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ESTABLISHMENT OF THE ARAB REGIONAL PACKAGING CENTRE

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Terminal report*

Prepared for the Arab Industrial Development Organization
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

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P R E F A C E

The report attempts to present a summary of activities and results that were achieved during the life span of the project. The analytical reviews presented are mainly based on the information contained in the reports of a number of experts and consultants international and national, who were associated with the project and the progress reports made periodically. Expert's suggestions and recommendations are annexed. Plenty of work had been done to maintain the efficiency and implement the project. However, the process of stock-taking and analysis of performance is also a search for instructions and inspirations from the past. Accordingly, a few enclaves of shortcomings have come to light and been pointed out more to sound an alternative than to criticise the work of those who managed the project.

Modestly speaking, the project has ended on a note of optimism and some of the Arab countries are anticipating programmes to boost the development of the packaging industries. The contributions made by the ARAB INDUSTRIAL DEVELOPMENT ORGANISATION, the Government of MOROCCO-MOROCCAN INSTITUTE OF PACKAGING, ARAB STANDARDISATION AND METROLOGICAL ORGANISATION, and a number of participating Arab countries; the REGIONAL BUREAU FOR ARAB STATES UNDP, UNIDO and the RESIDENT REPRESENTATIVES OF UNDP offices, particularly in RABAT and BAGHDAD and a number of experts, have conferred on the project an identity of overall success.

R. K. CHOWDHARY
CHIEF TECHNICAL ADVISER

I. BACKGROUND

The economic and industrial development in the Arab countries mainly concentrates on three major sectors : agriculture, industry, oil and petroleum products. Since most of the industrial and agricultural products require elaborate packaging for distribution both in the domestic and export markets, it is important that the development of the packaging industry should proceed in line with those planned for other sectors. The relationship between the development of the food processing industry, fertilisers, oil based products, and cement industries and supply of packaging materials - metal cans, glass bottles, paper and board based packages, plastic films, bottles, containers and jute sacks - essentially spells out the need to integrate the growth of the packaging industry with those of product producing and manufacturing sectors.

In the seventies, the regional structure of production obtaining in the Arab countries reflected a differentiated pattern of sectoral production with primacy of the product producing and manufacturing sectors and limited or often no concern for the development of the packaging industries. This clear and decisive dominance was due to a variety of factors such as:

- (i) Relatively low level of packaging technology compared to that of production technology
- (ii) Insufficient concern for import substitution and progressive use of locally available material
- (iii) Near absence of institutional scientific and research based infrastructure to stimulate the growth of the packaging industry
- (iv) Shortage of technical manpower and expertise to improve, absorb advance technology and production processes
- (v) Relatively low level of efforts to improve existing and establish new packaging industries in the region.

The growing awareness of the importance of the packaging industries and the need to have an immediate restructuring of the industry lead to the convening of the First Arab Regional Consultation Meeting in Cairo in March 1973 under the joint sponsorship of the Industrial Development Centre for Arab States (presently AIDO) and UNIDO. The meeting recommended the unification

of efforts towards the development of the packaging industry in the region, creation of specialised packaging centres / institutes and the national packaging committees in each country and the creation of a regional Packaging Centre. Subsequently, the third Arab National Packaging Committees meeting held in Casablanca recommended that the Moroccan Institute of Packaging (IMEC) be converted into an Arab Regional Packaging Centre (ARPAC).

The UNDP, in 1981, approved of a preparatory assistance phase to study the status of the packaging industries in selected Arab Countries and to prepare a unified plan for the development of packaging industries in the context of prevailing social, economic and financial conditions and locally available raw materials. The findings and recommendations of the preparatory phase of assistance and abiding interests of the Arab countries and AIDO to establish a nucleus of infrastructural facilities to assist and stimulate the Arab Packaging Industries resulted in a programme of technical assistance for the establishment of a regional nucleus

A two years assistance programme for the project 'Establishment of the Arab Regional Packaging Centre' at Casablanca Morocco, commenced in Jan 1984 with the joint collaboration of the United Nations Development Programme, the Arab Industrial Development Organisation and the host country, Morocco. The United Nations Industrial Development Organisation (UNIDO) was entrusted with the responsibility of execution of the programme. The life span of the project was extended by another year up to December 1986 to complete certain activities deemed essential to the overall interest of the project's programmes and perspectives.

2. OBJECTIVES AND LOGIC OF THE PROJECT

2.1. Development objectives

The project was intended to contribute to the development of an efficient, cost effective and modern packaging industries in the Arab Region which would enhance and expand the marketability of food and industrial products at the national, regional and inter-

national levels. By improving the quality and output of the packaging industries, present product losses-especially food stuffs- due to use of some unsuitable packaging material and technology would be eliminated.

2.2. Immediate objectives

Within the frame of the establishment of ARPAC, the project aimed at the creation of technical, communication and managerial capabilities of the Arab packaging industries. It was specifically expected to achieve :

- (i) A cadre of well trained specialists in packaging design, standardization, quality control, production techniques, technological & management information systems.
- (ii) Setting up of a regional consultancy service to assist Arab packaging industries in all aspects of the packaging industry.
- (iii) A compendium of technical guidelines for the eventual introduction of quality certification system for application at the national level in collaboration with the Arab Standards and Metrological Organisations' (ASMO) technical committee on packaging standards.
- (iv) Establishment of a regional communication network including national packaging committees in interested participating countries which will coordinate with ARPAC the flow of information on packaging.
- (v) Up-grading the documentation and information unit at the Moroccan Institute of Packaging (IMEC) to a regional Centre capable of collecting and disseminating information on the packaging industry and creation of a packaging enquiry service in close cooperation with AIDO's documentation and information centre and national packaging committees.
- (VI) Follow up studies and surveys carried out during the preparatory assistance phase.

2.3 Logic of the Project

The expected output of the project was to have a cadre of trained arab engineers, technicians, managers on different aspects of packaging so as to enable the Arab Packaging Industries to have the benefits of better expertise and improve their drive for meeting

the growing demands of domestic and international markets. Simultaneously, it was envisaged that the establishment of the packaging committees at the national level as a part of the regional packaging communication network would make a valuable contribution to the development of the packaging industries at the respective national levels and establish communication links for sharing of knowledge, exchange of packaging related information and facilitate regional cooperation.

2.4. In order to ascertain the picture of the packaging industry in the Arab States, it was considered that the situation would be better appreciated with some indication of future demand. The size and pattern of expected demand will be crucial considerations in strategic planning for high growth businesses like packaging. Accordingly, it was postulated that the future demand pattern of the packaging industry with production capacities and other related information would be important to plan the packaging industry's growth on more definite basis.

The quality of packaging obtaining in the Arab countries, among other factors, was considered to be a limiting factor in the expansion of domestic and export markets and even for formation of intra-regional trade and commerce. The constraints of technology, skilled manpower and types of raw materials in use, needed immediate efforts to bring about a distinct improvement in the production practices, quality, standards of packaging materials and packages, national awareness and activation of a mechanism to confer consumer protection through formulation of packaging standards, etc.

2.5. With a view to producing the expected output and accelerate the process of development, the Arab Industrial Development Organisation agreed to provide active and financial contribution (\$ 600,000) to the project to be expended over national experts 92 man months (\$ 168,000), training \$ 260,000; equipment \$ 40,000 sub-contracts \$ 50,000 and administrative support personnel \$ 32,000, miscellaneous \$ 50,000 ; together with the Government of Morocco agreement to host the project and provide through IMEC professional personnel, equipment, office space and secretariate support services.

The United Nations Development Programme through UNIDO agreed to contribute and manage the technical assistance programme in terms of different inputs initially amounting to \$ 600,000 but subsequently raised to \$ 838,000 after due revisions. The inputs stipulated expenses :

- (i) for missions of international experts and consultants
34.5 man months (\$ 295,600)
- (ii) National experts 30 m/m (\$ 25,200) ; individual fellowships, study tours and UNDP Group Training totalling \$ 250,000 and equipment needed to strengthen training and other technical capabilities of ARPAC \$ 138,800
- (iii) administrative support personnel \$ 18,400 and the balance towards project travel and other costs of miscellaneous nature.

3. ACTIVITIES CARRIED OUT AND OUTPUTS PRODUCED

The implementation of the project for a major part of its life span i.e from January 1984 to June 1986 was by AIDO's appointed Project Director Mr Abdelhaq BENNOUNA who was also the Director General of IMEC. On Mr BENNOUNA's separation from IMEC in June 86, AIDO nominated its Director General Mr. Hatim Abdul Rasheed as the Regional Project Coordinator, who assisted by the packaging Unit of AIDO and in association with UNIDO's Chief Technical Adviser Mr RAM K CHOWDHARY implemented the project activities during the second half of 1986.

To facilitate analysis, the activities of the project are considered under two major classification (i) delivery of project inputs and technical activities of the project.

3.1. Delivery of project inputs

In the initial phases of the project implementation, timely delivery of certain types of inputs particularly those relating to packaging committees, survey of packaging demands and inventory of production capacities, fellowships, study tour and to some extent consultancy missions had been the subject

of some concern. It is well recognised that a project with regional dimension and diverse situational logistics, variations in the levels of appreciation and awareness for packaging development among the participant countries and different political systems etc has certain in built complexities that do deflect the rate of response and create a deviation between the realities and the expectations. However, all the delays experienced were not wholly due to the prevailing complexities.

The organisational design and management of activities were in effect left to be under the responsibility of the Project Director with some administrative support. The task itself was complex, ostensibly requiring a great deal of preparatory ground work, technical advice and facts and guidelines supporting needs and the intensities of demand for packaging services in different countries in the region. Many of the fragments of information and guidelines needed for preparatory work were either not available or extremely patchy. Under such circumstances, the preparatory work got delayed with consequent delays in the delivery of inputs. UNIDO's offer of providing the services of a full time Chief Technical Adviser to be associated in advisory capacity for technical advice in technology and management of the project from the commencement of the project did not meet with the approval of the counterpart authorities. The Project Director carried the burden of the management of the project under conditions when his time, energy^{and} expertise had to be divided between ever increasing demands of national priorities and those of the regional ones. Accordingly, the delivery of certain inputs was delayed and the project's duration had to be extended to complete some of the important ongoing activities.

The project progress and delivery of inputs faced a difficult period in June - Aug 1986, with the separation of the project director and delays caused in holding of a joint consultation meeting between AIDO, UNIDO and Government of Morocco. However, as a result of

flexibility and co-operation by all the parties, the joint team consisting of Regional Project Coordinator assisted by AIDO's packaging Unit and the Chief Technical Adviser and UNIDO's back-stopping Officer reactivated the delivery of inputs to complete the backlog of activities.

End of the 'project status' indicates that AIDO and the host country Government of Morocco had, by and large, delivered the inputs contemplated on their parts although certain rephrasing of AIDO's inputs became essential due to changes in local conditions.

Regarding UNIDO's inputs, 18 of the international Experts consultants posts were fully implemented .

In addition, 14 national consultants posts for varying durations were fully implemented. Annex I details the concerned missions. The training programmes, consisting of 8 fellowships and 2 study tours one each to Austria and France and Scandinavian countries, 4 seminars and two training courses were implemented. The supplementary fellowships proposed on an adhoc basis but in conformity with the needs of the requesting countries are pending implementation. Implementation rate of principal inputs of UNDP/UNIDO may be seen at Annex IA.

All the equipment expendable and non expandable proposed (annex I) in the project had been delivered, The equipment delivered is duly installed and put to appropriate use.

3.2. Technical Activities of the Project

The technical activities of the project are classified under following major groups viz :

- (i) Seminars and training courses including audio-visual course material
- (ii) Study tours and fellowships
- (iii) Regional Packaging Communication network / Packaging Committees / focal points
- (iv) Standardization
- (v) Problem solving technical consultancy
- (vi) Documentation and Information, including Thesaurus in Arabic for classification of packaging information
- (vii) Survey of packaging related technological institutes
- (viii) Promotion
 - a) Publication and distribution of quarterly bulletin in Arabic ;
 - b) Exhibition

- c) Film on Food Packaging & Transport Packaging
- d) Techno-economic studies on opportunities for development of specific packaging industries
- e) Promotion of Technical Services

Workplans relating to the above set of activities were formulated by the project management with stipulations for periodic revisions by a specially constituted coordination Committee consisting of the UNDP, UNIDO, AIDO, ARPAC, IMEC and AFFI (Arab Federation of Food Industries). Workplans details by activity for the periods January 1984 to December 1985 and January - December 1986 are enclosed in Annexes III and IV.

All out efforts were made to achieve the programme of work according to the plan, with suitable modifications during the start up operations as necessary, and except for a small number of activities that were either dropped as a result of subsequent reviews undertaken or could not be implemented on account of more pressing circumstances beyond the control of the management. For instance, the proposed seminar on standardization, specification and quality control of packaging material could not be organised as the country viz Saudi Arabia expected to host the seminar regretted their inability to do so. Likewise, activities in respect of "Exhibition", film on food packaging and transport packaging, production of audio-visual course material and techno-economic studies on opportunities for development of specific packaging industries had to be kept in abeyance on readjustment of priorities and initiation of actions in areas demanding more urgent attention.

The activities regarding problem solving consultancy missions were envisaged in anticipation of the requests on the subject from the Arab countries. Accordingly, a few consultancy missions originally planned, could not be realised either due to the change in priority of the requesting country (as in case of Somalia) and or for reasons of short fall in demand arising on account of insufficient information being available with the national authorities.

4.0. Outputs

4.1. Trained personnel

Through the medium of 4 seminars and two training courses, the project contributed to the orientation and training of 263 Arab Engineers, technicians, managers, other specialists in different disciplines of packaging. The progress in this area has been highly significant. These programmes have prepared the necessary ground for the introduction of more advanced and specific subject particularly packaging material oriented training programmes to upgrade skills vitally required for the manufacture of high quality packaging material/packages and also programmes in relation to the particular needs of the end-user industries. Government officials and the representatives of government managed departments formed an overwhelming proportion of the participants vis-a-vis those belonging to the manufacturing and trading enterprises in these programmes. A more balanced approach in the selection of participants to a particular programme so as to ensure adequate representation of the target beneficiary groups would have conferred better rewards.

4.2. STUDY TOURS & FELLOWSHIPS

Study Tours

Two study tours one each to Austria and France and Scandinavian countries were organised in 1984 and 1985 respectively. These study tours were intended to expose the participants to the advances made in the technology of packaging and also to the methods and techniques of packaging followed in the countries visited. Efforts were made to offer opportunities to all the Arab countries to nominate participants to the study tours but all of them did not respond. As a result, the composition of the study tours had to be confined to include participants from the responding countries.

List of participants and the organisations visited by them are enclosed at Annex V. It is difficult to surmise how far the participants benefitted from such study tours organised at great expense and efforts as participants' reports on the subject are not available. Analysis of their reports and comments would have provided an opportunity for appraisal of the benefits and drawbacks of these tours.

The first signs of disapproval of the study tours came to the notice of the evaluation team during the period of deep evaluation of the project in August 1985. It was mentioned that these study tours had no lasting effects and are less profitable and should not be included in the activities of any future programme of technical assistance. In the absence of comments of those who participated in the study tour and their sponsoring

organisations, it is difficult to corroborate the validity of the adverse comments made above. However, it is extremely important to assess the cost-benefits of the study tours more thoroughly before undertaking such a highly expensive and complex activity in the future.

A third study tour was organized to the Democratic German Republic and the Federal Republic of Germany in 1987 (name of participant and organisations visited enclosed at Annex V). The participant was exposed to practical training and visits to factories and quality control laboratories for direct observation in connection with the following subjects: principles of packaging and functions of packages, particularly within the field of food packaging; main types of packaging materials used by the food industry, respective technical characteristics and laboratory quality control; plastic containers used for food packaging, health hazard and related laboratory testing.

4.3. Fellowships

The project achieved the completion of 8 fellowship training programmes on different aspects of packaging. Details about the disciplines pursued by different nominees together with the names of countries where they were placed with may be seen at Annex VI . The output achieved in respect of fellowship training very much fell short of original stipulations made in the project document.

The shortfall perhaps, is mainly due to a limited appreciation of the effectiveness of this instrument of technical assistance particularly by the coordinating agencies / Ministries to whom requests for nominations were addressed. Often, the communications addressed on the subject either did not reach the target organisations deeply interested in upgrading the quality of their expertise or were received by them very late. During the field missions undertaken by the C.T.A. in a number of countries, the package manufacturing and other concerned organisations contacted

complained of the delays in the receipt of communications through the conventional channels in their respective countries. In addition, many of them did not know that such a service was available under the project. With the establishment of packaging committees and or focal points, this shortcoming is expected to be overcome substantially.

4.4.

REGIONAL PACKAGING NETWORK

The project has succeeded in the establishment of regional packaging communication network through identification of related contact points / departments officially designated by the Governments of the Arab Countries in Morocco, Algeria, Tunisia, PDY Yemen, Yemen Arab Republic, Bahrain, Iraq, Sudan, Somalia, Saudi Arabia, Egypt, Jordan, Libya, Syria and Lebanon. Each of the contact point / department is endowed with the responsibility of evolving appropriate strategies and programmes for the development of the packaging industries and would provide an important means of communication at the national level. It is however recognised that these official agencies / contact points do not have the title of packaging committees (with few exceptions) but their orientation and roles and responsibilities are no different from those expected of the formally established packaging committees. It must be recognised that it is ultimately the decision and discretion of the respective government to create a formal structure in the form of a national packaging committee or designate a particular department to plan, undertake and coordinate activities that stimulate the development of the packaging industries. For the purpose of technical assistance, it is highly advisable to concentrate on the contact point and regard it as a focal point in the country. Many of these points do not have officers with a packaging related background and may at times fail to display the enthusiasm expected of them. These have to be constantly oriented with ideas and suggestions to advance their usefulness and capabilities. On an experimental basis, an attempt was made to project ideas and suggestions for enrichment of the programme of work of these departments in relation to packaging through personal contacts and dialogues, during the field missions of CTA as well

as through distribution of guidelines relating to the work of focal points, vide annex VII.

It will be equally important to maintain regular contacts with the officials (vide list annex VIII) of the focal points to receive and disseminate packaging information and developments taking place on the subject. It is advisable that the documentation and information centre at AIDO and the corresponding unit at IMEC place these contacts / focal points on their regular mailing list for the purpose.

4.5 IMPROVED DOCUMENTATION AND INFORMATION SERVICES

During the life span of the project, Packaging Thesaurus in Arabic, English and French was prepared and distributed to all the Arab countries for comments suggestions. This Thesaurus elaborated a wide range of subjects in packaging viz (i) science and fundamental techniques (ii) information sources (iii) products to be packed (iv) economic, social and statutory aspects (v) packaging functions (vi) packaging materials (vii) finished packages (viii) processes and techniques (ix) properties and phenomenon (x) packaging accessories and secondary products (xi) equipments and industrial plants (xii) tests and controls.

The publication of the ARPAC Bulletin in Arabic commenced during 1985 and already two issues of the bulletin have been brought out. The subsequent issues could not be published due to

some unforeseen circumstances resulting in the non availability of already prepared manuscript for the bulletin. The non availability of text is 'no doubt' sad but it is equally surprising that attempts to prepare another text were not made and the publication which has evinced good interest had to be abandoned after publication of first two issues.

The mail enquiry service was introduced and the information available with the documentation and information Unit of IMEC was utilised to respond to the enquiries received. The project provided technical support through consultants' mission to upgrade

the documentation and information Unit of IMEC so as to make it suitable to provide the service through ARPAC to the Arab countries. These upgraded facilities also helped many international experts and consultants, national experts and participants to the seminars / training courses held in Casablanca to use the service. Action to integrate the documentation and information centres of AIDO and that at IMEC have been initiated. It is hoped this integration will not only be in the mutual interests of IMEC and AIDO but will greatly expand the opportunities for users in the Arab world who wish to seek information on various facets of packaging.

4.6 Audio-visual training course in Arabic and Film on Food Packaging

The activities connected with the production of audio-visual aids and the film on food packaging were not pursued as a result of the decision to hold the matter in abeyance.

4.7 Technical Guidelines for Regional Packaging Standards for Arab Countries - Transport Packaging and food stuff packaging

The work on preparation of the guidelines was attempted by a UNIDO's expert on the subject. According to the findings of the mission undertaken by the expert Mr. HUGO BAUTISTA, it is important to (i) evolve a system whereby a plan of work for formulation of Regional Standards could be prepared for a period of three years, (ii) improve the exchange of information between the teams working on national packaging standards in different countries and the technical members of the Committee No. 19 of ASMO, the Committee entrusted with the task of recommending regional standards, (iii) all the Arab countries especially the respective organisations for standardization should be involved in the approval and certification of packages for dangerous goods in accordance with the prevailing provisions of U.N. system and (iv) the ARAB countries adapt ISO Standards for testing of complete, filled, closed transport packages under simulated conditions of distribution in the domestic and overseas markets.

4.8 Survey of packaging demands, of packaging materials, production capacities and techno-economic studies on opportunities of specific packaging industries development

Status reports in respect of the packaging industries for 16 countries have already been produced by the contractors Saudi Consulting House Riyadh on the basis of the field and desk research undertaken by them and submitted to AIDO with copies to IMEC and UNIDO. These reports are under study by AIDO for any follow-up action needed. Many countries expect that the outcome and recommendations of these studies would enable the national authorities to plan concerted actions to place the packaging industry on a strong footing. AIDO's packaging unit had been monitoring the progress of the survey work and prepared a summary of the reports received by them. Final report was received later on. In the tripartite review meeting held in Casablanca 15-17th December 1986, the members desired that the reports should have been circulated to the countries concerned and their comments and suggestions be invited. These studies should be evaluated jointly by UNIDO and AIDO.

4.9 Survey of PACKAGING RELATED TECHNOLOGICAL INSTITUTIONS

The survey results have revealed the prospects of developing packaging services in some of the already existing and well functioning technological institutions. These institutes can, at an appropriate time, in future, be converted into full fledged national packaging centres. This exploratory survey provides sufficient information on the available institution infrastructure of research and development which could be suitably expanded to include a number of packaging services required in the context of the national needs. Many of these organisations are already involved in performing similar work in respect of consumer and industrial goods and offer prospects to develop and distribute packaging knowledge with the back up support of testing laboratories.

The approach is expected to produce early pay offs by reducing the gestation period in the development of urgently needed packaging services in the Arab countries and may offer a solution within the reach of many countries. The study covered a number of countries - IRAQ, SAUDI ARABIA,

SOMALIA, SUDAN, EGYPT, ALGERIA, TUNISIA, MOROCCO, LIBYA, SYRIA, JORDAN, BAHRAIN and YEMEN ARAB REPUBLIC. The list of institutions identified which offer a potential for packaging services is enclosed at Annex IX.

5.0 PROMOTION OF TECHNICAL SERVICES OF PROJECT

- Identification of needs for Technical Assistance

The target beneficiary groups, in some of the countries surveyed, were not fully familiar with the nature, scope and the necessary administrative procedures needed to avail themselves of the technical services of the project. In many cases the communications inviting participation to seminars|training courses, fellowships and study tours, offer of consultancy missions of problem solving nature either did not reach the concerned organisations or were received by them very late. As a result thereof certain activities and consequently the outcome expected thereof fell short of the expectations. During these visits, an exploratory attempt was made to identify some problem areas that require technical assistance on an urgent basis. These are enclosed at Annex X .

- 5.1. Exhibition on packaging materials : The activities were held in abeyance
and packaging machinery and film and the subject has been discussed
on transport packaging-audio-visual in the foregoing.
courses in Arabic.

6.0 Achievement of IMMEDIATE OBJECTIVES

The principal objective of the project the 'Establishment of the ARAB REGIONAL CENTER' could not be achieved. The decision to establish it has been deferred by the Governing Council of AIDO in its meeting held in Oct. 1986. The concept of having a Unified Centre at one place to develop and offer packaging services and help bring about the development of the ARAB PACKAGING Industries seems to be under review. On the whole, the other immediate objectives have been achieved. The project has not only produced a favourable climate for further development of the packaging industries but a series of positive effects through activities of training, technological consultancies, special surveys and studies. A number of countries are ready to create national packaging centres duly equipped with technical expertise and the requisite laboratory facilities. Some countries have been provided with knowledge and guidelines to reinforce the existing technological institutional infrastructure for supporting packaging services .

At the end of the project, many countries are anxious to seek benefits from a technology programme that could raise national capabilities for standardization and quality control, packaging design and technology adaptation and strengthening of the capacities of the national infrastructure and research of development related to packaging. The national authorities in almost all the ARAB countries are anxious to develop the packaging standards particularly for food items and are taking steps to upgrade the expertise available in the national standards organisations for development of packaging standards.

The impact made by the project in terms of trained personnel, improved documentation and information services, contributions in the form of guidelines for formulation fo regional packaging standards, upgraded expertise of IMEC, well identified and oriented focal points, and data on forecasts of packaging demands, etc., have laid down strong foundations for promoting the development of the packaging industries and establishing industrial complementarity needed to develop the Arab packaging industries. Activity-wise achievements of the objectives can be seen from Annex XII.

