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**THE MOROCCO AGRIBUSINESS PROMOTION PROJECT**

**END OF PROJECT REVIEW**

**Prepared for**

**USAID/Morocco  
and  
The MAP Project Steering Committee**

**Contract No 608-0-00-98-00049**

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## TABLE OF CONTENTS

List of Acronyms	iv
Introduction	vi
<b>EXECUTIVE SUMMARY</b>	vii
<b>PART ONE OVERVIEW OF THE MAP PROJECT</b>	
1 1 Goal and Purpose of the Project	1
1 2 Implementing Organizations	1
1 3 Principal Activities Under the Four Components of the Project	2
<b>PART TWO REVIEW OF MAP PROJECT ACTIVITIES</b>	
2 1 Component #1 Promotion of Agribusiness Products Investment and Marketing	7
2 1 1 Diversify Agribusiness Trade	7
2 1 2 Augment Foreign Investment	8
2 1 3 Administer the Promotion and Investment Fund	9
2 1 4 Improve Applied Technologies	10
2 2 Component #2 Improving the Agribusiness Climate	11
2 2 1 Improving the Policy/Regulatory Environment	11
2 2 2 Intellectual Property Rights Legislation	12
2 3 Component #3 Reinforcing Industry Organization and supporting Organizations	13
2 3 1 Reinforcing Industry Organization and Supporting Institutions	13
2 3 2 Improve Food Safety	14
2 3 3 Improve Phytosanitary Inspection and Quarantine Procedures	17
2 3 4 Support to Growers in Crop and Soil Sciences	18
2 3 5 Market and Investment Information Services	20
2 4 Component #4 Human Resource Development	21
2 4 1 Food Processing Technology Training	21
2 4 2 Agribusiness Management Training	22
2 4 3 Professional Training in the U S	23
<b>PART THREE CONCLUSIONS AND RECOMMENDATIONS</b>	
3 1 General Conclusions	25
3 2 Significant Accomplishments and Impact on Collaborating Entities	25
3 3 Recommendations for Follow-up Activities	27
3 3 1 Activities to Complete Work in Progress	28
3 3 2 Consolidation Activities	28
3 3 3 Development Activities	29
3 4 Some Lessons Learned	31

## APPENDICES

A	Consultant s Terms of Reference	32
B	List of Contacts	34
C	List of Documents Consulted	36

## LIST OF ACRONYMS

AAA	Association des Amis de l Arganier
ABSP	Agricultural Biotechnology for Sustainable Productivity (Michigan State University project)
ADAME	Association pour le Developpement Agricole de la Region de Meknes
ADEPAM	Association de Developpement de Plantes Aromatiques et Medicinales du Maroc
ANAPROF	Association Nationale des Producteurs des Fruits
APHIS	Animal and Plant Health Inspection Service of USDA
APNOR	Association des Producteurs de Peches et Nectarines du Nord
ASPRAM	Association des Producteurs des Raisins du Maroc
AMI	Agribusiness-Marketing-Investment (DAI Casablanca office)
ANAF	Association Nationale du Froid
APEFEL	Association des Producteurs-Exportateurs des Fruits et Legumes
AMPEXFLEURS	Association Marocaine des Producteurs et Exportateurs des Fleurs
ASPEM	Association des Producteurs-Exportateurs des Maraichages et des Primeurs du Maroc
BPCS	Better Process Control School
CAMAPRA	Compagnie Marocaine de Production Agricole
CASEM	Comptoir Agricole-Semence Marocain
CHA	Complexe Horticole d Agadir (IAV Hassan II)
DAI	Development Alternatives Inc
DPAE	Direction de la Programmation et des Affaires Economiques (Ministere de l Agriculture
DPV	Direction de la Production Vegetale Ministère de l Agriculture
DPVCTRF	Direction de la Protection des Vegetaux des Contrôles Techniques et de Repression des Fraudes Ministère de l Agriculture
EACCE	Etablissement Autonome de Controle et de Coordination des Exportations
EU	European Union
FDA	U S Food and Drug Administration
FICOPAM	Federation des Industries de la Conserve des Produits Agricoles du Maroc
GATT	General Agreement on Trade and Tariffs
GDP	Gross Domestic Product
GMP	Good Manufacturing Processes
GOM	Government of Morocco
HACCP	Hazard Analysis and Critical Control Points
IAV	Institut Agronomique et Veterinaire Hassan II
IPM	Integrated Pest Management
IQF	Individually Quick Frozen
LACF/AF	Low Acid Canned Foods/Acidified Foods
MADRPM	Ministere de l Agriculture du Developpement Rural et des Pêches Maritimes (also referred to in this report as Ministry of Agriculture or Ministère de l Agriculture)

MAMVA	Ministere de l Agriculture et de la Mise en Valeur Agricole (previous designation for Ministry)
MAPP	Morocco Agribusiness Promotion Project
MTDC	Morocco Trade Development Center (Project branch office at DAI headquarters in Bethesda Maryland)
ORMVA	Office Regionale de Mise en Valeur Agricole
PASA	Participating Agency Service Agreement
PIF	Promotion and Investment Fund
PPQ	Plant Protection and Quarantine
PSA	Program of Support to Agribusiness
PVP	Plant Variety Protection
SASMA	Societe Agricole de Services au Maroc
SODEA	Societe de Developpement et l Exploitation Agricole
SONACOS	Societe National de Commercialisation de Semences
TOR	Terms of Reference
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UM	University of Minnesota
UPOV	International Union for Plant Variety Protection
USDA	United States Department of Agriculture

## INTRODUCTION

At the request of USAID/Morocco and the Steering Committee for the Morocco Agribusiness Promotion (MAP) Project the Consultant carried out an end-of-project review in Morocco from May 11 to June 3 1998

The objective of the review was to provide a document which

- captured the main accomplishments of the project under its four main components with particular attention to its impact on the Moroccan collaborating organizations in the public and private sector and
- recommended potential future activities for the collaborating organizations in order to sustain and build upon project achievements

The Consultant's Terms of Reference a copy of which is appended to this report also called for comments on lessons learned or insights which may be applicable to future MADRPM or USAID activities

The report is organized in three parts Part One presents an overview of the project and its implementing organizations As a guide to the reader each of the four components is shown graphically with its separate objectives tasks scope of activities and major accomplishments In Part Two each of the fourteen tasks or elements of the project is reviewed as to accomplishments impact sustainability and where applicable potential follow-on activities Conclusions and recommendations are presented in Part Three

In preparing the report the Consultant met with each of the main Moroccan institutions involved in the project and reviewed all relevant documents in the files of USAID/Morocco Special thanks are due for the support given by Allen Fleming of USAID Donald Humpal of Development Alternatives Inc Steve Clarke of the University of Minnesota and Abdelmajid Bennani of the Ministry of Agriculture Rural Development and Fisheries

## EXECUTIVE SUMMARY

The Consultant's Terms of Reference call for analysis of the significant accomplishments of the MAP Project and their impact on collaborating public and private sector entities and recommendations on follow-up activities by these entities which will help sustain and build on project achievements

Overall the MAP Project has numerous accomplishments to its credit. It has clearly achieved its purpose of increasing the capacity of the private agribusiness sector in Morocco to produce, package and market a wide variety of demand-driven, value-added agricultural commodities. Almost without exception, public and private sector beneficiaries of the project expressed their satisfaction with the assistance they received.

The latest DAI/AMI quarterly report for the period ending December 1997 documents performance indicators for the project: creation of 14,000 jobs (nearly half for women), increased exports of \$67 million, of which \$55 million went to non-traditional markets, introduction of 45 new products, and 155 firms adopting new technologies -- altogether an impressive record. Most of the activities and the government and private sector institutions with which the project has worked are sustainable and will continue to contribute to MAP Project objectives, and in other cases sustainability can be achieved with minimal additional external assistance.

Accomplishments under the four main components of the project may be summarized as follows:

*Promotion of agribusiness products, investment and marketing.* The DAI/AMI office in Morocco and the MTDC office of the project in the U.S. contacted almost 1,400 U.S. companies by direct contact, mail, and telephone to introduce them to Moroccan companies and their products. Support to Moroccan exhibitors at trade shows proved to be an effective way to make these contacts. Similar services were provided by DAI/AMI in Europe, where over 1,500 contacts were made. MAP Project support was crucial in bringing the "red tomato initiative" to the point where only final approval by U.S. authorities remains before this important market is opened to Moroccan exporters. Twelve trade partnerships were brokered by the project as a result of these contacts, contributing to \$67 million in increased Moroccan exports, of which \$38 million was for diversified trade -- products which accounted for less than 2% of Morocco's 1992 agricultural exports. The project worked effectively to promote trade with non-traditional markets, \$55 million (82%) of the \$67 million in new exports went to markets representing less than 10% of Morocco's 1992 exports of a given product.

While increased trade with the U.S. is an encouraging trend, relatively few Moroccan food processing companies are willing to make the adjustment -- and invest the money -- to exploit U.S. markets with its special requirements as to food safety, packaging, publicity and promotion, and large volume buyers. However, these differences are diminishing as stricter EU food safety standards are being imposed on processed products, and large-volume supermarket buyers impose their own stricter standards for both processed and fresh product. AMI/DAI recognized these problems early on, and devoted a large part of project resources to food safety issues, as discussed below, and worked with exporters to improve packaging and product presentation. Given these heightened standards, and with the prospect of loss of preferential access to the EU market, the more progressive Moroccan

exporters are seeking to tap into the U S market and it is these enterprises who benefitted most from the MAP Project

AMI/DAI activities included transfer to Morocco of technology developed in the U S In several instances notably in the case of spice cleaning strawberry plant production and food safety procedures the transfer was accompanied by joint ventures increasing the sustainability of the transfer A very important and highly regarded contribution of the project in terms of technology transfer was the organization of workshops seminars and short courses on a variety of subjects in cooperation with USDA/PASA and Moroccan institutions Examples include Integrated Pest Management post-harvest handling procedures in packhouses Better Process Control School and GMP/HAACP Trade and grower associations participated in many of these seminars and workshops and were strengthened in the process

#### *Improving the agribusiness climate*

The project contributed to an improved climate for agribusiness through the preparation of policy studies such as those relating to the impact of GATT and EU market unification on Moroccan exports identification of constraints in truck transport and difficulties in enforcing grower contracts The latter two reports led to adoption of legislation to implement MAPP recommendations With support from the ABSP Project with Michigan State University coordinated by MAPP a workshop on plant variety protection was organized Subsequently European authorities assisted in the drafting of a Plant Variety Protection Law which was passed by Parliament clearing the way for introduction of new plant varieties by protecting the intellectual property of the developers A study of the attitude of U S and European businesses toward doing business in Morocco showed that much remains to be done to improve the reputation of Moroccan agribusiness for slow response to changing market conditions and poor responsiveness to communications The multiplicity of small conservative family-owned enterprises has slowed adoption of new business practices,

#### *Reinforcing industry organizations and supporting institutions*

MAPP made very significant contributions in this area through its work with both public regulatory agencies in the Ministry of Agriculture Rural Development and Fishing such as the *Etablissement Autonome de Controle et de Coordination des Exportations (EACCE)* and the *Direction de la Protection des Vegetaux des Controles Techniques et de Repression des Fraudes (DPVCTR)* and with private trade and grower associations These efforts had positive affects on the overall agribusiness climate The safety of Moroccan food products in foreign markets was greatly enhanced by technical assistance and equipment provided to EACCE laboratories, which are now better equipped to do microbiological analysis of processed food, and testing for pesticide and heavy metal residues in all types of food products Improved plant quarantine procedures and legislation to protect intellectual property with respect to patents on improved plant varieties were other important contributions of the project through DPVCTR

DAI/AMI worked extensively to strengthen trade and grower associations Seminars and workshops were especially beneficial Associations with good management strong member support and an openness to new ways of doing things benefitted from project assistance Those that did not benefitted only marginally

The Program of Support to Agribusiness (PSA) component of the MAP Project operated by the University of Minnesota provided technical assistance training and equipment to the *Complexe Horticole d'Agadir* of IAV Hassan II. Three laboratory facilities were equipped with PSA support: a Diagnostic Clinic, a Soil-Water-Plant Laboratory, and a greenhouse for research on Integrated Pest Management. These facilities are now available to growers in the very productive agricultural region around Agadir, although more work remains to be done to increase utilization by the growers.

