed at least during the project completion period to enable the re-alignment of responsibilities between MSH and MOH personnel.
  - d. The project should attempt to provide additional technical OJT for the two other current members of the BMM. Training should focus on development of "consultative skills" and on further exposure the use of micro-computers for management applications.
  - e. The project should continue English language training for BMM Moroccan staff, to enable them to fully exploit English language materials concerning management applications.
  - f. Using a description of agreed upon functions for the current BMM, USAID should encourage the MOH either to specify which organizational entity within the Ministry will assume primary responsibility for the function in the future or state that the function was project-specific and will no longer be needed. (See Annexes 5 (A) and (C).) MOH should be urged to define and make its own budgetary provisions for resources (materials, space, technical assistance, etc.) needed to support any on-going functions.
6. DP/MIS
  - \*\*a. The MOH should establish a locus for "Informatique de Gestion" which will support computerized management information systems Ministry-wide.
  - \*\*b. The MOH should constitute a committee of "planification de la statistique et de l'informatique" and a committee of "informatique de gestion".
    - The MOH should decide if this "Cellule"/locus will be attached to SEM or BMM;

81

- The MOH should designate an individual to head the "Information de Gestion" function; and someone to be in charge of analysis/ programming for this function.

(See Annex 5(D) for a discussion of proposed procedures.)

- c. The MOH should designate a head (manager) of the HP 3000 computer center at SEM;
  - d. SPSS and, if needed, other packages should be acquired for the mini;
  - e. The MOH should contract for maintenance of its hardware (micros and mini). The agreement should provide for training MOH staff for regular maintenance/upkeep.
7. USAID should consider support of follow-on activities in health which complement and re-inforce the improvements made under this project (see Annex 5(B)).

## II. Project Background

The Health Management Improvement Project (608-0151) was designed to introduce major changes in the Ministry of Health's (MOH) management and administrative systems and procedures. These changes and improvements are to take place in two general areas:

1. MOH organizational and management functions at all levels, i.e. central, provincial and circumscription; and
2. specific administrative sub-systems of the MOH, i.e. personnel, information systems/data processing, financial/accounting systems, pharmaceutical logistics, and transport logistics.

The major project activities for accomplishing the project's purposes (1 and 2 above) as identified by the PP are as follows:

1. The development of the central Ministry's core management staff;
2. Making improvements in identified administrative and management systems (directing the efforts of the up-graded management group toward work with respective administrative divisions and operational programs to identify plans and carry out administrative improvements) and
3. Institutionalizing improved operational management and administration at all levels of the health system (includes long and short-term training in management and problem solving skills, and on-the-job training in the "how-to's" of these tasks, i.e. new procedures and forms).

The project's expected outputs include:

1. an improved MOH capacity for identifying management problems and for designing and implementing solutions;
2. a flexible data processing system responsive to the MOH's changing administrative processing and management analysis needs;
3. an institutionalized and operational reporting process (including collection, processing and communication of information) essential for the coordination and monitoring of basic health services;
4. a more efficient system for personnel administration which facilitates timely execution of essential personnel actions;
5. a budget and accounting system which facilitates rational allocation and control of resources by allowing the determination of actual program costs;
6. a more efficient system for procurement, storage and distribution of essential pharmaceuticals; and
7. a more efficient logistics system for vehicle fleet management.

20

The project was authorized on January 27, 1981 for three years (FY 1981-84) and a total of \$3,147,000. The Project Agreement, signed May 6, 1981, and subsequent amendments have obligated a total of \$2,185,000, of which \$1,691,000 is presently committed to a contract with Management Sciences for Health. The contract (signed January 8, 1982) provides technical assistance, in-country training, and some commodity procurement in support of the project. To accommodate for the lapse of time between the signing of the authorization and that of the contract, the original PACD has been extended by one year to January 26, 1985.

The first project evaluation in March, 1983 (end of year 1 of project) documented the fact that intended project progress was considerably behind schedule and that there was general disagreement over project focus. Following discussions with the MOH, the contractor with concurrence of USAID, decided to replace the Chief of Party. This was finalized in June, 1983, 15 months after the initial two-person contract team had arrived.

Contractor and MOH efforts under this project have been re-grouped to take into account refined and evolving MOH needs. Subsequent to the March 1983 evaluation, the MOH chose to focus on needs in 1) a thorough analysis of the existing pharmaceutical system and identification of options for improving the systems; and 2) expansion of the initial personnel administration task/activity from a rationalization and updating of personnel card files to a) computerizing the card files and b) manpower planning and all aspects of human resources management. Additionally, emphasis on practical, problem-oriented training in all areas of project activity, and the introduction of data processing capacity within the MOH (vs centralized, government-wide network) were incorporated.

As a result of clarification of MOH objectives and increased emphasis on computer-assisted management information systems, a contract amendment was signed (November 10, 1983) increasing the long-term technical assistance team to three persons.

In practice, this clarification has meant that two of the initial areas of project focus (pharmaceuticals; personnel/human resources) are receiving much greater attention and time than originally anticipated; and the remaining areas are assuming relatively less attention than envisaged in the PP design stage. Overall project purposes, however, remain unchanged.

Project activities as regrouped and refined have been progressing in the following major categories:

1. Human Resource Management
  - pilot personnel information system (PIS);
  - expansion of pilot system to cover entire personnel system;
  - development of a manual for use of PIS;
  - development of a method for analysis of manpower needs;
  - development of a method for projections of manpower supply;

2. Pharmaceutical Logistics
  - comprehensive analysis of pharmaceutical logistics;
  - design and implementation of innovations in pharmaceutical ordering, procurement and distribution, based on this analysis;
  - revision of nomenclatures and development of standard treatment protocols;
3. Information Systems
  - development of a nucleus of skilled information professionals;
  - development of central (MOH) computer/data processing capacity and systems;
  - development of micro-computer systems for specific applications in all project areas(i.e. human resources management, logistics improvement, etc.);
4. Financial Management
  - identification of priority problems;
  - formulation of recommendations;
  - development of appropriate interventions.
5. Vehicle Fleet Management
  - identification of priority problems;
  - formulation of recommendations;
  - development of appropriate interventions.

The focal point of contract team MOH/liaison on these project activities has been the "Bureau of Management and Methods" (BMM) which provides daily technical and administrative support to each area, and functions to organize and follow-through with MOH working groups drawn from the technical and administrative divisions.

The major focus of the project has been at the central level. The project strategy presumes eventual increased efficiency and service delivery in the field through 1) spin-off from improvements made at the central level and 2) activities which directly involve provincial personnel. Contractor - MOH work activities have already initiated this process.

### III. Evaluation Methodology

The March, 1983 evaluation recommended an additional interim in-house PES in month 24 to review progress in re-orientation of project focus and to assure that specific management improvements were being addressed. As month 24 approached, contractor reports and USAID monitoring/feedback were considered sufficient responses to these in-house evaluation needs. Therefore, the interim evaluation was deferred.

The present evaluation (Conducted from October 29 to November 18, 1984) reviews the project status at the end of 31 months of project activities.

22

The purposes of this evaluation as defined in the SOW (see Annex 2) are to:

- a. describe project progress in meeting agreed-upon objectives as set out in the ProAg and Contract as amended;
- b. recommend modifications in focus of strategy, workplan, etc., as necessary for the remainder of the project; and
- c. identify the management improvements that could be most effectively extended to the periphery and the modes and possible sources of support for such extension, taking into account AID priorities and Ministry absorptive capacity.

In light of a recently proposed extension of project PACD (2 years) and contract (1 year), and evolving concerns regarding the continuation of project accomplishments after departure of the contract personnel, the evaluation team was asked to focus on two additional areas:

- a. given progress to date, to examine the proposed extension; and
- b. to focus on specific issues of interest to USAID/MOH:
  - 1) status of BMM
  - 2) status of data processing/informative capacity at MOH/SEM

Specific methods used in conducting this evaluation include:

1. In-country discussions with representatives of the MOH, MSH/Boston and Rabat, BMM, and USAID/Rabat; and of other agencies and organizations involved in health activities in Morocco, i.e. the World Bank, WHO, and UNICEF.
2. Review of existing documents including project documents (PP, ProAg, Implementation Letters, internal memos, previous evaluation), contract and amendments, contractor quarterly reports and technical documents, MOH plans, "tableau de bord", computer programs, training plans, and procedural guides.
3. Travel to discuss and observe project and VDMS-related activities in the provincial areas (Kenitra, Marrakech).
4. Development of indices to assess achievement/progress in respective project areas.
5. Analysis and evaluative assessment of project outputs and accomplishments as compared with both original objectives, planned outputs, and evolving needs, as documented in project amendments and files.

The evaluation team subsequently discussed all major findings and recommendations with the MOH and with USAID/Rabat, and incorporated their suggestions where appropriate.

#### IV. External Factors

##### A. IMF Stabilization Requirements

Austerity measures imposed by the IMF continue to apply to the MOH, resulting in limited funds for material and equipment purchases, personnel positions, operating budget, etc. While this inhibits somewhat the MOH's ability to channel increased resources to priority areas of need, it simultaneously underscores the importance of the success of this project's activities. A more efficiently organized and run MOH will, it is hoped, decrease waste and inefficiency and provide the coordinative mechanism whereby scarce resources may be used more effectively.

##### B. Access to Ministry of Plan Computers

Regarding the "Improving the Ministry Data Processing (DP) capacity," the PP specifies (November 1980):

"The DP module of the project seeks to create a capacity which will meet the MOH varied DP needs in a way which is easily maintainable and usable, cost-efficient. This alternative does not require the purchase of a computer by the Ministry, but seeks to take advantage of the existence of a large and underutilized computer at the Ministry of Plan".

This large computer is the Honeywell-Bull HB 66/40 at Direction de la Statistique in the MOP. Regarding that same computer, an assessment conducted three year later (Guéron, February, 84) states that:

"The poor performance of the HB 66/40 due to lack of its systems programming support at the Departement de la Statistique and poor vendor support by HB forced the MOH to start relying more on the HP 3000 at the "Documentation Center" (of the same Ministry). However this machine is a "dedicated" machine for the use of MINESIS (a bibliographical system). Although it has some excess capacity for small application system, it is doubtful that it could well support the MIS needed by MOH".

Thus, the use of the MOP "mainframe" which was "guaranteed" for HMIP activities in 1980 was no longer feasible by 1983-84. (In addition, the MOP HB 66/40 capacity has become saturated — national census and related surveys — to the point where outside "clients" were (and are) actively discouraged from accessing it. The HP 3000 at the National Documentation Center was made available to the MOH for its National Fertility Survey data only (software capability).

These negative factors "forced the hand" of the MOH to seek other access to EDP. This was facilitated by the recent and rapid changes in computer hardware and software, as discussed below.

C. Recent and Rapid changes in Computer Hardware and Software

Significant drops in the prices of computer hardware and software, and a literal explosion in technology in the early 1980's resulted in the option to obtain equipment corresponding to the MOH needs at a price affordable to the project.

D. Dependence of MOH Administrative Procedures on other Ministries/  
Governmental Agencies.

The previous evaluation and subsequent documentation recognize the BMM as the unit which has replaced the originally envisaged "Planning Cellule" as the project's focal point and the coordinator of project activities between the DAA and the DAT. While the BMM is now clearly involved with implementation of project activities in all relevant parts of the MOH and is understood to be responsible to the Secretary General, the BMM has not been established as a formal organizational unit. Any effort to reorganize the MOH must have approval at higher levels in the government, and such approval has not been given in the case of the BMM. Intentions for the continuation of BMM-specific functions unit are unknown. (See discussion of BMM, Annex 5(A).

Furthermore, many other routine administrative processes (e.g. hiring/firing of personnel, budgetary allocations, vehicle scrapping) must be reviewed and approved by entities outside of the MOH system. Therefore, the full effect of efficient procedures established within the MOH may be limited by the relative management and administrative capabilities of these other entities.

V. Key Project Assumptions (see Log Frame, Annex 1)

A. Goal

1. The MOH's ability to allocate resources for ambulatory health services is not expected to change and is thus still a valid assumption. However, the availability of "ample" resources remains doubtful for any social service program.
2. Still valid
3. The assumption that Moroccans will seek health/FP care from an improved MOH health delivery system can be, in the long term, considered valid. However, little is known about the demand for and use of health services delivered by other providers. Furthermore, this assumption is still rather distant from the immediate effects of this project's activities.
4. Not relevant to the specific purposes of this project.

25

B. Purpose

1. Still valid.
2. This statement assumes official institutionalization of organizational changes within the MOH. Despite the fact that no such change has taken place in the 5 years since the PID design phase, the MOH assures us that formal organizational changes are being defined, and processed through the appropriate bureaucratic hierarchy.

Project activities (especially joint DAT and DAA task-oriented committees) have indeed broken down internal institutional barriers; and a new spirit of "teamwork" has been mentioned by all those interviewed by the evaluation team as a major project accomplishment. Most changes appear to be within the MOH's scope of authority. However, some actions (eg. increased disbursements/accrual processing) are to some degree dependent on outside entities (see External Factors), and are therefore beyond the purview of this project.

C. Outputs

1. The use of a GOM/US team approach and careful selection of training/trainees has resulted in improved staff morale, a participatory process, and a new eagerness to advance project activities. However, this itself will not necessarily result in effective institutionalization of new management systems and procedures in the MOH. Resistance to change, established hierarchies, inter- and intra - departmental competition require much more in terms of time, management perspective, and political will, to overcome.
2. While the assumption that the MOH will designate "adequate" counterpart personnel is difficult to quantify, the project's BMM is a shadow of that with which the project designers assumed that contract team would work. According to the PP (p. 27), "the project strategy emphasized the establishment within the Ministry of a technical resource in the area of program and management analysis..." In fact, the BMM has been staffed with one relatively senior MOH official, and two junior staff to serve as counterpart personnel and as liaison with the administrative and technical working groups (see discussion of BMM , Annex 5(A), for description of evolution of BMM staffing pattern). However, the project has not seen:
  - the official designation of the MOH counterpart as head of the Planning Cellule alias BMM
  - a clear definition of BMM tasks; nor delineation of TA contractor role within that defined scope

- allocation of tasks within the BMM itself; and between the BMM and respective MOH organizational units
- an effective counterpart/coordinator from the SEM.

The PP "resource" is certainly not established, since most of it has been expatriate, in the best "cooperation francaise" tradition.

3. The assumption that the MOH will sustain its commitment to implement the project has been verified in its (MOH's) active participation in technical working groups, and its concern that initially defined project activity areas be addressed (the request for project extension and additional technical assistance attest to this extension). However, there has been lack of involvement of appropriately placed counterparts which, ideally, could have provide authority for project decisions and more timely execution of project action. While the theoretical commitment to project implementation is strong, the practical commitment, i.e. behavioral evidence of commitment, is less than expected.

Sustained commitment to project implementation will be most evident after departure of the contract team. At this time, there is absolutely no clear focal point for assumption of the contractors' role in initiating and maintaining changes in MOH procedures and administrative functions. A mechanism does not exist for assuring MOH commitment to the project's activities after termination of the technical assistance contract.

D. Inputs: Assumptions still valid

#### VI. Progress Since Last Evaluation (see Action Divisions, March 1983 PES)

1. The BMM held periodic meetings at more or less regular and frequent intervals. These meetings, under the direction of the Secretary General, review project progress and mobilize MOH resources for project activities. Since March, 1983 the SG has named several working teams to be responsible for specific areas of project activity.

The Contractors coordinate all their technical activities with the DAT and the DAA (includes meetings work plans, ST consultant schedules, report dissemination and follow-up), and remain in contact with the SG regarding progress. The SG is called upon occasionally to intervene in resolving specific issues (e.g. training nominations).

2. In-country, short-term training plans have been developed in varying degrees of detail for functional areas of project operations, and for some general management workshops.

The short-term, in-country training program, and formulation of a policy with regard to medium and long-term training outside of Morocco have been negotiated with appropriate Ministry officials. The program has a very strong bias in favor of training focused on practical problems. It supports changes in management practices being introduced through the project and uses of the MIS, including planning and management applications at the provincial and central levels.

Agreed upon target objectives for long-term and short-term out-of-country training have been met and progress on in-country training is considerable. (See discussion on Manpower Development/Training under Outputs Section).

3. Work plans and schedules by project activity area, consultant input, and anticipated "benchmarks" have been developed, and modified as necessary during implementation. These are refined and reported quarterly.
4. The contractor's project workplan was revised, reviewed by USAID and the MOH, and finally incorporated as a contract amendment (No. 3, November 10, 1983).
5. The MSH contract team has prepared a HMIP evaluation guide. This outlined a suggested approach, questions and sources for an interim evaluation and a final evaluation (contractor's SOW called for a final evaluation plan.)

The major strategy of the evaluation plan is to compare indices of deficiencies to which the project (PP design) was to be responsive, with measures of the extent to which these originally identified symptoms/problems still persist. Specific evaluation questions are: what is the MOH's (new/revised) capacity to solve management problems? and how is such capacity being used to improve the management of MOH resources and delivery of services? How will the MOH continue work begun but not completed under the project in specific areas? and what is status of each project output vis-a-vis anticipated outcomes?

Most questions posed by the MSH evaluation plan are relevant to the interim (current) and final evaluations. The MSH final evaluation plan could be strengthened by the addition of specific measurable indices that will be evident by the end of the project and which can serve as baseline information for later impact evaluation. The evaluation team has attempted to show how development of the evaluation plan can move toward this objective (see Annex 5(E)).

6. The second PES is being conducted at month 31 of LOP instead of month 24 as proposed by the March, 1983 evaluation, for reasons stated under section III, Evaluation Methodology.

7. USAID has clarified contractor reporting requirements (quarterly and annual reports; internal correspondence concerning specific project actions, procurements, modifications, etc.). The contractor regularly provides the appropriate documentation.

USAID monitoring of project activities has intensified via regular meetings with the contractors/BMM; attendance at MOH/HMIP meetings; and systematic documentation of project actions.

8. In light of government policy emphasizing a decentralized data processing network, declining computer hardware and software costs, and MOH defined needs for computer applications in specific areas, hardware (several micro-computers, one mini-computer) and software needs were defined and elaborated as project activities progressed. Initial procurement actions were delayed as a result of an AID regulation effective at that time requiring that DP equipment purchases be approved by AID/W. All equipment and commodity needs identified to date are in-country.
9. A revised contractor workplan and implementation plans by project activity were submitted by MSH. Division of labor by primary and secondary responsibility for each contract was defined (see June, 1983, Quarterly Report).

## VII. Inputs

### A. Commodities/Equipment

MSH, MOH, and USAID identified needs (and most efficient procurement methods) as the project evolved. Nevertheless, AID/W clearance processes, waiver requirements, and Moroccan customs clearance contributed to unanticipated delays.

Additional office supplies, equipment, etc., will be required to support a project and contract extension (see below).

### B. Technical Services

The MOH has expressed its full satisfaction with and appreciation of the quality and quantity of technical services provided. Scheduling, SOW's, and consultant selection for STTA has been a coordinated MOH/MSM procedure.

The MOH has requested an extension of technical services (18 months LTTA and 16 months STTA) over a one year period, USAID and the evaluation team have reviewed this request (see discussion, Annex 5(C)).

### C. Training

The training input of this project was continually modified as project needs and available resources were clarified. Out-of-country training (long- and short-term) began later in LOP

than hoped for (MOH human and financial resource constraints). In general, however, the training provided has kept pace with specific technical needs and implementation schedules.

D. MOH Inputs

As previously documented, the MOH was unable to provide the MSH contract team with office space until eight months into the project; and has not officially designated counterpart personnel. The lack of adequate MOH inputs for international travel for participants caused considerable delays and problems. Finally, as assessed by the MOH itself, high level MOH collaboration with and follow-up on short term consultancies has been less than ideal, due to the numerous demands on upper-level management staff.

MOH working committees on the various project activities have been relatively faithful in providing the inputs and follow-up necessary to advance project activities. The real impetus for these, however, still comes from the BMM/contract team.