7.0 UTILISATION OF PROJECT RESULTS

TRAINED PERSONNEL

7.1 The benefits of the project have accrued to a number of countries whose participants attended the training courses, seminars, fellowships training. It is learned that the trainees to the fellowship training programmes, on return to

to their respective organisations have been able to bring about a qualitative shift in their working.

Similarly, a section of the participants to the seminars, as a result of collective thinking, interaction and exposure to certain approaches to solve packaging problems—deliberated in the technical sessions, commenced to mobilise efforts to stimulate the progress of the packaging industries in their countries.

The training courses were more of an appreciative level and could achieve a limited success to upgrade skills necessary for achieving improvement of quality standards of packaging materials and packages manufactured in the region. However these were considered to be an essential prelude to more advanced training programmes for development of skills and improvement of technology. These programmes and participants' suggestions have paved the way to launch more intensive efforts. Specifically tailor made to the needs of a particular country serious considerations may have to be given to strengthen the available infrastructure of research and development in the region so that the capabilities could be developed to train, through them, personnel up to the advanced level of skills who will not only be capable of introducing, adapting, modifying technology but also of initiating and developing indigenous technology systems.

7.2 INITIATION OF A REGIONAL CONSULTANCY SERVICES:

Technical expertise available at IMEC has received the contributions of many international experts who were assigned to the project from time to time. In addition, IMEC staff was engaged as national experts in some of the project activities. These opportunities, exposures and involvement of the technical staff, it is hoped, are sufficient to commence a regional packaging consultancy services. Most of the countries possess insufficient and appropriate technical personnel, know-how to adopt, diffuse and absorb advanced technology and much less facilities for offering cost effective R & D solutions to problems and impediments that arise at this plant or factory level. This gap needs to be bridged on a priority basis.

A nucleus packaging unit (Annex XI), exists at AIDO, this Unit could serve as a useful source for organising regional consultancy services through delivery of national/regional/international expertise as required.

7.3. PREPARATION OF TECHNICAL GUIDELINES

The ARAB Standards and Metrological Organisation (ASMO) Committee 19 is responsible for the formulation of regional packaging standards, with IMEC as its Headquarters. The head of the standardization department of IMEC is the convener of Committee No. 19. The technical members of the staff at IMEC,

ASMO and of the organisation for standards and quality control Baghdad had the opportunity to work as counterparts to the EXPERT ON PACKAGING STANDARDISATION whose mission involved preparation of technical guidelines for eventual introduction of quality certification system-for application at the national level. This exercise and assistance provided is expected to portray practical guidelines relevant and related to the conditions obtaining in the Arab countries. The project did provide sufficient scope for national standardisation organisations in Algeria, Sudan, Iraq, S. Arabia, Egypt, Jordan, Libya, Morocco, Syria, Yemen Arab Republic to have consultations with the visiting international experts and the CTA on the subject of formulation/adaptation of packaging standards and the methodology for quality certification.

The national Organisations for standards in a majority of the countries in the region are not yet fully geared to undertake work relating to the formulation of packaging standards, and much less for certification and monitoring of material specifications and performance of standards of filled and closed packages under simulated conditions of distribution in the domestic and export markets. Empirical evidence amply corroborates that it is during the stage of distribution, valuable products are damaged leading to either total loss of or partial damage. Insistence upon adoption of an acceptable pattern of packaging can surely minimise this loss.

The safety standards in handling and transportation of the corrosive chemicals, skin irritants and hazardous goods-explosives, inflammable chemicals-demand considerations of design of containers to enclose, contain and carry them safely, protecting the environment from getting affected. Similarly materials used for packaging of food products not only require standards in respect of the material properties and other related aspects but also technical support of expertise and testing facilities to assess the level of performance.

The resources of committee n° 19 are extremely limited and without an active involvement and contributions by the national standards organisations, the committee's work may be greatly hampered. The quality, coverage and speed of formulation of regional standards can significantly improve by reinforcement of the expertise and administrative support to the committee together with appropriate contributions by the participating member countries.

7.4 A REGIONAL PACKAGING COMMUNICATION NET WORK

The subject has already been dealt with in the section on output. It is however, pertinent to mention that the focal points identified hold the promise of more substantial contributions provided sufficient encouragement and guidance were provided from external sources and through technical assistance at least during the next couple of years. Some of these focal points were relied upon for promotion of packaging services to some extent during the implementation of the present project.

7.5 DOCUMENTATION AND INFORMATION

The documentation and information unit at IMEC has been substantially upgraded and is engaged in the collection, storage and dissemination of information on packaging industry. An enquiry service has already been commenced. Further steps to integrate the documentation and information services of AIDO and IMEC are under way and a long term mutually supportive system is expected to serve the best interests of the region.

The rate of obsolescence of information is perhaps a very high one. As such, the imperatives for efficiency of the service, lies in the basic support and contributions it receives and offers to the ARAB countries. It is felt, that IMEC alone will not be able to afford the regional service and will need financial contributions either from the recipients of the service or from a regional organisation like AIDO. Measures are needed to ensure sustained development so that the service will provide the exchange of industrial and technological information among the countries of the region with a view to strengthen the technological base of the industry. Information on identification and analysis of demand for and supply of packaging raw materials, processes, intermediate and ancillary products, packaging specifications, designs, styles, law and regulations, standards, cost, etc., are constantly needed by various segments of the packaging and user industries to exchange information on different aspects. This co-operation is yet to achieve convincing level of success.

7.6 SEMINARS - RECOMMENDATIONS

The project was transparently more training oriented, and seminars constituted one of the major components of the training activities. During the period, four seminars with the following subjects were held at different locations in region.

- (i) PACKAGING TECHNOLOGY FOR SELECTED FOOD PRODUCTS AND WAYS AND MEANS OF REGIONAL COOPERATION-AMMAN (JORDAN)
- (II) PACKAGING DESIGN AND MARKETING (EXPORT OF AGRICULTURAL AND AGRO-INDUSTRIAL PRODUCTS) -CASABLANCA (MOROCCO)
- (III) OPPORTUNITY AND PARAMETERS OF JOINT VENTURES FOR PACKAGING INDUSTRIES AND REGIONAL AND INTER COUNTRY COOPERATION-DUBAI (U.A.E.)
- (iv) FOOD PACKAGING FOR LOCAL AND EXPORT MARKETS -TUNIS (TUNISIA)

These seminars did prove to be very important events in project's history particularly in bringing together the like minded participants in the fora where they could share their own experiences with one another and freely exchange views with the international experts. These resulted in encouraging mobility of ideas and brought out a series of recommendations to improve the currently prevailing packaging situation through urgent official initiatives and actions by the packaging industry. These recommendations may be seen at Annexes.

A reference to the recommendations reveals participants enthusiasm to accelerate the progress and growth of the packaging industries through technical assistance and intra-regional co-operation, the instrumentality of which can confidently forecast a more rapid growth of the packaging industries in the region. These industries need more talents and utmost encouragement by the national authorities to evolve policies and programmes that promote, among other things, the use of locally available raw materials and resources of expertise.

The current awareness is a helpful sign not only to solicit

involvement of the participating countries but also to make use of their influence in the restructuring of strategies that help develop technological and managerial resources in the shortest span of time.

It is true that these seminars were not free from some of the short comings, but the over all gains and effects achieved in generating collective thinking on a number of important problem areas, and participants ideas cast in an atmosphere of pragmatic settings are reasons enough to confirm the efficacy of the medium. Attempts are needed to re-acquaint the focal points with the recommendations of these seminars and request them to take follow up actions as applicable.

7.7. INVESTMENT OPPORTUNITIES

Some of the countries in the region have started reviewing the investment portfolio of identified projects and are engaged in framing policies that could boost industrial entrepreneurship to make them increase progressively the use of locally produced packaging raw materials and packages. Appraisal of the use of plastics in packaging and strategies to improve it further in Saudi Arabia and Libya; glass in Tunisia, improvements in the capacity utilisation of a major package manufacturing unit in Sudan through planned maintenance, new designs of packages for export of fresh fruits and vegetables in Algeria and Morocco, etc., are some of the examples related to the project activities and the upward thrust it has produced.

8.0 EVALUATION

An indepth evaluation of the project was carried out by a team of UNDP and UNIDO consultants in Aug-Sept 1985, followed by two Tripartite Review Meetings held during Nov 7-12, 1985 and Dec 15-17, 1986 respectively. Summary of recommendations of the in-depth evaluation and those of the TRP meetings are enclosed at annex XIV, XV and XVI respectively.

9.0 CONCLUSIONS

In view of the achievements made, analysis of needs and scope for future work, the Tripartite review meetings have strongly recommended the continuation of technical assistance for a period of three years. A draft project document on the subject prepared jointly by AIDO and UNIDO was considered by the TPR Review meeting held in Dec 1986.

The members felt that the project document needs to be reformulated with emphasis on the creation/establishment of infrastructural facilities at the national level and recommended that the reformulation document should be completed by a UNDP organised reformulation mission consisting of UNDP, UNIDO, AIDO and IMEC.

The project did experience some serious difficulties of management in a specific period and ran the risks of a premature termination. It was felt that the reformulated document should clearly specify and high light management aspects so as to avoid the recurrence of the phenomenon in future.

10.0 RECOMMENDATIONS

TECHNICAL ASSISTANCE

1. Technical assistance for the development of the ARAB PACKAGING INDUSTRIES should be provided for a further period of three years with a minimum interruption so as not to dampen the enthusiasm and impact already created by the project.
2. The demand for the establishment of national packaging centres is gaining momentum in some countries. Others may like to develop packaging services in the already functioning packaging related technological Institutes in their countries. These should be encouraged and technical assistance in terms of international experts, fellowships training and supply of equipment (to the extent possible) be provided on a priority basis.

APPLIED RESEARCH AND CONSULTANCY SERVICES

3. Applied research studies on certain common problems relating to packaging need to be undertaken. For instance packaging development studies in respect of edible oil, fresh milk and other food items consumed by the common man should be undertaken.
4. Many countries of the region need problem solving consultancy missions in the package manufacturing and user industries, but are not able to localise their problem areas. They should be assisted in problem dimensioning so that necessary and useful consultancy expertise could be provided.
5. The concept and mechanism for regional consultancy service need to be studied in depth. AIDO may coordinate the activity and also identify enclaves of expertise - institutional and individuals obtaining at the respective levels of excellence in the ARAB countries.
An inventory of such resources in areas of packaging training standardisation, testing, analysis and quality control, design and development, techno-economic feasibility studies, packaging costs etc should be circulated to the officials of focal points, chambers of commerce and some leading package manufacturing and user organisations in the region.

TRAINING

6. The countries of the region are at different levels of economic and industrial development. Intra country training programmes, specifically addressed to the problem areas of the national packaging and related industries are recommended.
7. Development of skills at the grass root level-viz the technicians and non-managerial operational staff should be upgraded through training programmes in ARABIC with audio-visual aids.
8. A programme suitable for training of trainers in packaging should be organised at IMEC with practical work on testing and analysis of packaging materials.

SEMINARS

9. Preference for fellowship training should be given to technical staff working in the packaging centres and relevant packaging related technological institutes, manufacturing and commercial organisations.
10. One regional seminar with participation of senior Government officials and managers from the industry on a topic of current interest should be organised every year. An intra-regional consultation meeting in order to review and determine industrial co-operation among the packaging industries in the region should be organised to coincide with the board meeting of AIDC and/or Baghdad fair.

STUDY TOURS

11. The efficacy of study tours as an instrument of development has been questioned, the matter should be reviewed and opinions of participating countries be invited on the subject.

PACKAGING STANDARDS AND CERTIFICATION

12. The resources of expertise and administrative support for ASMO's committee n° 19 for formulation of APAB PACKAGING STANDARDS are extremely inadequate to the outcome expected of it. These need to be strengthened.
13. Most of the standards organisations functioning at the national level do not have the requisite expertise to formulate /adopt packaging standards, and much less for certification and monitoring

of these standards. Concerted efforts in developing expertise and create facilities for testing should be accorded high priority. ASMO is recommended to promote the concept with the national authorities. A system should be developed in which the suppliers of raw materials particularly plastics guarantee that the materials they offer do not contain any harmful ingredient.

DOCUMENTATION AND INFORMATION SERVICE

14. A long term arrangement between AIDO and IMEC is recommended to sustain the quality and adequacy of this service at IMEC and AIDO upgraded during the project. The need exists for the establishment of a regional documentation and information centre for packaging.

STUDIES AND SURVEYS

15. The final recommendations of the survey of packaging demands and inventory of production capacities were already received. The results should be evaluated by AIDO and UNIDO. A joint technical committee of the executing agency and the counterparts is recommended to guide and monitor the progress of such large and important studies as and when conducted in the future.
16. The packaging related technological institutions capable of supporting packaging services in the countries should be strengthened and their expertise upgraded to be able to provide assistance for the development of national capabilities in terms of technology adaptation, absorption and development and be urged to intensify their participation in the development and distribution of packaging knowledge.
17. The region is endowed with raw materials and energy resources which could profitably be used for the promotion of packaging industries. Studies aimed at identifying investment opportunities and to boost industrial entrepreneurship to increase progressively the use of locally produced raw materials should be encouraged and given priority.
18. Present state of the food packed in metal cans and plastic containers should be the subject of immediate study for assessment of attributes relating to food hygiene.

REGIONAL PACKAGING COMMUNICATION NETWORK

19. It is recommended that the officially nominated focal points/ departments should be recognised as an important part of the regional packaging communication network. In the interim period, these focal points are the nearest functioning alternatives to the National packaging committees. Further work on identification and orientation of focal points in the countries where such focal points are not yet established should be undertaken.

PROMOTION

20. More organised and effective efforts are needed to promote on regular basis the packaging services of any future project. The mailing list regarding announcement of programmes and services may have to be substantially expanded to include certain important segments of the target beneficiary groups. A packaging Newsletter in Arabic and highly news oriented and journalistic in nature should be produced and distributed every month among the Arab countries. Participation in the industrial fairs, with displays of packages manufactured in the Arab countries, competitions and industrial prizes, formation of the Arab Packaging Federation, production of documentary films, etc., should be encouraged and some of the member countries be assisted to undertake such activities.

LESS DEVELOPED COUNTRIES

21. It is important to have special facilities for training of industrial managers, technologists and technicians belonging to the packaging and packaging users industries in the less developed countries, in one of the member countries of the less developed countries. For instance, the Food Research Centre in Sudan could be reinforced to develop facilities for training of personnel from these countries.

PILOT DEMONSTRATION CUM TRAINING PLANT

22. A pilot production unit for extrusion and printing of plastic films, thermoformed containers should be established at one of the technological institutes, may be in Jordan at the R.S.S. for controlled experimentation with a view to making appropriate modifications in design and processes for upgrading ongoing technology and training of technicians.

PACKAGING DESIGN FOR EXPORTS

23. IMEC Casablanca have a well established graphic design section and has been equipped with the necessary hardware of photo setting and printing facilities. This service can be upgraded to train designers from other countries. Arab countries that are advanced enough to export packaged food and even in bulk form should have the services of a packaging development adviser at the enterprise/trade board level.

MANAGEMENT/ORGANISATIONAL DESIGN

24. Headquarters and secretariat of the project for the entire life span should be clearly defined right from the very beginning of the project.
25. Roles and responsibilities of the regional/national counterparts with the staffing pattern necessary for project management and the international staff should be clearly defined and attached to the project document as per existing conventions and norms of international assistance.
26. Guidelines regarding line of communication between the counterparts and the participating countries, the Executing Agency and UNDP Regional Bureau may be provided and the participating focal points advised on the procedures for inclusion of any ad-hoc assistance needed by them.
27. It is advisable to have an advisory committee consisting of AIDO UNIDO, UNDP and representatives of participating countries to guide and monitor any future project. This committee should convene at least twice a year at the project's headquarter and or at a place to be decided by the UNDP.
28. It is advisable to have the CTA from the beginning of the project. The CTA should maintain contacts with the UNIDO's SIDFAs and Resident Representatives of UNDP offices in the participating countries.
29. Efforts should be made to ensure equitable and even spread of activities of the project to as large a number of countries as possible.

30. Special efforts are needed to identify and satisfy the needs for technical assistance of less developed countries viz Sudan, Somalia, Mauritania, Djibouti, PDR Yemen and Yemen Democratic.
31. The participation in the periodic review meetings to assess the overall progress of the programme should be clearly defined with a scope for invitees to be determined by UNDP. It is advisable to associate certain members from the packaging manufacturing industry and technological institutes.
32. The national focal points duly established in each country should have a clearly defined role and responsibilities in their relationship with the regional project coordinator.

A N N E X U R E

LIST OF INTERNATIONAL EXPERTS AND
CONSULTANTS

Mr. R.K. CHOWDHARY Luis MADI	Packaging Project Evaluation
Mr John SALISBURY	Survey of packaging industry
Mr S.Y. OSTLUND	Manufacture of corrugated board and boxes
Mr William BLAU David BISHOP	Seminar on Packaging design and marketing
Mr G. GRUNDKE	Seminar on packaging technology for selected food products and ways and means of regional cooperation
Mr Gerard O. BALDIN	Milk and dairy products packaging
Mr Ivan VARSANYI	Food packaging
Mr Robert TAYLOR	Organisan of audio visual courses
Mr R.K. CHOWDHARY Mr R.K. CHOWDHARY	Packaging surveys Chief technical adviser
Mr Frank A. PAINE	Packaging materials
Mr Hugo BAUSITSTA	Packaging standardisation
Mr Mahmoud ZAYED	Documentation & information
Mr Aleksander SOLTAN	Packaging surveys
Mr Kurt Hansen GARMIN	Documentation & information
Mr Edmond LEONARD	Seminar on opportunities and parameters of joint Ventures for Packaging industries and regional and Inter-country Co-operation

LIST OF NATIONAL EXPERT

Mdm BENNANI Wafae	Studies on economic research
Mr CHAABANI Ahmed	Organisation of training programmes and preparation of course material
Mr HAMMI Mustapha	Documentation and information guidelines for thesurus
Mr IDRISSI A. Sahli	Documentation and information course material
Mr KHAMLICHY Ahmed	Establishment of packaging laboratories in Tripoli
Dr EL YUSSUFI Abdelaziz	
Mr BENNANI Kouider	Production of audio-visual aids
Mr LUOLIDI Abdenbi	Packaging of fruits and vegetables
Mr NADRI Ahmed	Testing equipment specification and requisition, installation
Mr SERGOUCHNI Ahmed	Packaging standards
Mr ZAMAT Mohamed	Packaging design
Mr BEZZARI Mustapha	Documentation and information and ARPAC bulletin Preparation of thesurus
Mr BASSIT Salem	Studies on economic research
Mr KHAMLICHY Ahmed	Paper and board carton testing Food compatibility regulations
Mr EL YUSSUFI Abdelaziz	

ANNEX 1.10

EXTRACTS FROM REPORT

MR. John SALISBURY

Survey of Packaging Industry
Jordan (11-01)

D. RECOMMENDATIONS

The recommendations are given below in the form of a detailed list with suggested priority treatments. When the various bodies have had time to analyse the points made, and the nature of the evidence on which they are based, it will be possible to build up a programme of action based on those accepted, together with new proposals that will no doubt emerge from the deliberations.

<u>Priority</u>	<u>Recommendation</u>
<u>General</u>	
1. 1	The analysis of the state of Jordanian products when offered for sale (as illustrated in Annex 2) should be continued on a regular basis.
2. 1	The technical staff operating in industry must be fully informed about the nature and application of the test equipment and test techniques at present available in RSS. A formal training method available at any time should be sought. This would probably best take the form of video training films.
3. 1	The RSS paper and packaging laboratory should be reinforced.
4. 1	Serious consideration should be given to permitting the technical staff from industry to be present during the testing of their packaging materials and containers, and the elimination of the formal test report preparation as practised at present.
<u>Corrugated Boxes</u>	
5. 1	Every support should be given to helping the local supplier produce good quality corrugated boxes. It is a vital industry.
6. 1	The equipment necessary for testing the materials and the boxes produced should be available to the manufacturer and to the users too.
7. 1	The present level of printing quality on corrugated boxes must be improved.
9. 3	The introduction of a joint venture company blending printing inks from concentrates locally should be considered as a means of bringing some much needed technical assistance in the field of printing.
8. 3	The introduction of a box certification scheme should be considered.

<u>Priority</u>		<u>Recommendation</u>
10.	3	The application of the corrugated box to fruit and vegetable packaging should be encouraged.
11.	3	The possible manufacture of the all-plastic corrugated containers should be considered.

Folding Cartons

12.	1	Support should be given to the local company that recently made a large investment in excellent machinery for folding carton production.
13.	1	The insistence on cast-coated board for pharmaceutical cartons should be discouraged throughout the Arab Region.
14.	1	The growth of carton systems that require such specialized materials of construction that they are unlikely to ever be made in Jordan, (e.g. Tetrapak and Purepak) should be discouraged.
15.	2	The quality and thickness of the carton board being used for detergent powders by at least one manufacturer is inadequate. Standards for leakproofness for such containers should be introduced.
16.	2	As the folding carton market is likely to be small for some time to come, the number of converters should be restricted to allow the quality to be built up.
17.	3	Efforts should be made to promote the need for well-made cartons when medium or high speed cartoning machinery is being used.
18.	3	A special study should be started on the creasing rule/ make-ready combinations that are needed for good creasing under local conditions.
19.	3	It is apparently in Jordan's interests to pack in plastics or glass whenever possible and this should be borne in mind when considering expansion in the use of specialized folding cartons.
20.	3	Match carton production should be considered as a special case better done 'in-house'.

<u>Priority</u>	<u>Recommendation</u>
21. 1	The number of companies making plastic containers should be reduced.
22. 1	Standards are needed for the performance of plastic containers focussing on print adhesion and leak resistance.
23. 1	The test equipment and test methods associated with plastic container packaging must be made available as soon as possible.
24. 1	Ways must be tried of making local industry more aware of the benefits of scientific testing and a way found in which they can be actively involved in the application of these testing techniques.
25. 1	The use of self-adhesive labels on plastic containers should be encouraged.
26. 1	A special study should be made to see if a standard range of plastic containers can be agreed on for the Arab Region, product by product, especially in the case of household products.
27. 1	The growing practice whereby product manufacturers make their own packaging (bottles, pots, cartons, cans) should be discouraged.
28. 1	In the centralized packaging laboratory there should be someone specializing in the interpretation of the regulations existing in other countries (e.g. U.S.A. and Germany) concerning permitted and non-permitted substances in food packaging materials.
29. 1	The system in which the suppliers of raw materials and containers are required to guarantee that the materials they offer do not contain harmful ingredients should be introduced as soon as possible.
30. 2	A study should be made concerning the extent to which anti-static agents are added to resins being used for container manufacture in Jordan.
31. 3	The chemical analysis section of the RSS should be skilled in the determination of monomer content in PVC and polystyrene.

	<u>Priority</u>	<u>Recommendation</u>
32.	3	The use of blown plastic containers as a form of milk packaging should be encouraged.
33.	3	A special study should be made on the possible introduction of PET bottles for the packaging of carbonated soft drinks as an alternative to the can and as a means of introducing one litre and two litre containers to the market for family use.

Plastic Films and Laminates

34.	1	The diversity of types of laminates in use is very great and without a big market it is difficult to make them economically. The freedom to purchase laminates abroad is necessary because the properties needed are often very specific.
35.	1	There is a real need for a central laboratory with a good understanding of the properties that can be expected from a given combination of materials. Test equipment for the materials and the filled packs will be essential.
36.	2	A special study should be made on the application of co-extruded films to the future needs of the Jordanian market and the possibility that this might be an exportable product.
37.	-	The introduction of the sterilizable pouch is not recommended as an alternative to the can.

Glass Containers

38.	1	The use of disassemblable, light-weight, glass containers should replace the aluminium can and possibly the triplate can as a beer container.
39.	1	The varnishing of paper labels should be made mandatory, except in the case of re-usable containers.
40.	1	A special company for making closures should be considered as part of the glass container industry so as to offer a total service to customers.
41.	3	The central packaging laboratory should begin work studying the application of glass containers to as many uses as possible for the Jordanian market.
42.	3	The needs of the pharmaceutical industry should be investigated to see if a small separate company for glass containers would better serve its needs.
43.	3	Technical help from the central laboratory should concentrate

Priority

Recommendation

on the testing of filled containers rather than the technology of glass containers.

- 44 3 Consideration should be given to the very gradual standardization of brown as the colour for glass containers for beer, so that recovery as cullet will be simplified.
- 45 3 The siting of skips for the collection of used glass containers should begin now.