#### *Human Resource Development*

This component of the project was also effective, although several key activities are not yet finished. The success of the University of Minnesota's collaboration with the *Institut Agricole et Veterinaire Hassan II* is due in large part to the personal relationships built up during a collaboration of over 30 years between faculty of the two institutions. Graduate level courses in agribusiness were developed at the Rabat campus of the Institute with the aid of faculty exchanges. Resources should be found to make the *Halle de Technologie* (pilot food processing plant) operational so that graduate students can benefit from the equipment being installed there, and IAV can conduct research and testing for agribusinesses, bringing in much-needed revenue to support continued operation of the equipment.

The institutions and organizations contacted by the Consultant during this study noted various actions they felt should be taken to build on the accomplishments of the MAP Project. In view of the uncertain availability of GOM or donor resources for follow-on activities, we recommend that these needs be prioritized as follows:

*First priority* Activities needed to complete work in progress

*Second Priority* Activities which will consolidate or deepen the achievements of the project

*Third priority* Activities which are based on project achievements but are more developmental and longer-term in nature

#### **Activities to Complete Work in Progress**

##### *Institut Agronomique et Veterinaire Hassan II, Rabat*

(1) To complete work on the *Halle de Technologie*, two short-term technical assistance trips from the U.S. are required for the specialist from UC/Davis (Singh) and the FMC specialist (Bichier). Each should visit once to assist with start-up as soon as all equipment has been delivered (September to December 1998). Depending on subsequent resource availability and needs, a second trip may prove beneficial to assist with any problems encountered during operations.

(2) One trip to the U.S. is needed for the IAV engineer (Mouncif) responsible for installation of the equipment in the *Halle de Technologie* to visit manufacturers of the equipment for training prior to installation and start-up.

*Direction de la Protection des Végétaux des Contrôles Techniques et de Répression des Fraudes (DPV (TRF))*

One or two additional trips to Bouznika by a USDA specialist as necessary should be planned to assure that operations are up to standard and that the facility is fully self-sustaining. A trip planned for June 1998 was canceled and needs to be rescheduled.

**Consolidation Activities**

*Établissement Autonome de Contrôle et de Coordination des Exportations (EACCE)*

(1) Additional travel to Morocco from the U.S. in 1998 and 1999 of specialists in information management and packaging technology. These services will maximize the utilization of the computer facility and packaging laboratory (3 to 5 trips of 2-3 weeks duration).

(2) Exchanges of visits by FDA and EACCE representatives to continue work on the Memorandum of Understanding with FDA concerning EACCE's capacity to control food safety.

*Complexe Horticole d'Agadir (CHA) Institut Agronomique et Vétérinaire Hassan II*

(1) Short-term technical assistance in two phases to develop a strategy for increasing utilization of CHA laboratory and facilities. In the first phase a consultant would develop a work plan for the next phase which has been agreed to by key organizations in the area including IAV, ORMVA, Souss-Massa, APEFEL and others. In the second phase a consultant with experience in rural institutional development would carry out a study of the interface problem and make proposals for consideration by the affected organizations.

*Direction de la Production Végétale (DPV)*

To benefit fully from the computer network already installed at DPV's *Cellule de partenariat* and to develop its capacity to maintain information databases for dissemination within the Ministry and to potential investors, one or two additional trips by a consultant are needed.

**Developmental Activities**

Included in this category are the following activities with agency responsibility as indicated:

- Extension of the wholesale market price system to three additional cities: Inezgane-Agadir, Marrakech, and Meknes (DPAE)
- Additional laboratory equipment for the EACCE Agadir and Berkane laboratories; training support to implement a pesticide surveillance system; additional training in food safety for 26 staff members; internships for inspectors in U.S. food plants; preparation of a manual on food safety procedures for EACCE inspectors and processing plant operators (EACCE)
- Assistance to on-going work with USDA/ARS/Westlaco on new environmentally friendly Medfly controls (SASMA)
- Support to move forward with leasing of prime agricultural properties now managed by SODEA and SOGETA, for the privatization of SODEA, COMAPRA, and SONACOS and policy impact support on improving management of export quota and subsidies (DPV)
- Support on implementing the Plant Variety Protection Law and for moving from an *ad hoc* biosafety committee to a fundamental legal framework for biosafety issues

(DPVCTRF)

- Technical advisory services leading to concrete proposals for an APEFEL-managed extension service to growers in the Agadir area (APEFEL)
- Revision of the underlying cooperative law (a five year project)

11

## PART ONE

### OVERVIEW OF THE MOROCCO AGRIBUSINESS PROMOTION PROJECT

#### 1.1 Goal and Purpose of the Project

The **goal** of the MAP Project is to increase the contribution that the private commercial agribusiness sector makes to GDP, foreign exchange earnings, and employment and income. The **purpose** of the Project is to increase the capacity of the private agribusiness sector in Morocco to produce, package, and market a wide variety of demand-driven, value-added agricultural commodities.

There are four main **components** to the MAP Project:

- (1) Promotion of agribusiness products, investment and marketing, with emphasis on export marketing.
- (2) Improving the agribusiness investment climate through the identification of actionable recommendations for policy and regulatory change.
- (3) Reinforcing industry organization and supporting institutions, with the objective of improving the effectiveness and efficiency of companies, industry and trade associations, and public institutions, and
- (4) Human resource development, to strengthen the human capital needed by agribusiness.

#### 1.2 Implementing Organizations

The project is executed via three **institutional mechanisms**, plus a buy-in:

- A 1992 contract with Development Alternatives Inc. (DAI), which operates an office known locally as Agribusiness-Marketing-Investment (AMI), for overall project technical coordination, with significant efforts devoted to commercial export market development and diversification, technology transfer, investment promotion, policy/regulatory reform, human resource development, and institutional reinforcement.
- A 1995 contract with the University of Minnesota for the Program of Support to Agribusiness (PSA), a component of the MAP project through which Morocco's principal agricultural institute, the Institut Agronomique et Veterinaire Hassan II, responds to private and public sector needs in the areas of agribusiness management training and education, food technology training, applied research and extension for growers, and a pilot food processing plant.
- A 1992 Participating Agency Service Agreement (PASA) between USAID and the U.S. Department of Agriculture (USDA), which provides short-term technical assistance, training, and commodity procurement designed to strengthen the capacity of the MADRP to support and regulate the export of horticultural products in such areas as phytosanitary inspection and quarantine procedures and infrastructure, food safety regulations and procedures, and management and investment information systems, and

- A 1996 buy-in to the USAID Global Bureau's Agricultural Biotechnology for Sustainable Productivity (ABSP) project coordinated by Michigan State University to help implement Morocco's recently approved plant variety protection legislation and develop related biosafety regulations

The MAP project is **managed** by the Ministry of Agriculture and USAID through a Project Management Committee and a Project Steering Committee the latter of which is co-chaired by MADRP and a private sector representative. DAI/AMI works directly with a number of private agribusiness trade associations, private firms, and local training institutes. The key collaborating government agencies which are directly involved in project implementation are: la Direction de la Production Vegetale (DPV/MADRP), la Direction de la Protection des Vegetaux des Contrôles Techniques et de la Repression des Fraudes (DPVCTRF/MADRP), la Direction de la Planification et des Affaires Economiques (DPAE/MADRPM), l'Etablissement Autonome de Controle et de Coordination des Exportations (EACCE) and l'Institut Agronomique et Veterinaire Hassan II (IAV Hassan II).

The MAP Project **strategy** is focussed on the following commodity subsectors:

Fresh vegetables  
 Fresh fruits (except citrus)  
 Processed fruits & vegetables  
 Spices & essential oils  
 Olives & olive oil (except black table olives excluded in 1993))  
 Grain legumes  
 Cut flowers & ornamental plants  
 Grapes, wine, and raisins (raisins excluded in 1993)

The approach to implementing the strategy is to proceed from commodity subsector diagnosis to development and implementation of action plans, while being as flexible and responsive as possible to the needs of private enterprise in the target subsectors.

The eight commodity subsector studies have provided a basis for supporting commercial activities, institutional strengthening, and policy and regulatory reforms. The MAP mid-term evaluation (October 1995), as well as periodic program reviews and implementation reports, have documented significant progress made in a wide range of activities.

### **1.3 Principal Activities Under the Four Components of the Project**

The charts on the following four pages show for each of the four components the interrelationships between objectives, tasks, scope of activities, and major accomplishments. It is intended to give the reader an overview of the many aspects of this large and complex project. The headings in the "Tasks" column cover the fourteen elements of the project and are keyed to corresponding section numbers in Part Two of the report, where a full description is given of accomplishments, sustainability, impact, and follow-up activities.

Component #1  
Promotion of Agribusiness Products Investment and Marketing

Objective	Task	Scope of Activity	Accomplishments
Diversification and Development of Export Trade	2 1 1 Diversify Agribusiness Trade (DAI Task 2)	Contacts with overseas buyers in U S and Europe Assistance at trade shows Drafting of promotional materials	3010 company contacts in US and EU plus 108 in Asia 117 US and 108 European firms visiting Morocco 50 Moroccan firms visiting US Support to Moroccan exhibitors at eight trade shows Articles in trade press publication of promotional materials
		Assist exporters to form trade partnerships Facilitation of export trade including non-traditional markets	Development of twelve trade partnerships between Moroccan and U S or European firms Facilitation of \$67 million in new exports of which \$55 million went to non-traditional markets
Commercial Partnerships Investment Promotion and Technology Transfer	2 1 2 Augment Foreign Investment (DAI Task 1)	Sub-sector studies	9 sub-sector studies
		Pre-feasibility studies	5 pre-feasibility studies
		Company presentations	154 briefings
		Joint venture promotion	12 joint ventures promoted
	2 1 3 Administer the Promotion and Investment Fund (DAI Task 7)	Cost sharing grants from special fund	35 small grants (max \$25 000) awarded 19 large grants (max \$100 000) awarded
	2 1 4 Improve Applied Technologies (DAI Task 3)	Consultation with U S technology suppliers	Introduction of technology on fruit and vegetable packaging forced air cooling improved spice cleaning new fruit varieties and Integrated Pest Management techniques
Workshops courses field days		IPM raspberry trials stone fruit field days post-harvest handling aromatic and medicinal plants pre-cooling etc	