E. Recommendation:

Approve proposed project extension (PACD and contract) and inputs. Extension benefits and MOH needs regarding "institutionalization of" project outputs are documented in this PES (see Annex 5 (A), (C) and (D)).

VIII. Outputs

The major project activities/strategies for accomplishing the project's purposes as identified by the PP are:

- 1) the development of the central Ministry's core management staff (see PES text, and Annex 5(A) for discussion);
- 2) Making improvements in identified administrative and management systems (individually listed and assessed below);  
and
- 3) institutionalizing (via formal and on-the-job training) improved operational management at all levels of the health system (described below under "Manpower Development/Training).

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
There is no specified output called "Training" in the PP. Rather, training is viewed as one of a number of means to achieve the general outputs:	- Per log frame in PP re training: #training sessions provided for health personnel at local, provincial, central level	- Training Plan 1. proposed draft prepared by MSH 2. draft revised and presented to MOH for discussion/revision 3. follow-up note by MSH describing teams recommendations regarding training plan submitted to MOH	March 1983 June 1983 September 1983	Contractor responsibilities limited to preparation of training plan and unspecified amount of in-country on-the-job training, seminars and Workshops regarding systems developed under the project.
#1 An improved Ministry of Health capability for identifying, designing and implementing solutions. This output supports strategy	- Per project agreement third amendment: (1/10/94) 1. Long-term/out of country: 4 years, 2 participants 2. Short-term/in and out of country: no specific # of trainees targeted; budget acts as constraint.	4. Subcommittee (MOH/MSH) appointed to draft final training plan 5. Subcommittee report, ("Plan de Formation")	September 1983 October 1983	Lack of clarity regarding roles and responsibilities of MOH, USAID and AID/IT (see output text and Lessons Learned).
#3, "Institutionalizing operational management (Manpower Development /Training)".	- Per contract: Training Plan required - Per "plan de Formation" prepared by MOH/MSH sub-committee on training under management project (submitted to full committee 6 October 1983): 1. Long term 2-4 Participants, 2 years each. 2. Short term/out-of-country: 17-27 persons, average 6 weeks each, total 24-37 person-months. 3. Short-term/in-country 385 person, 277 person weeks.	6. Plan adopted in practice  - Long-term training 2 MOH personnel selected for 2 years master level studies in U.S.: 1 of them has completed English language training and enrolled at U. of Miami Coral Gables:  1 candidate currently in English language training, expected to enroll U. of Miami Coral Gables	Dec. 1983-Sept. 1984  January 1984  September 1984  current (October 1984)  January 1985	

21

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
		- Short-term/out of country		In some cases recipients of short-term out of country training are not optimally deployed in this "back home setting".
		1. 2 SEM personnel to North America for 2 week observational tour of information management facilities and study of software and hardware (subtotal output 1 person month)	15-30 August 1983	
		2. 1 person (SEM) to Ecole National d'Administration Publique/ENAP in Quebec for 6 week course in management (subtotal 1.5 PM)	July-August 1984	
		3. 5 people (DAA+BMM) to U. of Pittsburgh (GSPIA) for 2 month French language course in management	July 1984	
	(subtotal 10 PM)	4. 4 people (SEM) to Stanford U. for 4 week micro-computer workshop. Total out of Country 16.5 (PM)	August 1984	
		- Short-term in-country		
		1. Training in PIS for MOH staff of infrastructure and personnel, and staff from controle des engagement et depense	4 quarter 1983	

23

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
		awareness of PIS and (CED) (M. of Finance)		
		2. SEM staff oriented to micro-computer while completing PIS programming	November 1983	
		3. BMM staff oriented to Lotus 1-2-3 and word processing	November 1983	
		4. 7 seminars in PIS for SEM and Personnel staff (3 seminars for training to support PIS data transfer. 1 for personnel staff to develop materials for office procedures manual, 3 for personnel administrators of all provinces, to develop orient to role in data collection for PIS survey)	1st quarter 1984	
		5. Training in Lotus 1-2-3 for 3 BMM and 3 infra- structure staff.	April 1984	
		6. PIS training: 3 groups of administrator - Economes trained to lead PIS survey teams at provincial level	April 1984	
		7. Training in Lotus 1-2-3 for SEM staff	May 1984	
		8. SEM staff trained for 2 weeks (full time) by Hewlett-Packard/Paris to introduce mini-computer		

33

OUTPUT

MAGNITUDE OF OUTPUT

PROGRESS/CURRENT STATUS

DATE ACHIEVED/  
EXPECTED DATES

COMMENTS/PROBLEMS/CAUSES

- | <u>PROGRESS/CURRENT STATUS</u>  | <u>DATE ACHIEVED/<br/>EXPECTED DATES</u> | <u>COMMENTS/PROBLEMS/CAUSES</u> |
|---|--|---------------------------------|
| 9. OJT in D-Base II Lotus, participation in needs analysis, action planning, and oversight of implementation.               | Ongoing since late 1983                  |                                 |
| 10. Workshop in pharmaceuticals; standard treatment protocols and methodology   | July 1984                                |                                 |
| 11. 3 sessions in Management Information System with 75 MOH participants (senior managers at central level and 3 provinces) | September 1984                           |                                 |

234

Discussion of Output #1

Manpower Development/Training

Training

Action Decision #2 of previous evaluation (March 1983) called for joint MSH, MOH and USIAD effort to, "revise the project training element to reflect MOH priorities and provide appropriate documentation (i.e. LOP training plan, long and short term, in-and out-of-country; project amendment, etc. as necessary." MSH prepared a proposed comprehensive training plan immediately following the evaluation and presented the draft to MOH for discussion, revision and nomination of candidates. Over the next six months, extensive discussions were held in regular meetings of the "BMM committee" (actually including all MOH and MSH key personnel responsible for project implementation). The draft plan's content (approach, target numbers of participants etc.) were not disputed; rather, discussion centered upon the means to achieve them. Specifically at issue was the question of the MOH's ability to pay airfares for out-out-country participants. AID also experienced difficulty in identifying suitable short-term programs in French. A draft final plan was prepared by the "Training Subcommittee" in September 1983 and presented to the full BMM committee in October of that year. This document specified the respective roles and responsibilities of MSH, USAID, and MOH and clearly set out training objectives, level, type of program, desired characteristics of MOH/USAID training institutions, duration of program and number of candidates to be selected. Trainee candidate selection criteria were specified at general (collective) and individual levels.

Despite delays in reaching accord on the plan and in actual selection of candidates, and despite difficulties in locating appropriate French language short-term training opportunities, output targets have been achieved or are in process of being achieved. (See attached output table for specific attainments and "Lessons Learned" for further comment). Types of training and trainees have been suited to project needs and MOH long term needs.

Recommendation: To derive full benefit from training investments, the MOH will need to undertake changes in organizational structures and processes which will permit optimal deployment of trained personnel.

35

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
#2. Flexible data processing system; and	- PP (1980) envisioned the MIS component of the project as an integrated inter-ministerial data processing network			This vision was later substantially altered because it became clear that it was counter to the GOM policy of ministerial self-sufficiency. The national strategy does not emphasize the development of a strong central capability but rather a more "decentralized" approach of strengthening each of the individual ministries.
#3. Institutionalized information collection and processing.				
	- February 83: Rousselle report "Information et Informatique dans le projet d'amélioration de la gestion de la santé au Maroc"; - <u>Major recommendations</u> hardware/software	- MOH accepts to develop " <u>Informatique</u> " plan, including - selection and purchase of a central computer - acquisition of small-scale equipment - selection of the SEM (Service d'Exploitation Mécánographique) as the organization focus within the Ministry for "Informatique" development and support	March/April, 1983	In addition to the fact that it was in contradiction with GOM policies, the PP vision appeared unwise in Feb. 83 due to: (1) major decrease in hardware cost; (2) increase in availability of user friendly software; (3) difficulty to retain trained staff if not granted easy access to powerful, flexible hardware/software.
	- acquisition of a central computer for use in processing of security data and health statistics - acquisition and installation of simple small-scale equipment for the personnel and logistics applications - organizational selection of an organizational focus within the Ministry for computer and support - human resources development of a nucleus of skilled computer personnel develop-	- development of a nucleus of skilled computer personnel - development of computer management capability  - Consultation by Rousselle and Desjardins: design of a plan for achieving the short, medium and long	June, 1983	The PP also underestimated the problems arising from the revision of rules, procedures and administrative methods at the level of logistic services (pharmacy and others) and personnel. These rules, devised when the Ministry was relatively small (4,000 employees), had become archaic and totally inadequate given the complexity of operations in a ministry now ten times larger.  Therefore, not only did those rules,

2/2

OUTPUT

<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
ment of computer management capability	term MOH computer strategy		procedures and methods have to be re-
- June 83: telex from MSH	- schedule for system		vised, but also computerized taking in-
Roberts to AID/W requesting	procurement/installation		to account the volume and complexity of
hardware/software including	- schedule for short-term		MOH operations. Furthermore, computer-
-- central <u>mini-computer</u>	technical assistance		ization opened the door to <u>management</u>
	- training plan for information		through mere transfer to the computer
	management		of procedures performed manually so
			far.
system to be installed in			
late 83: mini with 1 Meg.			The idea seemed unfeasible through com-
RAM/400 Meg disk/2 1600 BPI			puter systems of other ministries,
Mage Tape Drives/one 600 LPM			where MOH had already experienced sat-
and one 200 LPM printer/15			uration and poor quality services.
CRT terminal/software: multi-			
user OS, full screen text			The initial order of 2 IBM-PC's and two
editor, cobol and Fortan com-			portables (COMPAQ) was replaced by an-
compilers, DB mgt system, stat			other order of four COMPAQ's to obtain
analysis package, communica-			more flexibility in the use of equip-
tions software, online data			ment and accelerate the training pro-
entry			cess (one type of equipment instead of
- editing support			two).
- four <u>micro-systems</u> to be pro-	- Arrival and installation of	October 17, 1983	
cured and tested immediately	four <u>portable</u> micro computers		
for installation no later than	COMPAQ with 4 TALLGRASS hard		
than September 83; 2 IBM-PC	units, 8 floppy disk units, 4		
256K MM, with hard disk/2 IBM-	printers and software: 3		
PC portable systems one with	DBASE II and 1 WORDSTAR		
1 Meg hard disk/four printers/			
software: PC-DOS, Basic,	- Three COMPAQ's are available		
spreadsheet, DBASE II and	to BMM, with one installed at		
QUICKCODE, ABSTAT, WORDSTAR	SEM. Training of SEM and BMM		
(for one machine only)	personnel begins immediately		

57

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
	— anticipated request of quest of <u>additional micro-systems</u>	(see "training") and before the end of the year. PIS application (see "Human Resources") will be started and well on it way.		
		— Gueron report on the acquisition of a mini computer; and additional micro-computers. Main conclusions were — the MOH needs a minicomputer and HP 3000 is the best choice. — the request for additional IMB PC micro-computers is reasonable.	February 6, 1984	
		MSH receives green light from MOH to acquire 7 additional microcomputers	February 14, 1984	
		MSH recommends AID to proceed with the acquisition of 7 IMB/ PC/ 7 printers/ 14 320 K disk drives/ 7 QUADCARD	February 15, 1984	
		USAID agrees to purchase 7 micro computers for the MOH	February 22, 1984	
		— Arrival of IBM PC and 7 printers	April 6, 1984	
		Mini procurement approved by MOH and then by AID	Spring 1984	
		MOH prepares a room to host the mini at SEM	Spring/Summer 1984	

23

OUTPUT

MAGNITUDE OF OUTPUT

PROGRESS/CURRENT STATUS

DATE ACHIEVED/  
EXPECTED DATES

COMMENTS/PROBLEMS/CAUSES

	<p>Mini received and installed, including</p> <ul style="list-style-type: none"> <li>- 1 HP 3000/39 with 1 Meg. MM</li> <li>- 1 Fixed disk: 400 Meg.</li> <li>- 1 Tape Drive: 1600 BPI, 9 tracks</li> <li>- 1 Line printer: 1000 LPM</li> <li>- 1 Line printer: 200 LPM</li> <li>- 13 CRT terminals</li> <li>- Software: 1 multi-user OS, 1 full screen text editor, COBOL and PORTLAN compilers, IMAGE data base system, 1 graphics package</li> <li>- training for SEM personnel in hardware and software use (see training section)</li> </ul>	<p>November 1, 1984</p>	<p>Two microcomputers HP 150 with MS/DES 2 have also been approved and ordered. They will serve as terminals for the HP 3000. Each will come with two 3 1/4" floppy disk units which means some compatibility problems with the other micros operating with 5 1/4" floppys.</p> <p>The final implementation of micros and terminals is difficult to foresee at the present time. It will depend essentially on the progress registered at the project within different sectors of computer application.</p>
<p>Deployment of micros and terminals</p> <ul style="list-style-type: none"> <li>- personnel services: medical/paramedical/administrative/ATP</li> <li>- infrastructure</li> <li>- Pharmacy</li> <li>- Equipment</li> <li>- Motor-pool</li> <li>- Budget</li> <li>- Polit province and SEM/BMM</li> </ul>	<ul style="list-style-type: none"> <li>- Deployment of micros Oct./Nov., 1984</li> <li>COMPAQ (4): SEM (1), BMM (3), TALLGRASS (4): infrastructure (2) Bureau P. Medical (1) SEM (1)</li> <li>IMB PC (7): SEM (3), BMM (1) Infrastructure (1) Med. Pers. Office (1) Office of Equipment (1)</li> </ul>		

29

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
#4. Improved/efficient system for personnel administration and human resources management.	- Improvements in filing and record handling procedures in the Service of Personnel	- Analysis of filing and record keeping procedures; up-dating the Services of Personnel data base; construction of filing racks and reorganization of the records room	November 1983	- Required photocopying info files from Ministry of Finance records; materials procurement for racks; personnel training.
	- PIS pilot for medical personnel and its modification and extension for all MOH employees (includes production of detailed manpower statistics - Development of a system for manpower projections	- Preliminary analysis by PIS working group of management system of medical bureau/info flow, list of information outputs by potential users, list of documents to be used for the pilot and preliminary analysis of computer needs	May 1983	- "Per-computerization" actions include personnel training (all levels); identifying users needs; restructuring of Service of Personnel work flow; identification of bottlenecks, within and without MOH); and improvement of working conditions (offices, equipment etc.).
	- Development of a system for estimating manpower requirement	- Sub-committees identify user needs, Infrastructure and Personnel; and province	April 1983	
	- Training in manpower	- Hardware and software specifications for PIS pilot.	May 1983	
		- Development of administrative procedures and computer programming for the pilot.	July 1983	- Delays in microcomputer hardware procurement.
	- Discussions of methods for calculating human resource requirements.	October 1983		

20

OUTPUT

MAGNITUDE OF OUTPUT

PROGRESS/CURRENT STATUS

DATE ACHIEVED/  
EXPECTED DATES

COMMENTS/PROBLEMS/CAUSES

- |   |                |  |
|---|----------------|--|
| - Identification of personnel recruitments needs (programmers/analysts).  | June 1983      | - Inadequate MOH EDP capacity, a disincentive to trained programmers to seek work there. |
| - List of nomenclature for PIS info data base: defines PIS info data base to be used to develop codes for computerized system.              | September 1983 |  |
| - Plans for obtaining PIS data base info and for coding and entry of data.  |                |  |
| - Preliminary plans for training personnel staff in new procedures.   | September 1983 | - Delays in AID procurement process for hardware and software.                           |
| - Micros arrive.  | October 1983   |  |
| - PIS programming completed, including administrative procedures for programming.   | December 1983  |  |
| - Training: management/problems/solutions.  | December 1983  |  |
| - Detailed "checklist" for each administrative career step for medical staff developed and adapted to non-availability for computerization. | November 1983  | - Work on manpower projection proformas postponed due to non-availability of MOH staff.  |

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
		- Complete catalog of coded postings in MOH.	December 1983	
		- Training for data entry staff (coding; input).	January 1984	- Problems in recruiting training programmers/analysts.
		- Coding/inputting/debugging and coming on-line of the medical PIS pilot.	March 1984	- Need to provide for stock of expendable commodities.
		- Checklists introduced into the Bureau Medical (BPM) and development under way for other personnel sections (office procedures manual for personnel service.	January 1984	
		- 7 Seminars (coding, etc.; materials for office procedures manual; provincial personnel administrations.	on-going (May 1984)	
		- Survey to up-date/supplement PIS info data base, medical personnel.	April 1984	
		- Survey for paramedical personnel data prepared.	April 1984	
		- Manpower supply and needs projections methodology developed.	April 1984	- Advancing slowly, as data required for this from another project (WHO) not yet available.

2

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
		- Seminary to prepare extension of the PIS to the Paramedical Personnel Bureau.	May 1984	
		- Input from survey for medical personnel PIS.	July 1984	
		- Personnel manual (administrative guide) for all central bureaus drafted.	May 1984	- PIS paramedical extension delayed due to technical problems of finding a mainframe computer-IMB micro link for the transfer of personnel info from the DOT tape. Solution is to wait for installation of the HP mini, and use it to transfer the data to diskette form. PIS paramedical extension time-table to be revised.
		- Draft procdures for provincial personnel administra-	October 1984	
		- Infrastructure data for human resources management incorporated into the PIS.		
		- PIS inputs and outputs in in three pilot provinces.	November 1984	
		- Guide for provincial personnel administration.	February 1984	

43

Output #4: Human Resources (HR) Management

The broadly defined terms of reference for the Human Resources Management element of this project are to design and implement a workplan covering the development and improvement of the systems of HR management and personnel administration in the MOH.

To provide the necessary range of information for these tasks, three manpower information systems are to be developed:

1) Personnel Information System (PIS) holding the detailed record of each individual employed by the MOH. This is to provide both the data (instead of fiches) for day-to-day work in the personnel bureau and also detailed statistics on the health staffing situation;

2) Manpower projections, working from manpower statistics available from the PIS to produce projections of future health manpower supply according to a range of possible manpower policies; and

3) Manpower requirements, based on the current (WHO-assisted) work in PHC and the proposed development of a national method for calculating human (and other) resource requirements, to replace the current staffing norms for each type of health unit.

Development of each system is to follow a standard sequence of activities, i.e. a) central staff preliminary investigations/assessments, and development of a pilot activity on a micro-computer; b) seminar (training and planning) attended by representatives of all the functions in the MOH affected by the development so that they may understand the purpose and capabilities of the proposed system (aided by demonstrations of the pilot); specify what information outputs would be of value and how many would be used; agree on the data inputs to the system; and agree on the timetable for implementation; c) development and implementation of the main system, i.e. extending the pilot system; d) a second seminar to demonstrate the capabilities of the operating system; assure participants of the availability of outputs; and agree on changes/improvements; and e) central staff make technical assistance available to users.

As listed in the table on HR outputs, the project has progressed through (c) above (work on manpower requirements is behind due to the unavailability of data from the WHO-assisted pilot projects). The work has included -inter alia- considerable assessment, discussions/negotiations, training at all levels, development of standard procedures, and computer programming.

Progress to date has been significant. In addition to continuing work along the standard sequence above, the project should increase its focus on the use of the information provided for actual improvements in management performance and better delivery of health services.

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
#5. A budgetting and accounting system which facilitates rational allocation and control of resources by allowing	- Per log frame: Budget and program records permit determination of program costs. # of major vertical integrated programs utilizing new programs budgetary system.	- A draft "tableau de bord" for the operating budget has been prepared showing global status of credits; indicators of productivity and of expenditures for different levels of service; and current levels of credits and expenditures by "formation" (service, line items or or budget categories). Preparation of tableau de Board tested in one province (Kenitra). Extension to other provinces planned late November 1984.  - A computerized system for monitoring progress and procurement for construction and equipment contracts has been developed to assist in preparation of accrual reports for the investment and special fund budget.	Current - 4th quarter 1984	Accounting component of project was not started until late 1983.