Metal cans

- 46 1 The staff of the metallurgical laboratory in RSS should be given special training in the testing of cans.
- 47 1 The present state of the food can industry should be surveyed by a specialist in can production.
- 48 1 Food can production should be limited to one specialist company created by the union of one of the specialist can makers in a joint venture with a long-established foreign manufacturer.
- 49 1 The quality of the canned tomato paste on sale in Jordan should be the subject of an immediate enquiry by the body responsible for food hygiene.
- 50 1 A standard range of can sizes for food use should be established, preferably on an Arab Regional basis.
- 51 2 There should be national standards for food cans.
- 52 2 A vigorous campaign should be instigated to reduce the number of dented cans being offered for sale.
- 53 3 The use of aluminium cans for beer and soft drinks should be discouraged.
- 54 3 Aerosol can testing equipment should be introduced into the central testing laboratory.
- 55 3 Wider use of tin-free steel and second quality plate in local can production should be encouraged as a means of saving foreign exchange.
- 56 3 The expertise necessary for the analysis of lead and tin content of canned foods should be developed.

<u>Priority</u>	<u>Recommendation</u>
<u>Wooden Boxes</u>	
57. 1	The standard for wooden boxes for fruit and vegetable packaging at present specifies length, width and height. This should be reconsidered with a view to freezing the height requirement so as to make for more flexibility.
58. 3	The future role of the corrugated box in export packaging of fruit and vegetables should be borne in mind when planning wooden box capacity expansion.
<u>Woven Plastic Sacks</u>	
59. 1	Test facilities for drop-testing filled sacks and the skill to use them need to be acquired at the central test laboratory.
60. 1	National standards for flour sacks are required to simplify comparisons between local and imported sacks.
61. 1	The outside purchase of flour sacks should be discouraged when the local product can be shown to be a fair match.
62. 1	The system for placing large orders for delivery at agreed weekly or monthly rates should be encouraged so that the factory may plan its production efficiently.
63. 2	The local manufacturer should be given every support in expanding to meet a greater percentage of the high quantities that will be required when the newer flour mills come on stream.
64. 3	The potential for manufacturing the one ton "big bag" should be investigated, at national and regional level.
65. 3	The ruling that the plastic flour sacks should be used only once should be re-examined.
<u>The Disposal or Recovery of Used Packages</u>	
66. 1	The problem of litter should be regarded as a social and educational problem and not one to be solved by banning or restricting packaging materials or containers of a certain type (with some possible exceptions such as ric-too cans).
67. 1	Land fill would appear to be the best way of disposing of waste packaging materials in Jordan.
68. 1	Direct incineration as a way of disposal of packaging

- waste can cost six times that of land fill and does not appear to have any advantages for Jordan.
69. 3 The recovery of glass containers before they enter the domestic waste system should be implemented, although it must be realized that it will be many years before it becomes effective.
70. 3 The use of biodegradable plastics is not a viable solution.
71. 3 The recovery and re-use from industrial waste of plastic materials is in most cases already being done; a check could be made to see that it is not being overdone.
72. - The recovery of plastic waste from domestic waste is not a viable operation.
73. 3 Any plastic recovery schemes concerned with keeping plastic waste separate from domestic waste should emphasize the need to keep the different kinds separate.
74. 3 Collection of paper waste from industrial and commercial sources should be encouraged.
75. - The recovery of waste paper from domestic sources should be regarded as impracticable.
76. 3 The production of waste-derived fuels from the paper, plastic and wood in domestic waste should be regarded as a real possibility but work on the process in Jordan should be restricted to the need for such a process and the implications concerning the special design of furnaces required. This is a regional investigation.
77. 3 When PET bottles are introduced, it should be a requirement that they are clearly marked as such as an aid to their recovery.
78. - Work on the recovery of metal containers from domestic waste seems unlikely to be of value to Jordan over the next five years.

EXTRACTS Mr. Ostlund S.Y.

MANUFACTURE OF CORRUGATED BOARD AND BOXES
SUDAY - IRAQ (11-71)

RECOMMENDATIONS

Detailed recommendations for each visited corrugated box plant are given separately in this report.

In the light of the observations made by the consultant during this mission, the following recommendations are put forward for further in put by UNIDO/ARPAC.

S U D A N

As the corrugated board and box industry in Sudan is in great need of modernization, a consultant in the production of corrugated boxes should's, end at least 3 months with the principal Sudanese box makers. During this mission, he would :

1. Advise on necessary investments in order to upgrade existing corrugated box plants emphasizing following :
 - Modern production machines (new or second hand) and in this connection prepare delivery test programmes
 - Efficient plant lay-outs (Propose suitable extensions of existing buildings)
 - Efficient operation of the production machines (In-plant training - Production technology)
 - Basic knowledge in paper - starch-and steam technolog
 - Production planning
 - Quality control

2. Advise on technical specifications, when purchasing raw material (liner and fluting) and inventory (Balance:liner-fluting).

3. Advise on investments in testing equipments in order to up-grade the UNIDO Founded Cellulose Chemistry and Technology Research Unit (CCTRU) to be able to perform corrugated board and box tests.

4. Prepare and carry out a one month study tour to corrugated box plants and one paper mill in Europe for selected people in the plants.

I R A Q

In the consultant's opinion, the overall situation at the ICCM plant is satisfactory but there might be a need for a consultant one or two months to advise on :

1. Production technology
2. Production planning
3. Reporting system
4. Waste reduction
5. Basic knowledge of paper, starch and steam technology
6. Quality control
7. Development of new activities such as manufacturing of Bag-in-Box system, Bliss box etc.

In addition the consultant puts forward the following strong recommendation for the Arab countries participating in ARPAC :

This mission, together with earlier missions in the arab region by the consultant revealed the need for up-grading the production knowledge and training of the production people on all levels in the corrugated board industry, from machine-drivers to the technical managers. To solve this problems, there is a need for a well organized training centre where machine drivers, supervisors and technical managers can be informed and trained in modern production technology. The training programme should comprise theoretical informations and explanations coupled with practical work in a corrugated box plant.

The intention with th's centre should also be to train arab engineers to become consultants concerning production technology as well as upgrading of existing plants in the Arab region.

In the light of above mentioned lines of thoughts, the consultant strongly recommend UNIDO/ARPAC to study the possibilities of starting up a training centre. .

In the consultant's opinion the Iraqi Company for Carton Manufacturing (ICCM) would be a suitable place to start such a centre for the Arab Region.

In order to prepare the training programme, there is a need for a consultant during 6 months.

SEMINAR ON PACKAGING DESIGN AND MARKETING

FINDINGS AND FINAL RECOMMENDATIONS

Attendees at the seminar seemed to be truly interested in the transfer of information that can take place at such an event. Mr. Blau and Mr. Bishop came with the direct purpose of transferring information on two important aspects of export packaging.

1. Information on increasing the effectiveness of export package communication through the use of sophisticated market planning techniques (Mr. Blau).
2. Information on new packaging materials, structures and the techniques of design thinking (Mr. Bishop).

Unfortunately there were only a few individuals attending the seminar who were either in a position to functionally utilize information in either topic or had the technical background to fully utilize the information. Thus we would respectfully make the following recommendations for your consideration in future seminars of this type.

1. The seminar should start promptly at 0900 and run through 0400 with a light lunch or sandwiches served at lunchtime.

Rationale: Enough time in each day must be provided to intensively examine a topic.

2. Each session (half day or full day) be devoted to one topical area with no more than 2-3 speakers each giving a 20-25 min. paper. The remaining time, 1 1/2 hrs. should be devoted to discussion between the attendees and the speakers.

Rationale: This will allow enough time for the transfer of information even when an attendee is not in a directly related position or does not have enough background to assimilate the content from a topic alone.

3. Amongst each group of 2-3 speakers in each session could be at least one speaker who will present a short, concise case history in the topical area in which he shows what was done in his country and whether it succeeded or failed. For example in the marketing communications section, the gentleman from Algeria had presented the ITC Mejido (canned vegetable) project as a case showing how Algeria worked with ITC, the problems in implementing the solution and the kind of market feedback they received.

Rationale: Case histories show that the topic is not just an abstraction and demonstrate that on the local level these things can be done and where problems may arise.

Relative to more general findings that may be somewhat discolored by the short time available for inquiry we would suggest these ideas.

4. In general terms, for those Arab States that are advanced enough to be considering the export of packaged and even bulk products to international markets, consideration should be given to having available an experienced marketing executive on their trade council or at the enterprise level, with economics, advertising and distribution.

Our observation was that there is a tendency on the part of those Arab States with strong public sector participation in export (through trade monopolies, etc.) to push for local production of all packaging elements in order to build up local capacity. We would see the successful marketing of product lines (i.e. wine, canned fruit, fruit syrups, etc.) to more developed countries as an undertaking totally divorced from the problem of industrial underdevelopment. Thus, for example, if a certain state can produce a superior fruit syrup, they should use the best resource, whether local or not, for designing a suitable bottle that then would be locally produced. But if local printers cannot do a quality printing job, it is more important to present a quality image for export and achieve success with the exported products than to give a local printer the job and have a low quality product appearance that fails in the marketplace. If this raises the cost of goods then they must develop a marketing program through their exporter that will sustain the price necessary to pay for these ingredients in the "marketing mix."

Rationale: Many of the products currently exported from the Arab countries to Europe and other areas are bulk shipped so that "packaging" in the usual sense is not a factor. Yet several "package marketing" techniques commonly used with other bulk exporters could contribute value added and country loyalty to these exports. For example, the problem of identifying dates was brought up by one of the representatives from Iraq. Two suggestions were made to him.

A. Development of a "date mark" (or product mark) i.e., a symbol with the words "Quality Dates From Iraq". Then in negotiation deals with importers, an advertising allotment is made by the exporting agency for the importer to carry this mark on all packaging and possibly in local print ads. This same concept can apply to certain other fresh bulk shipped products. Essentially Morocco is doing part of this in their "Moroc" mark and promotional program on oranges.

B. In negotiating trade deals on bulk shipped products special allowances can be given if the importer uses packaging and a brand name designed specifically by the exporting country. Thus the product could be shipped in bulk, the packaging printed at the destination market, but a brand loyalty could be developed for adding value and consumer recognition.

SEMINAR ON PACKAGING TECHNOLOGY
FOR SELECTED FOOD PRODUCTS AND WAYS AND MEANS
OF REGIONAL CO-OPERATION

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The seminar made clear that it is a large requirement to change information in the field of food packaging, especially on the new trends and the progress in the field of food packaging.

The UNIDO can give support by publications and by delegation of experts as consultants. Very urgent requirements are in the field of commodity science. Therefore, the report give a proposition for the foundation of a Committee for commodity science by the UNIDO.

Other propositions concern the using of the possibilities of the Moroccan Packaging Institute, the translation of the "Encyclopaedia of Good Damages" (edition 1985 in German) and the supporting of researches, especially in the field of good damages, in the standardization and in the field of recycling.

Technical specifications in this field

The Saudi Arabian Standards Organisation, the SASO, progressively on his side works out specifications either on the foods of various food sectors as milk for instance (specifications elaborated in form of a targeted chapter of a "Codex Alimentarius") or on the packaging materials properties and characteristics, transportation and storage (in form of general considerations and recommendations).

In the case of pasteurised milk (see Appendix III) such a standard has been issued in 1977, based on various similar prescriptions of other countries, but voluntarily giving (impossible to do it because of the diversity of the equipments, of their relative specifications) any precise and to exactly followed specifications concerning the packaging materials for dairy products, but only "general recommendations" which are following:

..... "PACKAGING, TRANSPORTATION AND STORAGE"

- " The following shall be taken into consideration :
- " - The containers of pasteurized milk shall be made from harmless material, clean, sterilized and cause no change in milk properties.
 - " - Pasteurized milk shall be mechanically packaged to avoid any contamination.
 - " - The containers shall be tightly closed in a manner that prevent any contamination.
 - " - The temperature of pasteurized milk shall not exceed 10°C during transportation and storage.
 - " - Pasteurized milk shall not be sold to the consumer after the elapse of 3 days of production then returned to the plant.

LABELLING

- " Taking into consideration what has been stated in the Saudi Standard N° 1. concerned with "Labelling of prepackaged Foods", the following information shall be legibly labelled on the containers of pasteurized milk.
- " - Pasteurized milk
 - " - Date of pasteurization
 - " - If pasteurized milk contains more than 3% fat, the species of animal from which the milk is obtained shall be declared
 - " - In the case of homogenization, it shall be declared
 - " - In the case of using milk powder, its percentage shall be declared".

The non existence of precise standards for the milk packaging is not only understandable, but in today's situation perfectly right. Nobody may just impose its specifications to all milk and dairy products manufacturers without provoking inevitably enormous counter effects either on the equipment of the plants or on the undergone after sales services agreements.

Such an action would certainly initiate an endless tempest between all the parties concerned with it (Ministry of Industry and Electricity, SASO, local or/and foreign packaging manufacturers, local fresh milk and recombined milk and dairy products producers).

Having got in the course of this inquiry a fairly deep insight into the KSA milk and dairy industry as well as into the local paperboard industry and into the actual position reached by the SASO, it seems to the expert that the only real motive for one party requesting to exactly define packaging specifications (the BANAWI Packaging Group) is the desire to maintain and to confort its "monopolistic" packaging material producer position within the country. It is thus advisable to :

- 1°) Reexamine thoroughly if such "monopolistic" position is not at middle and long term a real danger for the country's liberal economic policy ?
- 2°) Study thoroughly and with rigorous good will any attempt to establish by newcomers new packaging manufacturer operations of that sort in the country (answer may be yes or no)
- 3°) If yes, the future competition on the packaging market will ameliorate and maintain up to date the quality and prices in conformity with the equipments of endusers to the final benefit of the products and of the consumers ;
- 4°) Collect continuously all publications of new standards or specifications in other dairy industries having countries ;
- 5°) Reconsider periodically the KSA general recommendations to progressively narrow the tolerances given ;
- 6°) Collect progressively all internal specifications edited by the manufacturer of the equipments being used in the country ;
- 7°) Also collect all prescriptions and tolerances for the packaging, being applied by the milk and dairy plant manufacturers;
- 8°) Establish and compare periodically synoptic specifications charts (suppliers side and endusers side) in order to progressively narrow the guidelines and recommendations ut to the point (middle term being within 3-5 years) where it thus will be possible at middle term to start to definitely fix the first official specifications for the dairy packaging material, with the agreement of all concerned parties.

FINDINGS

The increase and improvement of the local production of packaging materials and containers would require substantial allocations for package manufacturing and converting machinery in the investment budget of Syria. The development and extension of packaging in the food processing factories is dependent on the importation of suitable packaging lines. The material handling, storage, distribution, transportation would require rationalization through forming of units, palletization and containerization.

The problem of maintenance is very urgent. The systematic and organized maintaining activity is the key of continuous production. The machines and equipment, which are out of work, reduce the industrial incomes and decrease the morale in factories, therefore, the importance of maintenance is stressed.

Regarding the necessity of increased food production it is highly recommended to develop the food technologies harmonizing with the packaging techniques. Without co-operation between the food and packaging production including the development of machinery and technologies countable results and profits cannot be expected.

CONCLUSIONS

The development of food industry, including packaging is basic interest of Syria. This should be achieved through the introduction of new capacities, the achievement of higher productivity levels, better utilization of the existing facilities, more efficient use of the raw materials and improvement of the quality of locally manufactured goods.

The development of the food industry, including packaging demands financial concentration but it also needs individual concentration. Therefore, it is highly recommended to establish an Arab Regional Food Research, Development and Training Centre in the first step, and regarding to the national necessity to establish the Syrian food and packaging development and training institute in the next phase.

The Arab Regional Packaging Centre Project offers an excellent opportunity to develop the food packaging in Syria. This institution can help to solve many problems in the fields of development, design, and quality control.

Summarizing the facts it may be stated that the comprehensive development of the food industry and the food packaging requires the assistance of UNIDO and UNDP, accelerate the intensification and modernization of Syrian food industry.

Packaging industry practically does not exist in Syria. The packaging materials and containers imported constitute the dominant part of packaging supply. The quality of the locally made containers is not sufficient and there are no facilities to improve them.

The analysis of packaging component in the factories visited indicates that most of packaging containers are imported ready made form (cartons, corrugated fiberboard boxes, coated cellophane, coated aluminium, metal cans and boxes, etc). Package manufacturing plants (paper bags, plastic pouches, bottles and boxes, plastic crates) are converting imported packaging material (e.g. tin plate) or plastic granulates (e.g. polyethylene, polystyrene polyvinyl chloride).

The quality of imported packaging materials and containers varies according to the possibilities of the import. The losses and damages of packaging materials and processed foods during the filling, storage, and transportation are unsatisfactory due to the inadequate technologies and containers.

Therefore ^{it} is urgent need for expanding the domestic production of packaging materials, especially glass bottles (milk) and jars (preserved foods), plastic bottles (vegetable oils, soft drinks etc) and thermoformed items (tomato purée, fat, ghee, etc), plastic pouches (cheese, meats), metal closures (crown corks, caps) and corrugated papers (transportation).

EXTRACTS / MR. Robert TAYLOR

Organisan of Audio Visual
Courses
(11-57)

Main conclusions

1. The existing lecture notes were deficient in visual aid material and...
2. the lecture notes require extensive reworking to reflect conditions in the packaging industry in Arab regions.
3. there is a lack of film and video material suitable for promotion of packaging technology.
4. the period of time available to a consultant to undertake an analysés of audio-visual needs has proven to be insufficient.

Main recommen-
dations

1.

The production of audio-visual aids for the support of training courses and seminars should be undertaken as an urgent priority, including the scripting and production of a promotional film of the packaging industry. Concurrently with this activity, lecturing skills need to be imparted to professional engineers and technicians and, audio-visual equipment at IMEC should be supplement to provide

increased flexibility to cope with a wide range of audio-visual formats.

2. The two production requirements of producing visual aids in the format of 35 mm- and the promotional film, are at present treated as two separate concepts, although economies in production should be sought through the use of one Contracting Agency with facilities for the production requirements.
3. Through contacts with professional workers in the fields of film and visual aids within Morocco, such authorities may be appointed as the Executing Agency.

(Consultant in Packaging Surveys - 11-52)

1 - Coverage of Countries for the Study

On account of budgetary constraints, it is suggested that the study may be initially confined to cover twelve countries viz Iraq, Jordan, Morocco, Libya, Qatar, Syria, Sudan, Tunisia, Saudi Arabia, Egypt, and Lebanon.

The remaining countries viz Djibouti, Mauritania, Somalia, Yemen RA, Yemen RDP and Palestine may be covered in the next phase after the necessary financial resources are mobilised. G.O.I.C is already proposing to extend the study to Bahrain, Kuwait, UAE and Oman.

2 - Review of budget

It is recommended that budgetary provisions for the study may be reviewed in the context of the extended scope of the study. It may be possible to meet the financial commitments out of the joint budgetary provisions of UNIDO/AIDO ear-marked for the activity and the savings that may accrue from other activities stipulated in the project document.

3 - Priority of Industries

The focus of the study should be primarily directed to forecast sectoral demand for packaging materials/packaging types for the food industry-commodities, fresh produce and prepared food, followed by those for the pharmaceutical and consumer goods industries.

4 - Study Approach

Desk research combined with on the spot field investigations/ interviews of a cross section of the target audience/industrial units and informed opinions are suggested as the approach to the study.

5 - Sample size number of interviews

A minimum of 470-490 interviews distributed over different countries/ industries with in each, are envisaged for the field research investigations of the study. The selection of sampling units may be

done on the basis of stratified sampling with stratification according to the authorised capital or some other worthwhile criterion.

Interviews of the members of informed opinion group such as heads of industry's department, chambers of commerce export/import agencies, etc.... may be conducted by selecting the members on a purposive selection basis in consultation with the Directorate of industry in each country.

6 - Packaging material producing units

Units engaged in the manufacture of basic packaging material are few in the region. A complete coverage of these units is suggested.

7 - Characteristics of packaging and package user's industries

Information on certain basic characteristics of the packaging and user industries may be obtained. Information on aspects such as quality control measures, trained man power, material specifications, sources of raw material, plans for diversification may be collected. Attention to questionnaires designed for the purpose is invited.

8 - Distribution of field work-grouping of countries

The countries proposed for the study may be grouped into two-three geographically convenient clusters-for distribution of field work. For example, the grouping of countries consisting of S. Arabia, Iraq, Qatar, Jordan, Lebanon, Syria and Morocco, Algeria, Libya, Tunisia, Egypt and Sudan may be more advantageous from the points of view of travel convenience and cost. Each cluster of countries may be assigned to a team of two members (One senior specialist and a Junior one) who should possess the right experience of conducting packaging surveys.

9 - Time period and final report

The field work may be initiated in Dec 1985 and preferably be concluded by April/May 1985.

The choice of the timing is considered more conducive in the context of a relatively higher pace of industrial activity and more agreeable climatic conditions. The field work is expected to last for a period of five months. AIDO/ARPAC would very much welcome to have the final report by middle Aug. 1985.

TERMS OF REFERENCE FOR CONTRACTING FIRM

Suggested terms of reference for the contracting firm who may be assigned the contract have been formulated vide section 50 of the report.

1 - Briefing and mid term assessment

AIDO/ARPAC be invited to the briefing meeting. For assessing the interim progress particularly in view of the difficult logistic situation obtaining in the region, it is desirable to have tripartite (UNIDO/AIDO contracting firm) review meeting when the field work is half way through. This may help overcome any bottleneck that may be hindering progress.

2 - UNIDO's assistance during field study

In view of the diverse nature of the study and the fact that a number of countries at different level of economic progress are involved it is suggested that UNIDO may depute a consultant to ARPAC who may assist the Director of ARPAC in co-ordination work and complement the efforts of survey teams in desk research. The consultant should also collect validating data on the field work through "inter-penetrating sampling technique" to help improve the quality of the work and determine the confidence level of the forecasts.

3 - Co-ordination of work

DG (IMEC) Director ARPAC, it is suggested should act as a co-ordinator of the study. It is desirable that the survey team is accompanied by an Arab speaking member belonging to the region to facilitate the field work. AIDO/ARPAC may organise for such a support.

4 - In-depth interviews

In-Depth interviews are regarded as the core of field investigation. The temptation to leave the questionnaire with the respondents for its subsequent receipt should be avoided.

Physical act of completing the questionnaire in the presence of the respondent should be avoided. It is preferable to write down his responses as the interview progresses. It generally takes 2.5 to 3 hours to complete an interview including the observational study

of the unit sampled.

5 - Sampling frame

For selection of the sample amongst the processed food industries, the directory of Food Industries in the Arab Region may serve as a useful sampling frame. This may be supplemented by the list of industries available with the respective industries departments in each country.

Already such lists/ directories are available for S. Arabia, Morocco, Jordan, and Syria with B/EC. Efforts are in progress to obtain these for other countries.

6 - Desk research

The survey team should make efforts to collect published/unpublished reports, position papers, plan documents relating to agricultural and industrial growth-past, present and future - of country visited. AIDO had been approached to help collect information on the value and volume of agricultural and industrial production, imports/exports including those of the packaging industry for the period 1979-84 for each of the country.

7 - Import of packaging material

A majority of the countries of the region depend upon imports to meet the requirements of packaging material.

It is suggested that data on the volume and value of imports should be collected for the period 1979-84 for different materials- by country of origin.

Similar data on exports of packaging materials (if any) should be listed by country of destination.

8 - Coordination with G.O.I.C.

Under the sponsorship of AIDO, the Gulf Organisation for Industrial Consulting, Doha is planning to conduct a study on the consumption forecasts of packaging material in U.A.E, Bahrain, Kuwait and Oman. A better co-ordination between UNIDO/AIDO team and G.O.I.C. is recommended to make the studies complementary to each other.

9 - Mission to Sudan and some less developed countries

Preliminary information on the status of packaging and user industries in Sudan, Mauritania, Yemen RA, Yemen RDP, Djibouti is not available. It would greatly facilitate the survey work in these countries if short mission to Sudan, Somalia and Djibouti was undertaken as a prelude to the main study in these countries.

STRENGTHENING OF ARPAC SERVICES

1 - Standardisation and problems solving consultancy services

The demand on ARPAC services originating from the member countries, is likely to multiply in days to come. Already the need to evolve national standards for packaging material used in the food industries has been emphasised by a few countries and they are expecting immediate contributions from ARPAC. ARPAC plan of work (appendix XIII) may have to take into account the changing requirements and the new sense of urgencies. Some of the activities of ARPAC viz problem solving packaging development and packaging standardisation services may have to be strengthened immediately.

2 - Assistance to set up material testing laboratories

The need to set up material testing laboratories at the national levels is recommended. ARPAC may assist national governments in setting up these laboratories.

3 - Marketing and promotion of ARPAC services

The countries visited during the field visit provide enough evidence of the gaps that exist in the field of adequate packaging. There are many industries that are not aware of the facilities and potentials of ARPAC activities nor these services have been marketed and or promoted in any systematic manner. The need to do so through the region's oriented packaging problems and scenes depicted in a film, press features, participation in exhibitions, visits to influential and representative food processing units, seminars and congresses etc... could promote the interest of packaging manifolds.

A systematic and sustained approach of marketing ARPAC services may be incorporated in its plan of work.