Component #2  
Improving the Agribusiness Climate

Objective	Task	Scope of Activity	Accomplishments
Policy and Regulatory Change	2.2.1 Improving the Policy and Regulatory Environment (DAI Task 6)	Policy/Regulatory Studies	GATT/EU unification study Transport sector study Develop production contracts and arbitration Investor surveys
		Technical assistance equipment	Uniform food safety regulations (See also FACC Component #3) Plant protection plant variety protection plant quarantine (See also DPVCTRF Component #3)
		Consultation Seminars	Consultation on admission of red tomatoes into U.S. Seminar on role of arbitration in dispute resolution
	2.2.2 Intellectual Property Rights Legislation (ABSP/MSU)	Technical assistance Training Equipment	Support to development of Plant Variety Protection Law by GOM Install computer system for on-line access to variety registration catalog submission of PVP applications Sponsorship of Colloquium on PVP law and biosecurity

Component #3  
Reinforcing Industry Organizations and Supporting Institutions

Objective	Task	Scope of Activity	Accomplishments
Institutional Reinforcement	2.3.1 Reinforce Industry Associations and Supporting Institutions (DAI Task 4)	Technical assistance Consultation Trade show support Workshops Study tours	Collaboration with 10 trade and grower associations on trade show support technology transfer plant variety protection producer contracts red tomato admissibility and study tours to the U.S.  Workshops on diversification of exports for four ORMVAs Workshop on ammonia refrigerants for ANAF Workshops on postharvest handling of perishable crops
	2.3.2 Improve Food Safety (DAI/USDA/PASA PSA/U Minnesota)	Technical assistance Equipment Training	Assistance to EACCE Provision of additional food safety laboratory equipment ISO 25 lab procedures established adoption of FDA regulations on low acid and acidified foods adoption of food safety inspection and enforcement procedures certification of inspectors in BPCS training in the U.S. computer equipment installed
Support/Regulate Export of Horticultural Products	2.3.3 Improve Phytosanitary Inspection and Quarantine Procedures (DAI/USDA/PASA)	Technical assistance Training Equipment	Assistance to DPVCTRF Training of plant quarantine and phytosanitary inspectors by USDA/APHIS installation of equipment at Bouznika plant quarantine station workshop on red tomato certification
	2.3.4 Support to Growers in Crop and Soil Sciences (PSA/UM Task B)	Technical assistance Training Equipment Faculty exchange visits	Assistance to IAV Hassan II Complex Horticultural Agadir equip Diagnostic Clinic equip Soil-Plant-Water Testing Laboratory provide computer equipment financing of IPM research greenhouse multiple faculty exchange visits with UM for familiarization with equipment
	2.3.5 Market and Investment Information Services (DAI/USDA/PASA)	Technical assistance Computer equipment	Assistance to DPAE Establish detailed horticultural product market price information system for Casablanca Assistance to DPV Establishment of an investor information service advice on databases procurement of computer equipment

Component #4  
Human Resource Development

Objective	Task	Scope of Activities	Accomplishments
Management Technical and Professional know-how	2 4 1 Food Processing Technology Training (PSA/Univ of Minnesota) (DAI/AMI Purduc U)	Provision of equipment Technical assistance US travel Organization of short courses	Assistance to IAV/Rabat Equip pilot food processing plant to permit graduate-level training in food processing science research and testing for private industry clients and applied research in food canning and freezing
			Short courses in BPCS GMP/HACCP Thermal Process Control food processing technology international food law and quality control
	2 4 2 Agribusiness Management Training (PSA/UM Tasks C A-2)	Develop course materials Faculty exchange visits	Masters -level degree program at IAV/Rabat in Agribusiness Management
			Continuing Education program at IAV/Rabat and Agadir for agribusiness professionals in business management accessing market information investment analysis risk management etc
	2 4 3 Professional Training in U S (DAI/AMI Task 5)	Long-term study abroad	One PhD and two Masters-level candidates completing studies in 1998 at U S universities
		Industry internships	Internship in U S arising from joint venture between U S and Moroccan process control firms

## PART TWO REVIEW OF MAP PROJECT ACTIVITIES

### 2 1 Component #1 Promotion of Agribusiness Products, Investment, and Marketing

#### 2 1 1 Diversify Agribusiness Trade

**Implementing Organizations** DAI/AMI (Task 2)

**Scope of Activities** Contacts with overseas buyers in the U S and Europe support to Moroccan exhibitors at trade shows facilitation of trade partnerships

#### **Accomplishments**

*Facilitating contacts with overseas buyers*

(1) A total of 1 397 contacts were made with U S firms on behalf of Moroccan exporters as a result of phone mail or direct contact from DAI/AMI in Casablanca and the MTDC office of the project at DAI in Bethesda MD during visits of Moroccan delegations to the U S and at trade shows where support was provided by DAI/MTDC to Moroccan companies exhibiting or visiting

(2) A total of 1 513 contacts with European firms were made by DAI/AMI from Casablanca and during visits of Moroccan delegations to Europe and participation at trade shows where support was provided by DAI/AMI

(3) DAI/AMI and the MTDC office supported Moroccan exhibitors at U S trade shows including the Fancy Food and Confection Show (three times) the Produce Marketing Show (twice) the Food Ingredients Show (once) and the Natural Products Show (once) Moroccans visits to other shows such as the Beer and Beverage Show were funded by the project In Europe MAPP support was provided twice to exhibitors at the ANUGA show

(4) DAI/AMI facilitated the visits to Morocco of 117 U S companies interested in trade or investment including those participating in Moroccan trade shows and other delegations (This figure is included in item #1 above )

(5) Moroccan products were publicized in promotion material developed by DAI/AMI and by articles placed in the trade press in the U S Europe and Morocco

(6) In July 1997 DAI/AMI organized jointly with Wafabank a successful conference on the U S market for olive oil focusing on ways to add value to the product by moving from bulk shipments to consumer packages

*Assisting exporters to develop new markets*

(7) The project helped promote new trade partnerships in Europe and the U S by identifying and bringing together both buyers and sellers By the end of the project \$67 million in export sales had been achieved as a result of DAI/AMI promotional efforts Products included fresh tomatoes fresh and frozen strawberries capers herbs and spices olives frozen peppers apricot pulp and roses Particularly impressive was the growth of strawberry exports to Europe as a result of MAPP brokering efforts Morocco s share of that market went from 19% to 42% over the life of the project

## **Impact**

These activities had a significant impact on Moroccan foreign trade. Of the \$67 million in new exports, \$55 million went to non-traditional markets (markets for less than 10% of Morocco's 1992 exports of a given product) and boosted export product diversification by \$38 million (products which represented less than 2% of Morocco's 1992 agricultural exports).

Recognizing the gradual decline in the percentage of exports represented by canned products, DAI/AMI moved early on to encourage development of frozen products. By facilitating contacts between U.S. and Moroccan businesses and improving mutual understanding of business practices, the groundwork has been laid for substantial additional trade in the years to come. Trade agreements are often the basis for later joint investments by the two parties. Thus, some of the 12 trade deals facilitated by the project appear again as investments in the following section.

## **Sustainability**

The many private sector contacts facilitated by DAI/AMI will continue to provide the means to sustain increases in Moroccan export trade. Plans are being made by DPV to assume limited investment information functions in its *Cellule de partenariat*. DPV has proposed a *Comité mixte de concertation et de promotion de la coopération morocco-américaine* in which would be represented the Ministry of Agriculture and the private sector. It would promote trade and investment between the two countries. As noted elsewhere in this report, we believe that the Ministry has a supporting, informational type of role to play, but that the private sector organizations such as the U.S.-Moroccan Trade and Investment Council, formed following the signature of the Trade and Investment Framework Agreement (TIFA) between Morocco and the U.S., should take the initiative.

## **2.1.2 Augment Foreign Investment**

**Implementing Organizations:** AMI/DAI (Task 1), USDA/PASA in collaboration with DPV/DPMVIA.

**Scope of Activities:** Sub-sector studies, pre-feasibility studies, company presentations, joint venture promotion.

### **Accomplishments**

- (1) Eight sub-sector studies were prepared for the guidance of Moroccan and foreign investors: olives and olive oil, early vegetables, cut flowers, spices/essential oils/medicinal plants, wine and table grapes, processed fruit and vegetables, fresh fruit, and grain legumes.
- (2) Five pre-feasibility studies of potential investment projects were prepared: Mobile IQF unit, Fresh-cut vegetables, integrated potato processing, Nopalitos (cactus), and apricot drying and freezing.
- (3) Twelve joint ventures were promoted between Moroccan and American firms in: irrigation equipment (Lindsay Irrigation and Mahgreb Tube), artichoke seed distribution, melon exporting (Lindeman), nursery systems, strawberry plant nursery, herbal product distribution, greenhouse tomatoes, food plant safety inspections, beer marketing, beer distribution, organic soil amendments, and soil inoculation.

(Note: Some of these projects benefitted from Promotion and Investment Fund grants as reported in Section 2.1.3.)

4) In the U.S. briefings on Moroccan investment potential were provided to 154 firms.

### **Impact**

AMI/DAI tracks the number of joint ventures promoted rather than the actual value of the investment. However, by meeting and exceeding the number of investment projects targeted for the life of the contract, DAI/AMI has clearly had a very significant impact on Moroccan-U.S. trade and investment.

### **Sustainability**

See remarks on Sustainability in Section 2.1.1.

## **2.1.3 Administer the Promotion and Investment Fund (PIF)**

### **Implementing Organizations** DAI/AMI (Task 7)

### **Scope of Activities** Cost sharing grants

### **Accomplishments**

The purpose of the PIF is to reduce the risk associated with development of new markets, products, technologies, and services through cost-sharing. The PIF covers market research, market promotion, pre-investment studies, product research and development, and management services. The maximum amount for small grants is \$25,000 and for large grants up to \$100,000. Demand for this service was less than anticipated and as a result some funds were reprogrammed for other project uses. Thirty-five applications for small grants were approved and 19 for large grants. Some examples of grants are as follows:

- (1) A joint award to SASMA (a private applied agricultural research service) and DPVCTRF in connection with the medfly trapping program (as part of the effort to add red tomatoes to the USDA admissible products list)
- (2) A large award to Les Fermes du Levant to produce mycorrhizae for soil amendments
- (3) A large award for a high-altitude strawberry nursery (CASEM and EMCO-Cal)
- (4) Melon marketing and quality control project for Lindeman (US company)
- (5) Modified atmosphere packaging
- (6) Trial of non-refrigerated truck transport
- (7) A grant for argan oil production to ELSARGANE
- (8) Introduction of new designs for essential oil distillation and herb drying equipment
- (9) Organic plant production for aromatherapy and cosmetic use (Nectarome)

### **Sustainability**

The commercial success of these investments will determine the degree of ultimate sustainability and replication.