Output #5, finance/Accounting/Budgetting

Work on this component of the project was not started until late 1983 for several reasons: MOH priorities had emphasized the pharmaceutical and personnel areas; also program budgetting and cost accounting were being addressed by the PHC/Agadir pilot project being carried out in collaboration with WHO. In late 1983, however, there developed renewed interest in the financial component of the management project and a short-term consultancy was arranged for late December to review MOH financial management and accounting systems and to recommend actions. In early 1984, 10 senior MOH officials met 6-7 times for more than 2 hours each to draft a report recommending immediate implementation of the consultants' recommendations for short-run improvements and, in the longer run, a complete study of the financial system to be followed by the introduction of program budgetting, and analytic accounting system, and training of staff to operate the new system. Implementation of two recommendations were given especially high priority by MOH: development of 1) a system of performance reports which would link expenditures to service delivery, and 2) reports needed to gain release of accrual funds (funds carried over from one year to the next are made available only after a ministry provides an detailed accounting of "credits" and expenditures. See Holzer report, January 1984, for complete explanation.) Two MOH teams were designated, one to work on the operating budget, one on the investment budget and special fund.

In the second and third quarters on 1984, the MOH team responsible for the operating budget prepared a draft "tableau de Bord" that comprises "credits" reports (budget, expenditures and reimbursements by treasury) and performance reports (measures of productivity, related expenditures, and rudimentary program budget form). The process of filling the "tableau de bord" has been tested and documented in Kenitra. Revision, training of medecins chefs and administrative staff, and implementation in several pilot provinces is expected by the end of 1984.

After initial debate over locus of responsibility and types of software and hardware to be used, work has also proceeded on developing a computerized system for monitoring construction and equipment contract processes and procurement so that accrual reports can be prepared for the investment and special fund budgets. This effort is viewed as particularly important since there is believed to be a considerable amount of money sitting unexpended in the investment and special funds accounts.

Recommendation: Work on this project component is given high priority by MOH and has proceeded to date along the lines recommended in the Holzer report, largely with MOH initiative. It is recommended that contractor support to this component be limited to short-term technical assistance as needed, with minimal involvement of long-term personnel in follow-up. Moroccan staff of BMM should take responsibility for monitoring progress and for coordination and follow-up when necessary.

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
#6. - Improved pharmaceutical logistics system	<ul style="list-style-type: none"> <li>- Revision/reduction of nomenclature</li> <li>- Development of standard lists by type of treatment facility</li> <li>- Development of provincial drug ordering methodology</li> </ul>	<ul style="list-style-type: none"> <li>- Pharmaceutical ordering, procurement and distribution study, central and provincial levels</li> </ul>	October 1983	
		<ul style="list-style-type: none"> <li>- Data collection forms devised</li> </ul>	October 1983 (data analyzed)	
		<ul style="list-style-type: none"> <li>- Interviewers trained</li> </ul>	May 1983 (fieldwork)	<ul style="list-style-type: none"> <li>- Per diem costs of local field workers caused delays</li> </ul>
		<ul style="list-style-type: none"> <li>- List of drugs purchased by MOH reviewed and revised as 1st step toward a comprehensive "essential" drug list</li> </ul>	on-going (July 1985)	<ul style="list-style-type: none"> <li>- Survey provided information on pharmaceutical stock management, central and provincial drug ordering, central purchasing, skills/knowledge of MOH personnel throughout the pharmaceutical system</li> </ul>
		<ul style="list-style-type: none"> <li>- Methodology for estimation of drug needs study for ambulatory system drug requirements</li> </ul>		
		<ul style="list-style-type: none"> <li>- Development of plans pharmaceutical logistics improvement in:                             <ul style="list-style-type: none"> <li>a) selection                                     <ul style="list-style-type: none"> <li>- nomenclature revision</li> <li>- questionnaires for identifying appropriate category of users and appropriate facility for use of each drug in the nomenclature</li> </ul> </li> </ul> </li> </ul>	March 1984	<ul style="list-style-type: none"> <li>- Analyses provided basis for designing improvement strategies</li> </ul>
		<ul style="list-style-type: none"> <li>- Standardized drug lists by treatment facility</li> </ul>	June 1984	<ul style="list-style-type: none"> <li>- Drug needs study in conjunction with WHO PCH pilot projects</li> </ul>
		<ul style="list-style-type: none"> <li>- Draft standardized treatment protocols                             <ul style="list-style-type: none"> <li>b) quality control (option)</li> <li>c) procurement (option)</li> </ul> </li> </ul>	on-going (July 1985)	<ul style="list-style-type: none"> <li>- Private drug companies unwilling to share necessary information re quality control</li> </ul>
			November 1984	<ul style="list-style-type: none"> <li>- Procurement options being studied include 1) development of a march-cadre; 2) development of a system of direct provincial purchases; 3) exploration of international tender offers for drug purchase; and 4) improving the procurement unit</li> </ul>
			on-going	<ul style="list-style-type: none"> <li>- Procurement option discussions require more authority and MOH staff</li> </ul>

37

OUTPUT

MAGNITUDE OF OUTPUT

PROGRESS/CURRENT STATUS

DATE ACHIEVED/  
EXPECTED DATES

COMMENTS/PROBLEMS/CAUSES

<p>d) national and provincial stock management</p> <ul style="list-style-type: none"><li>- Information needs for stock management and drug ordering at central pharmacy and provincial pharmacies identified; and specific recommendations made.</li></ul>	<p>on-going</p> <p>not be achieved by the end of project</p>	<p>involvement than currently being provided</p> <ul style="list-style-type: none"><li>- MOH sub-committee for stock management and procurement lack authority and means to implement recommendations; and is behind on improvement plans and strategy. The MSH has decided, under the circumstances, that the pharmaceutical logistics sector will concentrate on development a training in drug ordering methodologies and other aspects of the selection process.</li></ul>
<ul style="list-style-type: none"><li>- Workshop to 1) develop a model for standard treatment protocols based on morbidity data from WHO primary health care pilot project current prescribing practices, etc.; and 2) ensure that these protocols can be used in methodology to be developed for estimating drug requirements (13 participants, 1 week)</li><li>- Demonstration of a new drug ordering methodology for provincial level and using MOH microcomputer capability (relates standard treatments and local demographic data to morbidity patterns)</li></ul>	<p>August 1984</p>	<ul style="list-style-type: none"><li>- Drug stock management improvement will be pursued under the new health project with the World Bank. This will likely address the recommendation that a central unit to coordinate the pharmaceutical logistics management cycle be established.</li></ul>
<ul style="list-style-type: none"><li>- Field/pilot test of new methodology</li></ul>	<p>on-going (April 1985)</p>	<ul style="list-style-type: none"><li>- Workshop for wider introduction planned for 1985.</li></ul>

4  
8

MOTOR POOL

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
<b>#1.</b> Improvement of the management capacity of the motor-pool at the provincial and central levels (coordinated with other ministries involved).	As specified by the BMM (end 1983):  - Management information systems for the motor-pool calling for a major simplification of administrative procedures (new forms, guides) and meeting the information needs of the motor-pool managers at the central and provincial levels, as well as other managers using the motor-pool services  - Pilot implementation in some provinces  - Expansion throughout the country  - Eventual computerization of system	Diagnostic of the present information system  First report of outside consultant, main recommendations:  - Reduction in the amount of raw data sent from the provinces to Rabat  - More insistence on receiving certain data now requested but not always provided  - Increased analysis in the center with the help of a computerized data base  - Preparation of a plan for the initial computerized data base  - Data form and data base design  - Start of data collection in five provinces for January to December 1984	January/March 1984  March 1984  May/June 1984  June/July 1984  July 1984	Little or no assistance from the motor-pool manager until September 1984.

69

MOTOR POOL

<u>OUTPUT</u>	<u>MAGNITUDE OF OUTPUT</u>	<u>PROGRESS/CURRENT STATUS</u>	<u>DATE ACHIEVED/ EXPECTED DATES</u>	<u>COMMENTS/PROBLEMS/CAUSES</u>
		- Data collection compiled for four provinces (out of five) for January/June 1984.	October 1984	
		Second consultant's report; main outputs:	October 22, 1984	Registry of data collected since July 1984 in five provinces has yet to be sorted out and completed.
		- Definition of information needs for management		
		- Design of new forms, guides, procedures		
		- MOH approval	October 1984	
		- Preparation of experimentation with new documents and procedures	November 1984	
		- Testing new documents and procedures in pilot provinces	Beginning November 1984	
		- Utilization of data obtained in experiment at SEM	End 1984	
		- Evaluation of results of experiment	Beginning 1985	
		- Planification/programming of system expansion	Beginning 1985	

50

MOTOR POOL

The project started late with BMM beginning to examine the motor-pool early in 1984. The motor-pool manager was not convinced of the usefulness of the project and did not cooperate during the first part of the year. The problem is now resolved, with the project progressing rapidly, thanks, in particular, to two visits by an outside consultant. Design of the new management information system is essentially completed with experimentation about to begin. External consultants to the BMM have practically finished their work by advancing the project to a level where the Moroccans would be able to take over.

## IX. Purpose

The project purpose is to improve the quality and quantity of the country's health services by increasing the effectiveness and efficiency of the GOM health delivery system. The Project Paper states this objective will be realized by a) improving the capacity of the Ministry to manage itself at all levels (central, provincial and circumscription) and b) by institutionalizing specific management and administrative support systems operational planning and control personnel, vehicle logistics, budget and accounting, service and use statistics).

### A. Progress Toward EOPS conditions

1. During project implementation, increased focus on the central and provincial levels has been agreed upon and documented. Circumscription level capacities will be addressed under this project as time permits, and/or by the MOH after project termination, as a logical extension of management and administrative improvements developed under this project.
2. New, improved procedures which seek to overcome "bottlenecks" and weaknesses as identified in the PP are en route in all project activity areas. (See Annex 6 Procedural Guides, Checklists, Tableaux de Bord, etc, developed under this project). However, the institutionalization of these measures is dependent upon implementation of the appropriate training and supervision methods.
3. The third and final log frame EOPS conditions, i.e. the existence of "adequate" human, material and financial resources at field levels for the MOH, assumes that this project will assist the MOH to identify priority health service needs/areas to which scarce resources will be channeled; and that more efficient utilization of MOH resources will result in savings which can subsequently be used to staff and equip health service and outreach program adequately. Based on progress to date, it is the evaluation team's opinion that the information made available as a result of revised information system will and should be used to assess resources available and to make resource allocation decisions.

## X. Goal

The project's goal is to improve the health status of Morocco's poor by improving the quality and quantity of health services available to them. Although there is no specific evidence to date which can describe progress toward this goal, it is still assumed that changes in administration and management of health services and delivery introduced by the project are a valid and necessary means of contributing to the achievement of this goal.

## XI. Beneficiaries

No change from PP.

## XII. Unplanned Effects

Computerization of administrative procedures at the MOH is just beginning (Medical Personnel and Human Resources are currently the only areas using DP). Its full effects have not yet been felt. The potential consequences of computerization are discussed herein:

The current, and predominant MOH-wide administrative procedures require significant manpower but few skills (manual copying, tabulation, classification etc.). Computerized procedures, on the other hand, will eliminate the need for these simple skills. At the same time, computerization also implies the creation of certain tasks, which calls for augmented skills in. e.g. coding, data entry, programming and analysis. If we consider all of the MOH's administrative actions, introduction of computers will likely affect a considerable number of employees.

It is recommended that the MOH begin studying the consequences of this potentially significant shift in manpower needs in order to avert employment problems. Specifically, planning for the "reorientation" of MOH personnel in preparation for new skills required by computerization should be undertaken.

## XIII. Lessons Learned

- A. A realistic assessment of the Host Country capacity and rate at which its contribution(s) can be provided should guide project implementation expectations.
- B. Development of computerized management information systems should build the capacity to meet information supply needs and stress their utility on the demand side (use/applications of information provided). The "fascination" which seems to come with the ability to generate data may diminish constructive reflection on how these data can be used to improve management.
- C. It can be deceptive to think and speak of "a Ministry" as an entity with a view or a position on a subject. In reality, there is rarely a single, articulated view on which one can act. On many subjects important for this project, there have been at least two or three views, often conflicting, which must be taken into account. The result is the need to plan for investment of considerable project time in discussion and negotiation.
- D. Contractor requirements should be defined so it is clear that outputs are a product of joint contractor-MOH effort. Contract responsibilities should be to support achievement of those outputs by means of specific levels and types of effort. Consideration should be given to specifying contractor

responsibility for 1) the transfer of responsibility and knowledge to MOH and 2) institutionalization through emphasis on training and use of information for management decisions and control.

- E. The training component of this project has been remarkably strong, given the difficulties encountered along the way. Nonetheless there are several lessons to be derived from the experience of this project, particularly in clearly defining roles and responsibilities at the outset:
- o In projects of this type, Ministries of Health need to take cognizance of the budgetary implications of training and AID needs to request assurances that such budgetary provisions have been made.
  - o When French (or any other non-English) language training is involved, consideration should be given to the limited capacity of AID/W/IT office to identify programs. It may be preferable to devolve responsibility for program identification to a contractor.
  - o When there is a tri-partite division of responsibility such as has been the case in this project, and given the need to establish project "tactics" before training needs can be specified, it would be more realistic to expect a training plan within 6 months of project start-up, rather than with 90 days.
- F. In designing management improvement projects, a thorough assessment of the quantity of capable, experienced administrators with analytical abilities, initiative, and interest should be made. Thinness in the ranks means that the few experienced staff there are tend to be overworked, and the project can benefit from them only on a part-time basis.

#### XIV. Special Remarks

##### 1. MOH/MSH/USAID Administrative Relationship(s)

Project documentation provides strong evidence of MSH and USAID complementary efforts to deliver inputs as identified, and the MOH's participation in their identification and customs clearance processes. Considering the usual bureaucratic processes and delays, this element has advanced very well.

Assessment of the contractor team's various TA, analysis and support role attests to the fact that the team has had to take on more responsibility than originally anticipated. Problems such as trainee participant selection, intra-ministerial coordination, systematic high level MOH involvement in major decisions for timely project implementation, have over-taxed the MSH team's capacity and have contributed to the need for an additional level of effort to bring project activities to a satisfactory culmination. At this time, USAID

54

is defining its actions in taking a more active role in "spelling out" MOH inputs over the time remaining in the project. We encourage USAID to underscore with the MOH the fact that the project extension will provide the time and the means for transferring the responsibility for project accomplishments to the MOH; and to build into the extension agreement those elements necessary for a successful transition (eg. specific definition of Moroccan responsibilities for "BMM type" functions; a coordinated management information unit for the MOH).

## 2. Systems Development vs Capacity Development

Given limited time and human resources, the contract team faces a conflict between the objective of leaving systems in place, and the objective of building capacity through training courses and technical help. In technical areas, there is a temptation for the expatriates to do themselves things that will get the systems developed or installed faster. But if they do, they limit the practical experience of the Ministry personnel. In non-technical matters, especially following-up implementation of plans and commitments on which depend the development and installation of systems, the expatriates also find it hard to resist filling a void when there is no follow-up or progress is slow. Both the sense of responsibility for this, and the doing of it, keep them (the team) away from capacity-building work, and eliminate pressure on Ministry officials to (learn to) follow-up and ensure that what is planned is done.

## 3. Use of Short Term Consultants

Under terms of their contract, MSH is to provide 42 months of short-term technical assistance (another 16 are proposed under the extension). During the period covered by this evaluation (March 1983 to November 1984) the quarterly reports have clearly set out plans and schedules for consultants. In project documentation, as well as in discussion with MOH, it is clear that the purposes, timing and specific scopes of work for consultants have generally been arrived at jointly by MOH/MSH. In many cases, the consultants' tasks are part of a longer-term work plan for each project component, and activities to be carried out in Morocco between consultations are specified in the consultants' reports. Thus Moroccan's use of the consultants' products is reflected in their close adherence to action plans. Moroccan assessment of the quality and timeliness of consultations has been found to be generally high.

MSH has used many of the same consultants (mostly from the contractor's own staff) for short consultancies over extended periods of time. This strategy has had several advantages. It provides continuity and eliminates the need for continually orienting new consultants; it has allowed for low-profile U.S. involvement in-country and has contributed to leaving responsibility for project implementation in the hands of the Moroccan working groups-- all judged to be positive effects. A neutral but notable consequence of the strategy is that it has altered somewhat the role of the long-term staff: the chief of party necessarily must spend a considerable amount of time working with MOH to prepare for and follow-up on consultant visits. No frankly negative consequences of the strategy were observed.

55

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project From FY 1981 to FY 1983  
Total U.S. Funding  
Date Prepared: 68 OCTOBER 1980

Project Title & Number: HEALTH MANAGEMENT IMPROVEMENT (608-157)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																										
<p>Program or Sector Goal: The broader objective to which this project contributes</p> <p>To improve the health status of Morocco's poor by improving the quality and quantity of health services available to them.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> <li>Declines in age-specific morbidity/mortality rates;</li> <li>Declines in incidence of disease and health disorders targeted by the GNM health system;</li> <li>Decline in age-specific fertility rates.</li> </ol>	<ol style="list-style-type: none"> <li>Health status surveys</li> <li>Hospital and clinic records</li> <li>MNI field worker records</li> <li>Data from MNI "vertical" programs (T.B., schistosomiasis, V.D. etc.)</li> <li>Fertility and/or contraceptive prevalence surveys.</li> </ol>	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> <li>MNI will allocate ample resources for ambulatory health services</li> <li>To a considerable extent, health status is a function of the availability of good health services</li> <li>Moroccans will seek health/FP care from an improved MNI health delivery system;</li> <li>Contraceptive use prevalence is positively related to availability of services, and inversely related to infant mortality.</li> </ol>																																										
<p>Project Purpose:</p> <p>To improve the quality and quantity of health services in Morocco by increasing the effectiveness and efficiency of the GNM health delivery system.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> <li>Improved MNI capacity to manage itself at all levels; central, provincial, circumscription.</li> <li>Institutionalized improvements in MNI management and administrative support systems: Planning, Personnel, Logistics, BQA, Health Statistics.</li> <li>Existence of adequate human, material and financial resources at field levels for the MNI.</li> </ol>	<ol style="list-style-type: none"> <li>Observations of MNI programs</li> <li>MNI work plans</li> <li>Health client surveys</li> <li>Clinic caseload analyses</li> <li>Comparative studies of beginning and end of project status developed for evaluation</li> </ol>	<p>Assumptions for achieving purposes:</p> <ol style="list-style-type: none"> <li>Ineffective and/or overtaxed MNI management procedures are a severe limiting factor to improved health services delivery;</li> <li>Organizational and administrative changes will be approved by MNI, Ministry of Plan, Ministry of Finance.</li> </ol>																																										
<p>Outputs:</p> <ol style="list-style-type: none"> <li>Improved capacity to solve management problems;</li> <li>Improved, flexible data processing capacity;</li> <li>Efficient system for collecting, analyzing and using operational statistics;</li> <li>Improved process for coordinating health programs;</li> <li>Efficient Personnel Administration system;</li> <li>Efficient Budget and Accounting System;</li> <li>Efficient Procurement and Logistics *</li> </ol>	<p>MNI Budget and program records permit determination of program costs. Improvements in personnel administrative procedures which will permit a regularly scheduled updating (i.e., monthly or quarterly) of records relevant to hiring, transfers, promotions, and other personnel actions. The # of major vertical integrated programs utilizing new program budgeting system. The # of information collection documents redesigned and used.*</p>	<ol style="list-style-type: none"> <li>USAID observation;</li> <li>Contractor reports;</li> <li>Project evaluation;</li> <li>MNI documents, including B and A records, personnel records, operational reports from divisions and provinces.</li> </ol> <p>*The # of divisions plus provinces utilizing revised data processing procedures, # seminars, training sessions provided for M-C, Majours &amp; other health personnel at local, provincial, central level.</p>	<p>Assumptions for achieving outputs:</p> <ol style="list-style-type: none"> <li>Use of a US/GNM team approach plus careful selection of training/trainees, will result in effective institutionalization of new mgt. systems and procedures in the MNI;</li> <li>MNI dedicates adequate counterpart personnel</li> <li>MNI sustains commitment to implement the project.</li> </ol>																																										
<p>Inputs (\$ 000)</p> <table border="0"> <tr><td>1. Personnel</td><td>U.S.</td><td>(1587)</td></tr> <tr><td>2. Training</td><td></td><td>( 370)</td></tr> <tr><td>3. Commodities</td><td></td><td>( 350)</td></tr> <tr><td>4. Evaluation</td><td></td><td>( 10)</td></tr> <tr><td>5. Inflation @ 15% p/a</td><td></td><td>( 378)</td></tr> <tr><td>6. Contingencies @ 10% p/a</td><td></td><td>( 252)</td></tr> <tr><td colspan="2">SUB-TOTAL</td><td>23,147</td></tr> </table> <table border="0"> <tr><td>1. Personnel</td><td>GNM (\$000)</td><td>(1,328)</td></tr> <tr><td>2. Facilities &amp; Transport</td><td></td><td>( 51)</td></tr> <tr><td>3. Travel Costs</td><td></td><td>( 15)</td></tr> <tr><td>4. Depreciation</td><td></td><td>( 68)</td></tr> <tr><td>5. Contingencies &amp; Inflation</td><td></td><td>( 358)</td></tr> <tr><td colspan="2">SUB-TOTAL</td><td>18,790</td></tr> <tr><td colspan="2">PROJECT TOTAL</td><td>41,937</td></tr> </table>	1. Personnel	U.S.	(1587)	2. Training		( 370)	3. Commodities		( 350)	4. Evaluation		( 10)	5. Inflation @ 15% p/a		( 378)	6. Contingencies @ 10% p/a		( 252)	SUB-TOTAL		23,147	1. Personnel	GNM (\$000)	(1,328)	2. Facilities & Transport		( 51)	3. Travel Costs		( 15)	4. Depreciation		( 68)	5. Contingencies & Inflation		( 358)	SUB-TOTAL		18,790	PROJECT TOTAL		41,937	<p>Implementation Target (Type and Quantity)</p> <ol style="list-style-type: none"> <li>Two long-term (3 yrs) 30 p/a short-term</li> <li>8 person/years long-term (U.S.) 30 p/a short-term (U.S. and 3rd country) In-country short-term</li> <li>EDP equipment Training supplies and equip. Misc. Office equipment.</li> </ol>	<ol style="list-style-type: none"> <li>Project Agreement</li> <li>Contract w/U.S. CONSULTANTS; IQC'S</li> <li>PIO/C's, PIO/T's, purchase orders, etc</li> <li>Audits</li> </ol>	<p>Assumptions for providing inputs:</p> <ol style="list-style-type: none"> <li>The U.S. has a significant comparative advantage in the field of health management improvement.</li> <li>U.S. management procedures can be effectively grafted onto a traditional French-style government bureaucracy.</li> </ol>
1. Personnel	U.S.	(1587)																																											
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\*) system for transport and other materials.