20.4 Findings of pilot survey

ARPAC may initiate plans of action on some of the key recommendations referred to in section 17.4 of the report.

20.5 - Expert mission to Jordan

Government of Jordan have requested AIDO for technical assistance in the field of packaging.

The problems was dimensioned and an expert mission for a period of 10 to 12 weeks on packaging standards for food is recommended.

Terms of reference have been set out vide section 14.3

- PRIORITY ACTIONS

1 - List of industries

AIDO/ARPAC are requested to obtain these from respective countries immediately and forward the same to UNIDO.

2 - Industrial data

Historical data on the past performance of industrial and agricultural sectors for the period 1979-84 vide proforma and on packaging industry vide appendices VII & VIII respectively may be collected by AIDO/ARPAC.

3 - Statistical data/country and seminar papers

Some of the country/seminar papers (mainly in Arabic) are available with DMEC and contain useful information on the quantitative and qualitative features of the packaging and users industries.

Statistical data contained there in may be collected and tabulated with English titles and classifications, and be forwarded to UNIDO.

4 - Quality control for packaging materials in the food industries

Quality control measures for packaging materials/packaging types are woefully lacking in the food industries. Nor there are trained technicians to do the job. ARPAC plan to conduct seminars on the

subject in Jordan. These need to be followed up by technician level training programmes.

Food industries should also be required to include quality control of packaging material as a part of the total quality assurance activity.

5 - Packaging development studies

The incidence of excessive use of packaging material particularly in respect of flexible packaging materials - plastic, paper, aluminium foil, and their laminates appears to be high.

Packaging development and evaluation studies - for optimisation in the use of packaging material for food industries are recommended for items of particular interest to the common man.

6 - Packaging standards for food

A concern has been voiced in Jordan that the progress for evolving packaging standards for food is very slow. The development of these standards is recommended at the national and regional levels.

Wherever these standards do exist, the implementation in practice is more relaxed-although the standards are made mandatory for adoption. More rigorous measures are recommended for the enforcement of the standards.

7 - Certification of packaging material

There is a need to identify/ create and equip material testing laboratories and packaging centers at the national levels- as the satellite centres of ARPAC. A criteria for accrediting these laboratories as certification laboratories for packaging material should be evolved and qualifying laboratories are recognised accordingly. The food industries must get their packaging materials certified during the next 5 to 10 years, till the packaging standards are well entrenched.

8 - Productivity improvements

The cost|waste control|production economies are very low.

The productivity standards achieved in the industrial sector are far below those obtained elsewhere. In plant studies and introduction of productivity measures, improved methods, incentives for achieving higher productivity, are recommended. For instance, currently high incidence of degrading of packaging material in storage can be effectively minimised through methods improvements, adoption of better storage techniques and maintenance of proper inventory flows.

Prof. FRANK A. PAINE - Consultant (11-61) in Packaging Materials

Participation as speaker in a seminar on "Opportunity and Parameters of Joint Ventures for Packaging Industries and Regional and Inter Country Cooperation" held in Dubai 21st to 24th April 1985

SUMMARY.

During the latter half of April 1985 the consultant prepared a paper entitled:-

PACKAGING MATERIALS AND THEIR EVOLUTION

Plastic films and laminates, glass, metals, paper and board

This paper was presented at the Seminar on 22nd April 1985 with simultaneous translation into Arabic. A few questions were answered in the session and further discussions with one or two participants were held in free time.

During the period of the Seminar opportunity was available to visit the Arab Packprint Exhibition held over the same period. Some 70 - 80 companies were represented at this and generally it was regarded as successful although largely accented towards the printing machinery sector of the industry.

Visits to two local companies, one packaging convertor and one food manufacturer were organised, and provided some background to the local situation.

This consultant was also contacted by a local corrugated case manufacturer and visited his plant to discuss the use of some test methods and their value in quality control.

Other papers given in the Seminar by several of the countries taking part indicated a wide variation in packaging supplies, packaging manufacture and technical know-how about packaging and distribution in the various countries and the value of joint work between them to assist in standards and training in particular.

Two other UNIDO experts and two Arab experts provided background information to the Seminar for the benefit of the largely Governmental and non-technical participants who in a final session enumerated a number of conclusions and recommendations which will be fully published in the report of the ARPAC organisation.

DR. MAHMOUD ZAYED

DOCUMENTATION AND INFORMATION

FINDINGS AND RECOMMENDATIONS

1. The documentation system in the Moroccan Packaging Institute (IMEC) is appropriate for its role, basically as a technical instrument; however, the documentation and information department should be re-inforced so as to enable it to fulfil its role at the Arab level as follows:

(a) Provide the documentation department with a microprocessor for Arabic documents processing and recording in order to benefit from its performance such as data storing and analysis and recording all recommendations, resolutions and documents produced within the framework of the Arab Regional Packaging Centre (ARPAC) since its first concept. This instrument will be utilized mainly to help the publication of the Arab packaging bulletin to avoid dependence on foreign sources in its preparation.

(b) Interest should be concentrated on developing a service of replies on enquiries and encouraging those who may benefit from this service in the Arab countries to do so; this assistance may also be provided in the form of field visits.

(c) Emphasis should be put on the collection of technical and statistical information with regard to packaging industry in the Arab countries and the world from its actual sources, rather than just collecting documents.

(d) Work should carry on toward the achievement of the findings that concern all the documents (abstracts) available in the Institute to benefit from their computerized processing and recording. This should be achieved through deploying more efforts by recruiting experts from outside in addition to IMEC staff.

(e) Re-inforce the documentation department by recruiting a library assistant and a documentation department chief.

(f) Improve the level of the documentation department staff through training programmes, either inside Morocco or outside, and inform them of recent and new documentation methods to keep up with any evolution in this field (see Annex 1).

(b) The appointment of a number of experts and researchers in packaging industry in the Arab countries to undertake studies on the most important subjects and sectors of this industry to be published in the bulletin. The elements and the frame of these studies should be determined beforehand so as to bear in mind the importance of the problems, the recent developments and tendencies in this industry. These activities are to be materially encouraged.

(c) A careful preparation of meetings and seminars in which people concerned with the Arab packaging industry participate; this preparation should focus on the presented subjects and papers so as to provide good material for publication.

(d) Setting up close relations with organisms and institutions concerned with the Arab world to allow co-operation in exchange of know-how, studies, research work and statistics that deal with packaging industry.

3. RECOMMENDATIONS TO THE ARAB INDUSTRIAL DEVELOPMENT ORGANIZATION (AIDO)

The role of documentation and information as a means of transferring packaging-technical know-how, data and statistics within the Arab countries is well established, and one can benefit from the activities and services provided. Priority was given to this area since 1973 in the activities of both Arab National Packaging Committees and the Moroccan Packaging Institute. However, one must clearly distinguish between the role and functions of information and the activities undertaken by the Moroccan Packaging Institute and the ARPAC Project on a technical basis in this concern; the role of information is mainly the reflection and expression of these technical activities both on international and on Arab level.

In the light of these points and following the above recommendations and suggestions the recommendations to AIDO will concentrate on the requirements for the next period so as to consolidate the Arab Packaging Centre (ARPAC) to assist it in carrying out its tasks on the Arab level concerning various technical, documentation and information areas. This would be possible through the following activities:

(a) Carry on supporting ARPAC and supply it annually with the necessary funds to enable it to execute its programme in various fields, particularly in documentation and information.

(b) Provide the project with a microprocessor in Arabic language.

(c) Provide training opportunities for documentation department staff either in Morocco or in another country.

(d) Re-inforce the ARPAC staff, allow the project some independence and appoint administrative and technical staff to work permanently for the project such as two to three persons from IMEC staff and two to three persons from other Arab countries besides a translator and a journalist and corrector; such staff will be able to face the requirements of the next period and render good service to Arab countries.

(e) Provide IMEC with a pilot plant within the framework of the project so as to support research and study process on the one hand and provide technical information and semi-industrial experiments for the service of replies on enquiries, in addition to its role in training on the other hand.

Conclusions and Recommendations

1. Conclusions

a) Packaging industry in PDRY is at an early stage of development apart from polyethylene film and bags, polypropylene copolymer crates and paper bags, which are made in the self-contained factories, the rest is either manufactured at the user's place in the package making sections (metal cans), on the product line (tetra pak cartons, P.S cups) or imported in the form of packaging materials and ready made containers (plastics films, paper, tinsplate, bottles, crown corks, folding boxes, corrugated fibre board boxes, paper and plastics sacks).

b) Importation of packaging materials and containers constitutes a predominant form of packaging supply, the annual value exceeding US\$ 5 million (over 28% of the total export earnings in 1985, or at least 7.7 % of the country's import bill for the same year.

c) The quality of the locally made packages is not satisfactory and there are no facilities to assess its level. The quality of imported packaging materials and containers varies according to the reliability of the foreign supplier. In some cases it is definitely inferior but no claims could be made since technical specifications cannot be verified locally from the above mentioned reasons. The orders are not based on the carefully selected grade and properties of packaging materials (tinsplate, corrugated fibreboard) or package constructions specifically tailored to meet the requirements of the products to be packed, therefore the choice is far from being most suitable technically and economically. There is an ample margin for reducing the cost of imported packaging media through the professional formulation of the technical specifications supported by the necessary knowledge of packaging technology.

d) There are no official statistics on food losses and damages of goods during the transport and storage due to the inadequate packaging but according to the verbal informations gathered during the visits to the manufacturing and distributing organizations, they vary from 2 to 30%. This indicates the urgency of improving packaging in PDRY and examining transport, storage and handling techniques of the packed products.

e) Packaging infrastructure (information, training, testing, promotion, planning and co-ordination) has not yet been developed in PDRY. In order to increase and strengthen the country's own packaging expertise it is imperative to start and continue the afore mentioned activities. These objectives should be implemented in close co-operation and assistance of the Arab Regional Packaging Centre (ARPAC), established by AIDO with the assistance of UNDP/UNIDO.

2. Recommendations

In order to improve packaging economy and techniques in PDRY the following recommendations are formulated, based on the mission's findings and conclusions outlined in the report.

With regard to the production and use of packaging

- a) To develop domestic production of packaging materials and containers.

For this purpose the following technical assistance inputs are recommended :

- i) To work-out the programme for further development of the production of plastic packaging, based on the Al-Gundi Plastics Factory, including manufacture of bottles, light weight containers (e.g. for powdered detergents) thermoforming (cups, trays etc) and laminates.

One expert for two months.

- ii) To carry out the following feasibility studies as a matter of urgency :

- production of glass bottles and jars ;
- production and conversion of corrugated fibreboard,
- production of crown corks.

For the first two studies one expert for three months is proposed. For the last one, one expert for one month.

Note : Since in some of these subjects assistance from other sources is being considered by the Ministry of Industry, the selection and priorities of the suggested feasibility studies is left to the discretion of the PDRY Authorities

- iii) To expand domestic production of metal cans for food preserves, especially for fish and horticultural produce, increasing can quality and variety.

One expert for three months.

- iv) To study the viability and economics of setting-up a central packing station at the Public Meat Corporation in Aden (the sole meat distributor in PDRY).

CONCLUSIONS AND RECOMMENDATIONS

1. Packaging is a techno-economic activity affecting almost any economic unit serving the production and distribution of physical goods. Each decision in relation to packaging has its individual character due to the complexity of parameters involved. Practical experience has demonstrated that packaging decisions are most efficiently made decentralized by the individual units within the packaging supplying and using sectors of the economy.

The main objectives of collective efforts within the field of packaging is

- to secure that an appropriate background is established as a basis for suboptimal decisions,
- to secure that co-ordination of efforts is made to the benefit of the field of packaging as a whole when suboptimal decisions are unable to secure such co-ordination, and
- to secure that the packaging development serve the society as a whole, or at least do not violate vital social interests.

Appropriate decisions require appropriate information background and the decentralized nature of packaging decisions consequently requires widespread dissemination of packaging information. The individual character of packaging decision situations demands a considerable degree of target orientation of the information flow.

The main stream of packaging information flows along the trading channels, a system which in the industri-

alized countries is able to satisfy the major part of the demand for packaging information. Packaging documentation, packaging information institutions, packaging exhibitions and similar collective information dissemination systems play an important role as complements to the main stream of communication, but do not contribute new information to the stream.

Knowledge demands more knowledge. It is therefore seen that the professionals with a good packaging knowledge background are also those most interested in new information, including new information from the complementary sources. Reverseely, are the least informed those who are the least interested in information. This situation is the prevailing in the developing countries, and extra efforts are therefore required in order to establish an appropriate interest in packaging information. Such interest can be established at the local level only, with the support of local individuals with a qualified professional interest in packaging development.

The efforts made hitherto to upgrade the packaging information level through joint Arab actions have shown limited results only. This may be due to insufficiency in mobilizing the local packaging interests.

2. The basis for an Arab packaging information programme should be a network of national packaging focal points, each with a contact network to the packaging suppliers and users, institutes, planning authorities and other professional packaging interests within the country. These primary packaging information users should be willing to contribute economically to the focal point and, moreover, demonstrate their sincere interest in the activity by participation in the management committee and by contribution of information. If such framework cannot be established, no national focal point should be appointed.

Each focal point should be managed by a management committee appointed by the focal point supporters and headed by a chairman who should not be a manager of the premise host or of the executive if this is a part-time. The packaging information focal point should work in close relation to the AIDO contact points where such are established, and with the national technical documentation centres/libraries.

The national packaging information focal point should, preferably, be established within the premises of a company, organisation or institution which can render practical support, and which has a status which is acceptable to the focal point contributors in respect to neutrality and efficiency.

Each focal point should have an executive who is paid for his/her focal point work by the focal point, and referring in this respect to the chairman of the management committee. The executive can be full-time or part-time, if so within a clearly defined framework in respect to time and service to be rendered. The packaging information focal point executive should have a proper technical background and training.

It is supposed that the running costs of the national packaging information focal points are fully met from national sources.

3. A superstructure should be established in order to support the national focal points.

Two types of support should be rendered

- a. Establishment service in the form of promotion of national professional interest, identification of the national packaging information needs, training of the packaging information focal point executive, organisation of the internal work and external activities, and

- b. After establishment current supply of relevant information and documentation back-up service.

The establishment service should be carried out as part of an establishment project for the Arab packaging information programme.

The superstructure should be established in the form of regional centres, each covering a geographical area which in respect to history, traditions, development, language, commercial relations and structure, communication form a unity of a certain homogeneous nature, and which a regional service centre can follow. Such regional areas could be the Gulf region, the Maghreb region, and one or two central regions.

Where packaging institutes are operational within a region should the regional packaging information centre be located with such institute. In regions where packaging institutes have not yet been established may other institutes with packaging activities and information dissemination capacity or regional technical information centres be assigned until a packaging institute activity is established within the region. It is suggested that the regional centres are established over a period, e.g. starting with the Maghreb region, in order to make full use of experience attained.

Each regional packaging centre should be managed by a board appointed by the national focal points associated with the centre. The chairman of the board should not be from the management of the host institute, or have a management position in respect to the regional executive in case this executive is part-time.

The regional packaging centre should have an executive, paid by the centre, who should be working full time in packaging. The executive may be part-time when needs and resources cannot justify a full time regional executive. The regional executive refer to the chairman

of the regional board in all matters related to the regional packaging centre.

A contract should be established between the regional centre and the host institute clearly specifying the services to be rendered by the host and the regional centre, the ownership of equipment and results, fees and terms of notice.

The regional packaging information centres will require funds for establishment as well as for covering the running costs. It is suggested that the establishment costs - staff training, consultancies, acquisition of initial and supplementary documentation and equipment are met through international assistance. After the initial period should the coverage of the running costs gradually be transferred fully to the participating focal points.

The long-term future of the regional packaging information centres depends upon the ability of the national packaging focal points to establish themselves, the technical and industry structural development within the field of packaging and the field of information technology.

The superstructure should further include a joint co-ordinating committee in which is represented the management committees of the national focal points, the boards of the regional centres, relevant Arab industrial federations and AIDO, with a part-time executive associated with the committee. The executive should carry out the decisions of the co-ordinating committee and refer to the chairman of the committee. The chairman of the committee should not be a manager of the company/organisation by which the executive is employed when not working for the co-ordinating committee.

The main task of the co-ordinating committee should be to create the framework for the establishment of the

network, to advise the regional centres and secure their building up of human and material resources, to supervise the proper and aggressive functioning of the national focal points and offer assistance when required, to establish a proper sharing of the work between the regional centres, to secure that the packaging information within the system is properly and safely accumulated and accessible to all professional interests in the Arab world, and to allocate and supervise the implementation of international, including joint Arab funds made available to the development of the programme within the rules established for the use of such funds. The coordinating committee is, moreover, recommended to seek membership of World Packaging Organisation as the regional Arab packaging organisation.

The function of the co-ordinating committee and its executive should be financed by joint Arab funding.

4. The activities of the Arab packaging information programme should include the issue of a regular Arab packaging newsletter to replace the ARPAC Packaging Bulletin. The newsletter should be in Arabic, regular (monthly), short (4 pages), easily conceivable, news oriented, journalistic, directed towards business circles and serve the purpose of creating packaging business within and between Arab countries.

The national packaging focal points should be encouraged to submit packaging news from their countries to the editor.

The contents should include

- coming events in the field of packaging - worldwide and in the Arab countries in particular - such as packaging and packaging related exhibitions, conferences, seminars, training programmes, etc.
- reference to important new books and reports in the field of packaging with indication of availability and price.

- reference to new standards and regulations of importance to packaging producers and users, exporters in particular with indication of availability.
- news about activities within the Arab packaging information programme.
- readers' enquiries and answers prepared by relevant professionals.
- information about new investments in the Arab countries in the fields of packaging raw materials, conversion and use.
- other packaging business news - new products, new persons, etc.
- "marriage announcements" with proposals for technical, financial and commercial co-operation within the field of packaging in the Arab countries.
- information about international prices of important packaging raw materials.

The newsletter should be published under the auspices of the co-ordinating committee, the actual editorial work and distribution to be carried out by one of the regional centres on a contract basis.

Only black/white illustrations should be included, and only such which can be reproduced by simple copying methods.

The manuscripts should be reproduced by the contractor and sent by mail in one copy each to the co-ordinating committee, the other regional centres and the national packaging information focal points for reproduction by photo-copying, stenciling or office offset, and circulation to the national networks. A copy of each national issue should be sent simultaneously to the co-ordinating committee for control.

5. Packaging suppliers guides should be issued on a regional basis in order to facilitate contacts between packaging suppliers and users, and promote trade between Arab countries.

A common systematic indexing system with alphabetic index (including synonyms) in Arabic, English and French, and a common questionnaire for collection of the information should be developed under the auspices of the co-ordinating committee, as part of the establishment project for the Arab packaging information programme.

Packaging suppliers guides should be issued only when the national packaging information focal points are able to collect representative information, and when the running costs can be covered without transfer of funds from the co-ordinating committee.

6. A selection of basic packaging textbooks should be supplied to the national packaging information focal points as part of the establishment procedure. A proposal for such a selection is reproduced in annex 9, section A. It is supposed that the national focal points update and extend their libraries according to the local needs on the basis of the reviews reproduced in the newsletter.

In order to keep the knowledge of the national executive up-to-date, and to give the local professionals access to a certain first-hand packaging information a small number of international packaging periodicals should be subscribed to. A list of such periodicals is also included in annex 9, section A.

An extensive selection of primary packaging documents should be established as part of each of the regional packaging information centres enabling the centres to submit photocopies of important documentation with short notice, and to give qualified advice to the packaging professionals within the region on the basis of the general packaging knowledge of the staff of the host institute in combination with the available documentation. A list of primary documents from which a selection can be made is reproduced in annex 9, section B.

It should be the responsibility of the co-ordinating committee to control that the regional centres have adequate primary documents and reproduction equipment at the disposal to fulfil their responsibilities vis-à-vis the national packaging information focal points.

7. A documentation service should be established based on the following principles:

a. All important documents relevant to packaging accumulated within the programme and with the institutions to which the national packaging information focal points and the regional centres are associated are registered, abstracted, classified according to the standard thesaurus for the programme.

Abstracts from external abstracting services (International Packaging Abstracts, Predicasts Containers and Packaging, ITC export packaging scheme) are utilized whenever possible in order to reduce the work load, taking into consideration the restrictions which such extractions impose on the publishing of the abstracts.

Abstracts in Arabic, English and French should be considered acceptable.

Collection and elaboration of abstracts can be initiated as soon as the establishment of the programme has been decided, awaiting classification when the revised thesaurus has been decided.

b. The classified abstracts are prepared decentralized by the regional centres according to contracts between the co-ordinating committee and the centres. These contracts also establish the responsibility in respect to supply of ITC classified abstracts in case co-operation with ITC is initiated.

The classified abstracts are submitted monthly by mail to AIDO for entering into the Arab technical documentation system, when operative, in order to

secure full utilization of the information throughout the Arab world. The abstracts may be submitted in written form or on diskettes/tapes which can be processed by the AIDO computer system.

- c. At the regional centres are established data bases containing all packaging abstracts registered within the AIDO technical documentation system and classified according to the standard thesaurus. The data bases are physically established within the institutions to which the regional centres are associated if appropriate computer capacity is installed, otherwise with a local documentation centre or computer service company.

AIDO prepares each month a diskette for each regional centre enabling the regional centres continuously to bring their data bases on par with the AIDO data base in respect to packaging documentation.

- d. Decisions on the computer technical aspects of the co-operation between AIDO and the regional centres are made by the co-ordination committee.
8. The export packaging documentation scheme under development by ITC should be considered a possible co-operation partner. An evaluation of this possibility should be part of the establishment project for the Arab packaging information programme. The scheme is based on exchange of information on 5 1/4" diskettes. The specification for a field station computer for the ITC scheme is reproduced in annex 5, section C.

In case the co-ordinating committee decides to join the ITC scheme a partner properly equipped should be appointed within the Arab packaging information programme. The processor at present installed at IMEC is not compatible with the ITC scheme and not appropriate for documentation processing, so investment funds of a size 120-150.000 DH should be provided in case IMEC is ap-

pointed ITC contact point. The installations at AIDO will require minor investments only to fit the ITC scheme.

9. A revised standard packaging thesaurus common for the Arab packaging information programme should be established on the following principles:
 - a. The packaging thesaurus is compatible with the thesaurus for the Arab technical documentation system at present under development at AIDO. Such compatibility will most probably best be established by inclusion of packaging elements on appropriate places in the general hierarchy of terms. The packaging thesaurus is then formed as an extract of the master thesaurus.
 - b. The revised packaging thesaurus is reduced in number of terms and more hierarchially arranged compared to the present in order to facilitate classification and make systematic retrieval practicable.

The revised packaging thesaurus should be worked out as part of the establishment project for the Arab packaging information programme, and decided by the co-ordinating committee.

10. A project should be set up for establishment of an Arab packaging information programme. The aims of this project should be:
 - a. Formulation of the organisational framework for the programme including the statutes regulating the superstructure (co-ordinating committee and regional centres) and the co-operation with the national packaging information focal points.
 - b. Establishment of the co-ordinating committee and its secretariat functions, selection and training of the executive, establishment of the co-operation with the regional centres on the basis of contracts and control procedures and establishment of external con-

tacts.

- c. Establishment and accomplishment of a training programme for the national packaging focal point executives.
- d. Evaluation of the possibilities for co-operation with the ITC export packaging documentation scheme and establishment of co-operation activities, if considered feasible.
- e. Establishment of a revised joint Arab packaging thesaurus.
- f. Evaluation of the possibilities for establishment of regional centres, definition of their geographical basis, selection of institutes to associate the centres with, assistance by appointment of the board members and the regional executives, assistance by establishment of budgets, working routines, co-operation with associated national focal points and the co-ordinating committee, and arrangement of the library and documentation functions. Moreover, on-the-job training of the regional executives and establishment of co-operation between the regional executives and the host institutes.
- g. Establishment of the Arab packaging newsletter, including the editorial line, selection and training of the editor, establishment of contacts to suppliers of information, including the national focal points.
- h. Establishment of an indexing system and questionnaire for packaging suppliers guides, production of promotion material and elaboration of budgets and financing plans for the regional guides.
- i. Formulation of standard framework for national packaging information focal point statutes and other background material for the establishment of the

national packaging information focal points.

- j. Production of propaganda material for campaigns for establishment of national packaging information focal points and accomplishment of such campaigns in selected Arab countries.

- k. Establishment of national packaging focal points, assistance by formulation of statutes, appointment of the managing committees and selection of the executives, establishment of budgets and working routines, including manifolding and distribution of the newsletter, establishment of co-operation with national professionals and the regional centre, and arrangement of library and documentation functions. Moreover, on-the-job training of the executives and assistance in the follow-up campaigns for supporters and promotion of the regional packaging suppliers guides.

The establishment project should be carried out under the responsibility of an organising committee with equal representation of government and industry representing a broad aspect of professional packaging interests. An international expert should be attached with the project and work in close contact with the coordinating committee executive in spe. A draft job description for the international expert is attached as annex 8.