## **2 1 4 Improved Applied Technologies**

**Implementing Organizations** DAI/AMI (Task 3) UM/PSA and IAV/CHA

**Scope of Activities** Consultation with U S technology suppliers facilitation of contacts with Moroccan users workshops courses field days

### **Accomplishments**

The MAP Project identified and facilitated commercial introduction of new technologies in production packaging and processing and adapted them so as to be sustainable in Morocco DAI/AMI considers the technology transferred when it is imported commercially and when its impacts can be identified at the farm firm or organization level These technologies included among others

- (1) Research and consultation on improving fruit and vegetable packaging materials to reduce losses caused by deterioration in cardboard fruit shipping containers This will allow Moroccan shippers to use forced air cooling effectively Adoption of new materials by shippers began in 1998
- (2) Forced air cooling systems were introduced to improve produce shelf storage capacity and quality through pre-cooling techniques U S forced-air cooling equipment was purchased in May 1998
- (3) Introduction of improved spice cleaning methods leading to purchase and installation of equipment from the U S company Carter Day by the Moroccan company Forafric
- (4) Introduction of new fruit and vegetable varieties New strawberry plant sources were identified so that Morocco could reduce its dependence on competitors in the EU market such as Spain The Sweet Charley variety was introduced from the U S A new variety of artichoke (Imperial Star) was introduced from the U S Introduction of low chill peach varieties
- (5) Integrated Pest Management techniques were introduced with assistance from the University of Minnesota/PSA project at the IAV Hassan II university
- (6) Introduction of the HACCP system of food safety management
- (7) Workshops and field days were held on Integrated Pest Management raspberry field trials stone fruit field days post-harvest handling asparagus aromatic and medicinal plants frozen fruit and vegetables and pre-cooling

### **Impact**

As of December 1997 a total of 155 firms had adopted new technology as a result of DAI/AMI efforts increasing Morocco s capability to export higher quality products acceptable on world markets Integrated Pest Management techniques were introduced to Morocco and research is going forward at the Complexe Horticole d Agadir (Hassan II) New varieties of fruits and vegetables have been introduced which will open up new markets for Moroccan exports

### **Sustainability**

Contacts between U S and Moroccan firms initiated by DAI/AMI will continue to facilitate technology transfer The CASEM firm is now doing annual trials on new fruit varieties and tree fruit nurseries also continue to introduce new varieties CHA will increasingly be involved in IPM research and with the technology transfer associated with that research

## **2 2 Improving the Agribusiness Climate**

### **2 2 1 Improving the Policy and Regulatory Environment**

**Implementing Organizations** DAI/AMI (Task 6) and DPV DPVCTRF EACCE APEFEL SASMA and others

**Scope of Activities** Policy and regulatory studies consultation seminars

#### **Accomplishments**

- (1) Study on the impact of the GATT Accord and EU market unification and expansion on the competitiveness of Moroccan exports
- (2) Study of the Moroccan International Transport Sector to identify constraints to road transport. With intervention of the Ministry of Agriculture with the Customs Directorate approval was obtained for single-point inspection of frozen goods by truck resulting in time savings and reduction in risk premiums of over \$1 million annually
- (3) Development of model agricultural commodity contracts and arbitration procedures to resolve disputes between growers and buyers. Model contracts have been adopted for commercial use
- (4) Support to the "red tomato initiative" aimed at gaining USDA authorization for import of Moroccan red tomatoes. MAP provided a broad range of support including developing contacts with USDA/APHIS through the PASA agreement developing with SASMA a medfly trapping program (supported by a PIF grant) and an environmentally friendly medfly control product (SureDye) devising solutions to logistic and commercial constraints, including greenhouse and packaging materials and combined truck-air shipment to the U S via Europe
- (5) Survey of American company representatives visiting Morocco to determine why U S trade and investment in Morocco has been low. Obstacles mentioned were the lack of plant registration with the FDA, the limited use of labels in English and the poor responsiveness of Moroccans to communications from U S buyers
- (6) Surveys of EU buyers (1994) and North American buyers (1998) which showed that poor business practices were hurting Moroccan exports. Good quality low prices and sensitivity to buyer requirements will keep Morocco in the market
- (7) Assistance through PASA in developing uniform food safety regulations (see Section 2 3 2 on EACCE actions)
- (8) Assistance to DPVCTRF in plant protection plant variety protection and plant quarantine procedures (See Section 2 3 3)

#### **Impact**

All the above studies listed above have had a positive impact on the climate for agribusiness in Morocco. For example the transport sector study led to a reduction in excess cost due to administrative delays from FF 18 000 to FF 10 000 resulting in annual savings of at least \$1 million and enhanced competitiveness of Moroccan exports. MAP involvement in the red tomato initiative helped complete the dossier and bring the initiative to the point where all necessary actions have been taken on the Moroccan side to achieve USDA approval for import of Moroccan tomatoes. Opening

of the US market for tomatoes will give a new impulse to Moroccan tomato exports which have begun to experience restrictions on exports to the EU. MAP's work with EACCE on food safety measures under all three of its institutional mechanisms contributes to improving access to the US market and increasing buyer confidence in the quality of Moroccan products. An impact already achieved is the reduction in the number of Moroccan firms on FDA's automatic detention list from 40 in 1994 to zero in 1997. The use of production contracts, if applied widely, should lead to better quality raw material and more reliable supply.

### **Sustainability**

EACCE and DPVCTRF have the capacity to continue their activities in food safety, plant variety protection, and red tomato phytosanitary controls. Transport issues are now the concern of a recently formed interministerial commission.

## **2.2.2 Intellectual Property Rights Legislation**

**Implementing Organizations:** Agricultural Biotechnology for Sustainable Productivity (ABSP) Project/Michigan State University in collaboration with DPVCTRF with educational and promotional support from AMI/DAI.

**Scope of Services:** Technical assistance, training, equipment.

### **Accomplishments**

- (1) National seminar on plant variety protection organized with the Ministry of Agriculture in 1993 which exposed the problem Morocco was experiencing in obtaining new crop varieties and germplasm due to lack of legal protection to patent-holders (based on monitoring by AMI/DAI).
- (2) National Tree Fruit Variety Workshop in 1996 at which the Plant Variety Protection draft law was debated with participation of the Moroccan tree fruit association ANAPROF.
- (3) Assistance in drafting of the Plant Variety Protection law (1995), reviewed and adopted by Parliament in 1996. This puts Morocco in conformance with the International Union for Plant Variety Protection (UPOV) convention and with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) required for affiliation with GATT.
- (4) Strawberry industry tour to Florida and California in 1995 with support from the California Strawberry Commission.
- (5) Tree plant industry tour to Florida and California in 1996 including information on patent procedures and privately-funded R&D.
- (6) Jointly with DPVCTRF organization of an international Colloquium on Plant Variety Protection and Biosafety in Morocco in March 1997 intended to enhance understanding of the law and to accelerate its full implementation by public and private sector entities.
- (7) Additional training in the US was provided in May 1997 to public and private sector personnel.
- (8) Computer equipment and technical assistance to the Service du Contrôle des Semences et Plants unit within DPVCTRF to improve communication between the head office and 14 field stations to provide on-line access to the current variety registration catalog, and to allow for electronic submission of PVP applications from regional centers and private sector breeders.

## **Sustainability**

DPVCTRF and the Ministry of Agriculture have the capacity to provide high-quality service to private and public sector entities wishing to register and protect varieties

### **2 3 Component #3 Reinforcing Industry Organizations and Supporting Institutions**

#### **2 3 1 Reinforcing Industry Organizations and Supporting Institutions**

**Implementing Organizations.** DAI/AMI (Task 4) with USDA/PASA, in collaboration with EACCE DPVCTRF several ORMVAs and numerous trade associations and private organizations

**Scope of Activities** Technical assistance consultation workshops

#### **Accomplishments**

##### *Grower and Trade Associations -*

(1) DAI/AMI worked with trade associations (ADAME ADEPAM ANAPROF APNOR AMPEXFLEURS APEFEL FICOPAM ASPRAM AAA) representing growers and exporters of fresh fruit herbs spices and medicinal plants flowers grapes arganier tree and a food processing federation Assistance to these organizations embraced such activities as audits trade show development management planning plant varietal protection introduction of new technology model producer contract testing red tomato admissibility food safety regulations and others

(2) Working with a cold storage association ANAF a manual on the safe use of ammonia refrigerants was developed by DAI/AMI and assistance was provided at a workshop on refrigeration in 1994

(3) DAI/AMI has worked closely with APEFEL in Agadir as a channel to assist growers and packhouse operators to improve post-harvest handling of perishable crops Assistance was provided at workshops in 1995 (2) 1996 (3) 1997 (2) and 1998 A very successful workshop on tomatoes melons and strawberries presented in 1997 had 48 participants Among other issues it dealt with the critical issue of temperature control in packhouses APEFEL is also the primary association link for work on the red tomato admissibility issue

(4) MAPP organized a tour to the U S for two persons from APEFEL and one from IAV/CHA (Dr Hafidi) to explore how U S land-grant universities work with producer groups and agricultural firms to develop joint research and service units with emphasis on IPM research and on how to communicate information to growers The trip generated thinking about how to manage collaboration between IAV and APEFEL and other organizations in the Souss-Massa region a group which is now referred to as Agripole As a follow-up AMI/DAI outlined for APEFEL the way advisory boards and marketing orders work with respect to research and development acreage and marketing restrictions and the generating of funds to underwrite university-industry programs

(5) Trade associations such as AMPEXFLEUR have benefitted from DAI/AMI support at U S and European trade shows as described in Section 2 1 1 on Trade Diversification

##### *Supporting Institutions*

(6) DAI/AMI collaborated with four ORMVAs in conducting workshops on diversification of

agricultural exports

(7) The MAP Project through the USDA/PASA and DAI/AMI has assisted EACCE over much of the life of the project in terms of technical assistance and provision of equipment in support of improving food safety. These activities are described in Section 2.3.2 on Food Safety.

(8) Assistance to DPVTCRF also through USDA/PASA included technical assistance and equipment for the Bouznika plant quarantine station as described in Section 2.3.3 on Phytosanitary and Quarantine procedures and invitational travel to the U.S. organized by USDA/APHIS.

### **Impact**

Producers have benefitted by the introduction of new technology and information on crop diversification at workshops organized with grower associations. Main beneficiaries were associations growing and promoting fresh fruit and vegetable exports and these organizations have expressed their great satisfaction with the MAP Project. FICOPAM representing food processors acknowledges that their members benefitted from GMP/HACCP and BPCS training. By increased participation in U.S. and European trade shows, trade associations have benefitted by developing new business contacts resulting in the diversification of export markets. MAPP support to supporting institutions such as EACCE and DPVCTRF resulted in an overall improvement in the control of food safety and plant material contributing strongly to an improved image for Morocco as a supplier of quality food products.

### **Sustainability**

While some additional support to EACCE and DPVCTRF is recommended elsewhere in this report, these entities are to a great extent self-sufficient. The issue of APEFEL involvement in improving extension services in the Agadir area and in collaboration with IAV/CHA on research and testing deserves further attention as it has the potential to contribute to both the sustainability of the CHA laboratory complex and improvement in agricultural production in the area. Likewise, the further development of Agripole has great potential for inter-sectorial cooperation in the Agadir area.

### **Follow-up Activities**

A study by an outside consultant of the interface between and among growers and parties to the Agripole agreement including at least one grower association (APEFEL), ORMVA Souss-Massa and IAV/CHA is strongly recommended. The further development of Agripole and its future role would be a part of the study. The study should produce well-founded proposals for ways of resolving some of the outstanding problems in this area. There is potential here for further development of public-private sector cooperation and to the decentralization of government services.

### **2.3.2 Improve Food Safety**

**Implementing Organizations** DAI/PASA (Task 4) in collaboration with the Etablissement Autonome de Contrôle et de Coordination des Exportations (EACCE) and PSA-UM/IAV.

**Scope of Activities** Technical assistance from USDA, FDA, Purdue University, the University of Minnesota and the National Food Processors Association plus provision of laboratory equipment.