ARTICLE I - TITLE

Health Management Improvement Project (Project No. 608-0151)

ARTICLE II - OBJECTIVE

The objective of this work order is to review work conducted to date, plans for the upcoming World Bank-assisted primary health care project and the AID-supported population project as a basis for identifying management improvements appropriate for application at the peripheral level. When such applications are recommended, the team will also identify possible sources of support, including the Ministry's own resources, centrally funded AID resources and the World Bank project. Selected interventions that would reinforce the efficiency and effectiveness of the AID-assisted GOM population and family planning project and its VDMS component could be recommended for USAID support under the population project. All such recommendations should take into account the Ministry's absorptive capacity and the requirements of the World Bank and the on-going AID population project.

ARTICLE III - STATEMENT OF WORK

The contractor shall:

- 1) Describe and quantify administrative/management improvements in the MOPH made to date through the project in the following areas:
  - a. human resource management
  - b. pharmaceutical logistics
  - c. vehicle fleet management
  - d. financial/accounting systems
  - e. information systems/data processing capacity
  - f. formal third-country or U.S. short-term training
  - g. staff development/on-the-job training
- 2) Develop and present measurable indices of progress that could be utilized by USAID and the MOPH to assess the service impact of future management improvements at central and/or peripheral levels. This will begin the process of connecting management improvements to some measurable service outcome. This connection may not be established with the present evaluation, but USAID and the MOPH should begin to address this question.
- 3) Analyze the present Bureau of Management and Methods (BMM) with respect to its personnel, its position within the

51

Ministry, its tasks and its ability to continue following the termination of the project. This unit is presently staffed with three Moroccans, who have been detailed there specifically for the Project. The evaluation team should assess the unit's present and potential future effectiveness. Of particular interest will be the counterpart relations with contractor personnel and the present staff's ability to operate independently.

- 4) Analyze contractor use of short-term consultants with particular attention to whether the MOPH has been appropriately involved in preparation of their scope of work and has utilized the product of their work. Of particular interest will be an assessment of the effectiveness of the contractor's continuing use of the same consultant for short periods over extended periods of time.
- 5) Describe MOPH utilization of computer hardware supplied by the project (including expected utilization of the mini-computer which will arrive soon). Special emphasis should be given to the contractor's preparation and training of Moroccan ministry staff in computer use. Repair and maintenance records should be examined and an analysis made of Ministry capacity to adequately service the hardware. USAID expects to receive a request from the MOPH to procure the SPSS package for use with the mini-computer. The team will assess this idea and make a recommendation to the Mission given that this will entail a fairly expensive yearly outlay for rental of the program.
- 6) Assess and comment on MOPH personnel involvement with the project, including all levels of the Moroccan health system.
- 7) Assess the administrative relationship between USAID, the contractor, and the MOPH and make recommendations for improvement, if necessary. This might include an analysis of how each of the parties has marshalled necessary inputs.
- 8) Explore and comment on whether the MOPH capacity to monitor basic health services has increased during the project.
- 9) Identify the management improvements that could be effectively extended or applied at the peripheral level, taking into account the Ministry's absorptive capacity and the activities and requirements of the World Bank and on-going AID projects.
- 10) Suggest the mode by which such improvements might be applied, i.e., through application in pilot provinces, and potential sources of funding support, including the

Ministry's own resources, the World Bank, and AID centrally funded resources. To the extent that such improvements could help the Ministry achieve greater efficiency and effectiveness in its population and family planning program, the team should identify possible means of supporting them under the AID-funding population 608-071.

ANNEX 3

AGENCIES AND KEY INDIVIDUALS INTERVIEWED

MOH Central Level

Mr. Othmane Jennane, Secretary General  
Prof. Moulay Tahar Alaoui, Director of Technical Affairs  
Mr. Omar Amouzig, Director of Administrative Affairs  
Dr. Abdelhai Mechbal, Chief, Planning and Infrastructure  
Mr. Abdelkader Haddad, Chief, Personnel and Budget  
Mr. Mohamed Laaziri, Head of Infrastructure Division  
Mr. Mohamed Khaldi, Head of Budget and Accounting  
Mr. Mohamed Benallal, Head of "Equipment" Division  
Mr. Mohamed Ouakrim, Chief, SEM  
Mr. Boudkar Fahdi, Head Parc Auto Service  
Mr. Hassan Serouji, Head of Personnel Service  
Mme. Touria Ramzi, Head of Accounting Service  
Mr. Brahim Hasbi, SEM Programmer/Analyst

MOH Provincial

Dr. Mohamed Izidine, Medecin Chef, Kenitra Province, and staff  
Dr. Azzedine El-Mansouri, Medecin Chef, Kenitra Province, and staff

MSH

Mr. Richard Roberts, Chief of Party  
Dr. James Wolff  
Mr. Paul Desjardin  
Ms. Daphne Kempner, MSH/Boston Backstop

BMM

Mr. Abdellah Aoufoussi  
Mr. Mamoun Ouadghiri  
Mr. Abbes Ouainim  
Mr. Brahim Oucherif

WHO

Mr. Jean Paul Fortan, WHO Representative

UNICEF

Mr. Leo de Vos, UNICEF Representative (departing)

USAID

Mr. Harry J. Petrequin, Acting Director  
Ms. Dale C. Gibb, Chief Population/Health/Social Services Division  
Mr. Paul G. Ehmer, Health Officer  
Ms. B. Eilene Oldwine, Assistant to Chief  
Mr. Carl Abdou Rahman, Population Officer  
Mr. John Giusti, Evaluation Officer  
Mr. Stacy W. Rhodes, Program Officer  
Mr. Mark Mathews, Controller

World Bank Morocco Health Team

Dr. Jean Pillet  
Mr. Louis Vassiliou  
Mr. Bernard Hubert

ANNEX 4

LISTING OF REPORTS  
MSH/MOROCCO HEALTH MANAGEMENT IMPROVEMENT PROJECT

Type of Report	Title (English/French)	Author(s)	Date of Report
Annual	First Annual Report: Morocco Health Management Improvement Project/ Project d'Ameloration de la Gestion au Ministere Marocain de la Sante. Premier Rapport Annuel	Bruce Mackenzia (COP) James Wolff, MD	March 1983
Quarterly	Health Management Improvement Project Quarterly Progress Report No. 1/Project d'Amelioration de la Gestion de la Sante Publique. Rapport d'Activite Trimestriel No. 1.	Bruce MacKenzie (COP)	June 15, 1982
Quarterly	Health Management Improvement Project Quarterly Report No. 2	Bruce MacKenzie (COP) James Wolff, MD	Sept. 15, 1982
Quarterly	Health Management Improvement Project Quarterly Report June 1983	Dick Roberts (COP) James Wolff, MD	June 1983
Quarterly	Health Management Improvement Project Quarterly Report September 1983	Dick Roberts (COP) James Wolff, MD P.A. Desjardins	December 1983
Quarterly	Health Management Improvement Project Quarterly Report December 1983	Dick Roberts (COP) James Wolff, MD P.A. Desjardins	December 1983
Quarterly	Health Management Improvement Project Quarterly Report April 1983	Dick Roberts (COP) James Wolff, MD P.A. Desjardins	April 1983
Quarterly	Health Management Improvement Project Quarterly Report June 1983	Dick Roberts (COP) James Wolff, MD P.A. Desjardins	June 1983

Type of Report	Title (English/French)	Author(s)	Date of Report
MIS Consultant	Information & "Informatique" in the Morocco HMIP/Information et Informatique dans le Project d'Amelioration de la Gestion de la Sante au Maroc	P.J. Rousselle	Feb. 6-14, 1983
MIS Consultant	Mission Report	R. Hurtubise	Sept. 7-14, 198
Human Resources Consultant	Human Resource Management in the MSP/ La Gestion des Ressources Humaines au Ministere de la Sante Publique	P. J. Shipp and M. L. Hume	Nov. 1-12, 1982
Human Resources Consultant	Manpower development: Management and Planning/objet: Gestion et Planification pour le Developpement des Ressources Humaines	Peter Hornby	Feb. 6-13, 1983
Human Resources Consultant	Technical Developments & Management Improvement in the Health Manpower System in Morocco	P. J. Shipp & M. L. Hume	April 11-29, 1983
Human Resources Consultant	No title. General Subject: Development of the Personnel Information System (PIS) (in French)	P. J. Shipp J. A. Huddart M. L. Hume	July 1983
Human Resources Consultant	Report on an Assignment (Further Development of PIS including Management Information Reports & Schedule of Future Activities)	P. J. Shipp	Feb. 6-22, 1984
Human Resources Consultant	Report on an Assignment (Participation in Workshop & Working Group directed at Introduction of Procedures Guides in Bureau of Personnel Service & Initial Planning for May Workshop on Extension of PIS to Bureau of Paramedical Personnel)	M. L. Hume	March 26- April 13, 1984
Human Resources Consultant	Report on an Assignment (Assistance in Advancing Work on Project of Health Manpower Requirements, Assessing Possibility of Improving Health Manpower Input in Provinces)	P. J. Shipp	March 26- April 13, 1984
Management Training Summary Report & Evaluation	First Advanced Health Management Program	Bruce MacKenzie (COP)	July 7-30, 1982

Type of Report	Title (English/French)	Author(s)	Date of Report
Drug Supply System	Esquisse Panoramique de l'Industrie et de la Logistique Pharmaceutiques Marocain	J. Wolff, MD Brahim Ducherif	June 1982
Drug Supply System Consultant	Pharmaceutical Supply System and Guidelines for Supply System Studies/ Resume du Rapport du Fin de Mission des Consultants M.S.H. dans le Cadre de l'Amelioration de la Logistique Pharmaceutique	J. Bates D. Kempner R. O'Conner	Oct. 28-Nov. 11 1982
Drug Supply System Survey	Survey of the Pharmaceutical Supply System: Volume I: An Analysis of the Selection Procurement, Distribution & Use of Pharmaceuticals:  Volume II: Pharmacologic Review of 1982 Drug nomenclature  Volume III: Survey Instruments	Managers: D. Kempner J. Wolff Contributors: P. A. Desjardins R. Feilden L. Reddy  A. Dozzi C. Letarte  Managers: D. Kempner J. Wolff Contributor: R. Feilden	October 1983          October, 1983    October 1983
Drug Supply System Consultant	Gestion Ameliorree des Stocks Pharmaceutiques Nationaux	J. A. Bates	Dec. 4-18, 1983
Drug Supply System Consultant	Report on Drug Logistics/Report sur la Logistique en Matiere de Medicaments au Ministere Marocain de la Sante Publique	J. Wickett	April 16-May 19 1984
Drug Supply System Consultant	Compte Rendue de l'Atelier pour le Developpement des Protocoles Diagnostic-Traitement	Robert Cushman S. Bisailon	July 23-27, 198
Finance Consultant	Financial Management Issues in the Moroccan Ministry of Health	H. Peter Holzer	Dec. 28, 1983- Jan. 18, 1984

Finance

Systeme d'Information Parc Auto

J. O. Burns

April 25-May 11

Consultant

MSH Contract

1984

Project Paper

Project Documents (Implementation Letters, Memos, files)

65

ANNEX 5(A)

Health Management Improvement Project - Bureau of Management  
and Methods

This addresses task #3 in the Evaluation Team's scope of work, which calls for an analysis of the Bureau of Management and Methods (BMM) with respect to its personnel, position in MOH, tasks, counterpart relations with contractor personnel, ability of Moroccan staff to operate independently, present and future effectiveness, and ability of the BMM to continue after the project.

1. Personnel

The BMM presently consists of three Moroccan staff: M. Aoufoussi (a Master's level graduate (Doctorat d'Etat) of the National School of Public Administration with previous work experience in the MOH) who has been with the BMM since February 1984; M. Ouanaim and M. Ouadghiri (trained nurses who have worked with the MOH for a number of years and who have had additional training in health administration from the National School of Public Administration. M. Ouanaim has been with the BMM since the 4th quarter of 1983; M. Ouadghiri joined the BMM during the first year of the project. A fourth person, M. Oucherif (also an MOH nurse by training) joined the BMM during the first year of the project, but has been in full-time English language training since early 1984, in preparation for undertaking 2 years Master's level studies in Public Administration (with a health concentration) beginning January 1985.

There are three expatriate advisors in residence: Mr. Roberts (chief of Party, Management specialist), Dr. Wolff (physician specializing in health management applications) and M. Desjardin (computerized information systems specialist.)

2. Position in MOH

During the first year of the project, the position of the BMM within the MOH was ambiguous. By virtue of the project's concentration on improving administrative functions (personnel, pharmaceuticals etc.), the BMM had developed effective working relations with the Direction of Administrative Affairs (DAA) but had no clear relation to the Direction of Technical Affairs (DAT) (whose head was a major force behind the project's creation) and no clear line of authority by which it was linked into the MOH structure. Toward the end of the first project year, this ambiguity was clarified somewhat: the Secretary-General announced that the BMM would report directly to him and that the head of the DAT would have a central role in directing project activities. The BMM continues to have this position in the MOH: it reports to the Secretary-General and works now with both the DAA and the DAT. However, as noted in the PES, the BMM has not officially been established as an entity on the MOH organization chart, nor has a Moroccan been officially named as head of the BMM.

66

### 3. Tasks

Until this evaluation, the tasks of the BMM had not been set down on paper (other than in the position descriptions of the long term expatriate personnel). As part of the evaluation, a description of BMM functions has been developed to serve as a point of discussion about future evolution of the unit. (Please see attached list of functions). In summary, the BMM participates with other MOH units to identify and analyse areas where management improvements are needed; to plan the strategy and activities which will lead to the desired improvements; and to organize MOH working groups which focus on desired changes. The BMM provides staff and technical consultation (both from in-country and external sources) to support management improvement efforts, provides material resources (paper, photocopying, secretarial services, diskettes, software programs as well as microcomputers) and keeps management improvement efforts moving along by providing follow-up, monitoring progress, and removing bottlenecks. Until the present time, the focus of activities (i.e. the areas in which specific management improvements have been carried out) are those defined by the Health Management Improvement Project: personnel, pharmaceutical logistics, vehicle fleet management and financial/ accounting systems. Additionally, and in support of all these, the BMM has been centrally involved in improving MOH capacity for computerized data processing, and the expatriate staff have played a key role in ensuring that training provided under the project has in fact been carried out.

### 4. Counterpart/Contractor Relations

The division of labor among contractor and counterpart staff has been a combined function of technical capabilities and experience, project priorities, length of time with the project, on-site availability, and formal, structural relations. Specifically, M. Ouanaim, who had done a study of the motor pool in the course of his university program, follows up on this area of project activity. M. Quadghiri follows the human resources (personnel and manpower planning) area. M. Aoufoussi, who had done work on pharmaceutical logistics as part of his Master's degree studies, was to have taken responsibility for this area, but the shift in emphasis within this component, from logistics to nomenclature, standard protocols, and ordering, tended to draw more on the technical/medical skills of Dr. Wolff. Furthermore, M. Aoufoussi was absent on short-term training over much of the summer of 1984, making him unavailable while key work on this area was proceeding. Nevertheless, he has remained involved in the pharmaceuticals area, playing a key role this fall in an analysis of drug consumption and cost data, using LOTUS 1-2-3 on the microcomputer. In addition, he has become involved in other areas of BMM activity such as arranging for the program of seminars being given by the management information systems consultant (M. Hurtubise) and with the tableau de bord (financial component of the project). Mr. Roberts continues to provide overall direction to all staff; and follows the motor pool and financial areas. Dr. Wolff concentrates on pharmaceutical activities

and provides backup to M. Ouaghiri in The Human Resources area as needed. M. Desjardin provides technical expertise in the computer area to SEM staff and MOH users.

At the interpersonal level relations between the contractor staff and the Moroccan staff appear to be cordial. Within the Moroccan staff, there are tensions arising from the ambiguities of the formal, structural relations. Since none of the Moroccans has been given clear authority for overall direction of the BMM, no one staff member has sought to assume responsibility for directing the work of the others (nor can anyone be expected to do so without clear authority.) The result is that the Moroccan staff work more or less independently from one another, with Mr. Roberts providing any needed coordination. Mr. Robert's ability to transfer his coordinating functions to Moroccan hands is clearly impeded until and unless someone is named to receive them. The implication of this situation for future continuity are discussed below.

5. Ability of Moroccan staff to operate independently

At the present time, the ability of the Moroccan staff to operate indepently from contractor staff is curtailed by the situation described above, ie. the absence of a formally designated head of the BMM, with authority to assume responsibility for the coordinating functions now performed by the contractor. If this impediment were removed, some degree of automony would be feasible, given the skills of Moroccan staff. Further limitations on independence at the present time are imposed, however, by the following factors.