EQUIPMENT RECEIVED WITHIN THE FRAME
OF THE PROJECT

1984 - 1985 - 1986

BON DE COMMANDE	NATURE DU MATERIEL	DATE DE RECEPTION	FOURNISSEUR	N° REQUISITION	V A L E U R		OBSERVATIONS
					Monnaie locale	\$ U S	
15.3.E 1480 du 17.12.83 O N U D I	OFFSET PRINTING Machine GTO 33 x 46 cm sigle color n° 680819 série 22 649 220 V 50R2 GR 431 et 7315 avec accessoires.	11.04.84	HEIDELBERG: RPA	18/83	DM 71.020	26.305	Transfert de propriété à l'INZC le 21/02/85. Vide UNIDO PAC/DG/jd 21.2.85
15.3.E 1520 du 29.12.83 O N U D I	MASSICOT Modèle 92 MCS - 2 avec accessoires	27.04.84	N. WOHLBERG RG R P A	2/83	DM 47.292,00	17.515	Transfert de propriété à l'INZC le 21/02/85.
15.4.E 0933 du 01.10.84 O N U D I	Voiture Peugeot 305 Berline SR Année Modèle 1985	07.01.85	SODEXA France	3/84	FF 63.286,00	6.575	
15.4.E 1022 du 10.10.84 O N U D I	1 Armoire sècheuse amplifiée 1 Perforateur n° 6822 1 Perforateur n° 6836 4 Barattes 2 Coupes ROTATIM 1 Socle pour armoire sècheuse	22.01.85	V. BOUZARD & FILS	2/84	FF 36.817,00	3.824	

15.4.E 4163 du 06.12.84 O B U D I	2 Films PERCO "Truite et Ligues" en cassette vidéo version Française	18.06.85	O B U O FRANCE	18/84	77 6.000,00	650
33 ARPAC du 13.12.84	: Carte logique pour micro films 800 du Centre de Documentation	22.05.85	LAB. TECH. COLOR SA MAROC	12/84	DE 4.800,00	470
24 ARPAC du 12.12.84	1 Demotechire ID 918 DS pour la couleur et la noir et blanc en salle d'impr- merie pour l' Laboratoire Papier-Carton	03.07.85	NOVL - PROTECH FRANCE	17/84	77 32.800,00	3.225
26 ARPAC du 13.12.84	Deux déshumers de temp- rature pour la table vibrante (hall d'essai)	18.07.85	M.S.S. FRANCE	11/84	77 14.050,00	1.400
ARPAC	Courages et documentations techniques		DIEZENTH SILVENE	16/84		2.783
15.4.E 1982 du 10/12/84 O B U D I	1 Lambda 3 double beam examining UV/visible spectrophotometer : Modèle 2300 AA Spectropho- tometer Sigma 500 Gas chromatograph	15/09/85	PERKIN-ELMER AUTELIA	4.5 6/84	AS 1.075.930,00	55.475
29 ARPAC du 16.12.84	Accessoirs pour l'éclairage pour l'appareil photovolt mobile 575 B n° 02-575.35 - porte étalon n° 26.570.01 - étalon standard blanc n° 26.570.08 - étalon standard noir n° 26.570.12	04/10/85	KALZ SCHROEDER KG	19/84	DK 1.000,00	310

3.6.8 (023 de 10.10.84 O N U D Z	1 Piqueuse BORMEX de fil n° 84.015-489 mécanique pour brosses et broches	22.01.85	BORMEX SZA	2/84	FR 8.236,40	2.627
0 ARPAC de 17.12.84	1.000 Bouteils en verre 100 x 100 mm pour essuyer d'absorption de liquides 95 930	21.03.85	KAEF, FRANCE R T A	13/84	FR 622,00	199
1 ARPAC de 17.12.84	10 rouleaux de papier pour enregistreur Philips FR 8202 pour Presse CT 10.000 4 Plumes rechargeables 985 x 03 pour enregistreur presse CT 3.000	20.03.85	AB LOYONZON 8 VETZE SUÈDE	10/84	SEK 1.110	130
02242 FROD de 21.12.84	Photocopieur XEROX type Ziroba 1045 Marathon	03.04.85	XEROX MAJOC	01/84	FR 88.707,00	9.310
5 ARPAC de 19.12.84	1 lot de pièces de rechange et fournitures pour le Laboratoire Poplar-Carton	09.05.85	ADAMEL LANGOUST FRANCE	09/84	FF 15.661,00	1.340
8 ARPAC de 14.12.84	2 Cellules tension/compression 5 EN Full scales INSTRON (pièces de rechange pour INSTRON)	21.05.85	INSTRON ENGLAND	13/84	£ 2.148	2.985
6 ARPAC de 14.12.84	1 Lot de pièces de rechange pour les appareils Lysay pour le laboratoire conditionnement compatibilité alimentaire	22.05.85	LYSAY - SUISSE	14/84	FF 3.030	1.370

1/.

15.5.2.13130 OMDZ	-VTR - 1030 CM 100 Universal video-projecteur à couleurs system -VTR - 100 P1 (1.5m x 2m) flat screen.	08/01/86	SONY TOKYO	03/85	1.056,180 TZZ	4.910	
33/86 ARPAC du 03/02/86	Fourniture de contrôles, détecteurs, support et tube en cuivre et en acier noir pour l'installation des pour system chromatographe et spectrophotomètre	Juillet 86	SEIA MAROC	02/85	140.854,40 DE	14.900	La mise en route est prévue pour Septembre 1986 en présence de représentant de FRENCH ELDER.
ARPAC du 07/01/86	1 Electrode spécifique n° 3 PH 03/01 n° 85520 1 Electrode de référence S 4 n° 99 490 1 PE mère n° 9000/70133	26/03/86	066 BOLEA FRANCE	04/85	77 11.620,-	1.400	
ARPAC du 27/02/86	Installation boîte pour spectrophotomètre d'absor- ption atomique Fourniture d'une paire de cuve en V.O.	Juillet 86 03/03/86	966 TRICHTILAS MAROC	05/85	5.000,- DE	325	
ARPAC du 03/02/86	Pompe à vide pour system chromatographe et spectro- photomètre	04/12/86	EDWARDS HIGH VACUUM ANGLAIS	01/86	749,50 £	1.045	

ED : Les réquisitions 7/84 et 8/84 ont été
remplies faute d'offre.

Casablanca, le 30 novembre 1986

Workplan details by
activity

<u>Activity</u>	<u>Location</u>	<u>Starting date and duration</u>
1. Seminar on packaging technology for selected food products and ways and means of regional co-operation	Amman	April 14
1.1 Selection of host organization and working out the programme	Baghdad	January 1984 one month
1.2 Selection of regional lecturers and one UNIDO consultant	Casablanca / Baghdad	February 1984 one month
1.3 Invitation of participants from the Arab countries	Baghdad	February 1984 two weeks
1.4 Collection of lectures and other training aids	Various	March 1984 one month
1.5 Carrying out of the seminar	Amman	14 April 1984 six days
1.6 Preparation of the report, conclusions and recommendations	Casablanca	May 1984 one month
2. Seminar on packaging design and marketing (export of agricultural and agro-industrial products)	Casablanca	23 July 1984 six days
2.1 Preparation of programme and aide memoire	Casablanca/ Vienna	February 1984 one month
2.2 Selection of regional lecturers and one UNIDO consultant	Casablanca/ Baghdad	March 1984 one month
2.3 Invitation of participants from the Arab countries	Baghdad/ Vienna	March 1984 two weeks
2.4 Collection of lectures and other training aids	Casablanca	May 1984 one month
2.5 Selection of participants; travel and DSA arrangements	Casablanca/ Vienna	May 1984 one month
2.6 Carrying out of the seminar	Casablanca	23 July 1984
2.7 Preparation of the report, conclusions and recommendations	Casablanca	September 1984 one month
3. Course on technical specification, economic analysis and quality control of packages and packaging materials	Casablanca	12 November 1984 ten days
3.1 Preparation of programme and aide memoire	Casablanca	April 1984 one month
3.2 Selection of regional lecturers and one UNIDO consultant	Casablanca/ Baghdad	May 1984 two months
3.3 Invitation of participants from the Arab countries	Baghdad	May 1984 one month

	<u>Activity</u>	<u>Location</u>	<u>Starting date and duration</u>
3.4	Collection of lectures and other training aids	Casablanca	September 1984 one month
3.5	Selection of participants; travel and DSA arrangements	Casablanca/ Baghdad	September 1984 one month
3.6	Carrying out of the course	Casablanca/	12 November 1984 ten days
3.7	Preparation of the report, conclusions and recommendations	Casablanca	December 1984 one month
4.	Seminar on opportunity and parameters of joint ventures for packaging industries and regional and inter-country co-operation	To be decided later on*	March 1985* six days
4.1	Preparation of programme and aide memoire	Casablanca/ Vienna	September 1984 one month
4.2	Selection of regional lecturers and one UNIDO consultant	Casablanca/ Baghdad	October 1984 two months
4.3	Invitation of participants from the Arab countries	Baghdad/ Vienna	October 1984 one month
4.4	Collection of lectures and other training aids	Casablanca	January 1985 one month
4.5	Selection of participants; travel and DSA arrangements	Casablanca/ Vienna	January 1985 one month
4.6	Carrying out of the seminar	See above *	March 1985* six days
4.7	Preparation of the report, conclusions and recommendations	Casablanca	April one month
5.	Seminar on food packaging for local and export markets * Location, date and organizational timetable to be fixed later on	Tunis being approached Approved.	July 1985
6.	Course on packaging technology and transport packaging techniques	Casablanca (after study tour Scandinavia 2-14 Oct.85)	14-23 October 1985
6.1	Preparation of programme and aide memoire	Casablanca/ Vienna	December 1984 one month
6.2	Selection of regional lecturers and two UNIDO consultants	Casablanca/ Baghdad	January 1985 two months
6.3	Invitation of participants from the Arab Countries	Casablanca/ Vienna	January 1985 one month
6.4	Collection of lectures and other training aids	Casablanca	April 1985 two months
6.5	Selection of participants; travel and DSA arrangements	Casablanca/ Vienna	May 1985 one month
6.6	Carrying out of the course	Casablanca	15 July 1985 six days
6.7	Preparation of the report, conclusions and recommendations	Casablanca	September 1985 one month

<u>Activity</u>	<u>Location</u>	<u>Starting date and duration</u>
7. Seminar on the standardization specification and quality control of packaging materials.	* Saudi Arabia Riyadh	December 1985
8. Two study tours of 8-10 participants each, to food processing and packaging research centres, industries and international exhibitions	1st November 84, Austria/France	November 1984
* Programme and organizational timetable to be fixed later on	2nd Scandinavia	October 1985, in collaboration with SCANPACK
9. Fellowships in packaging technology, manufacturing techniques and quality control	Various	October 1984 Continuous Pending receipt of new forms.
10. Fellowships in quality control, design and production techniques - Implementation dates of each fellowship will be pending the receipt of the nomination forms	Various	April 1984 sixteen months Pending receipt of new forms
11. Establishment of a regional packaging communication network		
11.1 Request of nomination of each Arab Country National Packaging Committee	Baghdad	January 1984
11.2 First reminder for the nomination above	Baghdad	April 1984
11.3 Second reminder for the nomination above	Baghdad	June 1984
11.4 Meeting of the National Packaging Committees * Location and date to be fixed later on	*(Casablanca 1986)	*(In principle 1986, in connection with the packaging exhibition).
12. Publication of a quarterly packaging bulletin in Arabic.		
12.1 Purchase, delivery and installation of equipment	Vienna/ Casablanca	January 1984 nine months
12.2 Preparation and printing of the bulletin	Casablanca	October 1984 Continuous
13. Elaboration of a thesaurus in Arabic for classification of packaging information data.		
13.1 Preparation of the thesaurus in Arabic, in consultation with related specific institutions	Casablanca	April 1984 12 months

	<u>Activity</u>	<u>Location</u>	<u>Starting date and duration</u>
13.2	Publication of the thesaurus	Casablanca	April 1984 four months
14.	Production of an audio-visual packaging training course in Arabic		
14.1	Search of a consulting firm for the technical elaboration of the course	Vienna	February 1984 three months
14.2	Preparation of the texts in Arabic	Casablanca	May 1984 three months
14.3	Execution of audio-visual course	Casablanca	August 1984 five months
15.	Production of a film on food packaging in Arabic	Vienna/ Casablanca	February 1984 eleven months
	- same schedule as for activity 14.		
16.	Preparation of technical guidelines for regional packaging standards for Arab countries in the fields of transport packaging and food packaging		
16.1	Establishment of a standardization work programme in co-operation with ASMO	Amman/ Casablanca	April 1984 one month
16.2	Selection of packaging standards of priority interest for adaptation to the Arab countries.	Casablanca	May 1984 two months
16.3	Final elaboration and proposal of specific packaging standards in consultation with ASMO and concerned Arab federations.	Casablanca/ Amman/Baghdad	August 1984 Continuous
17.	Surveys of package demands and inventories of existing production capacities of related packaging materials		
17.1	Collection of available reports and other data on the subject in co-operation with national and international organizations	Casablanca	April 1984 two months
17.2	Planning of a general survey covering interested Arab countries	Baghdad/ Casablanca	May 1984 three months
17.3	Carry out surveys in specific Arab countries within the frame of the general survey above.	Various	August 1984 five months

	<u>Activity</u>	<u>Location</u>	<u>Starting date and duration</u>
18.	Packaging materials and packaging machinery exhibition		
18.1	Preparation of the organizational programme and framework	Casablanca	March 1984 two months
18.2	Promotional and operational activities for the realization of the exhibition	Casablanca	May 1984 sixteen months
18.3	Realization of the packaging materials and packaging machinery exhibition * Precise date to be fixed later on	Casablanca	*
19.	Production of films on transport packaging and training courses on packaging technology in Arabic	Casablanca	January 1985 six months
20.	Techno-economic studies on opportunities for the development of specific packaging industries	Baghdad/ Casablanca	January 1985 Continuous

NOTE: Periodical revisions will be made in joint meetings of the co-ordination committee. The next meeting will take place in Casablanca during July 1984.

Workplan details by activity

PERIOD - SEPT TO DEC 1986

<u>Activity</u>	<u>Location</u>	<u>Starting date and duration</u>
Over all assessment of activities pending implementation and formulation of strategies for improving rate of :-	Baghdad	Sept 9-12

- (i) Fellowship training .
- (ii) Establishment of Packaging Communication Network.
- (iii) Technical assistance to Arab Countries .
- (iv) Survey of Technological institutions .
- (v) Formulation of Packaging Standards .
- (vi) Upgradation of documentation and information services .
- (vii) Promotion of packaging services of project .

(1) FELLOWSHIP TRAINING

- (i) Packaging standardistion-one fellowship Sept-Oct
- (ii) Packaging technology - " " Nov-Dec

(II) ESTABLISHMENT OF PACKAGING

COMMUNICATION NETWORK / FOCAL POINTS

- | | | | |
|-------|--|---------|---------------|
| (i) | Assessment of work already done . | Baghdad | } Sept 25-Oct |
| (ii) | Preparation of draft objectives including guidelines on possible composition of task groups , Approach to promote packaging services . | - do - | |
| (iii) | Field visits* to selected Arab countries for elaboration and promotion of concept . | | |
| | a) Saudi A. , Sudan , Somalia | | Oct.6-21 |
| | b) Egypt , Tunisia , Algeria, Libya | | Nov.1-18 |
| | c) Jordan , Syria | | Dec 1-10 |
| | d) Iraq , Morocco | | As needed |

(III) TECHNICAL ASSISTANCE TO ARAB COUNTRIES

- | | | |
|--|----------|------------|
| Consulting missions in the areas of: | Khartoum | } Sept-Oct |
| (i) Corrugated fibre board & packages in Sudan and Iraq. | Baghdad | |
| (ii) Milk and dairy products packaging in S.Arabia | Riyad | Oct-Nov |
| (iii) Food packaging in Syria | Damascus | Nov-Dec |

- (iv) Packaging surveys in Somalia Magadishu Nov-Dec
 (Subject to country's inter-
 rest still persisting)
- (v) Other requesting country / ies Nov. - Dec.

(IV) SURVEY OF TECHNOLOGICAL INSTITUTIONS

(Including institutions engaged in training ,
research and development , information sciences).

- (i) Preparing list of tech. institutions /
centres on basis of available info-
rmation with AIDO and other informed
interests . } Baghdad
- (ii) Desk research on capabilities and
objectives of institutions , serv-
ices and target beneficiary groups. } Sept 25-30
- (iii) Formulation of questionnaire for
soliciting information on basic
aspects of field research }
- (iv) Field visits* to prospective institutes OCT 6-21
in Arab Countries .

Selected Arab Countries (one or two Nov. 1-18
institutes in each country) to coincide Dec 1-10
with visits as detailed at III(iii) above.

(V) FORMULATION OF PACKAGING STANDARDS FOR FOOD PRODUCTS

Technical assistance on formulation of Arab Standards Particularly in area of food packaging , including guidance on formulation , adoption of standards - expert mission by a UNIDO'S expert .

IMEC - OCT -Dec
Casablanca
ASMO- Amman
and
Baghdad

(VI) UPGRADATION OF PACKAGING DOCUMENTATION & INFORMATION SERVICES

(i) Appraisal of facilities and information already available at AIDO and IMEC

IMEC Nov 1 -
Dec 31

(ii) Establishment of a mechanism for integration of AIDO'S information services with those of IMEC

Casablanca
"

(iii) Proposal for further upgradation of service in specific & well identified areas-by UNIDO expert on packaging documentation & information .

AIDO
Baghdad

(VII) PROMOTION OF PACKAGING SERVICES OF PROJECT

- | | | |
|------|--|--|
| (i) | Collection of Technical Material ,
Information Brochures , Summary of
packaging Studies in progress or already
completed to form part of background
material for promotion of technical
services such as testing and analysis,
Training , Information , Standardisation
and problem solving consultancy | Baghdad
Sept 25- 30 |
| (ii) | Field visits* to selected target
beneficiary groups in selected Arab
Countries to coincide with visits as
detailed at (III - iii) above | Arab Countries
Oct 6 - 21
Nov 1 - 18
Dec 1 - 30 |

(VIII) PACKAGING BULLETIN

Preparation , publication distribution of Casablanca
packaging bulletin in Arabic (Continuous
activity).

(IX) SURVEY OF PACKAGING INDUSTRIES IN THE ARAB COUNTRIES

Review and evaluation of the results Baghdad Linked with
on the basis of analysis presented for the completion
each country and formulation of of work/by
proposals for follow up action . consultant firm
sub contracted
for survey

(X) TRIPARTITE REVIEW MEETING

Preparatory work and preparation of progress report for the reference period Jan-Nov 86 . to be Nov 19-23 decided

(XI) Follow up work on revised project document for development of packaging industries in the Arab Countries . Baghdad As needed
Casablanca

* Field visits to be undertaken jointly by CTA and staff member of AIDO'S packaging unit .

RAB / 83 / 020 WORK PLAN

Time table of UNIDO / AIDO activities Sept. Dec. 1986

	ACTIVITIES.	SEPT	OCT	NOV	DEC	FUNDS FROM
1.	FELLOWSHIP TRAINING pkg. TECHNOLOGY / STANDARDS	-----		-----		UNIDO
2.	ESTAB. OF pkg. COMMUNICATION NET WORK/ FOCAL POINTS	-----				UNIDO
3.	TECHNICAL ASSISTANCE TO REQUESTING ARAB COUNTRIES	-----				UNIDO
4.	SURVEY OF NATIONAL TECHNOLOGICAL INSTITUTIONS IN ARAB COUNTRIES	-----	-----	-----	-----	UNIDO
5.	FORMULATION OF pkg. STANDARDS FOR FOOD					UNIDO
6.	UPGRADATION OF pkg. DOC . AND INFORMATION SERVICES					UNIDO
7.	PROMOTION OF pkg SERVICES OF project .	-----	-----	-----	-----	UNIDO
8.	PKG BULLETIN IN ARABIC					AIDO
9.	SURVEY OF PKG INDUSTRIES IN ARAB COUNTRIES .					AIDO
10.	TRIPARTITE REVIEW MEETING			-----		UNIDO

Liste des participants
au voyage d'étude et cours de forma-
tion sur les spécifications techni-
ques, analyse économique et contrôle
de qualité des emballages et matériaux
de l'emballage

Autriche - France du 04 au 17 Novembre 1984
Casablanca Maroc du 19 au 28 Novembre 1984

Jordanie

1. Mr SALAMEH SHARARI QATARNEH
Chef de Département Normalisation
Ministère du Commerce et de l'Industrie
B.P 2019 - AMMAN

Emirates Arabes Unies

2. Mr ABDULLA JAMA ALGAZI
Responsable du Secteur Industriel
Ministère des Finances et de l'Industrie
B.P1565 - DUBAI - E.A.U.

République de Tunisie

3. Mr AMAR CHIBANI
Responsable des Etudes
Institut National de Normalisation
B.P 23 - 1012 Tunis - Belvédère
Télex 13602 TN

République Démocratique du Soudan

4. Mr ALI AHMED ABDERRAHIM
Chef du Département Engineering
Normalisation et Contrôle de qualité
Ministère de l'Industrie
B.P 2104 - KHARTOUM

République de Somalie

5. Mr ABDERGHANI MULLIH HASSAN
Ministère de l'Industrie
B.P 3066 - MOGADICHO

République de l'Irak

6. Mme ANAM NADHIM MAHMUD
Ingénieur de Normalisation
Ministère de l'Industrie
B.P 11 118 - BAGHDAD
Télex 2620 WAZERIEA

.../...

7. Mr NUTHANNA SAID YAHYA
Directeur Technique de la
Société Iraqi Company for
Carton manufacture
B.P 29029 - BAGHDAD

Qatar

8. Mr HAMAD SAAD MAJID AL SAAD
Ingénieur Agricole au Centre
Technique du Développement Industriel
B.P 2599 - DOHA

Koweit

9. Mr AHMED AHMED HUSSEIN AL FOUZAN
Ingénieur de Normalisation Alimentaire
Direction de Normalisation et Métrologie
Ministère de l'Industrie et du Commerce
B.P 2944 - SAFAT

Royaume du Maroc

10. Mr HILMI Hassan
Ingénieur Chef de Service des
Industries Chimiques
Ministère du Commerce, de l'Industrie et
du Tourisme
RABAT / CHELLAH
11. Mr NADRI Ahmed
Chef du Service des Affaires Générales
et du Personnel
Institut Marocain de l'Emballage
et du Conditionnement (I M E C)
B.P 8006 - CASABLANCA/OASIS

République Démocratique Populaire du Yemen

12. Mr ADEL ABDULLA HUSSEIN
Responsable de Normalisation
Ministère de l'Industrie
B.P 300 - ADEN

Liste des Institutions visitées

(Voyage d'Etude Scandinavie - Octobre 1985)

FINLANDE

Helsinki

- Association of Packaging Technology and Research
- Enso - Gutzeit OY

Valkeakoski

- Yhtymät Paperitehtaat OY

NORVEGE

Moss

- Noblikk Sannem A/S
- M. Peterson & Son A/S

SUEDE

Göteborg

Scanpack 85

Trollhättan

Cerbo

Lund

- Tetra Pack
- Akerlund and Rausing

DANEMARK

Copenhagen

- Danish Packaging and Transportation Research Institute
- Medium Size Super Market

LISTE DES PARTICIPANTS

au

(Voyage d'Etude Scandinavie - Octobre 1985)

JORDANIE

Monsieur SALAMEH QATARNEH

TUNISIE

Monsieur MONGI Jlaiel

SOUDAN

Monsieur Salah El Din Bahloul Ahmed

Monsieur Ahmed Ibrahim Mohamed Saber

SYRIE

Monsieur Salah SHAHEEN

SOMALIE

Monsieur Ahmed HAJI

QUATAR

Monsieur Ahmed Ali KAFOOD

MAROC

Monsieur TAMOUH Mohamed

A R P A C

Monsieur BENNOUNA Abdelhaq

Madame TAZI A.

STUDY TOUR TO THE GERMAN DEMOCRATIC REPUBLIC
AND THE FEDERAL REPUBLIC OF GERMANY

From 22 November 1987 to 19 December 1987

PARTICIPANT: Mr. Al-Dakeil (Iraqi)

ITINERARY: 22 November to 17 December 1987: VEB Forschungszentrum
Verpackung, Dresden,
German Democratic Republic.

14 December to 15 December 1987: Institut für Lebensmittel-
konservierung Kin E.V.,
Neumünster, Federal Republic
of Germany.