## **Accomplishments**

- (1) DAI/AMI Provided additional laboratory equipment to optimize analytical to detect pesticide residues and to verify food product safety and quality (preservatives colorants heavy metals)
- (2) Evaluation and consultation on laboratory management by a USDA specialist during three trips to Morocco in 1997 and 1998 to make it consistent with International Standards Office 25 (ISO 25) guidelines ISO 25 certification is expected in June 1998
- (3) Training of an EACCE staff member in the U S by the manufacturer of the newly installed equipment for carbamate pesticide residue detection
- (4) Adoption of food safety inspection and enforcement procedures at food processing plants to comply with FDA requirements on Good Management Practices (GMP) and Low Acid Canned Foods/Acidified Foods (LACF/AF) procedures for products imported into the U S Relatedly EACCE assisted in clearing up problems with FDA process filings for a number of food processors
- (5) Participation of EACCE inspectors in training courses AMI/Purdue/FDA/NFPA training course in thermal and acidified food production (1993) Thermal Process Training (1994) GMP/HACCP (1994 and 1996) LACF/AF (1995 and 1996) Better Process Control School (FDA) certification training (1996) Thirty-nine plant engineers and inspectors were certified by FDA in 1996 The FDA-approved BPCS school offered in 1996 with Purdue University was the first one authorized by FDA on the African continent and the only one given in French [See also Section 2.4.2 on Food Processing Technology Training for information on PSA/UM support to additional food processing short courses including BPCS training in 1998 This function has now been transferred to LAV Hassan II which plans to put on FDA-authorized BPCS every two years ]
- (6) Transposition into Moroccan draft administrative code of FDA regulations on low acid and acidified foods An umbrella food safety enforcement law was submitted to Parliament in 1997 although adoption of a formal national code applying to both domestic and export food products has not yet taken place
- (7) Identification by DAI/AMI of problems with FDA detentions of Moroccan processed food products at US ports and recommendations on resolving problems The number of firms on the automatic detention list has been reduced from 40 to zero
- (8) Provision of computer equipment by USDA to automate EACCE management of data on export shipment quality control listing of certified exporters U S and European import standards and market information Installation was accompanied by technical assistance and training by a USDA computer specialist during four trips to Morocco between 1995 and 1998 As a side benefit data recorded by EACCE regional delegations at point of export of fresh fruit and vegetables and transmitted by computer to headquarters permits the accurate tabulation of Morocco s exports of these categories of food products
- (9) A Moroccan firm has formed a partnership with the US firm PhF to provide training and process authority services to Moroccan processors on a fee basis
- (10) With assistance from MAP EACCE is now a part of the American Spice Trade Association spice testing laboratory network
- (11) Provision of equipment and technical assistance by DAI/AMI for a new packaging quality control and testing laboratory at EACCE

## **Impact**

EACCE officials state that the impact of the MAP Project on their organization has been in three

areas expertise training and equipment They believe that EACCE is now better equipped to fulfill its responsibilities in terms of

- Initial and annual certification of fruit and vegetable processing plants (40 plants) and fish processing plants (40 plants) with respect to thermal processing container closures and sanitation in accordance with FDA and EU standards
- Quality control of fresh horticultural products at point of export
- Food safety control through laboratory analysis to detect pesticide residues
- Testing for integrity of containers (cans glass poly bags cartons)

The project has contributed to increasing the potential for Moroccan exports to the U S and elsewhere by introducing tighter process and sanitary controls at food processing plants and having a certified laboratory to detect pesticide residues on fresh fruit and vegetables At least twelve training courses on GMP/HACCP and BPCS targeted at the private sector were organized by the MAP project and were attended by several hundred representatives of food processing companies and EACCE As a result these processors should be better able to control manufacturing processes and increase acceptance of their products in US and other markets Grouping private sector and public sector representatives in training sessions meant that they would be working from the same information base (Note however that FDA puts all responsibility for producing safe food on the processor s shoulders not on a regulatory agency such as EACCE

### **Sustainability**

EACCE is sustainable as an organization as it is supported by a tax on all food imports which is equivalent to 0.1% of their value Operationally USDA specialist Michael Wehr has concluded that sustainability of the laboratory is adequate insofar as training workload planning, and budgeting are concerned He cautioned however that budgeting for equipment maintenance and repair must be based on historical experience and the level of equipment performance required and that annual workload planning should take place well in advance

### **Follow-up Activities**

(1) One or two additional trips (one in late 1998 and one in 1999) for the USDA Management Information System specialist (Gaillard) The objective of the trips would be fine tuning of the computer system and oversight of installation of a new system for accessing the EACCE intranet by outside users from the Internet via a dedicated line This will facilitate dissemination of data on exports collected by EACCE and to EACCE's database on Moroccan export regulations and regulations of importing countries

(2) One or two additional trips by the U S packaging specialists to assist the EACCE materials laboratory with testing procedures for metal glass and plastic packaging materials as well as advising on procedures for regulating workload and personnel requirements for the new EACCE packaging quality control laboratory

(3) Exchanges of visits by EACCE and FDA personnel to continue work on a Memorandum of Understanding that would recognize the level of safety assured by EACCE procedures and simplify import of Moroccan food products into the U S

### **2 3 3 Improve Phytosanitary Inspection and Quarantine Procedures**

**Implementing Organizations** DAI and USDA/PASA (Task 4) in collaboration with the DPVCTRF

**Scope of Activities** Technical assistance training and procurement of equipment by USDA

#### **Accomplishments**

- (1) USDA helped to equip the Bouznika Plant Quarantine Station (the first such station in Morocco) enhancing the capacity of DPVCTRF to regulate the importation of new plants and planting materials and the inspection and quarantine of Moroccan plant species destined for export
- (2) USDA/APHIS personnel provided technical assistance and training in operation of the equipment and in work procedures (on-going) Assistance was also provided in inspection procedures at ports airports and other ports of entry and on the control of pesticide use
- (3) DPVCTRF along with other agencies was assisted by USDA in the matter of the technical dossier for the export of red tomatoes DPVCTRF was responsible for the establishment of a Medfly trapping network (with assistance from APEFEL in the Agadir area)
- (4) Support to travel of DPVCTRF personnel to a workshop in the Philippines on plant protection and quarantine put on by APHIS
- (5) Travel to the U S of three DPVCTRF staff persons to USDA facilities in the Washington D C area and the Miami airport to exchange information on quarantine procedures (ongoing)

#### **Impact**

With the establishment of its first plant inspection and quarantine station Morocco can insure that imported and export plant material will be free of diseases and insects Support provided by the MAP Project to this project thereby contributes to the overall improvement of the climate for agribusiness in Morocco

#### **Sustainability**

As a department of the Ministry DPVCTRF should have no problem sustaining the quarantine station operations once personnel are fully trained

#### **Follow-up Activities**

Further support to the DPVCTRF is needed to develop its capacity to effectively operate the Bouznika Quarantine Station The station is still in its start-up phase and some items of equipment have not been put into service This is in part due to lack of training in the use of the equipment Other needs include improvement in sample handling procedures and work management practices These needs are being addressed in part by an observation tour to the U S for three person from DPVCTRF currently underway A visit to Bouznika by a USDA specialist in June was canceled and should be rescheduled

## **2 3 4 Support to Growers in Crop and Soil Sciences**

**Implementing Organizations** UM/PSA (Tasks B-1 B-2 B-3) in collaboration with the Complexe Horticole d Agadir IAV Hassan II

**Scope of Activities/Modalities** Technical assistance training faculty exchanges equipment

### **Accomplishments**

- (1) Equip Diagnostic Clinic for analysis of plant material to identify disease and insect attack on locally-grown crops. The clinic was opened in January 1997 and 340 samples were received from growers and processed in the first year of operation. A diagnostician was hired and trained by PSA. A computer software program was developed by PSA for the clinic to facilitate record keeping generation of reports to growers and billing. With a base charge per sample of Dh 200 total revenue of Dh 68 000 was generated.
- (2) Equip Soil-Plant-Water Testing Laboratory. Dedicated in October 1997 the lab has received and processed over 300 samples since then. Two CHA technicians staff the lab. A computer program was developed to automate data entry and retrieval and to generate reports and invoices to growers.
- (3) Multiple visits to the U S by three CHA faculty coordinators and other staff were arranged by the UM and a number of U S specialists visited CHA to help advance the program.
- (4) An environment-controlled greenhouse for Integrated Pest Management research was built on the IAV campus with PSA funds and dedicated in October 1997. Initial research is being concentrated on tomatoes. An PSA-funded insectary for raising insects to be used in trials is under construction. The project also sponsored visits by two IPM specialists to Morocco and provided advice to CHA faculty on IPM programming.
- (5) IAV organized and hosted an international symposium on Integrated Production and Protection (IPP) in May 1997 with assistance from PSA. Two hundred attended from Morocco and 100 from abroad.
- (6) With funding from PSA, IAV organized two technology transfer outreach meetings for growers to discuss current knowledge of IPM practices. The January 1997 meeting was attended by 150 growers while 400 attended the May 1998 session.
- (7) With enhanced expertise resulting from exchanges of specialists with UM IAV was able to set up several IPM networks with groups of growers in the Agadir area.
- (8) With financial support from PSA, IAV organized a two-day workshop on fertigation of tomatoes in February 1998 which was co-sponsored by APEFEL.

### **Impact**

The MAP Project through the PSA/UM component at the Complexe Horticole d Agadir has made a substantial and highly visible contribution to technology in support of the private agribusiness sector of Morocco. CHA reports grower satisfaction with the facility and this was confirmed by an official of APEFEL an association representing fruit and vegetable exporters.

CHA's impact on the local grower community. CHA's clientele for laboratory and other technical services was heightened by the formation of a grower-based Advisory Board in 1997. The Board met four times in 1997 and twice so far in 1998 to discuss joint research in such areas as IPM. CHA

hopes to use the Board to fund additional research on important subjects such as fertigation. CHA recently took the initiative to help form what is called Agripole, an ambitious attempt to form a coordinating body consisting of four grower associations, two local chambers of commerce, ORMVA Souss-Massa, SASMA, EACCE, DPVCTRF, DPV and IAV. The group is seen by CHA as a means to seek closer cooperation in agricultural research and extension between the public and private sectors and at the same time reach a greater number of growers with improved technologies.

### **Sustainability**

The sustainability of the grower service facilities is a matter of concern to CHA and is currently the subject of much discussion and planning. Lacking substantial institutional budgetary support for operation of the facilities (other than faculty salaries and utilities), CHA is dependent on the collection of user fees from growers, which as yet are not nearly enough to sustain it. For example, the Director has estimated that approximately five times as many samples (roughly 1500) would have to be processed through the Soil-Plant-Water lab to make it self-sustaining. So far, efforts at publicizing the laboratories have not done as much as had been hoped. This is a work in progress, and a number of ideas have been floated, including having faculty members spend a major portion of their time in the field, visiting growers and acquainting them with the services. The Agripole initiative has the potential to deal with the interface problem, though it is too early to say if this body can help close that traditional gap between the sectors.