- A) The technical nature of some of the tasks being performed under the project: e.g. it probably takes a physician to provide the type of technical support needed for current work in pharmaceuticals and it certainly takes a computer specialist to provide much of the technical support needed in the "informatique" area.
- B) The ability of the Moroccan staff to assume responsibility for the general management, follow up, and monitoring activities during the remaining contract period will depend not only on designation of a Moroccan head of BMM but on a reallocation of tasks between the contractor and the Moroccans. When a Moroccan assumes general management oversight and coordination, this will leave the head of BMM little time to follow up on the details of implementing project components. Thus an additional Moroccan staff member may be needed to take over these follow-up and monitoring activities.
- C) The present functions of the BMM include identification and definition of management problems (a problem analysis function) and generation of new solution possibilities. The ability of the Moroccan staff to perform these functions has been largely untested under the project, in part because the major problem areas were predefined during project design and in part because

external consultants have played a key role during project implementation in both problem analysis and solution generation. In the judgement of this evaluator, there is no apparent lack of capacity within the MOH to identify major problem areas or general solution strategies. However, there is always going to be a level of problem analysis and solution-generation which is either a) beyond the scope of generalists, such as those currently in the BMM or b) best done by someone from outside an ongoing system\*. Implications of this analysis for the independence of the BMM are as follows: 1) the staff will always need to work inter-dependently (in collaboration with other parts of the MOH) in general problem definition and analysis, solution generation and introduction and testing of applications; 2) the principal role of the BMM will be to catalyse the process of bringing to bear both internal and external resources for solutions to management problems; 3) and the Ministry will want to send present Moroccan staff for additional training in general systems analysis, introduction of micro-computer-assisted management systems, and consultative skills. English language training will also strengthen BMM staff access to new developments in the management field.

D) There remains a continuing need for technical support for users of the microcomputer applications software (D-BASE III, LOTUS 1-2-3, WORDSTAR etc.). Mr. Roberts and Dr. Wolff now provide much of this support. M. Aoufoussi is rapidly learning LOTUS 1-2-3, will probably have mastered FRAMEWORK before the end of the project, and will be able to provide some user support. M. Quanaim is learning LOTUS but is unlikely to have reached a level of proficiency which would enable him to provide much technical support to others, while M. Quadghiri has not mastered the applications software at all. To meet future needs, it will be necessary to have available technicians who specialize in one or another applications software, develop ongoing consultative relationships with user "clients" and rotate through the MOH offices (or visit on a regular periodic basis) to provide on-site user support.

#### 6. Present and future effectiveness

Despite the ambiguities and impediments described in this memo, the BMM has been effective in bringing about health management improvements. Its most talked-about accomplishment is development of a new spirit of teamwork, resulting from the break-down of traditional intra-organizational barriers during the course of project implementation. Other specific outputs linked to the BMM's efforts are described in the PES.

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\* Because people involved in day-to-day work are often too close to a problem to see it clearly, because outsiders can venture to observe and say things which insiders cannot, or because special expertise brings problems into a new and different focus.

The unit's future effectiveness will depend upon a) the way in which its future role--if any-- is defined; b) its becoming structured (organizationally) in a manner suited to its role and functions; and c) the BMM's having at its disposal the kind and amount of resources it needs to perform its own functions and to entice others to perform theirs.

#### 7. BMM Continuation After The Project

In discussing "the future role of the BMM" and the issue of continuity following the project, the evaluation team encountered almost as many visions of the future as it did interviewees. In general, these fall into two categories:

- A) The first of these views holds that the functions of the BMM (and its staff?) were to get a particular job accomplished (implementation of the project); that institutionalization has been or will be accomplished through the installation of new systems, procedures, and lines of communication; that all the major initiatives of the project have been accomplished through involvement of ongoing entities within the MOH, and these entities will continue the job of extending and refining activities started under the project; and that any ongoing coordination functions of BMM will subsequently be carried out by either SEM or the planning/infrastructure units with MOH.
- B) The alternative view holds that the BMM will be combined in some fashion with SEM and will be attached organizationally to one or another existing unit with the MOH. The most authoritative of these views that expressed by the Secretary-General envisages a new "Direction of Planning and Programming", to be attached to the Secretary-General's office, incorporating SEM, BMM and comprehensive planning into a coordinated "reflective" function. Under this arrangement, the BMM would coordinate with both the management of administration (DAA) and with technical services (DAT) on management improvements. No date was specified for formal establishment of the new "Direction".

The evaluation team has observed that there is considerable discussion and reflection concerning the structural future of the BMM. It has assumed that AID's interest in the matter is principally to ensure continuity of the momentum set in motion with project resources. In the team's view, the key to continuity lies in ensuring that the ongoing functions of the BMM are clearly established somewhere within the MOH, but that the issue of where and to whom those functions are assigned, and particularly the issue of whether a unit called "BMM" is formally established on the organization chart, is properly a matter of Moroccan national sovereignty. Accordingly, in its discussions with MOH, MSH and USAID, the team has sought to define those functions currently being carried out by the BMM in order to provide a basis for discussion of a) which functions are to be continued and b) who/which MOH entity will continue them.

In summary, the following recommendations are considered most important for ensuring effective transfer of responsibility to Moroccan hands and for continuity following completion of the project:

- 1) Name a Moroccan to be in charge of the existing BMM at least until the end of the project and even without formally establishing the BMM as a unit on the official organization chart. (It is of course possible that no one will accept the position unless the latter takes place, but there are many units operating effectively within the MOH which do not now have formal status).
- 2) Develop a job description for the chief of BMM and for other staff that: a) delineates which tasks and responsibilities are to be transferred from the contractors to Moroccan personnel; and b) ensures provision of both general management and day to day implementation support for all project activities.
- 3) On the basis of the above, develop function and task description for an additional BMM staff member to be appointed at least during the project completion period to enable the re-alignment of responsibilities between MSH and MOH personnel.
- 4) Send the chief of BMM (and contractor personnel) to participate in the National Council for International Health annual conference, early June 1985. Conference focus is on management; the project staff should present technical papers and possibly a workshop segment on use of microcomputers in health management. The conference will provide opportunities for project staff to exchange views and materials with others engaged in introduction of computer-assisted management systems.

Following the conference, the chief of BMM should undertake a short course in general systems analysis methods and a user-oriented course in application of micro-computer hardware and software for management systems development. These courses will give the chief of BMM a stronger foundation for work with MOH clients in problem definition and for interface between management systems users and computer technicians.

- 5) The project should also provide additional training for the two other current members of the BMM. Training should focus on development of "consultative skills" and on further exposure in the use of microcomputers for management applications.

11

- 6) The project should continue English language training for BMM Moroccan staff, to enable them to fully exploit English language materials concerning management applications.
- 7) The MOH should immediately establish a "cellule d'informatique de gestion" which will support computerized management information systems Ministry-wide. See Annex 5(D).
- 8) Using a description of agreed upon functions for the current BMM, MOH should either specify which organizational entity within in the ministry will assume primary responsibility for the function in the future, or state that the function was project-specific and will no longer be needed. The MOH should give serious attention to the question of what material and human (e.g. short-term TA) resources will be needed to carry on these functions in future, and to making budgetary provision for these resources.

Attachment to Annex 5(A)

Functions for Management Improvement

The following effort to specify functions for carrying out management improvements assumes that change in administrative and management systems, procedures, and processes is ongoing. One type of management problem may be resolved, but another will take its place; thus a continuing effort is required for development and management of an organization, even if the specific focus of that effort changes.

Mission/objective: to assist the MOH administrative and technical services at all levels (central and peripheral) to achieve improvements in management systems and processes.

Current BMM functions performed to achieve this mission	Will this function need to be performed in future (?)	If so, what MOH entity will have primary responsibility for performing it
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1. General Functions

1.1 Respond to needed management improvements identified by MOH "clients", by providing additional manpower and internal consultative (human) and material resources (including space) to MOH administrative and technical units during development of management improvement activities.

1.2 Analyze problems and define ("preciser") specific needs for management improvements. (problem identification and definition).

1.3 With MOH "clients": suggest improvements in management to solve identified problems; define solution strategies; develop action plans. (solution generation and development of management improvement activities.)

- 1.4 With MOH "clients", identify and define needs for special expert technical consultation or other special resources (eg. materials, equipment) from outside sources. Provide liaison between MOH and external resources when needed.
- 1.5 In cooperation with MOH training unit, identify management training needs and resources to support development of management capacity (both in general (ongoing) and in the context of specific projects for management development.)
- 1.6 Provide intraministerial coordination during development, testing and introduction of agreed upon management improvement activities (eg. organize meetings of working groups.)
- 1.7 Monitor activities for management improvement; serve as "animateur"; provide follow-up; remove bottlenecks.

## 2. Special Functions

- 2.1 Undertakes special studies of management problems, solution possibilities, etc..as needed.
- 2.2 When microcomputers are a tool for management improvement:
  - 2.2.1 Assist in development of management applications,
    - 2.2.1.1. (currently) assure communications between providers of computer services (SEM) and users of management applications,
    - 2.2.1.2. participate in needs analysis and definition,

2.2.1.3. assist in developing the application,

2.2.1.4. keep users apprised of development progress,

2.2.1.5. provide ongoing analysis and programming technical support during development, installation and ongoing operation of computer-assisted management systems (MIS/SIGs).

2.2.2. Conduct and/or participate in planning, organizing and executing data entry.

2.2.3. (currently) Provide training and supervision of programmers, analysts, and operators.

2.2.4. (currently) Recommend and participate in procurement, deployment, maintenance, and upkeep of material, equipment, and human resources associated with the computer.

25

Resources which have been available to carry out the above functions.

4 Moroccan staff of BMM  
3 expatriate staff  
funds and manpower for short-term technical assistance  
secretarial services  
photocopying  
report distribution  
materials and supplies  
computer hardware and software  
office space and conference rooms.

ANNEX 5(B)

Follow-on Management Improvement Activities

The following potential health management improvement activities have emerged from the Evaluation Team's discussions with MOH officials. Some activities make direct use of systems or methods developed under the Health Management Improvement Project (HMIP); others apply the analytic, systems development approach of HMIP. Most focus on the provincial level. All continue the process of streamlining and rationalizing management in the MOH.

There are several other activities not mentioned here. Introduction of the Tableau de Bord (Financial Management Tool), and of new parc-auto data collection instruments and analysis methods, are not mentioned because work on extending these to the provincial level will be well underway by the conclusion of the HMIP and can be continued without USAID assistance. Installation of new nomenclature, standard drug protocols and drug ordering system at the provincial level will be tested under HMIP, but it is expected that any future activities emanating from the pharmaceutical component of the project will be conducted under the auspices of the World Bank project.\*

The Evaluation Team has discussed the following with MOH and the order of presentation reflects MOH priorities. The Team concurs generally in the ranking--all the activities presented build upon the foundations laid by the HMIP, are important, needed, and promise to contribute to improved management of the Ministry. Those involving introduction of the computer at the provincial level probably have the greatest potential for far-reaching impact.

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\* As a part of an estimated \$25 million project to be signed in early 1985, the Bank will be financing creation of a central unit to control, procure, and distribute drugs (as recommended by the HMIP); modernization and expansion of storage facilities; PHC activities in 3 provinces based on the VDMS model; and development of a drug packaging unit for primary health care and for hospitals. Another small component of the project will provide some funds for Planning, Evaluation and Research activities. Among these will be a study of health sector financing, covering the public and private sectors. Most of the Bank loan, however, will be used to finance upgrading of facilities, construction of one hospital (in Taliouine), and transformation of a 100-bed TB hospital into an 80 bed hospital.

1. Evaluate the effects of VDMS on management of services at the provincial level. Specific activities that might be carried out under this effort include:
  - a. An analysis of provincial (including circumscription-level) health systems structure and function, with recommendations for changes. The problem is that structures have changed little, while functions, particularly with introduction of the VDMS approach, have altered considerably. The activity would seek to resolve incongruities between structures and functions, identify norms for roles and relationships of health workers, assess the need for manuals, training or other means of introducing recommended changes, and would assist the Ministry in assessing how much further it can go toward decentralization (activity is suitable for PRITECH short-term TA or could be combined with b. as part of a PRICOR effort).
  - b. Identify the actual recurrent cost implications of VDMS for the MOH operating budget. This information, together with that provided by activities above, is essential to enable the Ministry to rationalize service delivery. (Systems development for this activity is suitable for either PRITECH or PRICOR assistance.)
  - c. Using the definition of roles and relationships defined in activity (a.) above, identify the most desirable system for supervision of peripheral health workers.
  - d. Given the actual/desired role of "itinerant" workers under VDMS, determine the best method of "mobilizing" the worker. Possibilities to be assessed include giving the worker travel money but no vehicle; giving workers a "prime" (supplement) to rent a vehicle; giving each worker his or her own vehicle, etc. Assessment of the relative costs and merits of velo-moteurs vs. automobiles would also be made.
  - e. Improve the data base needed for overall evaluation of VDMS by defining the structure of infant mortality in the target population. MOH has identified a London-based team (Brass et al) experienced in providing technical assistance in the use of existing data to determine the structure of infant mortality by age. Some survey (sample census) work may be needed to define other characteristics of the infant mortality (IM) structure; some additional training is needed to enable Moroccans to make use of existing WFS tapes (at SEM) and census data tapes (at Plan) in the definition of IM structure. This activity is important not only for future evaluation of VDMS itself, but for assessment of the hypothesis that improved child-survival is linked to reduced fertility.

- f. Assess the knowledge, attitudes, and practices (KAP) of VDMS target population concerning VDMS activities and modes of delivery. Such an assessment will contribute to future management decision-making concerning re-alignment/evolution of services.
2. Continue efforts toward decentralization of planning and management begun under HMIP, by conducting management-capacity-building training for health service providers at provincial and circumscription levels. For these at provincial level (medecins-chefs of provinces, SIAAP, "animateurs" of programs, and administrators) training would focus on developing program, design of problem-solving strategies and workplans, and identification of non-institutional resources. Such a program could be accomplished in a 5-day seminar. At the circumscription level, training would focus on the planning and management of program execution, in response to provincial priorities. (Either PRICOR or PRITECH assistance is suitable for the design phase of this activity; training itself could be conducted under VDMS.)
3. Conduct feasibility study and pilot test introduction of computers for management of administrative services (including hospital administration) at the provincial level. This activity would make use of the management systems developed under HMIP which are being pilot tested at provincial levels under HMIP but which now use manual, not computer-assisted procedures. Under the follow-on activity, management data would be computerized in the pilot provinces where MOH is now testing use of computers for handling service statistics. Thus the activity will lay groundwork for eventual linkage between management data (eg. cost data in the tableaux de bord) and service delivery and health outcome data. Such a linkage will eventually enable assessments of cost-effectiveness (see elaboration of finance section of Evaluation Team's report on impact evaluation methods).

AID-supported activities could include:

- a. Conduct of operations research to determine the feasibility, cost (including, money, people and training), work plan and types of technical support needed to computerize provincial level management data such as preparation of the tableau du bord. The decision issue would be to computerize or not. (Suitable for PRICOR assistance.)
- b. If decision is to computerize, AID would provide supplementary training and technical assistance in the introduction of computers in X pilot provinces.
4. Provide further training (in-country and possibly third-country) in how to build a comprehensive health information system. This activity would assist MOH in combining and rationalizing the

management information systems developed under HMIP, with service and epidemiologically-oriented information systems being improved with WHO cooperation.

5. Provide technical cooperation to link Human Resource Management tools developed under HMIP (PIS and manpower planning model) to MOH assessment of total national health manpower requirements (to include both public and private sectors). This activity would include examination of how PIS and manpower planning model data can be used in the broader task of defining a methodology for manpower needs assessment. Indirectly (because of the broader scope of the MOH effort to which this activity provides assistance) the technical cooperation should contribute to examination of relationship between public and private health sectors. (This activity is suitable for short-term PRITECH TA.)

The outlines of potential future activities above have been developed in the context of the team's understanding that USAID and the MOH are not considering at this time to have a separate new project in the Health Management area. Other mechanisms exist for channeling support for continued management improvements in health and population. Thus the parameters of several existing AID projects have been considered in formulating new activities:

- a. Population and Family Planning Project with VDMS component—well known within USAID mission;
- b. PRITECH personnel have already visited Morocco to discuss possible assistance on mass media/immunization ORT. Note also, however (per 07 November 1983 cable to mission in PRITECH file) that while contract emphasizes TA in certain targeted areas (ORT, immunizations and public health education), there is also available "short-term TA (up to 3 months) to assist in more general PHC project design, implementation and evaluation activities such as management, financing, essential drug supply and manpower development. "Some joint mission—funding of these latter activities is expected. Portions or all of several of the activities identified above (eg. "systems development") could easily fit into these PRITECH areas. See file copy of cable introducing PRITECH for further info. See also file copy of project document (contract) page 10-13 E. Systems Support for details regarding types of TA support available in Management, Personnel Training and Development and Design and Evaluation.
- c. PRICOR is specifically designed to support small scale (less than \$200,000) operational research projects to help resolve operational problems and especially to aid in decision-making. PRICOR priority areas are "community" (peripheral level) financing, community health workers, community organization and community-based commodity distribution). Several of the activities listed above could fit these criteria. PRICOR does provide TA to host countries during the proposal development stage.

ANNEX 5(C)

REVIEW OF PROPOSED PROJECT/CONTRACT EXTENSION

Upon its arrival in Rabat, the evaluation team was asked by USAID to add to its scope of work a review and assessment of the proposed extension of the HMI project and related contract. The following is in response to that request. The conclusions expressed here are supported by in-depth analyses of the Bureau of Management and Methods (BMM) and of the Service d'Exploitation et Mechanographique (SEM) attached to the evaluation report. (Annexes 5(A) and 5(D)).

A. Project and Contract Extension

1. In the team's judgment, the project contract should be extended. A number of justifications have already been well documented (see Action Memo for Mission Director, 08/04/1984 and MSH letters to USAID 21 and 28 May 1984) and will not be repeated here. In summary, there is a substantial amount of work now in process, and solid outputs can be expected as a result of extension. There is a high degree of interest within MOH in seeing the work begun brought to conclusion, and the MOH cannot finish the tasks currently under way without external (contractor) assistance. To ensure that necessary long-term training is not disrupted, AID will need to provide for extending the PACD for a two-year period.

2. Special observations and recommendations:

As reflected in Mission documents and in Evaluation Team interviews, there appears to be substantial agreement on the part of MOH, USAID, and the contractor (MSH) that the extension should emphasize the transfer of both responsibility and knowledge from the contractor to the MOH and the "institutionalization" of the management systems and processes developed under the project. The evaluation team strongly supports these priorities. To achieve these outcomes, however, several steps need to be taken, and the Team recommends the following:

- 2.1. Extension documents (amendment to ProAg, contract) should distinguish clearly between anticipated outputs to be achieved by joint MOH and MSH effort, and those tasks which are specifically the contractor's responsibility. In other words, the contract scope should make attainment of the outputs the responsibility of the MOH; contractor responsibility should be specified in terms of level and type of effort to be delivered in support of outputs. Consideration should be given to specifying two tasks or objectives for the contractor during the extension period:
  - 1) the transfer of responsibility and knowledge to MOH;
  - and 2) institutionalization of management systems and

processes through emphasis on training and on use of information for management decisions. Specific deliverables might include a short-term in-country training plan and sample models of summary reports for managers.

2.2. In its discussions with MOH concerning the extension, USAID should stress that:

2.2.1. The MOH needs to specify which of the current BMM functions will be discontinued (because no longer needed to ensure continuity of management improvements started under the project) and which functions will be continued. For the latter, MOH should be encouraged to specify which organizational units within the Ministry will assume responsibility for on-going functions. (A draft description of functions [alias a functional description for BMM] has been developed by the Evaluation Team to assist all involved in thinking through these issues and is attached to Annex 5A on BMM which discusses recommended approach.) AID should also focus the MOH's attention on the need to determine what financial material and human (e.g., short-term TA) resources will be needed to carry out these functions in the future, and the need for MOH to make budgetary provision for these resources.

\*2.2.2. At least for the duration of the project, it is essential that MOH designate a Moroccan to head the BMM. A Moroccan must be acknowledged as having responsibility and authority to direct the work of the BMM if effective transfer of general management functions from MSH to MOH is to take place. Action on this matter can be taken without requiring that the BMM be formally established on the organization chart (an involved process, much of which is outside control of MOH civil servants). It may be done in concert with or in light of decisions to be made under # 2.2.1 above, but the team would call USAID's attention to the fact that the extension period is short and it would seem unwise to prolong discussion of points which will take some time for MOH to resolve. The two key/essential requirements are designation of a Moroccan to head BMM and the following action:

\*\*2.2.3. The MOH should immediately devise a plan for the establishment of a "cellule d'informatique de gestion" which will support computerized management information systems Ministry-wide. This "cellule" will ensure that technical (analysis, programming, and applications development) support to micro-computer users will be and can be provided by Moroccans in the future. (See report of Evaluation Team's information specialist Annex 5(D) for full discussion of problems and options.) USAID can leave to MOH the choice

82

of options as to how and where to establish the cellule. USAID should focus on the ESSENTIAL point: That a choice be made and the cell established.