17 December to 18 December 1987: SOMIC GmbH + Co. KG,
Wasserburg, Federal Republic
of Germany.

المعهد المغربي للتعبئة والتغليف

INSTITUT MAROCAIN DE L'EMBALLAGE & DU CONDITIONNEMENT

PROGRAMME PRELIMINAIRE DU STUDY-TOUR AEFAC

AUTRICHE et FRANCE

4 - 17/11/1984

- Dimanche 4/11/84 : Arrivée à Vienne
- Lundi 5/11/84 : - Briefinf, M. BELO/M.HAND Unido, Centre International de Vienne
- Visites :
a) Centre Autrichien de l'emballage
b) Institut de recherche de l'emballage autrichien
- Mardi 6/11/84) : - Visites de laboratoires de recherches,
) (conditionnement alimentaire)
Mercredi 7/11/84) : - Visites d'industries
- Jeuji 8/11/84 : Arrivée à Paris, Briefinf et visite du L.N.E.
- Vendredi 9/11/84 : Visites d'industries transformatrice du carton :
-Ets H. CHARPENTIER B.P. : 2
45600 SULLY SUR LOIRE
-Ets LEGUAY EMBALLAGES ORLEANS B.P. : 234
45402 FLEURY- LES AUBRAIS Cedex
-Ets REINE
B.P: 72 5, rue Balland 01102 OYONNAX Cedex
- Lundi 12/11/84) : Participation au Congrès International de
) l'Emballage (IFEC - PARIS)
Mardi 13/11/84)
- Mercredi 14/11/84) : Visite du Salon de l'Emballage (Programme
) à organiser avec le L.N.E.)
Jeuji 15/11/84)
Vendredi 16/11/84)
- Samedi 17/11/84 : Départ pour Casablanca

Programme à organiser avec le LNE 1, rue Gaston Boissier 75015 PARIS
N.E- et l'IFEC 1, Cité Bergère 75009 PARIS

المعهد المغربي للتعبئة والتغليف

INSTITUT MAROCAIN DE L'EMBALLAGE & DU CONDITIONNEMENT

COURS DE FORMATION

Organisé dans le cadre du projet ARPAC

Ce cours est réalisé par l'IMEC/ARPAC avec le concours de l'Ecole de l'Emballage de l'Université du Michigan.

LES PRINCIPAUX THEMES SONT :

A - LES SPECIFICATIONS DE MATERIAUX D'EMBALLAGES :

- Papier, carton ondulé, carton plat
- Plastiques et complexes
- Emballages métalliques

B - LES PROCÉDES DE FABRICATION :

- Technologie de production et contrôle de qualité

C - LA MISE EN ŒUVRE DES DIFFÉRENTS MATERIAUX D'EMBALLAGES

- Transformation
- Conception d'emballages adaptés

D - COUT DES EMBALLAGES

- Analyse de la valeur

E - LA NORMALISATION DES EMBALLAGES ET DES MATERIAUX D'EMBALLAGES :

- Méthodes d'essais
- Normes de caractéristiques

+++++

FELLOWSHIPS

<u>ACHIEVED</u>	<u>NAMES</u>	<u>COUNTRIES</u>
Training of Instructors (Dublin) July/August 85	CHAABANI Ahmed	MOROCCO
Packaging Technology (Scandinavian Countries) October 85	SALAH EL DIN BAHLOUL Ahmed	SUDAN
	AHMED IBRAHIM MOHAMED Saleh	SUDAN
	TAMOUH Mohamed (instead of) NBIGUI Taib	MOROCCO
	ALI NOMAN KAED	DR YEMEN
Documentation/Information April 1986	Mohamed Ali Mohamed ASSAKAF	DR YEMEN
Design/Marketing July 1986	Yusuf Abdul Rahman DOSNGEE	DR YEMEN
	Abdul Rahim YASSIN	
<u>IN PREPARATION</u>		
Quality control	DAHAM Alinam Mohamed	I R A Q
Packaging Technology	Samir Nasir HUSSAIN	I R A Q
	Issa Mohamed KADIM (Re-nomination)	I R A Q

ANNEX VII

MEMORANDUM OF ASSOCIATION

- 1 - The name of the Organisation is
- 2 - The registered office of the Organisation shall be
- 3 - The objects for which the organisation is established are :.....
 - I) to promote awareness for good packaging.
 - II) to undertake and promote studies, research and development in packaging and packaging development.
 - III) to test, evaluate and certify packages ;
packaging materials, packaging systems, technology including equipment and processes.
 - IV) to assist and recommend standards for packaging packaging materials, processes and equipments ;
 - V) to provide advisory services to the packaging and user industries on packaging problems,
 - VI) to study packaging trends, preferences, legal requirements in foreign markets and undertake applied research studies for the purpose, study packaging requirements for exports commodity and country wise and suggest measures to effect improvements.
 - VII) to undertake pre-feasibility and feasibility studies of techno-economic nature in the packaging and related fields.

.../...

- VIII) to provide training both short term and long term for technical personnel working in Industry, Commerce and Government in packaging technology.
- IX) to collect, classify, store and disseminate packaging information to different target beneficiary groups in and outside the country;
- X) to stimulate and promote interest of packaging in technological institutes, universities and colleges and provide facilities for training ;
- XI) to undertake economic studies and analyse implications of national regional and international policies on packaging on domestic production domestic consumption and domestic prices.
- XII) to study the packaging requirements with reference to transport by road, water, rail and air and in the context of storage, handling and distribution conditions prevailing in the country;
- XIII) to study, evaluate and suggest improved packaging to achieve a positive impact on marketing;
- XIV) to study methods, evolve procedures, hold contests and suggest incentives appropriate for development of packaging ;
- XV) to undertake advertising, publicity, organise and or participate in exhibitions/industrial

.../...

- fairs, buyers, sellers meetings, to promote packaging ;
- XVI) to establish, strengthen relations with any other agency having similar objectives in the country or abroad ;
- XVII) to prepare, print and publish any papers or periodicals, reports on packaging and or having a bearing on packaging ;
- XVIII) to organise, promote study tours in the country and abroad and invite or sponsor trade delegations to different places within and outside the country ;
- XIX) to establish branches of the organisation in the country to promote objectives of the organisation;
- XX) to invite representatives of the Government, industry trade, other institutions and organisations national, regional and international to the organisation in connection with matters that promote the objectives of the organisations ;
- XXI) to accept fees, grants of money, securities and property of any kind on such terms as may be in conformity with the interest of the organisation and permitted by the laws of the country ;
- XVII) to acquire by gift, purchase, exchange, lease hire or otherwise howsoever, any property

.../..

moveable or immovable of the organisation and in conformity with the law of the country and or limits placed by principal supporter/partner sponsor of the organisation and the build, construct, improve, add demolish, and repair such buildings, works a constructions as necessary for the organisation.

XXIII) to sell, lease, exchange, hire or otherwise transfer all or any portion of the property moveable and immovable of the organisation provided by approval in writing of the competent authority is obtained for the relevant purpose ;

XXIV) to invest and deal with any financial research moneys, securities of the organisation no immediatly required for any of its activities in such a manner as may be provided by the rules and regulations of the Organisation and amended/determined from time to time ;

XXV) to draw, make, accent, endure, discount cheques, notes, bonds and other negotiable instruments for the purpose of the organisation ;

XXVI) to create any reserve fund, sinking fund, insurance fund, provident fund or any other special fund for depreciation of for repairs, improving, extending or maintaining any of the properties or rights of the Organisation and or for recoument of usable/depletion assets and or benefits of the

.../...

employees and for any other purposes for which the society deems it expedient or proper to create or maintain any such funds of funds :

XXVII) to borrow and raise money with or without any security or on the security of mortgage, charge or hypothecation or pledge of all or any of the moveable or immoveable properties belonging to the society or in any other manner whatsoever provided that prior approval in writing of the competent authority is obtained in that behalf :

XXVIII) Create administrative, technical and other posts under the organisation and to make appointments there to in accordance with the rules and regulations of the organisation ;

XXIX) to make rules and regulations and bye-laws for the conduct of the affairs of the organisation and to add to, amend, vary or revise them from time to time with the approval of the 'competent authority' ;

XXX) to do all such 'other things and undertake actions either alone or in conjunction with other organisations or persons as the organisation may consider necessary, incidental

.../...

or conducive to the attainment of the
above said objectives :

- 4 - The names, addresses and occupations/designations of the present members of the board of Director of the 'organisation' to whom the management of the affairs is entrusted under the law of the land, till a newly elected/nominated board is formed are as follows ; -

COMMUNICATION NETWORKPACKAGING COMMITTEES / FOCAL POINTS

<u>COUNTRY</u>	<u>MINISTRY / ORGANIZATION</u>	<u>CONTACT OFFICERS</u>
1. ALGERIA	MINISTRY OF COMMERCE - ALGER	Mr Alem Mostefa Director I/c Regulation & Normalisation Phone 66-33-66 66-65-32
2. TUNISIA	MINISTRY OF INDUSTRY, COMMERCE 95, Rue de la Kasbah - Tunis	Mr Salah Fessi Director Phone 262-247
3. MOROCCO	MINISTRY OF INDUSTRY -- RABAT MOROCCAN INSTITUTE OF PACKAGING Km 9.5, Route de Nouaceur B.P. 8006, Casa Oasis Casablanca - Morocco	Mr. El Mossadeq Director Industries Mr. Zaki Ali, DG Phone: 36-25-01/36-22-66 Telex: 24086 IMEC
4. IRAQ	MINISTRY OF LIGHT INDUSTRIES Baghdad	Mr. Ali Alabadi Telex: 2249
5. SAUDI ARABIA	MINISTRY OF INDUSTRY AND ELECTRICITY Riyadh	Mr Essam Al Mahdy Director Protection & Encouragement Dept. TLX 401154
6. EGYPT	GENERAL ORGANISATION FOR INDUSTRIALIZATION Cairo EGYPTIAN PACKAGING DEVELOPMENT ASSOCIATION	Dr Mongi M.A. Deputy Chairman G.O.F.I. 6, Khalil Agha Street Cairo TLX 23389 Mr A. Elasfoury 3, Behlar Passage Kasr El Nil Street Cairo
7. SUDAN	MINISTRY OF INDUSTRY Khartoum	Mr Abdul Razik Khatib under Secretary TEL 80136 80530 Mr Adam Mousa Director

SUMMARY OF THE SURVEY OF TECHNOLOGICAL
INSTITUTES

<u>COUNTRY</u>	<u>INSTITUTES</u>	<u>PROSPECTS FOR PACKAGING CENTRES</u>
1. MOROCCO	I M E C - CASABLANCA	Already well established
2. ALGERIA	-	Propose to set up a new Packaging Centre
3. TUNISIA	(i) LABORATORY CENTRALE TUNIS (ii) INNORPI - TUNIS	Govts' decision is awaited to set up a Packaging Centre in one of the Institutes. LABORATORY CENTRAL is already having basic equipment and expertise for packaging material testing
4. IRAQ	CENTRAL ORGANIZATION FOR STANDARDIZATION & QUALITY CONTROL - BAGHDAD	Can support Packaging Services with upgradation of packaging material testing laboratories.
5. S. ARABIA	(i) SAUDI ARABIAN STANDARDS ORGANIZATION RIYADH (ii) SAUDI BASIC INDUSTRIES CORPORATION RIYADH	Laboratory facilities are excellent, are planning to upgrade these for package testing. Can be developed into Packaging Centre Are also anxious to set up a Packaging Centre
6. EGYPT	EGYPTIAN PACKAGING DEVELOPMENT ASSOCIATION CAIRO	A Packaging Centre is being set up in the city of Ramadan
7. SOMALIA	-	Packaging material testing laboratories may have to be set up in meat processing and frozen fish packaging Units.
8. SUDAN	FOOD RESEARCH CENTRE SHAMBAT - KHARTOUM	Centres' Laboratories need to be upgraded through addition of equipment & training of expertise.

SUMMARY OF THE SURVEY OF TECHNOLOGICAL
INSTITUTES

<u>COUNTRY</u>	<u>INSTITUTES</u>	<u>PROSPECTS FOR PACKAGING CENTRES</u>
9. LIBYA	INDUSTRIAL RESEARCH CENTRE TRIPOLI	A packaging Unit is already set up with the intention of expanding its activities manifolds.
10. SYRIA	INDUSTRIAL RESEARCH AND TESTING CENTRE DAMASCUS	Wish to set up a national Packaging Centre/Division at the earliest. Laboratory facilities already available can be used for testing of packaging material in the initial stages of centre's development.
11. JORDAN	ROYAL SCIENTIFIC SOCIETY AMMAN	Desire to establish a national packaging centre and have the necessary scientific personnel & laboratory support, the expertise is to be upgraded.
12. BAHRAIN	STANDARDS & METROLOGY SECTION MINISTRY OF COMMERCE & AGRICULTURE MANAMA	There is not enough demand for packaging services to call for the establishment of a packaging centre.
13. YEMEN ARAB REPUBLIC	No technological institute bearing relationship with packaging exists at the moment.	

IDENTIFICATION OF TECHNICAL ASSISTANCE SERVICES NEEDED

<u>COUNTRY</u>	<u>INSTITUTION/ORGANISATION</u>	<u>TYPE OF TECHNICAL ASSISTANCE/SERVICES</u>	<u>m/m</u>
1. MOROCCO	IMEC - CASABLANCA	- Consultancy mission to study economics of utilisation of packaging raw materials in Morocco.	4
		- Consultancy mission to study packaging and transportation of dangerous goods by different means of transportation and system of certification.	2
		- Consultancy mission on packaging of fresh and frozen fish and sea foods.	2
		- Fellowship training on food products in metal containers and plastics shelf life studies	1.5
2. ALGERIA	INSTITUT ALGERIEN DE NORMALISATION ET DE PROPRIETE INDUSTRIELLE (INARPI) ALGER	1. Consultancy mission for training technical staff on formulation of packaging standards	2
		2. Fellowships training of two technical members of staff - packaging standards.	3
	ENTREPRISE NATIONALE DES EMBALLAGES METALLIQUES ALGER	1. Consultancy mission on the upgradation of the Unit and training of their technical staff on Quality Control.	2
		2. Fellowship training for Graphic Design for exports in metal cans.	1.5
	MINISTRY OF COMMERCE ALGER	3. Consultancy mission for development of packages for fresh fruits and vegetables.	2
3. TUNISIA	LABCRATOIRE CENTRAL TUNIS	i. Training of a cadre of 8 technicians on testing of packaging materials transport worthiness tests, etc. through fellowship, training.	12

INSTITUT NATIONAL DE LA
NORMALISATION ET DE LA
PROPRIETE INDUSTRIELLE
(INNORPI) - TUNIS

NATIONAL CENTRE FOR
INDUSTRIAL STUDIES
TUNIS

ii. Technical assistance
in the form of equipment
for transport worthiness
testing laboratory.

i. Technical assistance for
establishment of a full
fledged packaging Centre
under processing.

ii. Consultancy mission for
formulation of packaging
standards.

i. Consultancy mission for 2 m|m
packaging of milk in glass
bottles vis-à-vis plastic
container/bottles.

4. IRAQ

CENTRAL ORGANIZATION
FOR STANDARDIZATION
AND QUALITY CONTROL
BAGHDAD

i. Fellowship training of 12 m|m
8 technicians on
packaging testing material

ii. Consultancy mission on 2 m|m
establishment of a transport
worthiness testing laboratory

iii. Consultancy mission on 3 m|m
formulation of packaging
standards and certification
procedures for food products

IRAQI CHAMBER OF
COMMERCE - BAGHDAD

i. Consultancy mission on 2 m|m
establishment of a Packaging
Centre.

MINISTRY OF LIGHT
INDUSTRIES - BAGHDAD

i. Consultancy mission on 1 m|m
package printing

5. S. ARABIA (i) SAUDI ARABIAN
STANDARDS ORGANI-
ZATION - RIYADH

i. Consultancy missions for 3 m|m
establishment of a Packaging
Centre and

ii. Establishment of transport 2 m|m
worthiness testing labora-
tory.

iii. Fellowship training of three 6 m|m
technicians on packaging
material testing.

iv. Seminar on Packaging Stan- 0.5 m|m
dardization.

(ii) SABIC - RIYADH
AND

(iii) KING ABDUL AZIZ
CITY FOR SCIENCE
& TECHNOLOGY
RIYADH

)
Seminar on PLASTIC IN 0.5 m|m
PACKAGING -
Expert mission

	(iv) KING ABDUL AZIZ CITY FOR SCIENCE & TECHNOLOGY RIYADH	i. Fellowship training documentation & information	1.5 m/m
		ii. Packaging training methods & techniques - 2 faculty members.	4 m/m
	(v) JEDDAH CHAMBER OF COMMERCE	i. Training course on fundamentals of packaging	
6. EGYPT	EGYPTIAN PACKAGING DEVELOPMENT ASSOCIATION CAIRO and EGYPTIAN PACKAGING CENTRE RAMADAN	i. Fellowship training for the person in packaging docu- mentation & information	2 m/m
		ii. Consultancy mission for development of packaging centre.	3 m/m
		iii. Consultancy mission for packaging of edible oil	2 m/m
	EGYPTIAN ORGANISATION FOR STANDARDISATION	i. Consultancy mission formu- lation of packaging stan- dards.	2 m/m
		ii. Fellowship training in packaging material testing, two technicians.	3 m/m
7. SOMALIA	MINISTRY OF FISHERIES MARINE RESOURCES MOGADISCIO	i. Consultancy mission for packaging of frozen fish	2 m/m
	MINISTRY OF COMMERCE MOGADISCIO	i. Consultancy mission for quality control of packaging materials - Metals - cans	2 m/m
		ii. Consultancy mission for packaging of bananas for exports.	2 m/m
		iii. Consultancy mission on graphic designs for labels for export of Rum	2 m/m
8. SUDAN	MINISTRY OF AGRICULTURE KHARTOUM	i. Consultancy mission for packaging of fresh mangos for exports	2 m/m
	FOOD RESEARCH CENTRE SHAMBAT - KHARTOUM	ii. Fellowship training of 2 technicians on shelf life studies for packaged food.	3 m/m
		iii. Technical assistance in upgradation of existing material testing laboratories & setting up of a transport worthiness testing laboratory.	

MINISTRY OF INDUSTRY
KHARTOUM

- i. Seminar on role of packaging in the national economy. 3 m/m
- ii. Fellowship training of two officers of inspection Agency in monitoring of packaging & certification. 3 m/m
- iii. Consultancy mission for formulation of packaging standards for food. 3 m/m
- iv. Fellowship training for two technicians on formulation of packaging standards. 3 m/m

9. LIBYA

INDUSTRIAL RESEARCH CENTRE

Expert Missions

- (i) Establishment of Packaging Centre 2 m/m
- (ii) Performance Testing of Complete & filled packages 1 m/m
- (iii) Packaging of olive oil in Plastic bottles 2 m/m
- (iv) Determination of shelf life studies for food products 2 m/m
- (v) Status of Packaging Industry - Packaging Survey 3 m/m
- (vi) Formulation of Packaging Standards 3 m/m

Fellowship Training

- (i) Testing & Quality Control - Paper & board - one technician 1.5 m/m
- (ii) Testing & Quality Control - metal & glass - one technician 1.5 m/m
- (iii) Determination of shelf life studies for food products - one technician 1.5 m/m
- (iv) Performance testing of complete & filled packages - one technician 1.5 m/m

10. SYRIA

INDUSTRIAL RESEARCH AND TESTING
CENTRE.

Expert Missions :

- | | |
|---|-------|
| (i) Establishment of a Packaging Unit
& Promotion of packaging services | 4 m/m |
| (ii) Quality control in Glass Jars | 2 m/m |
| (iii) Packaging of Edible oil -
Rationalisation of sizes & up-
gradation of re-packing facilities
in Syria | 2 m/m |
| (iv) Milk & Dairy products packaging | 2 m/m |
| (v) Status of Packaging Industry in Syria | 2 m/m |
- TECHNOLOGICAL GAPS & MEASURES FOR
IMPROVEMENTS

Fellowship Training

- | | |
|--|---------|
| (vi) (i) Testing, analysis & Quality control
of paper & board -
2 technicians for 1.5 m/m each | 3 m/m |
| (ii) Testing, analysis & quality control
of glass bottles, jars & metal cans
one technician | 1.5 m/m |
| (iii) Packaging of Food - Compatibility
Studies - 2 technicians for 1.5 m/m
each | 3 m/m |
| (iv) Packaging standardisation
-2 technicians 1.5 m/m each | 3 m/m |

Seminar

- | | |
|-------|--|
| (vii) | PACKAGING OF READY MADE GARMENTS FOR EXPORTS |
|-------|--|

11. BAHRAIN	(i) MINISTRY OF DEVELOPMENT & INDUSTRY	Consultancy mission	Packaging Survey Identification of investment opportu- nities.
	(ii) MINISTRY OF COMMERCE AND AGRICULTURE	Consultancy mission	Packaging Standars & Certification Procedures
	- STANDARDS AND METROLOGY SECTION	Consultancy mission	Packaging of Fresh Fruits & Vegetables
		Fellowship Training	Packaging Standards (2 technicians)
	(iii) MINISTRY OF HEALTH	Consultancy mission	Migration Studies for entire shelf life on packaged foods
		Fellowship training	Migration studies for entire shelf life of packaged foods. (2 technicians)

12. YEMEN ARAB REPUBLIC

Experts

San'a:	(i) Expert on Establishment of Packaging Laboratories	3 m/m
	(ii) Expert on Testing of Metal Cans & Glass bottles	1 m/m
	(iii) Expert on testing of Flexible packaging materials - plastics paper & board	2 m/m
	(iv) Expert on Packaging Design - Graphics and Structural - for Exports	2 m/i
	(v) Expert on Production of film on 'Packaging ITS ROLE IN DISTRIBUTION SYSTEM'	3 m/i

Fellowship training

(i) Packaging Material Testing - metal & glass	3 m/r
(ii) Packaging material testing - plastics / paper & board & laminates	3 m/r
(iii) SHELF LIFE STUDIES ON FOOD PRODUCTS	3 m/i

13. JORDAN

ROYAL SCIENTIFIC SOCIETY

Consultancy mission on:

- a) Establishment of a Packaging Centre. 3 m/m
- Consultancy mission on: 2 m/m
- b) Migration studies for the entire shelf life of food compatibility of packaging materials.
- c) Fellowship training on Testing & Quality control of metal cans. (one technician) 1.5 m/m
- d) Shelf life studies of packaged food in metal cans. 1.5 m/m

DIRECTORATE OF STANDARDS:
MINISTRY OF TRADE & INDUSTRY

- a) Consultancy mission on formulation of packaging standards.

MINISTRY OF TRADE & INDUSTRY

- a) Consultancy mission on packaging design (Graphics) & Printing. 2 m/m
- b) Consultancy mission on foods in metal packaging - migration studies. 2 m/m
- c) Consultancy mission on packaging waste disposal & recycling. 2 m/m

ARAB INDUSTRIAL DEVELOPMENT ORGANIZATION

AIDO PACKAGING UNIT

I/ The Unit is composed of :-

Unit Chief, A Specialist in Chemical and Plastic Packaging Industry and secretarial services. The Unit is supported by 6 competent functional staff in the Fields of :

1. Training & Personal Development
2. Plastic Packaging
3. Packaging, Engineering & Mechanical Testing
4. Glass, Carton, Paper and Cement Packaging
5. Data retrieval and information
6. Textile Packaging

II/ The objectives of the Unit are the development of Arab National and Regional Economy, the upbringing and improving of the Packaging Industry and the Production of better quality containers and packings and the utilization of available raw materials and resources to produce packages as replacements to imported ones. The Unit also aims for the transfer of modern technology to Arab Countries and develop the technical and organisational capabilities of the Arab countries. It also aims at Training and Upbringing of the persons involved in the Packaging Industry.

III/ The Unit achieves these aims through the following activities :

1. Carrying out sectorial studies on the Packaging industries (existing and planned) in the Arab countries and identifying the opportunities for the horizontal and vertical development of the industry ; and promoting the Establishment of Joint Arab Projects utilizing local materials as far as possible.
2. Providing technical, economical, and marketing consultations for the Packaging Industry in Arab Countries and supplying it with information and studies and other implementation of necessary studies for establishing New Projects or expanding existing ones.

3. Assisting Arab countries in establishing National Institutions on Packaging and Laboratories specialised in Testing, Research and development and design so that these Institutions / Centres become the nucleus for providing services in packaging on the National and Regional Levels. In this regard the geographical distribution and the different levels of progress and capabilities must be taken into account.
4. Full cooperation with the National Committees / Focal Points, Research and Dev. Institutions in their activities.
5. Training of Technical Personal and promoting suitable training opportunities and organising training courses on Packaging.
6. Unifying standards and specifications related to the Packaging, Packages by cooperation with ASMO
7. Issuing publications and periodicals related to the Packaging Industry and its Development on the National / Regional and International Level.
8. Holding seminars and participating in their organisation

The Unit has been active in these fields and many studies have been implemented specially on the Regional Level since the beginning of 1986.