### **Follow-up Activities**

To achieve financial sustainability, the Diagnostic Clinic and the Soil-Water-Plant Laboratory at CHA, funded by the MAP Project, need to process a much higher volume of samples from growers of fruit and vegetable crops. The need to enlarge its client base is recognized by CHA and efforts are being made to deal with this interface problem, as described in Section 2.3.4. It is recommended that a short-term consultant be retained to examine the many factors which interact to affect the sustainability of grower services offered by CHA. While there are clearly political issues involved, an analysis of the situation by an outside consultant, whether Moroccan or American, with experience with rural institution building, could produce proposals for consideration by the newly created coordinating body, 'Agripole'. An important part of the analysis should be the potential role of APEFEL in reaching out to growers. We recommend that CHA raise the issue with the parties concerned to see if there is a consensus on the need and utility of such a study. There is a risk that without the support of growers and grower organizations, as well as public institutions like ORMVA, the laboratory facilities may not be financially self-sustaining.

A good beginning has been made with establishment of a grower Advisory Board and signing of an agreement to create a coordinating body known as Agripole, consisting of representatives from ORMVA Souss-Massa, EACCE, SASMA, DPVCTRF, INRA, and IAV, plus four grower groups and two local chambers of commerce. The group is seen as a means of achieving closer cooperation in agricultural research and extension between the public and private sectors. A study of the market for laboratory services and the attitude of growers toward IAV, commissioned by UM/PSA and IAV/CHA, is currently being carried out by a local consulting firm, Marketis Consultants, using a grower questionnaire developed by the firm and IAV faculty. The firm will also draft a business plan.

for CHA services. This work could form the basis for the study by an outside consultant recommended in the above paragraph. It would be carried out in two phases: first drawing up terms of reference that are clearly understood and agreed to by all the affected organizations, and second making specific recommendations for actions.

### **2.3.5 Market and Investment Information Services**

**Implementing Organizations:** DAI/AMI and USDA/PASA with DPAE and DPV

**Scope of Activities:** Technical assistance, computer equipment

#### **Accomplishments**

- (1) DAI/AMI carried out a survey of private operators and the public sector to determine the need for a horticultural product price reporting system. This would supplement DPAE's existing services in reporting on domestic market prices on key commodities, as well as cereal export markets and French produce markets. The survey established the need for a wholesale market price reporting system similar to one developed by DAI/AMI for AMPEXFLEUR in 1994 which reports flower market prices daily by fax.
- (2) A consultant, a retired USDA market news reporter, developed and trained DPAE staff to implement a detailed list of classifications which breaks out horticultural products by size, whether washed or unwashed, etc. during three visits to Morocco.
- (3) Collaboration with DPAE established a wholesale price reporting system in Casablanca. Same-day fax service for subscribers began in May 1997. Training was provided on how to extend this service to other cities.
- (4) Short-term technical assistance through USDA to DPV in establishing an investment promotion information unit (*Cellule de promotion de partenariat*) in its *Division des Projets de Mise en Valeur et de l'Industrie Agricole (DPMVIA)*. USDA consultants assisted in the installation of a LAN network including procurement of equipment and related database management and software training to improve dissemination of information. Recommendations were also made on critical databases which DPV should acquire and maintain so that it can provide information to investors on crop production, food processing, land availability, weather and climate data, relevant legal and regulatory documents, and a commercial/professional contact database.

#### **Impact**

Prices of horticultural products in the wholesale market of Casablanca are now available daily by fax to subscribers. By increasing the transparency of market transactions, producers and marketers are better equipped to market their products on optimum terms. The effort was a good example of the transfer of a low-cost, easily managed market information system which is highly valued by Moroccan firms and producer associations.

#### **Sustainability/Follow-up Activities**

It is recommended that DPAE extend this successful service to three other major markets: Inezgane-Agadir, Marrakech, and Meknes. See also comment on sustainability under Section 2.1.1.

## **2 4 Component #4 Human Resource Development**

### **2 4 1 Food Processing Technology Training**

**Implementing Organizations** University of Minnesota/PSA (Task C Task A-2) DAI/AMI (Task 3) with Purdue University in collaboration with IAV Hassan II Rabat

**Scope of Activities** Technical assistance and equipping of pilot food processing plant sponsorship of short courses in food quality and safety courses for food industry professionals (Continuing Education)

#### **Accomplishments**

- (1) Development by DAI/AMI of FDA-certified Better Process Control School (BPCS) in 1966 together with Purdue University GMP/HACCP training in 1994 and 1995 and Thermal Process training in 1995 and 1996
- (2) Participation in four BPCSs held in the US in 1997 and 1998 by IAV faculty in preparation for similar schools to be offered at IAV
- (3) Sponsorship by IAV/UM (PSA) of short courses in Food Processing Technology (Oct 1996) GMP/HACCP (April 1997) and in International Food Law and Quality Control (December 1997) with lecturers from UM FDA FAO and Moroccan institutions The latter two courses attracted more than twenty participants from the food industry who paid fees ranging from Dh 3000 to 4000
- (4) BPCS II course for food industry professionals (including three from Tunisia and Senegal) in April 1998 designed and organized by IAV and UM faculty with FDA participation All forty-seven participants passed and are certified by FDA
- (5) Short-term technical assistance trips by UM faculty -- 2 in 1997 and 3 in 1998 (for BPCS) and six consultation/training visits by IAV faculty to the U S
- (6) Provision of equipment for IAV short courses
- (7) Renovation of pilot food processing plant ( 'Halle de Technologie' ) at IAV Rabat expense
- (8) Provision of pilot plant equipment for canning and freezing of food products at the Halle de Technologie by UM/PSA (\$240 000)

#### **Impact**

IAV Rabat faculty are now equipped and certified to offer BPCS training to agribusiness professionals in Morocco and the region As the only such certified institute in North Africa IAV can attract participants from other countries and realize additional fee income to support its other activities Agribusiness professionals in Morocco are aware of continuing education resources available through IAV and have demonstrated their interest by their willingness to pay fees of Dh 3000-4000 The pilot food processing plant though not yet in service has the potential to reinforce existing food processing training by offering students advanced training in canning and freezing process technology This will create a cadre of food technologists trained in modern food processing technology They are potential employees of Moroccan food processing plants which seek to improve processing to meet increasingly stringent US and EU import standards The pilot plant will also be available to the agro-processing industry to conduct tests on new or improved canned and frozen food products

### **Sustainability**

The sustainability of the above activities has not yet been demonstrated. As the IAV has limited funds to support them, both the continuing education programs and the pilot food processing plant must generate income from services provided to the private sector. IAV is now in a position to offer on a regular basis courses in food processing technology, HACCP/GMP, international food law, and BPCS, and an additional three courses are in planning. Given the interest already generated, there appears to be a reasonable chance that this part of the IAV program will be sustainable. Sustainability will be enhanced by continuing faculty exchange visits with the University of Minnesota under the UM-IAV Linkage Program which will continue the relationship established more than 30 years ago.

The pilot food processing plant will, however, not be sustainable until it is completely equipped, has gone through a start-up phase, and its availability for industry testing has become known. IAV resources to cover operating costs are still in doubt, making it imperative that services be marketed to private industry.

### **Follow-up Activities**

Short-term technical assistance is needed to complete installation of equipment and start-up of the pilot food processing plant at IAV Rabat. While internal funding problems at IAV delayed renovation of the Halle de Technologie and therefore the ordering of equipment, subsequent delays in procurement and shipping were beyond the control of IAV and should not be allowed to prevent timely completion of the facility. The University of Minnesota estimates that less than \$25,000 is needed to provide short-term technical assistance from UC Davis (Singh) and FMC (Bichier) to oversee start-up of all equipment once it is received, a training trip to the US for the Moroccan engineer Mohamed Mouncef, and one additional trip by Singh or Bichier as a contingency against possible equipment problems. On the reasonable assumption that all equipment is ready for start-up in September 1998, most of the above services would be needed in the October to December time period. Additional trips could be envisioned for 1999.

### **2.4.2 Agribusiness Management Training**

**Implementing Organization:** Univ. of Minnesota/PSA (Task A-1) with participation of the Sparks Company, Memphis, TN, in collaboration with IAV Hassan II.

**Scope of Activities:** Develop graduate-level course materials, IAV faculty exchanges, seminars/short courses for agribusiness professionals (Continuing Education).

### **Accomplishments of MAP Project**

(1) Contributed to the development of a Masters-level degree program in Agribusiness Management at the Department of Human Sciences of IAV (Rabat campus) which began in September 1996. Eight IAV faculty members spent a total of 12 person months on the UM campus in 1996 consulting with UM faculty on developing course materials. Six UM faculty co-taught parts of these courses in 1997 and several returned during 1998. A number of seminars open to the profession were offered during these consultations, as well as by Sparks.

(2) Contributed to the development of a Continuing Education program at IAV which offered courses to agribusiness professionals in Rabat and Agadir. Courses of 2 to 10 days in duration were offered in 1997 and 1998 in team (personnel) management accessing U.S. and European markets, strategic business management, risk management, agro-industrial investment analysis, and pricing and competition in international markets. (Note: These are in addition to food processing technology training courses offered by IAV and discussed in Section 2.4.2.)

**Impact** The first two-year Agribusiness Management course cycle will be completed in July 1998 when 10 students will graduate. This group is currently taking part in an internship program with Moroccan agribusiness companies. A second group of ten has completed one year of study, and a third group will begin in September 1998. It is expected that virtually all of these graduates will be employed by private agribusiness companies, thus upgrading management skills in these companies and contributing to their modernization and increased export potential. The popularity of the program can be judged by the fact that more than 20 persons applied for the ten positions available.

The Continuing Education program attracted the participation of many professionals from Moroccan companies. Evaluation of the courses by participants was uniformly positive.

#### **Sustainability/Follow-up Activities**

The graduate level training should be sustainable as costs are provided in the IAV budget. Continuing education courses require fees from participants to be sustainable, but no fees have yet been received for this program. There is a need to continue identifying areas of training which are considered valuable by industry professionals and for which they are willing to pay. Participation by foreign specialists in organizing and presenting certain courses is desirable. It is hoped that the University of Minnesota - IAV Linkage Program can provide this type of support. It is also hoped that the student internship program can encourage corporate participation and perhaps sponsoring of certain training activities.

### **2.4.3 Professional Training in the U.S.**

#### **Implementing Organizations** DAI/AMI (Task 5)

**Scope of Services/Modalities** Long-term degree education at U.S. universities, short courses at U.S. universities, and industry internships at U.S. agribusiness companies.

#### **Accomplishments**

(1) MADRPM provided three candidates for long-term study in the U.S. to be funded by the MAP Project: one PhD candidate in plant pathology at the University of Delaware, an MSc in Agricultural Economics at Purdue University, and an MSc candidate in Agricultural Finance at the University of Minnesota. The MSc in agricultural economics has returned to Morocco and is currently working in DPAAE's Finance Service. The PhD candidate expects to complete his thesis on fungicide resistant strains of potato late blight and return to work at DPVCTRF in June 1998. The other MSc candidate should also finish his studies in June 1998 and return to work at DPAAE.

(2) The demand for short-term training in the U S has been limited by English language requirements and low industry interest. Instead DAI/AMI organized over 120 workshops seminars conferences and field days. Examples are a postharvest workshop on tomatoes melons and strawberries in Agadir and asparagus field days. Also study tours to the U S were organized such as an integrated pest management tour for representatives of EACCE and APEFEL.

(3) There has been limited activity in the case of industry internships in the U S. One company PhF a process authority offered an internship in its U S offices to its Moroccan partner Cabinet Essadki.