NB: The use of the term "cellule" does not imply structural or organizational changes within the Ministry; but rather that a locus for this activity be identified.

2.2.4. It is also desirable that the MOH consider the addition of one other Moroccan to the BMM staff, in order to release the to-be-appointed chief from day to day follow-up of project components thus enabling him to focus on general management and coordination of project activities.

2.3. Regarding statements of expected outputs to result from extension as stated in Action Memo 08/04/1984 and summarized in the attached chart, several points should be noted:

2.3.1. Extension of the Personnel Information System (PIS) to include paramedical personnel is technically feasible but only if MOH is successful in removing some bottlenecks. There needs to be better communication among and subsequent action by the various MOH personnel responsible for PIS extension. Timely decisions need to be taken as to whether the extension will be accomplished on the mini or on micros. If it is to be done on the mini, SEM staff will need time to master use of the mini.

2.3.2. The "Standardized Personnel Administration Guide" is specifically related to the "acts" (personnel actions) implied by PIS. This covers a lot, but should not be interpreted as covering all aspects of personnel administration.

2.3.3. The expectation that "training will be complete for MOPH personnel in the utilization of [project supplied hardware] during the extension" (as stated in Action Memo, p. 3, item e) is probably unattainable. The technology is changing as rapidly as the applications. It would be more realistic to say that MOPH personnel will attain a minimal level of proficiency in machine use and applications support and MOH will have developed a plan for on-going training of their personnel.

\* Essential discussion point for short-term extension (April 1985).

\*\*Essential discussion point for long-term extension (January 1987).

83

B. Two-year PACD Extension

The evaluation team recommends that USAID's proposal that the PACD be extended by two years be approved. Discussion follows:

Two MOPH candidates were selected within the past year for long term U.S. training in health management and administration. They have undergone in-country English language training in preparation for their programs. One candidate departed in September 1984 and the other will leave in January 1985. They are both entering the University of Miami for two year programs. Therefore, to ensure continued project funding for completion of their courses, it is necessary either to extend the PACD to January 26, 1987, or to transfer these participants to the Mission's general training project (608-0178).

A transfer to 0178 would be strongly resisted by the GOM counterpart agency for this project, and GOM approval is far from certain. In addition, it would utilize resources that would otherwise be available for scholarships for other Moroccan and GOM agencies not now benefitting from USAID projects, as envisaged by project designers and Mission strategy.

Based on these considerations and on the logistics of project administration, it is recommended tht the PACD be extended by two years to allow for the completion of this training within the HMIP's framework.

Expected Achievements (Contract Activities)

By end of Current Contract January 1, 1985

By end of Extension January 1986

1. Human Resources Management

a. PIS

- o computerized information, filing and tracking system for medical personnel (2,000 files) installed
- o extension to the paramedical personnel (25,000 files) underway
- o extension to the two remaining personnel bureaus initiated

b. Personnel Administration Guide

- o standardized procedures manual for central level in use

c. Manpower Planning

- o supply projections complete for medical personnel and approx one-third of the paramedical classes

- o extension to paramedical system completed and utilized daily for processing of routine actions.

- o standardized provincial version produced and in use

- o process complete for all technically trained personnel

- o models for making supply/demand projections introduced for use (medical and paramedical personnel) and applied in pilot procedures

2. Pharmaceutical Logistics

a. Revision of Nomenclature

- o standard drug lists by type of treatment facility prepared

b. Development of Standard Treatment Protocols

- o diagnostic treatment manual for paramedical workers

- o reviewed, revised, approve by MOH and in use

- o protocols reviewed and field-tested

- o future potential training use by MOH and for estimating annual provincial drug requirements.

95

c. Improved Drug Ordering Methodology

- o new methodology for drug ordering based on drug requirements projections introduced
- o models for estimating annual provincial drug requirements by service unit developed and tested in pilot provinces
- o production of training materials and seminars at central and provincial levels to carry out implementation in pilot provinces

3. Financial Management

- o analytical reporting system describing key cost and service delivery items for individual service units implemented in selected pilot provinces
- o system tested in up to 5 pilot provinces and revised for wider application

b. Accrual Carry-Over

- o format (through a computer file) to make accruals from previous year's unexpended funds available for quicker expenditure completed and field testing begun
- o N/A

4. Vehicle Management

- o improved data base/essential reporting requirements designed and tested in pilot provinces
- o field testing, introduction nationwide and institutionalization of the new system
- o associated materials production and training completed

5. Data Processing/Information System

- o installation of 4 micro-computers and mini-computer installed
- o training in utilization of machines completed
- o machine in use in all project activity areas, esp. pilot applications and working out the "bug"
- o computer assisted reporting and analysis of system described above institutionalized
- o planning for wider extensions underway
- o all pilot activities evaluated, methodologies revised, and preparations made for extension throughout the system
- o initial training in the major types of software for Ministry applications provided; and some experience in software use acquired

96

ANNEX 5(D)

COMPUTER MANAGEMENT

RECOMMENDATIONS

Preamble

By computerized statistical information system (CSIS), we mean application/use of the system to support acquisition, usage, production, and analysis of data from surveys and the national health information system.

By computerized management information system (CMIS), we mean the application/use of the system to support the management of administrative services as well as technical services.

CSIS essentially supports the statistical activities of SEM (Service d'Exploitation Mecanographique); the system uses almost exclusively the minicomputer HP 3000 and social science orientation software: SPSS, WFS package. It requires few analysts/programmers, since clients and statisticians can interact directly with the computer.

CMIS essentially supports the management activities/systems outside the SEM and disseminates information throughout the Ministry (and on a medium-term basis to the provincial and local levels). On a short/medium-term basis, it will rely almost exclusively on micro computers (mini only for large scale acquisitions/data analysis) and on management oriented software: DBASE III; LOTUS 1-2-3-, FRAMEWORK, SYMPHONY, LINDO, etc. It requires several analysts/programmers.

Statistical services have been organized for sometime at the SEM (MOH) and a computerized statistical information system will provide assistance without incurring major difficulties.

A computerized management information system is a recent phenomenon at the MOH. It is not officially organized/recognized. Until now, the system has been held at arm's length by BMM. CMIS analysts/programmers are young, lack experience and some of them (analysts, statistical technicians) require retraining. Generally, the morale is high, the will to learn and to grow is impressive. However, the task of institutionalizing the CMIS remains.

The role of computerized management information is and will remain important for the success of the project as well as the cost-effectiveness of its expansion given its omnipresent role in the support of new administrative procedures and management information systems already developed or being developed.

Therefore, given the deadlines and the lack of time to request an additional computer consultation which would have been necessary for the implementation of general recommendations, the following recommendations are detailed and specific, aiming at immediate action:

1. The Ministry should acknowledge and organize a computerized management information system CMIS (independent of structural reforms which might be time consuming),
  - by naming as soon as possible a person responsible for the CMIS who will assume the role of interlocutor for all Ministry services requiring CMIS use.
  - by naming a senior analyst as assistant to the above named person who will be responsible for the coordination of all analysis/ programming projects within the computer management structure.
2. The CSIS (Computerized Statistical Information System) should be structured as soon as possible at SEM and the following staff should be appointed:
  - Manager of minicomputer operations.
  - Analysis/Programming Officer for statistics.
  - Operator and back up operator for minicomputer.
3. The Ministry should address, as soon as possible (independent of official structural reforms which may require more time) the question of where the computerized management information function will be located within the MOH.

Both SEM and BMM - or a substitute - are candidates for where the responsibility of this function could be located.

Among the arguments in favor of the BMM locus, we have noted the following:

- The resulting increase in visibility/appeal of BMM activities (microcomputers are more concrete than management methods.)
- The geographic proximity of BMM in relation to other Ministry services (as already stated, CMIS calls for working sessions, frequent interactions among users; such contacts can not be made by telephone.)
- Essentially, integration within a single system of two functions which can not easily be dissociated from management support i.e.: (1) problem analysis - identification and evaluation of solutions; and (2) implementation of those solutions throughout the computer system.

88

- The unique focus of BMM on management while SEM's primary interest so far has been and appears to remain concentrated on statistics (surveys - SNIS (System National d'Information Sanitaire) - computer entry and processing of historical health data.)

Among the arguments in favor of the SEM locus, we have noted the following:

- The assembling of all resources (material and human) for computer application and usage under the same management.
- The fact that all computer and information system personnel are presently at SEM and, if the locus for computerized management information was to be assigned to the BMM, this would require personnel transfers.

If the Ministry opts for the linkage of CMIS to SEM, it will have to take into account the necessity for the BMM to have access to minimal computer resources (at least two micros, one hard disk, privileged access to the mini, one analyst, one programmer) to provide support for its management studies. The Ministry should also evaluate communications problems for users resulting from SEM's distance from the MOH and should consider the installation of a branch of the computer management section at the Ministry.

4. The Ministry should create a CMIS committee which would include:

The Director for Technical Affairs or his representative  
The Director for Administrative Affairs or his representative  
The officer in charge of the BMM (or substitute)  
The person responsible for CMIS  
SEM Chief Operating Officer.

This committee should supervise and stimulate the implementation of CMIS at the Ministry.

The committee should meet and report to the Secretary General at least every two months.

5. The Ministry should create a planning committee for CMIS and CSIS, which would include the SEM chief operating officer, the person responsible for the CSIS, the person responsible for CMIS and his deputy, the manager of minicomputer operations, as well as the BMM operating officer or substitute. Such committee should meet at least once a month and should report to the Computer Management Information Committee at the ministry.

6. A complete list of the positions required in the CMIS should be established as soon as possible. A precise description of tasks and responsibilities should be provided, along with the minimal qualifications for candidates applying for those positions.

The preceding task should take into account the organizational chart which will necessarily be the same as that of the CMIS, i.e. function/organization (vertical functions: acquisition, programming, analysis) and horizontal (projects).

The CMIS functions/organization will determine the number of people needed in each position in 1985, and will indicate the specific tasks/projects assigned to each member of the staff during that year.

7. The person in charge of the computer management information function should begin a masters in computer information systems in January 1985, in a francophone country university for a initial period of four months. During the training he should have access to a center equiped with a HP 3000 where he would spend the equivalent of one day per week.

The manager of minicomputer operations at SEM should undergo training beginning January 1985, in a French speaking computer training center equipped with a HP3000 and familiar with the health field. Parallel to this training, he should attend at least two courses of 45 hours each at the university level on the operation and usage of computer management information systems.

In the absence of these two, Paul-Andre Desjardin should be temporarily in charge of the computer management information function and the operation of the mini-computer. The transfer of responsibilities should be carefully planned since it would take place within a period of only two months (May-June 1985).

The senior analyst, assistant to the person responsible for CMIS, should be named in June 1985 at the latest and sent in September 1985 for training in a francophone university (short-term program at the master level) for a period of four months. He should have access to a computer center equipped with a HP3000 and programs in the field of health; and should spend the equivalent of one day per week on this during those four months of study.

The individual in charge of the computer management information function should return in January-May 1986 to finish his master's degree. During his absence, his deputy would be in charge.

8. Short-term training needs in computerized management information systems and "off the shelf" software such as, DBASE III, LOTUS, LINDO, FRAMEWORK) for analysts, programmers, analysts/technicians of BMM, and statisticians and statistical technicians of SEM, (people from the MOH who use the micro) should be identified as soon as possible.

A training program should be designed and the training offered preferably in Morocco in order to reach as many people as possible.

The possibility of purchasing, as needed, during the years 1985-86, training packages for HP 3000, should be considered, either from the hardware manufacturer (for example IMAGE); a software company (for example GENESYS), or other relevant consultants, i.e., computer specialists who have designed interesting applications for HP 3000.

Training on IMAGE should be offered only when a practical application can be developed for the related software.

The principle of training analysts in a computer language at a high level should be studied beginning 1985. That language should be PASCAL, for mini as well as micro. A PASCAL compiler should be purchased for mini and micros. In-depth training should be provided on site through one/several applications. No investment should be made in FORTRAN and COBOL training.

9. An inventory of the software available for HP 3000 should be established and the acquisition of relevant software evaluated. The evaluation of GENESYS software should be a priority consideration.

The SEM should be equipped with a 132 MB disk for its Mini HP 3000 to complement the 400 MB disk already acquired.

- Justification:
- Security (in case of breakdown)
  - Increases system performance (simultaneous access to both disks is possible)
  - Delays system saturation
  - Immediately available (already in place, sent by mistake)
  - Offered with discount (at cost)

The SEM should be equipped with 5 1/4" diskettes for its micros HP-150 as well as the 3 1/4" diskettes already furnished.

- Justification:
- Compatibility with other micro's i.e, COMPAQ and IMB operating on 5 1/4".

LINDO software (linear programming) for micros should be acquired. Some members of SEM have already been trained on this software in California.

DBASE III and QUICKCODE III software for micros HP 150 should be acquired.

- Justification:
- Staff already trained in software use on IBM PC and COMPAQ.
  - Software uniformity for the various micro's
  - Avoids forcing the programmers to learn a new software (CONDOR) provided with HP 150.

SPSSX software for HP 3000 should be rented for the next two years, provided a commitment is made by the Ministry to maintain the rental when the two years are up.

- Justification:
- SAS not available for HP and BMDP is too specialized; staff already familiar with SPSS
  - SPSS indispensable for the "statistics" section of SEM
  - Cost-effectiveness of micro acquisition even if SPSS will not be directly useful to attain management improvement goals.

10. A study of the feasibility of a direct linkage between the HP 3000 and terminals located at a distance from HP 3000 should be conducted.

The Ministry should immediately take steps to draw up maintenance contracts for its MINI and its various micros. These maintenance contracts should include training for the Ministry staff in the general maintenance of the equipment.

The Ministry should plan for the possible need to hire/request a consultant to assist in the implementation of the above recommendations.

COMMENTS ON COMPUTER MANAGEMENT

1. Inventory of Existing Resources: Human, Hardware/Software

Within a year, the Ministry's computer capability has increased considerably. In October 1983, the Ministry owned only two APPLE II E micros acquired independent of the project. The Ministry, on the other hand, was a customer-user of two other computers at the Ministry of Planning. However, the quality of services left much to be desired.

Since October 1983, the computer population has been progressively built up as follows:

- October 1983: Installation of 4 portable COMPAQ micros, compatible with IBM PCs, complete with 4 printers and 4 hard disks
- April 1984: Installation of 7 IBM PCs and 7 printers
- November 1984: Installation of a mini HP 3000-39 with a disk unit of 400 Meg, 1 tape drive, 2 line printers and 13 terminals. Two additional HP 150 micros are also expected to be delivered. All these systems have been amply equipped with useful up to date software programs. Appendix I describes the location of the micros.

As far as hardware/software is concerned, the Ministry has at its disposal a computer capability which will more than likely meet its needs on a short-term basis (3-4 years) at the central level. In spring 1983, following the Rousselle report, the Ministry identified the SEM (Service d'Exploitation Mecanographique) as the organisation in charge of computer matters.

Until the fall of 1983, SEM personnel had practically no autonomous computer resources and used outside computers to conduct important surveys. This enabled SEM staff to become familiar with the HP 3000 at the National Documentation Center and with the SPSS package. SEM staff was essentially familiar with social science applications and became a client of other computer centers with the HP 3000 capability. SEM personnel had practically no experience in: (1) micro-computers, (2) computer service delivery, (3) computerized management information systems, (4) management and operation of a complex computer center.

During the year following the purchase of the first four micros, major efforts were made to train SEM personnel through long-term technical cooperation (in particular Paul Desjardins) and training sessions in and outside of Morocco (see section "training"). It is well known, however, that mastering computer tools can only be done through practice. Therefore, during this first year, the micros (4 having been available for a year; 7 additional ones for six months---equivalent availability: a total of 7 equivalent micros for a year) have been used to train BMM and SEM personnel, particularly in the two following fields:

93

1. General microcomputer systems
2. Information System for Management, as the software on which the staff had been trained was designed for this particular field (as opposed to the "social science applications", SEM's focus). Staff orientation toward management has also been reinforced as the result of the participation of some BMM and SEM staff members in management training (see "training" section).

Four SEM staff members had already acquired some experience on the MINI (HP 3000/39) at the National Documentation Center. This experience, however, was limited to the use of the SPSS package and that of the World Fertility Survey; in other words, it was essentially oriented toward social sciences. The entire staff should, therefore, be trained on the commercially developed/off the shelf software which was purchased along with the mini. In this regard, a six-week package for in-house training for twelve people was purchased simultaneously with the mini. Such training is divided into three blocks of two weeks. The first was presented in October 1984 and concentrated on theory. The second block will be offered in November 1984 and will be of a more practical nature. The third training will take place at a later date, most likely in 1984 and will focus on the "off the shelf" software". The exact dates are to be determined soon according to the needs of the Ministry.

As mentioned earlier with regard to micro's, one should not expect SEM personnel to become immediately functional in the use of the MINI (hardware and software). Such sessions provide at most a base on which one can build. Mastery of computer skills can only be accomplished progressively through practice, starting from simple applications, such as the transfer of data and software existing on the two computers at the Ministry of Planning, the entry of new data, the implementation and use of SPSS, etc.

The training in management and operation of a computer center and various micros remains to be resolved. Two SEM members have been trained within the project framework. However, the most qualified member of the two is not available to SEM anymore. The actual resources of SEM in computer management are very limited and it is imperative that they be reinforced as soon as possible for optimal operation of a major computer system. A computer center cannot be managed on a daily basis by a committee or a team. The staff must be identified and its respective responsibilities clearly established.

In lieu of a summary, Appendix 2 gives a quantitative view of the evolution of SEM personnel.

## 2. Organization of a Computer Information System and SEM Reorganization

Until a year ago, SEM (Service d'Exploitation Mecanographique) worked in two sectors:

1) Health data

SEM collects health data of all kinds and from all sources. Data is then sorted out, analyzed and disseminated. The various Ministry agents provide data and report on things such as dispensary activities, health center and hospital activities, mortality and morbidity, SIAAP activities by program, etc. Based on such data, SEM provides statistical reports to the Ministry. They also respond to request from other ministries, research centers or individual researchers.

This data has been collected for the past 20 years. The collection is carried out without computer support. Their usage and analysis are carried out manually.

SEM presently plays an important role in the design and development of SNIS (Systeme National d'Information Sanitaire), with technical support from WHO. This integrated system will soon replace (starting date 1986) the above mentioned system for health data collection. In a first phase, SEM has conducted a survey on information needs for each of the programs at the central level. The same operation will soon be conducted at the provincial level and at a later date, at the service delivery center level. Through these surveys, the managers are able to identify programs, the goals of such programs, indexes to measure those goals in a valid manner, the present availability or non-availability of data for goal measuring, and the frequency of collection of various elements of information. The aim is to draw up a permanent inventory of health activities on one hand, and of health status on the other.

SEM should in the near future collect all data identified as pertinent to the above operation process them and return all information deemed necessary by the central, provincial and local managers.

No extensive studies have been carried out to determine whether such operation would be carried out manually or by computer. It is likely however that the computer alternative will be chosen given the importance of the project and the availability of the mini.

The possibility of transferring to the computer all or part of the health data collected during the past 20 years has been raised. Such an operation could be vary costly and its advantages are not evident given the probable incompatibility of the old structure for data collection and the present one, and the future workload of the SEM.

2) Surveys

Since 1980, SEM has been the prime contractor for two (2) national surveys: fecundity and contraceptive prevalence; and a provincial survey of contracteptive prevalence. The following surveys are presently scheduled:

as

- 85-86: Nutritional status of children less than 5 years of age (24,000 households)
- 86: Cause of infant mortality
- 86-87: Contraceptive prevalence.