Hameed AL JOUDI

A I D O

IMMEDIATE OBJECTIVES AND RESULTS ACHIEVEDMAJOR IMMEDIATE OBJECTIVESRESULTS OF ACHIEVING PROJECT OBJECTIVES

- | | |
|--|---|
| 1. ESTABLISHMENT OF ARPAC: | NOT ACHIEVED. DECISION DEFERRED |
| 2. TRAINING OF GADRE of specialists in packaging design, standardization, quality control production techniques, technological and management information systems; | Yes, it has been achieved through ORGANISATION OF 4 SEMINARS 2 TRAINING COURSES, 8 FELLOWSHIPS TRAINING.

263 ENGINEERS, Technicians, managers and specialists trained.

IN ADDITION TWO STUDY TOURS WERE ORGANISED TO AUSTRIA, FRANCE AND SCANDINAVIAN COUNTRIES RESPECTIVELY. |
| 3. Initiation of a regional consultancy service to assist Arab packaging industries in all aspects of the packaging industry; | Formally not initiated. But IMEC's TECHNICAL STAFF HAS BEEN TRAINED TO TAKE UP THE WORK, AIDO's PACKAGING UNIT IS IN A POSITION TO ORGANISE THE SERVICE BY DEPLOYMENT OF NATIONAL REGIONAL AND INTERNATIONAL EXPERTISE. |
| 4. Preparation of technical guidelines for the eventual introduction of quality certification system for application at the national level in collaboration with the Arab Standards and Metrological Organization's (ASMO) technical committee on packaging standards; | Guidelines are under preparation Technical staff of IMEC, ASMO and IRAQ ORGANISATION FOR STANDARDS AND QUALITY CONTROL-ORIENTED ON THE SUBJECTS. BESIDES, ADVICE WAS PROVIDED TO NATIONAL STANDARDS ORGANISATIONS IN S.ARABIA, IRAQ, EGYPT, SUDAN, MOROCCO, ALGERIA, ON THE SUBJECT THROUGH CONSULTATION MEETING. |
| 5. Setting up of a regional packaging communication network including national packaging committees in interested participating countries which will coordinate with ARPAC the flow of information on packaging; | SUBSTANTIALLY ACHIEVED FOCAL POINT FUNCTIONNING IN MOROCCO, ALGERIA, TUNISIA, EGYPT, SOMALIA, SUDAN, S. ARABIA, JORDAN, LIBYA, and SYRIA PDR YEMEN. |
| 6. Up-grading the present documentation and information unit at the Moroccan Institute of packaging (IMEC) to a regional centre capable of collecting and disseminating information on the packaging industry and creation of a packaging enquiry service in close cooperation with AIDO's Documentation and Information Centre and national packaging committees; | SUBSTANTIALLY ACHIEVED

FURTHER WORK IN PROGRESS. |

7. SURVEY ON FORECAST OF DEMAND FOR PACKAGING MATERIALS AND INVENTORY OF PRODUCTION CAPACITIES.

ACHIEVED. SURVEY COMPLETED IN 19 OF THE 22 ARAB COUNTRIES. RESULTS ARE UNDER STUDY BY AIDO

8. SUPPLEMENTRY

ESTABLISHMENT OF PACKAGING INFRASTRUCTURE AT NATIONAL LEVEL

SURVEY OF PACKAGING RELATED TECHNOLOGICAL INSTITUTIONS WITH PROSPECTS TO SUPPORT PACKAGING SERVICES COMPLETED IN ALGERIA, TUNISIA, IRAQ, S. ARABIA, SUDAN, SOMALIA, EGYPT. SURVEY IN PROGRESS IN SOME OF THE REMAINING COUNTRIES.

RECOMMENDATIONS OF EVALUATION MISSION

Policy and ORGANISATIONAL MATTERS

1. It is recommended that steps to formally establish ARPAC may be initiated and the centre established at the earliest possible opportunity.

2. On establishment of centre, it would be incumbent to define its constitution, organisational structure, financing, its relationship with national laboratories in other countries of the region et. It is time, AIDO may look into such aspects.

3. In the light of the fact that IMEC and ARPAC (proposed) are currently two separate entities and UNDP & AIDO's inputs for the establishment of the centre are presently made through the professional support of IMEC, it is recommended that the role of IMEC vis-a-vis ARPAC may be more clearly defined.

4. ARPAC project does not have any formally assigned technical staff on its rolls. Most of the technical services and activities are carried out through national / regional and international consulting missions and through the support facilities of IMEC. With a view to have the necessary component of counterpart staff particularly in certain key technical areas - viz training, information & documentation, standardisation and technical assistance (consultancy services), it is recommended that four positions of technical experts one each in the areas specified above be created & filled in the project. These positions & persons may be transferred to ARPAC on its establishment. These persons would also manage the delivery of programmes and activities of the extension project under the guidance of project Director.

5. A few fellowships for training of persons proposed under 3. above may be utilised from the fellowships component of the Extension Project.

TECHNICAL

1. On a detailed evaluation of the pros and cons of the extension proposal, the mission recommends in principle the extension of the project 'Establishment of ARAB Regional Packaging Centre'.

2. The mission is in general agreement with the outputs expected and the activities scheduled during 1986-88. However, the pilot plant may be installed on the basis of the results of the feasibility study. It is further recommended that special programmes of training be organised and conducted for the benefit of industries and organisation in the less developed countries of the region as well.

3. The establishment of the pilot plant for training and research and development needs further study and elaboration. It is recommended that a feasibility study to highlight, what specific areas of the packaging pilot plant are needed, its cost benefit analysis to be elaborated by the project management to decide about the financial outlays. Accordingly the financial provisions proposed for the pilot plant in the proposal amounting to \$ 150,000 may be kept in abeyance. The position to be reviewed in the light of the outcome of the study.

4. 30 man months of consulting mission of international experts and 74 man months of national experts involving an outlay of \$ 400,000 have been proposed. A number of countries are considering to obtain the services of experts for identification of packaging needs, standardisation and technical assistance. The mission recommends that international expert missions be provided. In addition, two resident international experts for a period of 8 to 12 months each are recommended to help provide the awareness for right packaging concept, undertake diagnostic studies, identify training needs and organise technical assistance where ever needed. They would also associate themselves with the concerned authorities and help develop communication network to promote the services of the project/ARPAC and provide feed back to the project director on various aspects.

The mission agrees in principle the components of activities and has taken note of the outlays proposed as UNDP's & AIDO's contributions. Tentatively, the pattern of assistance from UNDP may take the form as given below :

	<u>1986 - 88</u>	
1. Int. Consultants, travel & National consultants including two resident international experts	\$ 500,000	
2. Sub-contracts & promotional activities	\$ 90,000	
3. Training	\$ 380,000	
4. Equipment	\$ 150,000	
5. Applied research*	\$ 50,000	* Kindly refer to appropriate recommendation
6. Sundry	<u>\$ 70,000</u>	
	<u>\$1240,000</u>	

N.B. The provision for pilot plant to be reviewed after the findings of the feasibility study and due additions to be made. The counterparts contributions have been placed at \$780,000 for the duration of the extension project. Due adjustments may be called for to follow the principle of cost sharing & matching contributions.

5. It is recommended that the steps to establish packaging committees in the interested countries be reinforced and these committees established. In addition, contact points involving organisations & interests more involved in the field of packaging be identified and developed as focal points for promotion of centre's services.

6. The mission recommends a specific provision for applied research on certain common problems relating to packaging in the region. Applied research studies of a developmental nature relative to the formulation of packaging standards for items consumed by the common man - food, cooking oil, milk, fruits & vegetables... in the domestic market. Similarly, applied research studies may be made in respect of exportable products fish, handicrafts, dates, fresh fruits etc.

7. The demand for creation of national centres of packaging and laboratories is gaining momentum. Some of the countries have already prepared project feasibility studies for the establishment of national laboratories. It is recommended that the establishment of such centres / laboratories - as satellite centres - be encouraged and technical assistance provided by the project.

In addition, attempts to identify & develop the existing set-up of laboratories in different countries and their potentialities to be developed into packaging laboratories be made.

8. An excellent scope exists for offering consultancy services to various countries of the region. It is recommended that this area be explored and developed. These assignments are likely to yield rich dividends not only in enhancing the confidence of the countries in the activities of the centre but would offer excellent material for case studies to be used in the training programmes for development of skills.

9. It is recommended that industrial profiles of various material based packaging industries may be compiled. These combined with the output of the surveys of packaging industries could be used for planning and growth of the packaging industry in the region.

10. There is a need to help the official agencies of the national Governments to formulate plans for packaging materials and make investment decisions for starting/expanding packaging industries. The project may develop expertise to offer such guidance & services at the macro level.

11. It is recommended that the training programmes be more oriented to the problems of the packaging and packages user's industries. A study on assessment of training needs at different levels in a couple of countries is recommended on an experimental basis.

TRIPARTITE REVIEW COMMITTEE MEETING
CASABLANCA, 8 - 12 NOVEMBER 1985

-CONCLUSION AND RECOMMENDATIONS

The project was commended upon for its overall success by all the members.

The Tripartite Review Meeting made the following recommendations:

- 1) The scope of the project on packaging should be significantly enlarged to include on priority basis the programmes and activities for the growth and development of packaging centres at the national level of the countries who are interested to do so, in addition to those of ARPAC.
- 2) A Project Document incorporating programmes and activities, inputs, outputs, sources of funding etc. for the development of National Packaging Centres and ARPAC should be prepared by UNIDO and submitted to UNDP/AIDO/Government of Morocco by end January 1986.
- 3) The current phase of Preparatory Assistance Programme should be extended for six months, and be financed out of the savings accruing from 1984-85 budget of the project (UNDP/AIDO together). A work plan should be prepared by UNIDO and submitted to UNDP/AIDO and the host Government immediately.
- 4) AIDO are requested to continue its efforts for the establishment of ARPAC and finalize arrangements for the recruitment of counterpart technical staff with back up of facilities of library, laboratories, etc. so that the possibility of further technical assistance could be considered.
- 5) AIDO and the participating Governments are recommended to establish communication network based on packaging committees and/or other focal points, so that the possibility of developing National Packaging Centres among the interested countries could be examined on the basis of concrete programmes in the next phase.
- 6) The planned activities in the work plan of the Project Document 1984-1985 that are committed and could not be implemented in the past on schedule, should be completed within the next 3 to 6 months. UNIDO should be associated with the work of packaging surveys.
- 7) There is a need to spell out clearly "cost-sharing" aspects of project's financing in the document. AIDO has already given an indication of the budget amounting to US\$ 1,240,000 for a period of three years appropriated as US\$ 780,000 cost-sharing to the UNDP project budget and US\$ 460,000 in kind. The Project Document should clearly reflect the cost-sharing component and UNIDO should ensure that the contributions of counterparts are made on time.
- 8) There is a need to look into the packaging needs of less developed countries of the region. These countries should be provided by technical assistance in the form of developing packaging expertise intended for preservation and conservation of food. This would also bear a complementary relationship with another forthcoming UNDP project "Food security" in the Arab region.

LIST OF PARTICIPANTS

TRIPARTITE REVIEW COMMITTEE MEETING

CASABLANCA, 8-12 November 1985

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

Mr. BOURJINI Salah	Chief, Division Regional Programmes
Mr. DE CASTERLE	Deputy Resident Representative, UNDP Rabat
Mr. R.K. CHOWDHARY	Consultant

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO)

Mr. J. BELO	Backstopping Officer Agro-Industries Branch, DIO
Ms. F.Z. BENNANI	Industrial Development Officer PC/PDEB

ARAB INDUSTRIAL DEVELOPMENT ORGANIZATION (AIDO)

Mr. Adnan M.L. KINDI	Director of Sectorial Development
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MINISTRY OF TRADE AND INDUSTRY - MOROCCO

Mr. Abdelhaq BENNOUNA	General Director of the Moroccan Packaging Institute (IMEC)
Mr. Omar FARAJ	Direction de l'Industrie

REPUBLIC OF IRAQ

Mr. Abdul Aziz AL DOORI	Ministry of Trade and Industry, Iraq
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JORDAN KINGDOM

Mr. Ibrahim KAKISH	Chief, Division Chemical Industries Ministry of Trade and Industry, Jordan
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TRIPARTITE REVIEW COMMITTEE MEETING

CASABLANCA, 15-17 December 1986

CONCLUSIONS & RECOMMENDATIONS

CONCLUSIONS

1. The project was commended for its overall performance and success and the members acknowledged the contributions made by all parties UNDP/AIDO/UNIDO/Govt of Morocco/IMEC and all the participating countries. The members strongly felt the need for continuation of technical assistance suited to the specific requirements of each country without any discontinuity.
2. The focus of future assistance should concentrate on the development of the infrastructure at the national levels.

RECOMMENDATIONS

1. The proposed three years programme of technical assistance should be reformulated in the context of the needs of the participating countries and project document completed by the reformulation mission within a period three months. The reformulation mission is recommended to take into account the identified needs of the countries and the experience of the project under review.
2. The establishment of network of packaging communications/packaging committees/focal points is a continuous activity and should be given priority. Pending their establishment, the officially identified contact points should be assisted by all concerned to provide guidelines to enlarge their roles in the development of packaging industries.

3. The capabilities & capacities of IMEC and other packaging related technological institutes in the Arab countries should be utilised on a priority basis for implementation of the project activities.
4. Experts in the Arab countries should be given preference in the selection of experts for implementation of project activities. A roster of Arab Experts should be prepared by AIDO/IMEC/UNIDO for the selection of international experts, preference should be given to those having proficiency in ARABIC, other things being equal.
5. The institutional framework and management responsibility for project implementation should clearly be defined in the project document to avoid any overlap and possible confusion during implementation.
6. The national counterparts assigned to the Experts should be national specialists who will act as homologues in the missions of international Experts.
7. Some participant countries recommended that the possibility to support the organization of an exhibition on Packaging Machinery and Materials in an Arab Country be examined. when reformulating the project document.
8. The efforts to identify and assess the capabilities of packaging related technological institutions in the Arab Countries doing work on Quality Control, training, standardization, documentation and information & technological concultancies should be continued and completed during the next months together with assessment of technical assistance needed in these countries.
9. The representatives from the Maghreb countries recommended that, in the follow-up project, particular attention be given to the presentation of documents and to the training of their participants in French or Arabic.

LIST OF PARTICIPANTS

Tripartite Review Committee Meeting
Casablanca, 15 - 17 December 1986

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

Mr N. LAUZON Deputy Resident Representative, UNDP RABAT
Miss S. RIMOLDI PNUD / RABAT

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MINISTRY OF TRADE AND INDUSTRY - MOROCCO

Mr S.Y. TAHIRI Ministry of Trade and Industry
Mr A. ZAKI General Director of the Moroccan Packaging
Institute (IMEC)
Mr O. FARAJ Direction de l'Industrie
Mr A. BENMOUSSA Direction de l'Industrie
Mr A. CHAABANI IMEC Observer

J O R D A N

Mr Salem QUHEIWI Ministry of Industry

A L G E R I A

Mr ALEM Mostefa Ministry of Trade

T U N I S I A

Mr FESSI Salah Ministry of Industry and Trade

I R A Q

Mr Abdul Aziz AL-DOURI Ministry of Industry & Minerals

E G Y P T

Mr ISMAIL Abdellatif

Chemical Petrochemical Industries
Ministry of Industry

MINISTRY OF FOREIGN AFFAIRS & COOPERATION (MOROCCO)

Miss AIT SABAH

FINAL REPORT - SEMINAR ON PACKAGING TECHNOLOGY IN FOOD INDUSTRY
AND ARAB COOPERATION AND COORDINATION PERSPECTIVES

AMMAN - 14 - 19 APRIL 1984

At the invitation of the Arab Industrial Development Organization, the Arab federation for food industries and under the auspices of his excellence Dr. Jaouad Al Inani, Minister of Industry, Commerce and Tourism in the Hashemite Kingdom of Jordan and within the framework of the regional project for packaging industry development, implementation prepared and executed together by the Arab Industrial Development Organization representing the Arab industrial organisms, the United Nations Industrial Development Organization (UNIDO), the Kingdom of Morocco, and the United Nations Development Programme, a seminar was held in Amman on the Theme "Packaging Technology in Food industries and Arab cooperation and coordination perspectives", from April 14th to 19th, 1984.

This seminar was the first activity to be held for the project. During the opening ceremony, speeches were addressed to participants by the following persons :

- Dr. Jaouad Al Inani : Minister of Industry, Commerce and Tourism in the Hashemite Kingdom of Jordan.
- Dr. Falah Said Jabr : for Director General of Arab Industrial Development Organization and Arab federation for food industries.
- Mr. Mahdi Al Abidi : Secretary general of Arab economic Union Council.

The interventions emphasized the project importance and the role played by packaging as one of converting industry sectors that serve many of industrial branches, particularly food industries. The speeches also agreed on the Arab completion importance in the field of industrial economic activities as well as Arab cooperation, and exalted the efforts deployed by the Arab Industrial Development Organization and the Arab federation for food industries, and thanked both the kingdom of Jordan for its hospitality and contribution to the seminar preparation as well

.../...

as his excellence the minister of Industry, Commerce and Tourism and all the persons working under his direction to provide all success elements for the seminar.

Participants from Arab ministries of Industry, Arab organizations, specific Arab federation, members from the Arab federation for food industries and several other international organizations, contributed in the seminar works as mentioned in the list herewith.

At the beginning of the seminar works the following persons were elected :

Dr. Jaouad Al Inani / as president
Dr. Falah Said Jabr / as Vice president
Dr. Sani Rabii / as rapporteur

All through the seminar, participants discussed the following different studies, researches and papers prepared by the Arab Industrial Development Organization, the Arab federation for food industries, the Moroccan packaging institute, the United Nations Industrial Development Organization and the Arab federation for chemical fertilizer producers. Participants also reviewed the detailed work programmes concerning the regional project presented by Mr. Abdelhaq Bennouna, Project Director.

- 1 - The role of packaging in trade exchange promotion b
by Mr. Abdelhaq Bennouna
- 2 - Concentrated tomato transport and packaging
by Professor Griig
- 3 - Concentrated tomato in the Arab world and linked packaging issues
by Dr. Falah Said Jaber
- 4 - Arab Cooperation perspectives in packaging industry for food industries
by Mrs. Nasira Saadoun
- 5 - Food industry new packaging trends
by Professor Griig
- 6 - Chemical fertilizer packaging in Arab countries
by Mr. Abdelaziz Hussein
- 7 - Hors-d'oeuvres in usury and linked packaging materials.
by Professor Griig

- 8 - Hors-d'oeuvres packaging
by Professor Griig
- 9 - Food and dairy products packaging
by DR. Sami Meksine ER-RABII
- 10 - Scientific research results on damage affecting products particularly packaging materials
by Professor Griig
- 11 - Intervention on Food packages National Committee
by Mr. Jack Khayat

Please find herewith the seminar concerned documents as follows :

- 1 - Seminar adopted recommendations
- 2 - Participants' names and addresses list
- 3 - Opening ceremony speeches.
- 4 - Studies and researches set presented and discussed during the seminar.

RECOMMENDATIONS

Packaging industry represents an effective basis among converting industries in general, and particularly in food industry . packaging material costs include a considerable rate of the whole commercialized units production costs. While this industry technologies vary between sophisticated and intermediate, raw materials also vary according to packed food products nature, since they include flexible and rigid metals, glass, plastics, paper and etc...

Developing this industry on Arab basis is one of food industry development elements, mainly when this industry deals with locally produced agricultural raw materials and uses locally originating packaging materials and if the region countries, through their cooperation and through the regional project for packaging industry development, arrive at determining in an exact and scientific way the characteristics of both this industry existing branches and the actual needs of its products

.../...

and consequently of its raw materials as well as the technical and economic appropriate technologies by means of training and developing technical staff in all areas.

These matters and others will enhance market food products and packaging materials to bolster on Arab standards protecting both manufacturers and consumers in the best conditions so as to meet with Arab markets requirements.

After an exhaustive discussions that included work papers and participants' interventions, the following recommendations were recommended.

FIRST : At Regional project level

1 - The participants complimented all those who deployed their efforts for the preparation and the start of execution of packaging industry development project and the establishment of Arab packaging Center (ARPA), as well as to those in charge of its implementation. They also rendered homage to all Arab countries through their ministries of industry together with packaging industry, food industry and the other industries responsables for their positiveness towards the regional project.

Participants thanked the United Nations Development Programme and Kingdom of Morocco for their project support.

2 - Seeing the importance of carrying out field surveys that deal with packaging industry on either package manufacturing plants and factories, or package consuming industries and on its future development perspectives the participants request the Arab Industrial Development Organization to give more interest in field surveys aiming at both practical fact evaluation, effective and available potentials determination, and cooperate for this with specific Arab federations, particularly with Arab federation for food industries and Arab federation for paper and printing industries due to their close relation with the matter.

3 - Seeing the importance of packaging national committees establishment and reactivation, the participants request all Arab ministries of industry

.../...

national chambers of industry, standardization and metrology organisations, universities and scientific research centers to accelerate the constitution of such committees or the improvement of their efficiency and give them a more "effective" role through their cooperation with the Arab industrial development organization and the Regional project direction for the sake of packaging industry development within the national framework determined by the project.

Since these committees constitute affluents for one another, many particular experience need be transferred, adapted and developed, Arab ministries of industry were also requested to appoint a member in charge of coordination between these committees and project direction so as to ensure interaction continuity for a higher effectiveness.

In the context, participants emphasized a quick reaction to Arab industrial development organization related note.

4 - Benefit from regional and international organizations cooperation possibilities in order to implement some regional project clauses at lowest costs, and also benefit from project reserved funds to cover all its dependent organism, particularly with Food and Agriculture organization and international trade Centre.

5 - Packaging related studies, seminars and consultive meetings should whenever possible cover all other industrial sectors beside food industries, such as fertilizer, cement and building materials, paper and carton industries.

SECOND : Food industries and packaging

While the Arab countries know a large evolution including the creation and the development of existing food industries, packaging industry constitutes a basis for this industry and sometimes even its economic feasibility determinant, knowing this sector importance, the international food products and packaging technology monopoly it faces, participants in this seminar recommend the following.

1 - Undertake studies upon support provided by foreign countries to food products and packaging materials exported to Arab countries, and submit them to all concerned organisms and authorities in order to

.../...

find out ways capable of consolidating and supporting arab packaging and food industries in the same way comparable to foreign similar industries.

2 - Undertake technical and economic studies upon the use of plastics, glass and aluminium materials in packages since their raw materials are available in the Arab countries, so as to substitute rigid metal (Tin) packages in food products current uses, particularly in dairy, concentrated tomato, hors d'oeuvres, vegetal oils etc industries.

3 - Invite the project responsables to carry out compared studies between packaging material properties and their possible substitutes on the hand and packed products and substitution possibilities of for more appropriate and economical locally originating packaging materials on the other hand - attempts should concentrate on the transfer of appropriate and adequate technologies to Arab fact and actual requirements.

4 - More importance should be given to Arab food industries and used packaging materials characteristics presentation as well as more interest in information either on packed products or packaging materials themselves, manufacturing date, validity period and package possible alternative use or how best clearance means, emphasis should be allowed to Arab and National standards adoption.

5 - Larger interest should be given to packaging material waste recovery participants request concerned Arab authorities to work toward environment preservation, pollution limitation, and a better recovery of food product packaging material waste.

6 - Adoption of Arab unified standards for hors d'oeuvres products, emphasis should be put on these products nutritive value increase and more control on imported similar products.

.../...

THIRD : General recommendations in the field of Arab cooperation

1 - Since the Moroccan packaging institute constitute a nucleus of an Arab Center specialised in studies, development, information and staff training in packaging industry ; participants strongly agree on the resolution taken by Arab industry ministers concerning the conversion of the institute into a specific Arab center and request a faster execution of the resolution.

2 - Seeing the importance of technical staff training at all levels, participants request Arab institutes and universities to introduce packaging discipline among their studies and training programmes.

3 - While participants insist on the interest that national and bilateral conventions represent in matters of Arab common market and goods free movement, they request all Arab countries to work toward these conventions implementation and at the same time provide more freedom to goods and packaging materials movement.

4 - Invite project responsables to give larger interest in developing packaging industry and provide it with success elements in the least developed arab countries that possess the elements of its establishment.

5 - Owing to historical and economic current conditions of the Arab countries, they will remain importers of many packaging using raw materials, as matter of fact participants recommend an Arab coordinated and unified negotiating position in import process either of raw materials or semi-manufactured products.

FOURTH - General recommendations

1 - Invite the Arab industrial development organization in cooperation with specific Arab federations to hold a seminar on food and packaging

.../...

Arab industries facing foreign competition and their support and protective ways.

2 - Participants recommend all Arab countries, specific Arab federations and Moroccan packaging institute to increase their contribution and participation in international activities organized by specific international organisms.

3 - Invite the national and Arab development funds to finance Arab common packaging concerned research, surveys and projects, for this industry constitutes a "common" point to many converting industries and an important factor to their development and economy.

4 - Participants thank the Arab industrial development organization and Arab federation for food industries for their efforts aimed at well preparing and organizing this seminar, thanks are addressed to participants for the preparation and presentation of seminar work papers.