**Sustainability/Follow-up Activities** N/A

## PART THREE CONCLUSIONS AND RECOMMENDATIONS

The Consultant's Terms of Reference call for analysis of the significant accomplishments of the MAP Project and their impact on collaborating public and private sector entities and recommendations on follow-up activities by these entities which will help sustain and build on project achievements

### 3.1 General Conclusions

Overall the MAP Project has numerous accomplishments to its credit as described in the preceding section of this report. It has clearly achieved its purpose of increasing the capacity of the private agribusiness sector in Morocco to produce, package and market a wide variety of demand-driven value-added agricultural commodities. Almost without exception public and private sector beneficiaries of the project expressed their satisfaction with the assistance they received. Assessing the degree to which the project reached its goal of increasing the contribution that the private commercial agribusiness sector makes to GDP, foreign exchange earnings and employment and income is beyond the scope of the Consultant's TOR. The latest DAI/AMI quarterly report for the period ending December 1997 documents performance indicators for the project claiming creation of 14,000 jobs for low-income workers (nearly half for women), increased exports of \$67 million of which \$55 million went to non-traditional markets, introduction of 45 new products and 155 firms adopting new technologies -- an impressive record. Most of the activities and institutions with which the project has worked are sustainable and will continue to further the objectives of the MAP Project and in other cases sustainability can be achieved with minimal additional external assistance. Where this is the case specific recommendations are made in the following paragraphs.

### 3.2 Significant Accomplishments and Impact on Collaborating Entities

Section Two of the report examines each of fourteen tasks which make up the four main components of the project and reports on accomplishments, impact on the collaborating entities and on beneficiaries, sustainability and potential follow-on activities. Conclusions from this analysis are summarized below.

#### *Promotion of agribusiness products, investment and marketing*

The Casablanca office of AMI/DAI and the MTDC office at DAI in Bethesda devoted much time to facilitating contacts between Moroccan and U.S. businesses through phone, mail and direct contact including support at U.S. trade shows and by serving as broker on actual trade deals. Development of new trade contacts by similar means in Europe was the responsibility of the AMI/DAI office. These activities had a significant impact on Moroccan foreign trade. New exports worth \$67 million were promoted, of which \$55 million went to non-traditional markets<sup>1</sup> of which \$13 million to the U.S. and boosted export product diversification by \$38 million<sup>2</sup>. MAP Project support was crucial

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<sup>1</sup> Markets for less than 10% of Morocco's 1992 exports of a given product

<sup>2</sup> Products which represented less than 2% of Morocco's 1992 agricultural exports

in bringing the "red tomato initiative" to the point where only final approval by U.S. authorities remains before this important market is opened.

The European Union remains the principal market outlet for Moroccan agricultural products. This is not unexpected given Morocco's proximity to European markets -- especially to its traditional French market where language differences are minimized -- and to European business practices. What may not have been anticipated at the outset was how few Moroccan food processing companies were willing to make the adjustment (and invest the money) to exploit U.S. markets with its different requirements as to quality, food safety, packaging, publicity and promotion, communications and large volume purchase on strict delivery schedules. However, these differences are diminishing as stricter EU food safety standards are being imposed on processed products and large-volume supermarket buyers impose their own stricter standards for both processed and fresh product. AMI/DAI recognized these problems early on and devoted a large part of project resources to food safety issues, as discussed below, and worked with exporters to improve packaging and product presentation. Given these heightened standards, and with the prospect of loss of preferential access to the EU market, the more progressive Moroccan exporters are seeking to tap into the U.S. market and it is these enterprises who benefited most from the MAP Project.

AMI/DAI activities included transfer to Morocco of technology developed in the U.S. In several instances, notably in the case of spice cleaning, strawberry plant production and food safety procedures, the transfer was accompanied by joint ventures, increasing the sustainability of the transfer. A very important and highly regarded contribution of the project in terms of technology transfer was the organization of workshops, seminars and short courses on a variety of subjects in cooperation with USDA/PASA and Moroccan institutions. Examples include Integrated Pest Management, post-harvest handling procedures in packhouses, Better Process Control School and GMP/HACCP.

#### *Improving the agribusiness climate*

This report documents a number of useful reports and seminars prepared by AMI/DAI which contributed to an improved climate for agribusiness, such as those relating to the impact of GATT and EU market unification on Moroccan exports, identification of constraints in truck transport and difficulties in enforcing grower contracts. The latter two reports led to adoption of legislation to implement MAPP recommendations, simplifying road transport inspection procedures and crop production contracts and arbitration. With support from the ABSP Project with Michigan State University, coordinated by MAPP, a workshop on plant variety protection was organized. European authorities assisted the Ministry of Agriculture in the drafting of a Plant Variety Protection Law which was passed by Parliament, clearing the way for introduction of new plant varieties by protecting the intellectual property of the developers. Other important actions which improved the agribusiness climate are summarized below, including support to red tomato exports to the U.S., food safety controls and plant quarantine procedures. Morocco continues to suffer from an image problem in the eyes of both European and American businesses. Much remains to be done to improve the reputation of Moroccan agribusiness for slow response to changing market conditions and poor responsiveness to communications. The multiplicity of small, conservative family-owned enterprises has slowed adoption of new business practices.

#### *Reinforcing industry organizations and supporting institutions*

MAPP made very significant contributions in this area through its work with both public regulatory agencies such as EACCE and DPVCTRF and with private trade and grower associations. These efforts had positive effects on the overall agribusiness climate. The safety of Moroccan food products in foreign markets was greatly enhanced by technical assistance and equipment provided to EACCE laboratories which are now better equipped to do microbiological analysis of processed food and testing for pesticide residues and heavy metals in all types of food products. Improved plant quarantine procedures and legislation to protect intellectual property with respect to patents on improved plant varieties were other important contributions of the project through DPVCTRF. DAI/AMI worked extensively to strengthen trade and grower associations. Seminars and workshops were particularly appreciated as noted below. Associations with good management, strong member support, and an openness to new ways of doing things benefitted from project assistance. Those that did not benefitted only marginally.

The Program of Support to Agribusiness (PSA) component of the MAP Project, operated by the University of Minnesota, provided technical assistance, training, and equipment to the *Complexe Horticole d'Agadir* of IAV Hassan II. Three laboratory facilities and applied research services were equipped with PSA support: a Diagnostic Clinic, a Plant-Soil-Water Laboratory, and a greenhouse for research on Integrated Pest Management. These facilities are now available to growers in the very productive agricultural region around Agadir, although more work remains to be done to increase utilization by the growers.

#### *Human Resource Development*

This component of the project was also effective, although several key activities are not yet finished. The success of the University of Minnesota's collaboration with the *Institut Agricole et Vétérinaire Hassan II* is due in large part to the personal relationships built up during a collaboration of over 30 years between faculty of the two institutions. Graduate level courses in agribusiness were developed at the Rabat campus of the Institute with the aid of faculty exchanges. Resources should be found to make the Halle de Technologie (pilot food processing plant) operational so that graduate students can benefit from the equipment being installed there and IAV can conduct research and testing for agribusinesses, bringing in much-needed revenue to support continued operation of the equipment. Fortunately, the Linkage Program which unites them will continue after the MAP Project terminates, though it seems likely to be limited to occasional faculty exchanges.

### **3.3 Recommendations for Follow-up Activities**

The Consultant's Terms of Reference call for recommendations on follow-up activities for key public and private sector institutions or groups to build on MAPP achievements, based on an assessment of where high-priority work remains to be done. These follow-up activities should consolidate progress made under MAPP and help to deepen its sustainable impact.

Following discussions of report findings with the MAP Project Steering Committee, it was decided to categorize recommended follow-on activities as follows:

*First priority* Activities needed to complete work in progress

*Second Priority* Activities which will consolidate or deepen the achievements of the project

*Third priority* Activities which are based on project achievements but are more developmental and longer-term in nature

### **3 3 1 Activities to Complete Work in Progress**

*Institut Agronomique et Veterinaire Hassan II Rabat*

Some additional support is needed to maintain the momentum of work toward putting into service the pilot food processing plant. The facility is needed by IAV as a teaching tool and as a research and test facility for both the canning and the frozen food processing industry. The fees to be charged to outside users will contribute to sustainability by partially covering operating costs. Assistance of the following types is needed to complete the work in progress:

**Recommended Action #1** To complete work on the *Halle de Technologie* two short-term technical assistance trips from the U.S. are required for the specialist from UC/Davis (Singh) and the FMC specialist (Bichler). Each should visit once to assist with start-up as soon as all equipment has been delivered (September to December 1998). Depending on subsequent resource availability and needs, a second trip may prove beneficial to assist with any problems encountered during operations.

**Recommended Action #2** The Moroccan engineer responsible for installation of equipment at the *Halle de Technologie* (Mouncif) needs one training trip to the U.S. equipment manufacturers facilities after equipment is received and before start-up.

*Direction de la Protection des Vegetaux des Contrôles Techniques et de Repression des Fraudes (DPVCTRF)*

Further support to the DPVCTRF is needed to develop its capacity to effectively operate the Bouznika Quarantine Station. The station is still in its start-up phase. An observation tour to the U.S. is currently underway for three persons from DPVCTRF including two from the Bouznika station.

**Recommended Action #3** One or two additional trips to Bouznika by a USDA specialist as necessary should be planned to assure that operations are up to standard and that the facility is fully self-sustaining. A trip for the specialist planned for June 1998 was canceled and needs to be rescheduled.

### **3 3 2 Consolidation Activities**

*Etablissement Autonome de Contrôle et de Coordination des Exportations (EACCE)*

This organization has greatly increased its capacity in terms of regulating food safety and in computerizing its management information system. Its sustainability is not in question. A few additional actions are needed to consolidate the accomplishments of the MAP Project and to maximize the value of project and EACCE investments.

**Recommended Action #4** Additional travel to Morocco from the U S in 1998 and 1999 of specialists in information management and packaging technology These services will maximize the utilization of the computer facility and packaging laboratory (3 to 5 trips of 2-3 weeks duration)

**Recommended Action #5** Exchanges of visits by FDA and EACCE representatives to continue work on the Memorandum of Understanding with FDA concerning EACCE's capacity to control food safety

*( Complexe Horticole d Agadir (C H4) Institut Agronomique et Veterinaire Hassan II*

To realize an adequate return on investments already made by the MAP Project further assistance needs to be given to CHA While a solid technological base has been laid in the form of equipment training and technical assistance to CHA s grower support services these facilities have not yet generated nearly enough revenue to sustain operations The problem appears to lie in the interface between CHA and its client base -- mainly growers of export crops such as tomatoes and citrus in the southern part of the country Many growers have not recognized the value of or have chosen not to take advantage of the services available to them at CHA CHA is attempting to deal with this problem but a clear strategy has not yet been developed

**Recommended Action #6** Short-term technical assistance in two phases to develop a strategy for increasing utilization of CHA laboratory and facilities In the first phase a consultant would develop a work plan for the next phase which has been agreed to by key organizations in the area including IAV APEFEL and ORMVA Souss-Massa In the second phase a consultant with experience in rural institutional development would carry out a study of the 'interface problem' and make proposals for consideration by the affected organizations

*Direction de la Production Vegetale (DPV)*

DPV has established the *Cellule de partenariat* in its DPMVIA unit to assume some of the informational functions of trade and investment promotion formerly carried out by AMI/DAI Computer equipment was provided by the project and a LAN has been installed by USDA/PASA consultants to improve dissemination of information Recommendations were also made for databases which DPV should acquire and maintain so that it can provide information to investors on crop production land availability relevant legal and regulatory legislation and a commercial/professional contact database The system is not yet operational