For these surveys, SEM ensures the sample selection, the training of interviewers along with their coordination and supervision, the coding of the data, entry on computer (previously by keypunch; direct entry by terminal in the future), and data processing using software such as SPSS or WFS. The processing, formerly done on the Ministry's computers, will now be carried out on SEM's HP 3000.

Up to a year go, SEM was essentially a statistical service, using computers only for a very specific range of "social science" applications. For practical purposes, SEM at that time had no specific computer function. Following the Rousselle report (early 1983), SEM was chosen by the Ministry as the focal point for computerized information. Its responsibilities in that role and the limitations of those responsibilities have yet to be clearly specified. One should note that SEM was chosen to receive the mini HP 3000. Is it a confirmation of the mission entrusted to SEM a year ago, or a result of being, at the present time, the only potential client for the mini because of its need to analyze results of its surveys? The question deserves attention since, at the micro computer level, there is no clear cut answer, and as long as there is no answer, SEM will remain essentially what it was, namely the Ministry's health statistical and information service, and not the focal point for computerized information in the Ministry.

According to its organizational chart, SEM has 2 distinct departments: statistics and computerized information. SEM is equipped with 4 COMPAQ and IBM micro-computers and is expecting two additional HP 150 micros. Its computer personnel has increased considerably. However, a portion of that personnel will continue to work on traditional SEM statistical activities. That portion is even larger than in the past since SEM must at the present time operate its own HP 3000 while, in the past, they were clients of the Ministry of Plan's two computers. On the other hand, the staff is very young and, in our opinion, does not have enough experience to direct and manage computer information system development for the entire Ministry (the only SEM analyst with some seniority is no longer a member of the "computer team"). An organizational chart exists but the person in charge of the computer division has not been named, nor the respective persons in charge of analysis/programming and data processing. It is quite possible that these vacancies simply attest to the fact that SEM does not have among its existing staff qualified candidates. If SEM is to become the computer "focal point" at the Ministry, it will have to rapidly resolve the vacancy problem as it will not be efficient to have the computer center managed by its staff of analysts.

SEM will also have to structure its computer activities - both micro and mini into computerized management information system and statistical management information system. It is felt that SEM is at ease with

96

statistics (its traditional activity), but that it is still searching for an identity at the "micro" level. SEM pretends to be the core of micro-computerized information development at the Ministry; however, one year after the arrival of the micro's, SEM has yet to demonstrate its ability to master concrete applications of the system. The BMM has been largely involved in the organization, coordination and implementation of micro-computerized information development. SEM has not yet succeeded in defining its role and functions as an organization within this development.

SEM possesses enough equipment to affirm its leadership, and its personnel has benefited from an important part of the training associated with the project. Yet, SEM still hesitates to commit itself at the micro level until now as demonstrated in SEM's unwillingness to identify micro-computer human resources. The option in which everyone would work on micro as well as mini computers is certainly appealing because of the flexibility it offers. However, the complexity of tasks and tools does not allow, in our opinion, everyone to do everything with equal facility. A minimal level of specialization is required in the short term. It is therefore urgent that SEM go rapidly beyond the organizational chart level and equip itself with a description of detailed and precise tasks for each of the positions identified, while focusing on the necessity of a minimal

differentiation between micro activities (essentially oriented toward management) and macro activities (oriented toward statistics, at least for a while). It is only then that SEM will be in a position to judge the adequacy of its staff (in quality and quantity) to perform the identified tasks. Next year, SEM plans to hire new personnel. It is urgent that SEM be able to identify its needs in order to select and train the candidates accordingly. Once more, we do not feel that SEM can continue to pursue its policy of training everyone in everything, especially when such training is essentially of a general theoretical nature, and in practical terms is a pure waste if not followed by practical applications, the real area for in-depth training.

Therefore, the moment has come for SEM, if it wants to play a leadership role in computerization at the Ministry, to affirm through actions its interest in computerized management information systems. To this end, the SEM analysis and programming division should devote all its resources to computerized management information systems on micro-computer in the immediate future, and on mini-computer in the longer term. It would be enough, in the present context, if SEM assigned only one analyst and one programmer (or a converted statistical technician) to computerized statistical information systems; all other resources (4 analysts and 2 programmers now; 4 analysts and 5 programmers next year) should be assigned to computerized management information systems (see organizational chart, Appendix III). It is also urgent that SEM selects someone to direct computer operations, someone with the experience and authority to assume such function. This person could also temporarily direct the management analysis/program division while trying to identify an analyst from SEM staff who has demonstrated through experience the greatest potential to assume that role. If that resource is not available on staff someone should be hired from the outside. It should also be possible to immediately identify someone within the SEM staff who would be in charge of the mini-computer operation (data processing) and to provide him immediately with three/four months training in a computer center which has been equipped for at least two years with a HP 3000; and which is located either in Morocco or outside but preferable in a francophone country. During this training period, he should also be taking university courses in computerized management information systems and their operation.

As already mentioned, SEM personnel do not appear to have at the present time among its ranks anyone with enough experience to take over the computer division. We believe that the best solution would be for someone to be sent, beginning January, for supplementary training in the computer science department of a francophone university to begin studying for a master's degree in computer information systems. The first part of the master's degree will take four months. In the interim, the computer division leadership would be assumed officially by Paul Desjardin, who would direct the mini-computer operation as well as the management analysis/programming division simultaneously. Paul Desjardin would transfer his responsibilities to the Computer Operations Manager (COM) (who is also responsible for management analysis/programming) and to the Data Processing Manager (DPM) when they return in May/June. During the period June-December 1985, the COM would continue the organization of the computer information system and in particular, would designate a chief of

98

the analysis/programming division who, in turn, would leave for a training period of four months in september 1985. Upon his return, the COM could delegate to both managers the leadership of the computer division and would, in turn, leave in January 1986 to finish his master's degree (to be completed June 1986). This training strategy is shown in Appendix IV.

In case the computerized management information division is linked with EMM, the computer operations manager, the chief of analysis/programming and the entire personnel of the management analysis/programming division should be transferred to EMM. All other recommendations mentioned above, in particular those pertaining to training, would in such case remain valid.

APPENDIX I

ASSIGNMENT OF MICROS AND TERMINALS

It is difficult to retrace the precise assignment of 11 micros (4 COMPAQ and 7 IBM). However, their present assignment, as follows, appears to be representative of the assignment during the period April 1984 to present:

	<u>Usage</u>
SEM: 4 (3 IBM & 1 COMPAQ)	training/development/data entry
BMM: 3 (COMPAQ)	training/development/data entry/ studies
INFRASTRUCTURE: 2 (IBM)	data entry/development/data processing
MEDICAL PERSONNEL BUREAU: 1 (IBM)	data processing/data entry
EQUIPMENT: 1 (IBM)	development (later: data entry/ data processing)

N.B.: SEM will soon receive two supplementary HP 150 micros

This assignment should not change in the short term. Only when new applications reach an operational stage would it be necessary to bring in a micro. The most likely short-term candidates are:

1. Motor Pool/Vehicle Fleet
2. Bureau of paramedical personnel
3. Central pharmacy
4. A pilot province

Whenever a micro is needed for one of these applications, it will be necessary to determine which, within the infrastructure - BMM or SEM - can release one of their machines. The decision will be made on the basis of how BMM and SEM are using available equipment.

In the not too distant future, the number of micros will become inadequate. Unless development on a large scale takes place (for example: micro-computerized information systems for each provincial division), the best solution (in terms of cost-effectiveness) will probably reside in the transfer of applications from micros to mini, as micros can be substituted by terminals with a direct line to the mini (using a modern and ordinary telephone line). This is particularly recommended in the case of heavy applications such as the pharmacy or personnel office. In the later case in particular, the two micros necessary for the extension of the application to the four categories of personnel could then be advantageously released for other uses by completely transferring the PIS to the mini and installing two terminals at the BP (Bureau de Personnel).

Since the question of the substitution terminal/micro will be raised one day, it should be examined without delay in order to fully understand all its implications and the human resources it will require. Two points in particular are worth examining:

1. Setting up a direct line between a remote terminal and the mini

Its feasibility should be demonstrated (technical documents, estimates, delivery dates, etc.).

2. Reprogramming of micro applications on the mini

The 2 sets of equipment (HP and IBM) are not compatible and applications on micros cannot be transferred to the mini. This could change if a UNIX operating system becomes available on HP. It would then be possible to program in C under UNIX on both machines with a very good transferability. However, such product will not be available in the near future. Furthermore, it implies an expertise in analysis/programming which goes beyond the present expertise offered by all SEM analysts. Therefore, micro-mini transfers at the present time will imply reprogramming. It will be necessary in the future to determine the type of machine used for each new application in order to prevent costly reprogramming.

APPENDIX II

EVOLUTION OF SEM COMPUTER PERSONNEL

1. At arrival of first micros (October 1983)

- o 1 analyst
- o 2 programmers
- o 1 member of French cooperation mission who have essentially devoted their time to "social science" applications on the Ministry's computers to meet the needs of SEM surveys at the national as well as the provincial level.

2. Presently

- o 3 analysts
- o 1 specialized analyst (temporary)
- o 1 analyst member of French cooperation mission (temporary)
- o 2 programmers
- o 2 statistical technicians "converted" into programmers.

Excluding the temporary staff, SEM computer personnel has increased from 3 to 7 persons in one year, which demonstrates a real effort on the part of the Ministry and the SEM to adapt human resources to the increase in computer capacity. However, the Ministry is aware that such effort is still inadequate and important personnel additions are scheduled in 1985.

3. Additions in 1985

- o 3 statistical technicians converted into programmers
- o 2 programmers (their recruitment will be very difficult given the limited budget.)
- o 2 analysts (their files are under examination.)
- o 1 operator urgently need for the mini. Concrete steps have yet to be taken to recruit one.
- o 2 members of French cooperation mission (subject to the uncertainties of the cooperation agreement) one of whom will replace the present member who will be leaving at the end of 1984.

This staff will require training. Taking into account recruitment difficulties and other administrative problems, one can expect SEM personnel to be as follows by mid-1985 (end of long-term technical assistance within the project framework):

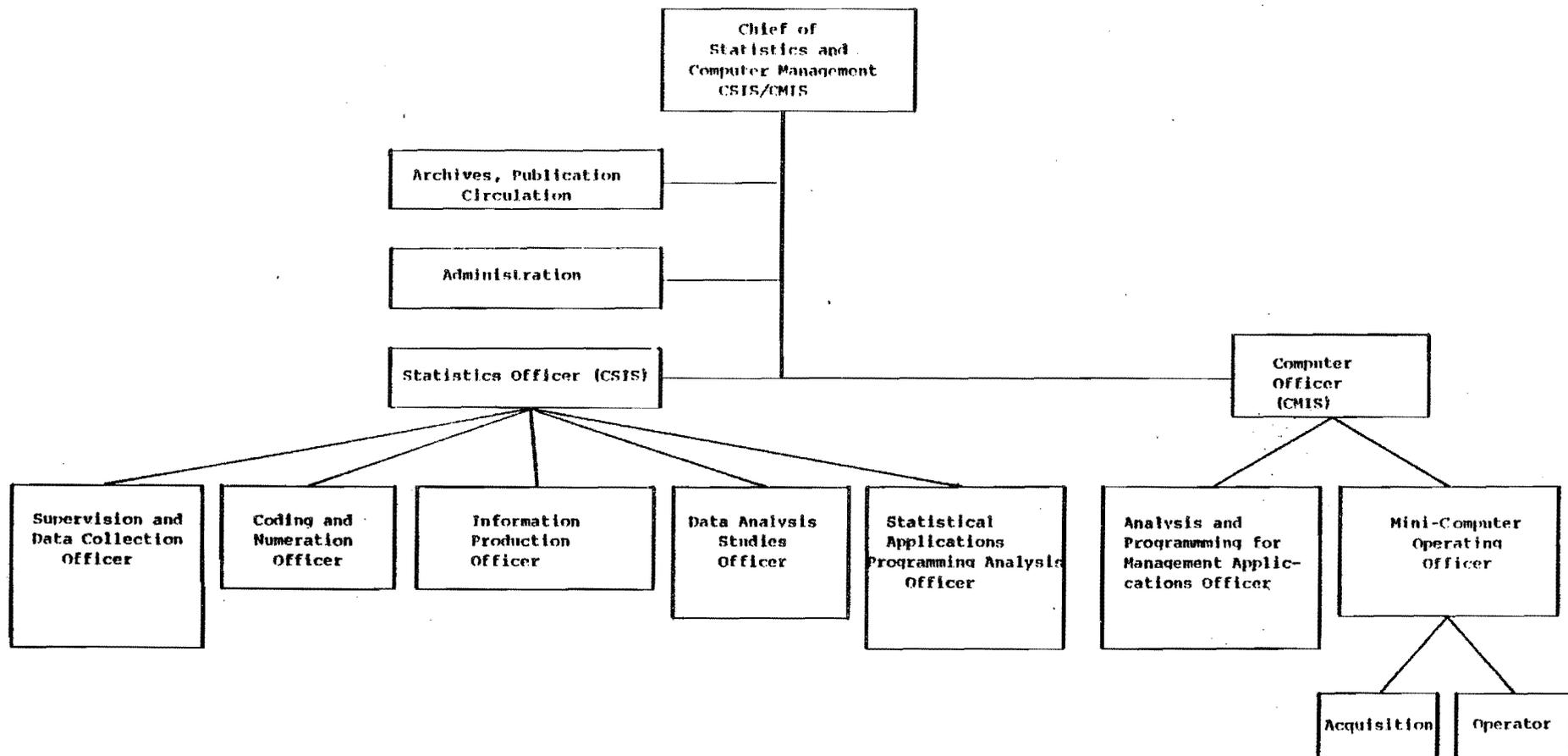
o Analysts.....	5
o Programmers.....	2
o Operators.....	1
o Statistical technicians converted into programmers.....	<u>5</u>
Regular personnel sub-total.....	13
o "Cooperants".....	<u>2</u>
GRAND TOTAL.....	15

SEM has more than six (6) statistical engineers and six (6) statistical technicians who will be using the mini in a relatively autonomous manner through SPSS and WFS (World Fertility Survey) "packages". In addition, a number of terminals will be set aside for data entry by the staff in charge of data acquisition. At the present time, survey data is punched on cards according to the traditional method, which has become outdated after the mini's arrival.

The preceding inventory of both SEM computer personnel and other personnel using the computer facilities at SEM clearly indicates that the number of terminals presently available (i.e. 13) is far from excessive. If their use is not properly programmed, some overloading may occur.

103

501



APPENDIX IV

Training Strategy for Computer Service Managerial Personnel (ideal scenario)

Computer managerial personnel includes:

- Computer operations manager (COM)
- Analysis/programming division manager (APM)
- Data processing manager (DPM)
- o December 1984: Nomination of future COM and DPM
- o January-June 1985: P. Desjardin as COM, APM and DPM on interim basis.
- o January-May 1985: The future COM begins his masters in computerized information systems.
- o January-April 1985: The future DPM completes his work-study program.
- o May-June 1985: Transfer of duties by P. Desjardin to the new COM and DPM.
- o June 1985: Nomination of future APM.
- o September-December 1985: Future APM attends a computer course/program (master level).
- o January-May/June 1986: APM and DPM jointly assume the role of computer operations manager.
- o January-May/June 1986: The COM finishes his masters program.

The training strategy described above is not the only possible one. Other options could certainly be considered which would ensure the same level of training and avoid sending all three people for training at the same time.

105

ANNEX 5 (E)

On Evaluation and Indicators

The Evaluation Team has been asked to develop some "measurable indices of progress... to assess the service impact of management improvements" at central and/or peripheral levels." The team understands that several things are wanted or assumed by this request:

1. "Service... at central or peripheral levels" implies not only administrative services at both levels but also health care services; and
2. emphasis is to be on "impact" rather than output or process.

Within the limitation of the time available, the team accepts the challenge to "begin the process of connecting management improvements to some measurable service outcomes." It is no small task and there are several problems with it.

First, the HMIP was designed to focus on administrative services at central and peripheral levels and on general management tasks associated with direct health care services delivery at the periphery (i.e. planning, allocating, directing and controlling resources). It has not focused (nor was it intended to focus) on effecting major changes in the ways in which health care services are delivered (albeit some kind of positive results for health service delivery were expected down the line). It is fair to ask what, if any, have been the effects of management improvements on such direct service delivery, but extreme caution should be used while attempting to answer the question and when attempting to draw conclusions.

Secondly, there are a number of knotty methodological problems to be considered in designing an approach to impact evaluation of a management improvement project, even if one concentrates on those aspects of "service" which the project was designed to address. The measurement of "impact" implies assessment at some point in time after project completion, e.g. 1-2 years. Some early indications of impact may be evident by final evaluation, but real impact, in the strict sense of the word, takes time to manifest itself.

As you move further in time away from project activities, many other intervening variables enter the picture and it becomes increasingly difficult to establish any kind of causal relationship between project activities and some specific outcome. This problem is compounded if there are "follow-on" management improvement activities. With time, intervening variables, and interaction effects among project components, the very nature of the question becomes more complex and less and less amenable to response with simple, quantitative/measurable indices. Thus, one can give examples of types of measurable indices suitable for use in conjunction with a broader evaluation question, but it would be simplistic (not to say foolhardy) to expect that a handful of measurable indices alone will suffice to assess impact.

A major source of methodological problems is the nature of the project itself. As an effort to affect management, the project can be thought of as working in two domains: 1) systems, procedures, processes, and organizational structures; and 2) human behaviors (decision-making, use of information). Impact of project activities on the first is not so difficult to "measure": one can count forms, ascertain whether systems are in use, document changes in timeliness etc. Assessing impact on human managerial behavior is another matter. Especially in the absence of baseline data documenting how decisions were made before the project, or what their content was, it is very difficult to "measure" behavioral change by means of indices. Qualitative assessments of change are likely to be both richer and more feasible.

The absence of baseline data itself poses methodological problems. One would like to be able to say that whereas before the project, "X" amount of service was being delivered at "Y" cost and now the same amount of service is being delivered for "Z" cost (with Z less than Y); the fact is we do not know what the value of X or Y was at the outset. That is one of the problems the project was introduced to address. One possible way to handle the baseline data problem is to use the final evaluation as a baseline against which to measure future impact.

Over the long term, one would like to be able to demonstrate that management improvements resulted in better, more appropriate, timely, cost-effective services (administrative services and health care services). Unfortunately, it takes more than management to create these effects. Not the least of the necessary ingredients is the conscious decision to place value on these outcomes rather than others.

With this long preface and its caveats, we turn to the design tasks. Figure 1 presents the general framework of evaluation being assumed in what follows. Emphasis here is on Impact Evaluation, with some attention to links back to Final Evaluation. It is quite possible that AID itself will not sponsor an impact evaluation for this project; in this case, the Final Evaluation can help put in place the methods and measures by which the Ministry itself will wish to conduct future impact evaluations. The Evaluation Plan submitted by MSH, together with outcome targets specified in the project extension documents, offer two sensible points of departure. The Evaluation Plan is a well conceived, thoughtful document, generally sound in its methodological approach. It poses the right questions. If it fails to specify precisely how those questions are to be answered (including which "measurable indices" are to be used) it does not fail to note that such measures need to be developed. Accordingly, this Evaluation Team proposes that the Evaluation Plan be used as a starting point, with this team's effort as an example of next steps for plan elaboration. Such elaboration need not take place before the Final Evaluation itself, but the final choice of key indicators may be linked during the remaining months of the project to further identification of "key decision variables" that MOH users want for regular performance monitoring.

In the process of elaborating the methods for evaluating expected impact of the project, it will be necessary to delimit carefully the "domain" of expected impact. The proper domain is: the management systems (forms, procedures, etc.) and their use by decision-makers (managers). Part of the perception that "management improvements are a bottomless pit because the need for them goes on" stems from a failure to specify when one "improvement" ends and another begins.