5 - Participants and organizers deply thank Bourdan through its King, its government and its people for their hospitality and cooperation ; they also thank his excellence Dr. Jaouad Al Inani, Minister of Industry, Commerce and Tourism for the valvable directions he provided to the seminar.

THE FINAL REPORT
SEMINAR ON THE ROLE OF PACKAGING
IN PROMOTING ARAB TRADE EXCHANGE
(CASABLANCA, July 23-28, 1984)

Upon the invitation of Arab Industrial Development Organization (AIDO), United Nations Development Programme (UNDP), United Nations Industrial Development Organization (UNIDO), Moroccan Packaging Institute (IMEC) and under the auspices of MR. Azeddine GESSOUS, Ministry of Commerce, Industry and Tourism in Moroccan government and carrying on the implementation of the regional project to promote packaging industry in the Arab world, a seminar on "The role of packaging in promotin Arab Trade Exchange" was held in Casablanca from 23rd to 28th July 1984.

The following spoke in the opening ceremony :

- 1/ MR. MIFTAH EL KHAIR Abdelhai : Representative of Ministry of Commerce, Industry and Tourism in Kingdom of Morocco.

- 2/ MR. Abdelkrim BELKORA : Director Geenal Assistant of AIDO

- 3/ MR. Jean Claude PETIT PIERRE : Resident UNDP representative in Morocco.

- 4/ MR. J. BELO : Representative of UNIDO.

- 5/ MR. Abdelhaq BENNOUNA : Directot General of IMEC and Director of Packaging Regional Project.

The speeches emphasized the importance of Regional Packaging Project through which the Arab Packaging Industry could be promoted, and underlined the positive role of all parts acting for the implementation of this project, its organisms and its activities, particularly the distinguished role played by the Moroccan Kingdom and its disposition to transform the Moroccan Packaging Institute into Arab Center acting in this vital industrial sector.

The speeches also emphasized the Arab integration and coordination in this field and requested to provide all means and potentials for the success of this project and act for the enforcement of the recommendations adopted by such seminars and meetings which are one of the main backgrounds of this industry promotion.

The speeches exalted the efforts of the Moroccan Kingdom and its supports to project, the efforts of AIDO, UNDP, UNIDO, and IMEC in connection with the implementation area of this project paragraphs.

Delegation from Arab ministries of industry and related international Unions and organizations participated in this seminar.

At the beginning of the seminar the seminarists close :

- MR. Abdelkrim BELKORA : Director General Assistant of AIDO as chairman.
- DR. Mouhsin Sami RJBAL : From AIDO as rapporteur.
- MR. CHABANI Ahmed : From IMEC as rapporteur involved.

The seminar involved six meetings and were respectively chaired by :

- MR. Abdelkrim BELKORA : Director General Assistant of AIDO
- DR. Salah ROUAG : Director of AIDO Regional Office.

- DR. Fallah Said JABR : General Secretary of Arab Federation for Food Industry.
- MR. Mustapha FLANI : Secretary General of Engineering Industry Arab Union.
- MR. Abillelaq BENMOUNA : Director General of IMEC and Director of the Project.

The seminarists debated a number of studies, research documents and country papers as follows :

1/ Country Papers :

Hashemite Kingdom of Jordan : Presented by Mr. Ibrahim KAKISH

Republic of Lebanon : Presented by MR. Abou NAQUM

Islamic Republic of Mauritania : Presented by Mr. SID Ould DIDI

Democratic People Republic of Algeria : Presented by Mr. MARZOU
Massoud

Kingdom of Morocco : Presented by MR. FARAJ Omar;

2/ Role of Packaging in Package Marketing and Export : Presented by DR. Falah Said JABR general secretary of Food Industry Arab Federation.

3/ Packaging Marketing Approach as a Factor Promoting Export Package : Presented by MR. BLAU UNIDO expert.

4/ Packaging Label designs efficiency in Marketing areas : Presented by MR. SELIN from I.T.C.

5/ Label Packages adequacy to target Markets Strategies : Presented by MR. SELIN from I.T.C.

6/ Arab and International activities and Packaging Standardisation methodology and quality control areas : Presented by MR. Hassan Es. Saoudi from ASMO.

- 7/ Packages for Transporting and Exporting Agricultural and Agro-industrial Products - Plastic Containers : Presented by DR. SAMI Mehsine Er Rubi, from AIDO
- 8/ Carton Containers : Presented by MR. Ibrahim El Gargis from Arab Union printing and paper industry.
- 9/ Wooden Packages : Presented by MR. OULIDI AbJenbi from IMEC.
- 10/ Role of Packaging in Commercializing and Exporting Canned fish in the Arab countries : Presented by MR. SAMIRA Chemaa from Arab Union for fish.
- 11/ Role of Packaging in Marketing and Exporting Agricultural Products (vegetables and fruits) in Morocco : Presented by MR. Abdelkrim EL FABI and MR. KETTANI from O.C.E.
- 12/ Carton packages : Presented by MR. KHAMLICI Ahmed from IMEC.
- 13/ Designs and Specifications of Packages for Agricultural and Agro-Industrial Products : Presented MR. ZEMAT Mohamed from IMEC.
- 14/ The Importance of studies and Marketing Agricultural and Agro-Industrial products : Presented by MRS Wafaa BENNANI MEZIANE from IMEC.
- 15/ Board Carton use in Agricultural Products : Presented by MR. LEGRAY guest expert.
- 16/ Packaging in evolution : Presented by MR. BISHOP.
- 17/ The establishment of an Arab Packaging Factory : Presented by MR. NIMR Abdelah, representative of Arab Union for Food Industry in Jordan.

18/ Packaging Documentation/information systems and tendencies in Arab and Industrialized countries : Presented by MR. HEMM Mustapha from IMEC.

During the seminar period, the participants made several field visits which involved :

- 1/ A visit to laboratories, documentation and information department in IMEC.
- 2/ A visit to a wooden packages factory in Sidi Larbi (CO-AMUSSY).
- 3/ A visit to a refrigerated station for fruits and vegetables (SOCAMAR).
- 4/ A visit to an orange juice factory (FRUMAT).
- 5/ A visit to a paper and carton factory (C.M.C.P.).

After a full discussion of all papers, studies and researchs prepared and presented at the seminar as well as a debate on the regional project of packaging, the participants adopted the following recommendations.

Packaging Industry covers a wide area in Arab Industrial activities. Its plantation and development in the world represents a trade exchange promotion among Arab countries and between these countries and external world countries.

Since the total development of Arab Packaging Industry consists of a good preparation and training of technical staff, adaptation of transferred international technology, selection of the most adequate technology to Arab reality and finding Arab Unified Standards of all Industrial products, these elements together are the basis of the any decrease in production costs of the producing units and consequently provide more freedom to promote trade exchange will lead to the development of a wide sector of Arab industries that rely, to a certain extent, on good products packaging varying from food products, building materials, fertilizers, pharmaceutical products, to minor equipment and etc...

The participants in the seminar complimented AIDO'S council resolution issued in September 1981 concerning the establishment of an Arab Packaging Center in Kingdom of Morocco. This Center which is to export its activities as a specialized technical body supplying Arab countries with its services to elaborate Packaging Industry. At the same time the participants heartedly greeted the generous offer of the Moroccan Kingdom to transform the Moroccan Packaging Institute into a specialized Arab Center concerned with this vital industry and hoped that AIDO would carry on deploying efforts in order to implement this project.

The seminarists emphasized the necessity of giving interest in the following recommendation and work for their implementation seeing that they are the basis of any development of Arab Packaging Industry through regional project :

- First : Carry out field survey on Arab level over available potential of packaging factories, technology nature which is used in this industry, characteristics of the technical staff working in it and market needs of this products up to 2 000, giving particularity to less developed Arab countries.
- Second : Since packaging industry plays an important and major role in marketing agricultural and agro-industrial products, the participants recommend the interest of developing the manufacturing and the material quality packages used skill and through training on the latest technology used in this field interest should be given to scientific researches and experiments concerning production and marketing.
- Third : Seeing the importance of setting up Arab Unified Standards in Packaging Industry, the participants appeal to the Arab countries to contribute more efficiently in the activities of the technical committee of packaging issued from ASMO and give this question the extreme priority in the programmes of country standards and metrology bodies, the participants hope that ASMO will provide assistance to Arab countries where such bodies exist so as to create them.

- Fourth : Since it is important to benefit from local raw materials used in packaging industry instead of imported the participants request the bodies in charge of the implementation of the Arab Packaging Project to set up a programme that aims at studying this question.
- Fifth : More interest should be given to remanufacture packaging products waster under all its forms in order to reduce the production costs which will enable Arab products to compete with similar foreg ones.
- Sixth : Since package factors design and printing are important factors in marketing agricultural and agro-industrial products, the participants recommend the necessity of giving special interest in this field by creating highly qualified and skilled technical staff and also by benefiting from regional and international experience in this area.
- Seventh : The participants emphasize the importance of finding unified Arab terms in matters of storing and transport methodes of agricultural and agro-industrial products, fresh a or manufactured. Which will help the promotion of Arab Trade Exchange.
- EIGHT : Seeing the rapid scientific and technical development of this Industrial sector in the world, the participants hope that the Arab countries will set up an Arab network of data and codumentation in Pakcaging field and contribute in all regional and international activities and actions relevant to this field.
- Nineth : Since the national committees of pacakging are the backbone of : This industry development, of the coordination of efforts deployed by all sides and of the evolution of awareness towards the important role played by packaging especially in marketing and trade exchange fields, the participants request all Arab countries to give extreme interest in the establishment and revival of these committees, and request AIDQ through those to give technical advice to these committees to fulfil their roles.

Tenth : The experience and opinion exchange among participants in such seminars is regarded as one of the important matters, particularly through country paper debates which reflect packaging industry fact in each country, the problems and the obstacles that it encounters as well as the ways used to over-come them, it also includes some proposals to develop this industry and consolidate the common Arab work in this field, there fore the seminar emphasized the necessity of giving interest in preparing and present in country papers from the side of all participants in such meetings in the future.

In conclusion, the participants and organizers of this seminar thank deeply the Kingdom of Morocco through its king, its government and its people for their reception of this seminar activities, for their hospitality and the provision of its succes elements.

The participants thank AIDO, UNDP, UNIDO, and IMEC organizers of the seminar, and also the experts and participants in the preparation and presentation of studies and researches to this seminar.

FINAL REPORT - SEMINAR ON " OPPORTUNITY & PARAMETERS OF JOINT VENTURES FOR PACKAGING INDUSTRIES AND REGIONAL AND INTER COUNTRY COOPERATION. (DUBAI 21-24 April, 1985)

Within the framework of the ARPAC mid-term programme (1984-1985), with the assistance of AIDO and UNIDO, the participation of the Ministry of Finance and Industry and under the patronage of His Excellency Cheikh Hamdane Ben RASHED AL MACTOUM, Minister of Finance and Industry of the U.A.E., a seminar on "Opportunity and parameters of Joint ventures for packaging industries and inter-country co-operation" was held at Dubai, U.A.E. between the 21st and 24th April 1985.

Among the participants in this seminar were : representatives of 13 Arab Countries, representatives of some Arab Industrial Associations and Arab Financial Institutions, in addition to experts from AIDO and a group of Managers and packaging specialists from the U.A.E. (see list of participants).

This seminar was held in compliance with the orientations and recommendations of the sixth Conference of Arab Ministers of Industry (Damascus, October 1984) which stressed the necessity of concentrating on Arab joint ventures as the most efficient means for achieving Arab Co-operation and a real utilization of the Arab material and human potentials as part of the Arab development on the whole and the industrial development in particular.

Up to now, Arab investors have not taken much interest in packaging industries, therefore Arab joint ventures in this field have remained limited, despite the efforts made by AIDO as early as 1973 which consisted of several seminars and conferences that lead to the idea of establishing the Arab Regional Packaging Centre in Casablanca, Moroccan Kingdom.

The reason for such a lack of interest in packaging industries might rest in the fact that the parties concerned with these industries are so numerous, whether they are users of packages (such as food, chemical, pharmaceutical industries etc...) or producers of packages and packaging materials (such as paper and plastics or metallic, textile or glass packages....etc....). Everyone should be aware of the important role the packaging industries play in the protection of products from distribution hazards (during the various operations of transporting, handling and stocking). Moreover attractive packages can stimulate sales and increase competitiveness of products on export markets.

The participants studied the situation of packaging industries in the Arab Countries through regional papers presented by some Arab States and a paper submitted by the ARPAC Project Director, together with the opportunity of undertaking joint ventures for the manufacture of paper packages in the light of a paper prepared by the Arab Association of paper manufacturers.

International experts dealt with the technological aspects of food packaging as well as the new development in packaging materials, the possibilities of financing industrial projects and the relationship between the quality and the final cost of the package.

In the light of the paper presented by the Arab Investment Assurance Institution, the participants studied the possible methods for financing and developing Arab joint ventures together with the opportunities and parameters of Arab co-operation in the field of packaging.

In collaboration with Industrialists in Dubai, the Ministry of Finance and Industry of the host country organized field visits to several packaging industrial plants so that the participants could witness the development achieved by this industry in Dubai.

Moreover, participants had the opportunity to visit "Dubai Printing and Packaging Exhibition" where they got an idea about recent developments of printing and packaging machinery.

As far as information and statistics relative to the packaging industry in the Arab Countries are concerned, the participants realized that there is an important lack in this field. It is clear that there is a need for data about the existing production capacities, the raw materials used, the demand for packages and packaging materials and the sources of these materials. Therefore it is absolutely necessary to carry out a sectorial study to determine the Arab packaging industry situation, the opportunities for Arab joint ventures either on regional or Arab levels and the possibility of relying on local raw materials instead of imported ones. There is no need to precise that if detailed information about all these aspects of the present situation of the Arab packaging industry is not provided, it will be impossible to take investment decisions on a sound basis.

The regional papers which dealt with the situation of the packaging industries in some Arab Countries showed that these industries are still underdeveloped and that they depend on imported raw materials for the production of packages. Thus the import of raw materials and the inefficiency of the technology and the means used to produce packages make their cost much higher in comparison with the packaged product.

Moreover it was noticed that some Arab projects still meet difficulties in marketing the packaging materials they produce because of the lack of Arab coordination and the absence of market surveys for these products.

The analysis presented by International Experts emphasized the extraordinary development achieved by the packaging industries at different levels : technology, manufacturing techniques, variety of materials used for the production of packages, adaptation of packaging design to stocking and handling requirements, protection of the product and the ratio between quality and cost of the package which should not have a negative influence on the marketing of the product.

All the interventions pointed out that there was an urgent need for the adaptation of technology to suit local conditions concerning the weather or the purchasing power of the Arab citizen. Besides they insisted on the necessity of providing skilled labour, local raw materials together with developing people's consciousness of the packaging industries's problems and development.

The study of the opportunities and parameters for packaging joint ventures and the possibilities for their promotion through Arab financial institutions allowed the examination of many aspects such as : the concept of financing and promoting common projects, the various financing sources, task repartition for a better management of the financial and promotional operations, the co-ordination of present promotional efforts and definition of ways to adapt the promotional activities to the specific aspects of the packaging industry.

It appeared also that it was necessary to bring package users to play a role in financing joint ventures for the success and stability of the project which serves their interests and will ensure the satisfaction of part of their needs for packages.

Furthermore, this study revealed the dispersion of Arab efforts in this field and the insufficient utilization of the important capacities offered by numerous Arab financing sources. It is clear that the lack of technical and economic studies of packaging projects and the absence of a communication network between Arab business men and investors act as a deterrent in the field of investment.

Consequently, the participants recommend that :

1. Urgent action should be taken to carry out sectorial studies programmed in the activities of ARFAC in order to determine :
 - the present situation of the packaging industry in the Arab countries ;

- The existing Arab industries, their production potential, their present and future demand for packages and packaging materials, hence the definition of opportunities for investment in this sector within the Arab countries;
 - A list of projects according to their priority, concentrating mainly on the possibilities of utilizing the already existing Arab raw materials and emphasizing the promotional aspects to attract the participation of Arab private and public sectors.
2. The participation of package users to the financing of joint ventures in packaging should be stressed and the packaging industry placed among the priorities of Arab joint ventures in order to meet the demand for packages and insure the success of these projects.
 3. Arab Governments should contribute to the success of packaging joint ventures through financing part of them and providing joint packaging companies and institutions with the necessary help and facilities such as land and infrastructure together with allowing the free circulation of capital destined to finance packaging projects within the Arab countries.
 4. Arab countries, and especially those which receive capital and have raw materials necessary to the production of packages, should encourage the promotional bodies and study the opportunities for investment in the packaging field, in co-ordination with the Arab Regional Packaging Centre Project (ARPAC).
 5. The ARPAC Documentation/Information Centre should be given the necessary help for its development so as to be able to provide Arab countries, their industries and the Investment Institutions with statistics and technological information relative to the packaging industry both on Arab and international level, including information about investment opportunities in the Arab Countries.

In conclusion, the participants and organizers of this seminar would like to thank His Excellency Cheikh Hamdane Ben Rashed Al Maktum, Minister of Finance and Industry of the U.A.E., His Excellency Jaafar Ibrahim Al Fardane, Secretary of the Ministry of Finance and Industry and Head of Industrial Affairs, Mr Abid Darwich, Director of Industry and all specialists from the Ministry of Finance and Industry in Dubai and Abu Dabi

for their hospitality and their contribution to the success of this seminar. They also deeply thank AIDO, UNDP, UNIDO and the Director of AEFAC Project for the efficient organization of this activity.

Finally, the participants have decided to send messages of thanks to His Excellency Cheikh Hamdane Ben Rashed Al Maktum, Finance and Industry Minister and His Excellency Ahmed Hamid Tayer, State Minister for Financial and Industrial Affairs.

FINAL REPORT- SEMINAR ON " FOOD PACKAGING
FOR LOCAL AND EXPORT MARKETS "
2nd - 6th July 1985
TUNIS, TUNISIA

At the invitation of AIDO, with the kind assistance of the Tunisian Ministry of National Economy, the UNDP and the UNIDO and under the patronage of his Excellency the Tunisian Minister of National Economy, a seminar on "Food Packaging for Local and Export Markets" was held from 2nd to 6th July 1985 at Tunis, Republic of Tunisia.

His Excellency Rashid SFAR, Tunisian Minister of National Economy presided the opening ceremony which started at 11 A.M on Tuesday 2nd July 1985. During this first session the participants listened to the interventions of :

- His Excellency Rashid SFAR, Tunisian Minister of National Economy
- Dr Mahmud ZAYED, Representing the Director General of AIDO
- Mr TABARRAH Riad, UNDP Resident Representative
- Mr Abdelhak BENNOUNA, Director of ARPAC Project

In his speech, Mr Rashid Sfar, welcomed the organizers and the participants, pointing out the importance of holding such a seminar which deals with one of the most sensitive subjects related to the Arab processing industries and in particular industries concerned with agricultural and food products and their packaging. He also insisted on the necessity of securing enough food for the Arab consumers and reducing the gap between different Arab Nations through a real co-operation and the utilization of modern technologies to achieve regional and national self sufficiency in food. Furthermore, the Minister urged the participants to suggest and recommend solutions that could be carried into effect without delay in order to protect the interests of both

producers and consumers and to improve quality standards and reduce cost of food products both for local and export markets. Then, he stressed the fact that priority should be given to the training of Arab technicians and engineers capable of adapting modern technologies to our Arab reality and underlined the need for an Arab common effort to develop the Agricultural/Industrial production both in quantity and quality.

Mr Rashid Sfar also insisted on the necessity of developing the Arab Regional Packaging Centre Project, since it represents a positive step in this field. Finally he reaffirmed the full support of the Tunisian Government to the Project and their will to work in co-operation with UNDP for its extension which is just a stage towards the final aim : the establishment of the Arab Regional Packaging Centre (ARPAC).

This Centre, he said, will be the first to be established at an already existing Arab Institute and will utilize and improve its experience to serve Arab Countries.

In their interventions, the representatives of UNO, UNDP and ARPAC restated the importance of the ideas and subjects dealt with by his Excellency the Minister.

Furthermore, they talked about technical and practical subjects contained in the middle-term programme prepared by the above mentioned Organizations in co-operation with the Moroccan Government. In fact, this programme includes activities such as technical consultancies, studies, surveys, Documentation|Information and mostly training activities which contribute to the development of the packaging sector in the various Arab industries and in particular food industries.... These interventions, too, urge the Arab countries to support and assist the ARPAC Project which has already done a great deal to justify the establishment of the Centre.

Among the participants in this seminar were representatives from the following Arab countries : Tunisia, Algeria, Morocco, Lebanon, Syria, Jordan, Iraq, Sultanate of Oman, Democratic Republic of Yemen, In addition to representatives from Arab and International Organizations concerned and specialized experts (cf list of participants attached).

At the beginning of the proceedings, the participants elected :

- President : Mr EL FASSI SALAH, Vice Director of Industry in the Tunisian Ministry of National Economy
- Vice-President : Mr Jean ABOU NAGUM, President of the Lebanese National Packaging Committee
- Reporter : Mr CHABANI Ahmed, from the Moroccan Packaging Institute

The seminar concentrated on five main points, that is :

I/- Presentation and discussion of some Arab Countries Papers

To this end, participants representing some Arab Countries presented surveys about the situation of the packaging industries in their respective countries, giving relevant information about the importance of this sector, the kinds of packages used, the manufacturing techniques of food packaging for local and export markets and the problems encountered by this industry. These country papers revealed that the main problems are :

- The dependence on imported raw materials
- The lack of technical specialized cadres
- The absence of standardization and the variety of manufacturing techniques used for packages and packaging materials
- The insufficiency of packaging data and statistics in the Arab countries

In fact, the participants discussed country papers from the following Arab states : Tunisia, Jordan, Lebanon, Syria, Algeria, Morocco and Iraq.

II/- Problems related to the Arab Food Industries, including present situation and future prospects :

In this respect, the participants discussed the study presented by the Arab Federation of Food Industries about the

present situation and the future prospects of food packaging industries in the Arab world. This study dealt also with the different aspects of the Arab food industries, the level of Industrialization, the kinds of packages used in these industries, their economic situation and their future prospects in the light of such factors as the demographic growth, the increase of the average food consumption, the improvement of standards of living, the availability of raw materials and manufacturing equipments and the consumption trends related to social changes.

Then the participants discussed the study presented by the Egyptian Association for Packaging Development which explained the Egyptian experience in this field and the efforts made to establish the National Egyptian Packaging Development Institute (N.E.P.D.I.), taking into account the fact that packaging should be dealt with as a series of successive operations from the producer to the final consumer.

III/- Food packaging recent trends :

Considering the importance of keeping up with the technical evolution of food packaging and adapting the advanced technologies used in developed countries to the requirements of Arab countries situation with regard to the technical level, the availability of raw materials and skilled labour, the economic and social circumstances, the seminar concentrated on the study of the papers presented by international experts specialized in various food industries and packaging which explained the latest evolution in the following fields :

- Packaging of fish, meat, citrus fruit, early vegetables and sauces
- Packaging of liquids, juices and aerated waters
- Packaging of snack products, including nuts, raisins, dates, prunes, dried fruit, fruit juice, yoghurt, biscuits and potato chips
- Development of flexible packaging materials used in food industries such as plastics and composite materials
- Packages of today and tomorrow for dairy products packaging

- Decision making in metallic packaging industries
- The use of Electronic Data Processing for the development of the packaging industries
- Packaging and distribution hazards.

IV/- The role of packaging in food products marketing :

With regard to the major role that the package plays in marketing and sales promotion of goods and the effect that design has on the consumer and the competitiveness of the products the following studies were presented and discussed :

- Design and marketing techniques
- Package/Consumer relationship (creativity and choice criteria).

V/- Field visits :

In order to understand the reality of the packaging industries in the Arab countries, the participants visited a certain member of Tunisian Companies concerned with food packaging materials (producers and users of these materials) such as plants for dairy products, metallic, glass, paper and cardboard packages).

R E C O M M E N D A T I O N S :

In the light of the various interventions and discussions, the participants adopted the following recommendations :

1. An effort should be made for an effective standardization of packaging materials and packages used in the Arab food industries.
2. The ARPAC Project should have the necessary support so as to be able to assist the Arab packaging industries in the fields of research, development, training, documentation and information.

3. The comprehensive packaging sectorial study should be carried out as soon as possible to determine the situation of the Arab packaging industries together with present and future demand for packages and packaging materials and to allow Arab countries to exchange experiences and specialized cadres in this field.
4. Because the National Packaging Committees play an important role in this sector, the participants recommend that these Committees should be encouraged, where they already exist and urge Arab countries which haven't created theirs yet to give this matter the necessary consideration.
5. Seminars and exhibitions specific to packaging should be organized to deal with the whole subject or a particular aspect of packaging (glass, plastics, metal, paper and cardboard).
6. A particular attention should be paid to studies meaning to replace imported materials by local ones or those dealing with the possibility of undertaking joint Arab projects in the field of packaging.