**Recommended Action #7** To benefit fully from the computer network already installed DPV further work by a consultant is required to implement its *Cellule de partenariat* One and possibly two trips are needed

### **3 3 3 Developmental Activities**

*Direction de la Programmation et des Affaires Economiques (DPAE)*

DAI/AMI assisted DPAE to establish a horticultural market report system at Casablanca s wholesale market The system inaugurated in 1997 provides same-day fax service to subscribers with market prices on a long list of commodities It is recommended that DPAE extend this service to three other major markets Inezgane-Agadir Marrakech and Meknes

#### *EACCE*

- (1) Additional training for staff in four modules BPCS GMP/HACCP international food law and food processing technology
- (2) Additional equipment for EACCE satellite laboratories in Berkhan and Agadir
- (3) Training support (in conjunction with DPVCTRF) for a new system known as "plan de surveillance de pesticides" which would put inspectors in the field to monitor pesticide use in the field and track it through to the point of export
- (4) Additional training of inspectors through internships in the U S and Canada similar to the 10 to 15 day stages which are now available to EACCE staff in France EACCE stresses the need to see how process control actions work in practice in North American food processing plants -- as opposed to theory -- which would make their inspectors more effective

#### *APEFEL*

This association representing growers of more than 50% of fresh tomato exports from Morocco is generally regarded as one of the better-managed associations in the country APEFEL has received MAPP help in the form of organizing seminars on such subjects as post-harvest handling of tomatoes and integrated pest management and in travel to the U S to see how research and extension services are financed in the U S by universities and commodity (grower) associations Ways need to be found to organize and finance an effective extension service for growers in the Agadir area and APEFEL may be the vehicle for doing so If this can be done it could serve as a model for other parts of the country As noted above APEFEL also has a role to play in linking growers to IAV/CHA research and testing facilities The study mentioned above (Recommended Action #6) could be enlarged to embrace both APEFEL and IAV In that case it would make concrete proposals for mechanisms for financing extension services as well as ways in which Agripole could coordinate extension services and research and testing at IAV

#### *SASMA*

Assistance to on-going work with USDA/ARS/Westlaco on new environmentally friendly Medfly controls

#### *DPI*

- (1) Support to move forward with leasing of prime agricultural properties now managed by SODEA and SOGETA
- (2) Support for the privatization of SODEA, COMAPRA, and SONACOS
- (3) Policy impact support on improving management of export quota and subsidies

#### *DPI (IRF)*

- (1) Support on implementing Plant Variety Protection Law
- (2) Support on moving from an ad hoc biosafety committee to a fundamental legal framework for biosafety issues
- (3) Pesticide monitoring training in conjunction with EACCE (see above)

#### *Cooperatives*

- (1) Revision of the underlying cooperative law (a five year project)

### **3.4 Some Lessons Learned**

#### *Direct support to the private sector*

Throughout the six years of its existence the Morocco Agribusiness Promotion Project concentrated its resources on directly supporting the private agribusiness sector's capacity to export value-added agricultural products thus contributing to increasing the sector's contribution to GDP foreign exchange earnings and employment and income. Project accomplishments in terms of diversification of agricultural exports trade agreements signed and joint ventures negotiated bear out the value of this approach which was characterized by consultation with Moroccan and European firms from the DAI/AMI office in Casablanca combined with direct contact with U.S. importers from the MTDC unit in the Bethesda Maryland offices of DAI. Transfer of new technologies was another effective tool used to augment the capacity of the agribusiness sector to export quality products. The transfer was effected both through joint ventures between Moroccan and U.S. or other overseas firms and through seminars and workshops in Morocco organized by the project in cooperation with Moroccan trade and grower associations. This latter approach also served to strengthen the capacity of these associations to deliver services to their members. Finally a positive feature of the project was that implementers had the flexibility to adjust priorities in response to changing market conditions needs and opportunities.

#### *Indirect support through public sector entities*

MAPP's assistance to agencies of the Moroccan government was concentrated on those entities which directly impact Morocco's capacity to export high-quality safe food products. This approach was especially successful in the case of semi-autonomous agencies with well defined missions and competent staff such as the EACCE which is responsible for inspection of food plants and the control of pesticide and heavy metal residues on processed and fresh products. Also effective was MAPP's work with the plant quarantine unit with plant variety protection legislation with a wholesale market price reporting system with production contracts and arbitration and with policy studies on ways to reduce truck transport costs by simplifying controls. A good example of an effective cross-cutting effort with both public and private sector entities was the red tomato initiative which worked toward opening the U.S. market for fresh tomato exports from Morocco.

#### *Effectiveness of consultants*

Projects which aim at institutional change require a long-term approach by a competent and dedicated team of consultants who are able to establish relationships of mutual trust and respect with their host country counterparts. This was certainly the case with the AMI/DAI team. (Not every consultant is equal to the task as demonstrated by one case of a necessary change of personnel in the DAI/AMI team.) Assistance to individual units within the bureaucracy of a government ministry is particularly difficult. Because of political factors which lead to changing priorities combined with frequent movement of personnel it is often difficult to reach agreement on objectives and to sustain the work once a task is defined. The MAP Project demonstrated the effectiveness of working mainly with the private sector and relatively autonomous public sector entities.

## **APPENDIX A CONSULTANT'S TERMS OF REFERENCE**

### **1 OBJECTIVE**

The objective of the end-of-project review is to provide a document which will

a) capture the major accomplishments of the Morocco Agribusiness Promotion Project (MAP) along the lines of its principal components--particularly in terms of impact on the project's principal public and private sector collaborating organizations and

b) recommend a set of potential future activities for the Ministry of Agriculture and its collaborating partners to pursue following the end of the project in June 1998 in order to sustain and build upon MAP achievements

The product desired is a report as described below which will be of practical use to the Ministry of Agriculture Rural Development and Fisheries (MADRP) as well as USAID and other donors in developing their respective future programs

### **2 THE REVIEW**

The objectives of the review are stated above. It was requested by the MAP Steering Committee to provide a reference piece to consolidate accomplishments recorded by the project from the point of view of the implementing agencies and key private sector partners. This review is not meant to detail exhaustively all MAP accomplishments. More information will be provided through end-of-project reports and a DAI/AMI "lessons learned" conference to which this review should provide input. The contractor will however need to become thoroughly versed in significant MAP results to date in order to accurately portray the project's accomplishments in terms of its principal components.

The review is also intended to take the next step i.e. lay out a menu of substantive areas for potential follow-up for the Ministry of Agriculture and its collaborators based on an assessment of where high-priority work remains to be done. From a decision-makers' viewpoint, the review should a) identify ways to consolidate progress made under MAP in order to help deepen its sustainable impact and b) document the viability of the MAP strategic approach for possible replication.

### **3 REPORTS AND DELIVERABLES**

The report will include

a) an analysis of the significant accomplishments of the MAP project with respect to its component activities (listed above) with particular attention to

- i) technology transfer and management know-how
  - ii) diversification and development of export markets
  - iii) commercial partnerships and investment promotion
  - iv) policy and regulatory change
  - v) training institutional reinforcement and information
- b) a cross-cutting analysis of how these accomplishments have impacted the project's principal public and private sector collaborating entities
- c) a set of recommendations for these key public and private sector institutions or groups for potential follow-up activities which will help sustain and build upon MAP achievements and
- d) identification of areas which USAID (assuming resources are available) or other donors might consider for continued collaboration subsequent to project completion in June 1998

## APPENDIX B LIST OF CONTACTS

Ministere de l'Agriculture, du Developpement Rural et des Peches Maritimes  
Mme Hnia Bencheikh Chef de la Division de la Cooperation

Direction de la Production Vegetale, Ministere de l'Agriculture  
Abdellatif Guedira Directeur  
Abdelhak Bennani Chef de la Division de la Mise en Valeur  
Abdescam Bourfoune  
Abdelmajid Bennani

Direction de la Protection des Vegetaux, des Contrôles Techniques et de Repression des Fraudes,  
Ministere de l'Agriculture  
Mohammed Amal Rahel Chef de Station de Quarantine de Bouznika  
Mohammed Belhadri Service Contrôle des Semences et des Plantes  
Mohamed Zerda, Service Contrôle des Semences et des Plantes

Direction de la Programmation et des Affaires Economiques  
M Mezhour Chef de Division

41

Etablissement Autonome de Contrôle et de Coordination des Exportations (EACCE)  
Albert Sasson Directeur General  
Najib Mikou - Chef du Departement Developpement  
Abdellatif Taraf - Attache de Direction Charge de la sous Direction Produits Frais  
Mohamed Najib Layachi - Ingenieur en Chef Chef de Departement (Produits Transformés)  
Jaafar Kettani - Ingenieur Agronome Chef du Departement Laboratoire

Institut Agronomique et Veterinaire Hassan II, Agadir  
Dr Brahim Hafidi Directeur de Complexe Horticole d'Agadir  
Prof M barek Fatmi Departement de Protection des Plantes (IPM Coordinator)  
Dr Mohamed Tami Departement d'Horticulture (Soils Lab Coordinator)  
Dr Mohamed Achouri Post-harvest pathology IPM  
Dr Ahmed Ait Oubahou, Physiologie et Systemes de Post-Recolte  
Mr Ahmed El Alami Departement Sciences des Sols

Institut Agronomique et Veterinaire Hassan II, Rabat  
Dr Mustapha Berrada Coordinateur de Programme de Soutien de l'Agribusiness  
Dr Lahsen Ababouch Food Processing Technology  
Dr Embarek Amane Agribusiness Management  
Mohamed Mouncef Engineer Halle de Technologie

FICOPAM

Abdelaziz Ghoubi Directeur  
Mlle Mamma Salim

APEFEL

Mohammed Zahidi Secetaire General  
Bouchaib Zahidi Vice President

ASPEM

Hassan Maghraoui

SASMA

Ahmed Lekchiri Directeur General  
Abdelmoghite Sebbata Chef de Departement Laboratoire de Biochimie

Abdellah Radouani Planteur Taroudant

**APPENDIX C**  
**LIST OF DOCUMENTS CONSULTED**

AMI/DAI *Annual Work Plan for 1966*

AMI/DAI *Annual Work Plan for 1997-1998*

AMI/DAI *Quarterly Reports Nos. 10 through 17*

USDA/FAS/ICD *MAP Project Action Plan Review and Update* Steve Hawkins Dec 1997

USDA/FAS *Assessment of the Operation and Management Systems of the Morocco DPI (IRF Bouznika Quarantine Station)* Michael Wehr Feb 1998

USDA/FAS *Final Assessment of the Morocco Export Laboratory (EAC (E) with Respect to its Request for Purchase of Laboratory Instrumentation* H. Michael Wehr May 1997

USDA/FAS *Establishment of a Horticultural Investment Promotion Unit*, Jennifer Harte March 1998

International Science and Technology Institute *Joint Mid-Term Evaluation Accessing International Markets (AIM) and Morocco Agribusiness Promotion (MAP) Final Report* October 1995

University of Minnesota *First Phase Work Plan for the Program of Support to Agribusiness (PSA) July 1995-December 1996*

University of Minnesota *Second Phase Work Plan for the Program of Support to Agribusiness (PSA) January 1997 - June 1998*

University of Minnesota *Project Implementation Update* January 1998