Figure 1

Conceptual Framework for Evaluation of Management Project

Stage of Project:	Design	Implementation	Post project	
Types of Indices data elements use- ful for evaluation:	. Objectives . Anticipated outputs . other base- line data	. Inputs (by number and type)	. Actual Outputs Achieved . Process measures . Evidence of Initial Impact	. Outcome or . Impact measures
Modes of Evaluation:		"Interim" or Process	Final Evaluation	Impact Evaluation

011

Project Component	Principal Outputs	Available Data Elements	General Evaluation Questions (from MSH plan)	Methods of Evaluating (including measurable indices)
1. Human Resources Management	1.1 Personnel Inventory System that tracks personnel "acts" for each employee.	Name Sex Age 1. official 2. actual Promotions etc.	(1) Is PIS providing, timely, accurate info for HR management? (4) Are there changes in efficiency of personnel administration? In morale?	1.1.1. To verify accuracy; select sample of PIS files and check through comparison of files and (follow-up interviews in field) that files are current and correct. 1.1.2. To measure efficiency changes: (document at final and at impact evaluation): a. # days it takes (average) to complete processing a personnel action; b. # files currently pending completion of a personnel action; c. # files which have been at central level awaiting action for more than X # days; d. # personnel at central level used to process personnel actions; e. total # personnel actions completed per month per DAA central employee. 1.1.3. To measure effects at peripheral/provincial level: a. # days/months between sending personnel action and receipt of notice of completed action. (Verify through inspection of records and interviews with admin-economes + chef medcin.; b. scalar measures of employee morale + satisfacation with personnel admin. services (e.g. how long did processing of your last personnel action take?

On a scale from 1 to 10, how satisfied are you with MOH administration of your personnel file? Why satisfied/dissatisfied? (n.b. This may be politically sensitive!);

- 1.1.4. To measure impact on utilization of info system:
  - a. verify through interviews and inspection that central level managers "track" info such as 1.1.2. a-c above. Do they receive the data on regular basis? Do they take appropriate action when indicators fall below target? Are sub-ordinate personnel aware of MOH targets for "timely action"?

1.2 Manpower ? number of  
Planning unfilled  
Model posts, by  
that location and  
projects type of  
"needs", manpower  
supply, new required.  
entry requirements  
etc.

(2) Is planning system in place?  
(3) Is system used to guide training, recruitment, distribution of personnel?

- 1.2.1. Verify that Planning Model is in place and up to date (e.g. sample check to see that provincial and central level reports of unfilled posts are the same).
- 1.2.2. To measure changes in efficiency: (compare indices at 2 points in time):
  - a. # days/months between notification of unfilled post and commencement of recruitment action.
  - b. # days/months between notice of vacancy and filling vacancy;
- 1.2.3. Verify data are used for decisions re distribution of personnel:
  - a. verify data are presented in regular report (through inspection of reports) and interviews;
  - b. document use of data for decision-making (eg. redeployment) through interviews and mini case studies.

211

Project Component	Principal Outputs	Available Data Elements	General Evaluation Questions (from MSH plan)	Methods of Evaluating (including measurable indices)
2. Finance	2.1 tableau de bord in use at provincial levels to monitor budget and expenditures and personnel performance.	#medical consultations per M.D.  #paramedical consultations per worker.  #visits per inhabitant per month  #"itinerant" visits per month per worker.	(6) What is project impact on financial management?  (7) Does budget/ accounting system allow determination of program costs?  (revise to specify desired impacts)	<p>2.1.1. Verify system is in place by inspecting tableaux at provincial level. Determine timeliness of completion, distribution to key decision-makers (chefs-medcins + admin-economes) and document case-examples of uses.</p> <p>2.1.2. To measure impact on management of worker productivity:</p> <ul style="list-style-type: none"> <li>a. plot changes in # consultations each period for individual workers or service units; compute percentage changes;</li> <li>b. establish desired target "productivity levels":  both "ceilings" which signal needs for more personnel or likely deterioration in quality of care, and "floors" which signal need to personnel; combine services or reallocate</li> <li>c. record # and type of actions taken to increase and/or "rationalize (e.g. make more consistent across service units) productivity.</li> </ul> <p>2.1.3. To measure and evaluate cost per unit of service delivered:</p>
		Total "program" costs for:		

a. ambulatory services;

b. hospital services.

a. compute total number of consultations total cost of service and track divided by over time;

b. compare costs per consultation among same types of service units and between different types of services;

c. document management changes made to rationalize cost/unit of service: e.g. to reduce costs or increase output; to redeploy personnel and other resources so that cost per unit of service performance is comparable within similar types of activities (ambulatory-fixed; ambulatory-itinerant; hospitals, etc.);

d. determine exogenous factors affecting cost per unit of service (e.g. price rises among cost elements) and relate these to cost/service data.

Those from tableau de bord as above; output data from VDMS, SIAP records of case incidence/prevalence etc.

2.1.4. To begin to link productivity and cost data resulting from this project to health service delivery outcomes:  
(n.b.: The causal link between the two is methodologically difficult to prove. All one can hope for is to see some association between the two. Despite these caveats, the importance of determining the cost-effectiveness of itinerant ambulatory services such as those provided under VDMS is sufficiently important in and of itself, and data from the management project is of sufficient utility, that it is worth examining how evaluation of VDMS can contribute to evaluation of HMIP. The following provides an example of how it might work.)

- a. determine the content of "itinerant" services;
- b. select output indices available for those services (e.g. # diarrhea days total or per child under five; #cases of preventable diseases; # new FP acceptors) or manipulate to arrive at "benefits" measures (very tricky business).
- c. compute total "program" costs for achieving outputs using data from tableau de bord;
- d. divide thru by population and compare.

2.2 Accrual  
"credit" report  
for invest-  
ment budget.

- 2.2.1.a. Determine length of time it takes to prepare "credit" accounting report in MOH and compare to previous point in time;
- b. determine percent of supposedly available "credits" now released by MOF for use by MOH;
- c. measure length of time between approval of an investment project and actual disbursement of funds.

TYPES OF SUMMARY STATEMENTS ABOUT IMPACT THAT CAN BE MADE WITH FINANCIAL DATA

1. "Direct Health Service worker productivity (as measured by average number consultations per worker) has reached X percent of target levels (as compared with Y percent [last period])."

(N.B.: There is probably a ceiling number of consultations per worker that is feasible and desirable given quality of care considerations.)

2. Comparison of differentials in productivity has resulted in X number of actions to redeploy personnel.
3. The number of service units falling below target levels of productivity has dropped from N to M.
4. Cost per unit of service (as measured by consultations) have [increased or decreased] by X percent and the following management actions were taken to [bring about the improvement or halt decrease].

(N.B.: The source of change may lie outside the control of responsible managers. The important index of impact is that the manager is: a) aware of changes; and b) acts to do what she or he can.)

5. # days per month needed to prepare "credits" report for claims against investment budget has been reduced from X to W. As a result, Z percent of budget been made available to MOH for expenditure (versus Y percent last year). Thus increasing the Ministry's absorptive capacity: average time between approval of investment project and actual disbursement of funds has been reduced from b to a.
6. Data from HMIP, when combined with health care delivery service statistics now permits us to know that X package of services per inhabitant cost Y.

Project Component	Principal Outputs	Available Data Elements	General Evaluation Questions (from MSH plan)	Methods of Evaluating (including measurable indices)
3. Informatique	3.1 A well structured computer service responding in a timely efficient and effective ay to the management information needs of the MOH at all level: central, provincial, level.  Well trained staff/up-to-date hardware and software.	Number/type of hardware software.  Number/type of staff.  of computer	Is the computer service providing timely, efficient, effective support to management? Are there changes in efficiency service management?	3.1.1. <u>Computer Service Management</u> a. Does an adequate organization chart exist? b. Do descriptions of positions/tasks exist? c. Does a plan exist for hiring/training staff? d. Staff moral (scale: 1-10). e. Micro computers distribution. f. Micro computer idle time. h. Micro computers out of order. 3.1.2. <u>Support to management in MOH</u> a. Number of systems supported by computer (operating, in development, in preparation). b. Average response time of computer service to users for: - data entry - programming - analysis - service c. Users satisfaction (scale 1-10).

Project Component	Principal Outputs	Available Data Elements	General Evaluation Questions (from MSH plan)	Methods of Evaluating (including measurable indices)
4. Motor Pool (MP)	4.1 More simple reporting procedures Computerized management information system for Motor Pool (MISPA) that tracks major data regarding each car in MP	Car identification and utilization data.	Is MISMP providing, timely, accurate info and correct. for MP management?  Are there changes in efficiency of MP administration?	<p>4.1.1. To verify "<u>accuracy</u>" select a sample of MISMP files and check (through comparison of files and follow-up interviews in field) that files are current</p> <p>4.1.2. To measure <u>efficiency</u> changes: (document at final and at impact evaluation):</p> <ul style="list-style-type: none"> <li>a. # days it takes to deliver an authorization for vehicle action (repair, "reform" parts permutation);</li> <li>b.# files currently pending completion of a vehicle action;</li> <li>c.# files which have been at central level awaiting action for more than Y days (e.g. 30, 60, 90).</li> </ul> <p>4.1.3. To measure <u>effectiveness</u> changes:</p> <ul style="list-style-type: none"> <li>a.# average age, consumption, number of unavailability days, number of preventive repairs action, number of "panne", accidents, kilometers and kilometers-passenger car year;</li> <li>b.utilization of cars per program.</li> </ul> <p>4.1.4. To measure <u>effects</u> at peripheral/provincial level:</p> <ul style="list-style-type: none"> <li>a. # days/month between sending a request for vehicle action and receipt of authorization (verify through inspection of records and interviews with admin-econo-chef parc auto periph);</li> <li>b. number of car operating/waiting repair/waiting "réforme";</li> </ul>

6/11

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Project Component	Principal Outputs	Available Data Elements	General Evaluation Questions (from MSH plan)	Methods of Evaluating (including measurable indices)
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- c. average time to receive vignettes.
- 4.1.5. To measure impact of utilization of information system verify through interviews and inspection if managers track information such as 2 (a, b, c) and 3 above. Do they receive the data on a regular basis, take appropriate action when indicator fall below target. Are subordinate personnel aware of MOH targets for "timely action"?  
 Are vignettes allocated as a function of activities?  
 Are vehicles allocated as a function of activities?  
 Are data used to decide if a vehicle should be repaired or "riformi"...? etc.

- CHECKLIST D'ACTIVITE A SUIVRE -

NOM.....	DATE DU COMMENCEMENT
PRENOM.....	DU PROCEDE.....
DOTI.....	
NATIONALITE.....	
GRADE.....	DATE DE L'ACHEVEMENT.....
POSTE BUDGETAIRE.....	D'ACTIVITE.....
SPECIALITE.....	
SITUATION JURIDIQUE.....	
DATE DE RECRUTEMENT.....	
AFFECTATION ACTUELLE.....	PROVINCE. OU PREFECTURE.....
LIEU D'AFFECTATION.....	

- |   |                                  |
|---|----------------------------------|
| 1) - Réception de la demande  | DATE.....                        |
| 2) - Préparation de la note à<br>Monsieur le Ministre + Avenant<br>de radiation + lettre d'accord     | DATE.....                        |
| 3) - ENvoi de ces document à la<br>signature  | DATE.....Parapheur N°..          |
| 4) - Retour de ces documents signés   | DATE.....                        |
| 5) - Envoi de la lettre d'accord et<br>de l'avenant de radiation au bureau<br>d'ordre pour diffusion. | DATE.....                        |
| 6) - Réception de l'avenant signé par<br>l'intéressé ainsi que l'avis de<br>cessation de service      | DATE.....                        |
| 7) - Envoi de la lettre de blocage du<br>TRAitement (DOTI)  | DATE.....                        |
| 8) - Enregistrement provisoire dans<br>l'Ordinateur   | DATE.....                        |
| 9) - Envoi au C.E.D. pour visa  | DATE.....                        |
| 10)- Retour après visa du C E D   | DATE.....VISA N°...<br>DATE..... |
| 11)- Enregistrement définitif dans<br>L'ordinateur  | DATE.....                        |
| 12)- Réception du dossier de rembourse-<br>ment des frais de rapatriement                             | DATE.....                        |
| 13)- Envoi du dossier au service de la<br>comptabilité  | DATE.....                        |

O B S E R V A T I O N S : (1)

(1) Reporter dans cette case toute étape non prévue dans ce Checklist.

- DEMISSION -

- CHECPLICK D'ACTIVITE A C. I. N. -  
-----

NOM ..... DATE DU COMMENCEMENT  
PRENOM ..... DU PROCEDE .....  
COTI .....  
NATIONALITE .....  
GRADE ..... DATE DE L'ACHEVEMENT DE .....  
POSTE BUDGETAIRE ..... D'ACTIVITE .....  
SPECIALITE .....  
SITUATION JURIDIQUE .....  
DATE DE RECRUTEMENT .....  
AFFECTATION ACTUELLE : PROVINCE OU PREFECTURE .....  
.LIEU D'AFFECTATION .....

- 1) - Réception de la demande de démission Date .....
- 2) - Préparation de la note au Ministre Date .....
- 3) - Envoi de la note au Ministre Date..... Parapheur n° .....
- 4) - Retour après décision du Ministre Date .....
- 5) - Préparation de la lettre d'accord ou de la lettre de regret Date .....
- 6) - Envoi de la lettre d'accord ou de la lettre de regret Date ..... Parapheur n° .....
- 7) - Retour de la lettre signée Date .....
- 8) - Envoi de la lettre signée au Bureau d'Ordre pour diffusion Date .....
- 9) - Retour de la lettre signée du Bureau d'Ordre après diffusion Date .....
- 10) - Si regret, envoi des documents à la salle des dossiers pour classement dans le dossier administratif Date .....
- 11) - Si accord, réception de l'avis de cessation de service Date .....
- 12) - Préparation de la lettre de blocage du traitement à adresser à la COTI ..... Date .....
- 13) - Envoi de cette lettre au Bureau d'Ordre pour la diffusion Date .....

T  
502

- DEMISSION -

- CHECKLIST D'ACTIVITE A SUIVRE -

- 14) - Retour de la lettre après la diffusion Date .....
- 15) - Préparation de la décision de radiation des cadres Date .....
- 16) - Envoi de la décision à la signature Date ..... Parapheur n° .....
- 17) - Retour de la décision après signature Date .....
- 18) - Envoi pour l'enregistrement provisoire par l'ordinateur Date .....
- 19) - Retour après l'enregistrement provisoire par l'ordinateur Date .....
- 20) - Envoi au C.E.D. Date .....
- 21) - Retour après visa du C.E.D. Date .....  
Date de visa ..... n° Visa .....
- 22) - Envoi pour enregistrement définitif à l'ordinateur Date .....
- 23) - Retour après enregistrement définitif à l'ordinateur Date .....
- 24) - Envoi au Bureau d'Ordre de la décision visée pour diffusion Date .....
- 25) - Retour après diffusion Date .....
- 26) - Envoi à la salle de dossier pour archivage Date .....

OBSERVATIONS :

CONVENTION MEDECINS PRIVES  
CHARGES DE SERVICE  
DESCRIPTION DE LA PROCEDURE

CHECKLIST D'ACTIVITES A SUIVRE

NOM.....	DATE DU COMMENCEMENT
PRENOM.....	DU PROCEDE.....
DOTI.....	INITIALES DE L'AGENT.....
NATIONALITE.....	
GRADE.....	DATE DE L'ACHEVEMENT DE.....
POSTE BUDGETAIRE.....	L'ACTIVITE.....
SPECIALITE.....	
SITUATION JURIDIQUE.....	
DATE DE RECRUTEMENT.....	
AFFECTATION ACTUELLE.....	
.....	

- |   |                            |
|---|----------------------------|
| 1) ARRIVEE DE LA DEMANDE DE CONVENTION  | DATE.....                  |
| 2) PREPARATION DE LA NOTE AU MINISTRE   | DATE.....                  |
| 3) ENVOI DE LA NOTE A MONSIEUR LE MINISTRE  | DATE.....PARAPHEUR No..... |
| 4) RETOUR DES DOCUMENTS PORTANT DECISION DU MINISTRE                              | DATE.....                  |
| 5) PREPARATION DE LA LETTRE D'ACCORD OU DE REGRET A LA MAIN                       | DATE.....                  |
| 6) ENVOI A LA SIGNATURE   | DATE.....PARAPHEUR No..... |
| 7) RETOUR APRES SIGNATURE   | DATE.....                  |
| 8) DIFFUSION DE LA LETTRE D'ACCORD OU DE LA LETTRE DE REGRET                      | DATE.....                  |
| 9) RETOUR DES DOCUMENTS APRES DIFFUSION   | DATE.....                  |
| 10) RECEPTION DU DOSSIER DE RECRUTEMENT ET DE L'AVIS DE PRISE DE PRISE DE SERVICE | DATE.....                  |
| 11) PREPARATION DE LA CONVENTION POUR LE SIGNATURE DU MINISTRE                    | DATE.....                  |
| 12) ENVOI DE LA CONVENTION A LA SIGNATURE DU MINISTRE                             | DATE.....PARAPHEUR No..... |
| 13) RETOUR DE LA CONVENTION APRES LA SIGNATURE                                    | DATE.....                  |
| 14) ENREGISTREMENT PROVISoire DANS L'ORDINATEUR                                   | DATE.....                  |
| 15) ENVOI DU DOSSIER AU SERVICE DE LA COMPTABILITE                                | DATE.....                  |

17) ENREGISTREMENT DEFINITIF DANS  
L'ORDINATEUR

DATE.....

18) ENVOI A LA SALLE DE DOSSIER  
POUR L'OUVERTURE D'UN DOSSIER  
ADMINISTRATIF

DATE.....

FIGURE N°1

DEMANDE DE DONNEES INDIVIDUELLES

NOM DE L'INTERESSE.....  
PRENOM(S).....  
N° DOTI.....  
OBJET .....

INITIALES DE L'AGENT.....

DATE.....

SIGNATURE.....

ROYAUME DU MAROC

-----

MINISTRE DE LA SANTE PUBLIQUE

Mle D.O.T.I.

COMPTE RENDU (de cessation de service  
(1) ) de prise de service  
) reprise de service

Province ou ( )  
Préfecture )

Formation : .....

- 1) NOM ET PRENOM.....
- 2) Grade: .....
- 3) Nature de la décision.....  
.....
- 4) Date de la décision.....
- 5) Date de cessation de service.....
- 6) Date de prise ou de reprise de service.....

OBSERVATIONS :

.....  
.....

Signature de l'Absent :

Signature du Médecin-chef  
de la  
province ou préfecture

signature du chef  
de service

(1) rayer la mention inutile.

126

ANNEX 7

LIST OF TRAINEES

A. Long term

1. Name: M. Tihani  
Service: Personnel  
Locations: University of Miami, Coral Gables  
Duration: 2 years (September 1984 - expected completion June 1986)  
Content: Public Health Administration
2. Name: M. Oucherif  
Service: Bureau de Management and Methodes  
Locations: University of Miami, Coral Gables  
Duration: 2 years (expected start January 1985)  
Content: Public Health Administration

B. Short term

1. Location: North America (Canada)  
Duration: 2 weeks  
Date: 15-30 August 1983 (2 weeks)  
Content: observation of and 3 day seminar in mangagement and technical functions and organization of information centers; familiarization with materials/hardware and software for applications in Management Project  
Introduction to D-Base II and Compag  
Participants: 1) M. Hasbe (informatician/SEM)  
2) M. Ellakhmi (programmer/SEM)
2. Location: Quebec, Ecole Nationale d'Administration publique AP  
Duration: 6 weeks  
Date: July-August 1984  
Content: General Management  
Participants: M. Hasbi
3. Location: University of Pittsburgh (GSPIA)  
Duration: 2 months  
Date: July 1984  
Content: Management (French language)  
Participants: 1) M. Amouzghir (DAA)  
2) M. Aoufoussi (BMM)  
3) M. Annas (Personnel)  
4) M. Khaldi (Fin)  
5) M. Ouanim (BMM)

4. Location: Stanford University  
Duration: 4 weeks  
Date: August 1984  
Content: 4 SEM personnel: 1 information, 2 programmers,  
1 statistician  
Participants: 1) M. Ellakhmi  
2) M. Hajra  
3) M. Guendassi  
4) Mlle Nocairi