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A.M.I.
Agribusiness Marketing Investissement

STUDY OF THE PROCESSED FRUITS AND VEGETABLES SUBSECTOR

AND

RECOMMENDATIONS FOR PROJECT ACTIVITIES

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FOREWORD

The Processed Fruits and Vegetables Subsector Study is the sixth in the series of subsector studies and commodity action plans to be prepared by the Agribusiness-Marketing-Investissement (A-M-I) portion of the Morocco Agribusiness Promotion Project (MAPP). AMI has many tools and resources to assist private businesses, both in Morocco and the United States. In order to deploy these resources, AMI is preparing an action plan for each subsector based on an analysis of the structure of the subsector and the evolution of the markets for the products in that subsector, either new or old. These studies will provide the project with an analysis of the evolution of each of the subsectors and permit the project to compare the potential benefits and returns from applying its resources to one or the other of the subsectors and will highlight those areas with the greatest potential return within a given subsector. The goals of the study are to provide recommendations for concrete actions which the project can develop through:

- highlighting the opportunities and constraints facing the subsector, especially those which the project can take concrete steps to address;
- providing the basic understanding of the opportunities which is necessary to serve as a preliminary screen for the Promotion and Investment Fund (PIF) requests;
- generating baseline data on the project clients as well as the basic information needed for product promotion;
- providing a clearer identification of potential buyer and investor opportunities and linkages; and
- introducing the project to potential partners for investment opportunities and other project activities in Morocco's agribusiness community.

The project uses a subsector diagnostic approach to develop this action plan. It identifies the principal channels through which product flows from the fields to the consumer, the trends in the industry, points of leverage, and the opportunities and constraints facing the industry. By differentiating the channels and identifying the points of leverage (those points in the industry where a concerted effort will have the largest payback) the action plan will determine the best ways to approach the constraining factors and realize the opportunities which exist.

The initial fieldwork was carried out in October 1993 by members of the AMI staff in conjunction with two specialists in the field provided by the Postharvest Institute for Perishables (PIP), one from DAI, and one from Agro-Concept. During the four weeks over which the field work was conducted in Morocco, more than twenty private Moroccan firms and agencies involved in processed fruit and vegetable production, supply, marketing, and logistics were interviewed, along with the relevant public sector agencies with the task of supporting the operators in the sector. In an effort to get the widest view of existing and potential activities, the team visited agricultural businesses in Casablanca, Ain Atiq,

Marrakech, Kenitra, Beni Mellal, Larache, Fes, Meknes, and Sidi Slimane. The marketing consultant's analysis stemmed from visits with firms in Germany, Poland, France, and the U.K. and data analysis in the U.S.

The study examines the wide range of products which Morocco produces and the dynamics of the industry. Long a supplier of processed fruits and vegetables to Europe, Morocco is developing some new products while dropping others. European trade policies have channeled Moroccan processing into certain product lines and container sizes which are increasingly competitive. Meanwhile Moroccan policies regarding corporate and land ownership as well as control of the marketing channels over the period from 1970-1985 greatly altered the flow of product, weakening the industrial fabric.

There are many issues facing the Moroccan processed fruit and vegetable industry which must be addressed if the industry is to remain a dynamic world supplier. Moroccan food safety standards are not well developed at either the regulatory or the factory level and are increasingly below the standards which are being adopted by the leading markets into which Morocco exports. Raw material supply is quite erratic due to a lack of effective contracting mechanisms, limiting Moroccan firms' abilities to program and meet export orders. Moroccan processors have been slow to develop new products which can keep pace with the evolving world market, though they still remain ahead of many emerging exporting companies.

Chapter One reviews the range of products produced in Morocco, and the historical export partners. Chapter Two explores the structure of production and export, identifying actors in the subsector and the flow of product from production to market. Chapter Three provides an in-depth analysis of the main markets Morocco supplies and the leading competitors in those markets. Chapter Four delves into the subject of Quality of processed foods and food safety. Chapter Five discusses the supporting environment, including legislation and institutions. Chapter Six reviews the major market trends, driving forces and new opportunities, leading up to a vision of what Morocco's the future could bring, and recommendations for Project actions in support of the sector.

This report reflects the findings of the consultants, who retain sole responsibility for all perspectives, conclusions, and recommendations presented.

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ACRONYMS

AMI	Agribusiness-Marketing Investissement
ASAP	Agricultural Sector Adjustment Program
BURAPRO	Supply Office - Min. Commerce and Indust.
CAP	Common Agricultural Policy
CFR	Code of Federal Regulations
CMPE	Centre Maroccain pour la Promotion des Exportations (Moroccan Export Promotion Agency)
DAI	Development Alternatives, Inc.
DH	Dirham
DPA	Direction de Production Agricole (Regional Agricultural Office)
EACCE	Etablissement Autonome de Controle et de Coordination des Exportations (Export Coordination and Supervision Agency)
ECU	European Currency Unit
EEC	European Economic Community
E.U.	European Union
FICOPAM	La Fédération des Industries de la Conserve des Produits Agricoles du Maroc (Processors' Trade Association)
FOB	Free On Board
FSIS	Food Safety Inspection Service
GATT	General Agreement on Tariffs and Trade
GMP	Good Manufacturing Practices
GSP	Generalized System of Preferences
HACCP	Hazard Analysis and Critical Control Points
IBRD	International Bank for Reconstruction and Development
IESC	International Executive Service Crops
ITPA (PAIC)	Industrial and Trade Adjustment Program
LACF/AF	Low Acid Canned Food/Acidified Foods
MAMVA	Ministère de l'Agriculture et de la Mise en Valeur Agricole (Ministry of Agriculture)
MAPP	Morocco Agribusiness Promotion Project
OCE	Office de Commercialisation des Exportations
ONICL	Office National Interprofessionnel des Ceréales et Légumineuses
ONTS	Office National du Thé et du Sucre (National Tea and Sugar Office)
ORMVA	Office Régional de Mise en Valeur Agricole (Regional Agricultural Development Office)
PAGI	Programme d'Ajustement de la Grande Irrigation
SAP	Structural Adjustment Program
PIP	Postharvest Institute for Perishables
U.K.	United Kingdom
SASMA	Societé Agricole de Service au Maroc (Moroccan Agricultural Service Company)
TARIC	Tarification Intra Communautaire
(US)FDA	United States Food and Drug Administration
USDA	United States Department of Agriculture
USAID	United States Agency for International Development

EXECUTIVE SUMMARY
PROCESSED FRUITS AND VEGETABLES INDUSTRY

I. INTRODUCTION

This study analyses the industries of processed fruits and vegetables, focused on apricots, tomatoes, pickles, green beans and capers. Processed (frozen) strawberries have only become an important export in the past year, so no historical analysis is carried out on them, though they are the focus of deeper analysis. Products using olives, oranges, and paprika[1] are not reviewed in this study.

Globally, exports of these products increased gradually over the ten years from 1980 to 1990, from 30,000 tons to 50,000 tons by 1990. The total tonnage decreased in 1992 and 1993 due to the drought which severely affected supply of raw material.

Meanwhile, the values of these products increased far more rapidly, from just over 100 million Dhs, to over 700 million Dhs in 1990 (in U.S. dollars this increase was approximately from $20 million to about $80 million). The unit values of the products exported increased threefold, from 4 to 15 dhs/kg. Therefore there has been both continual increase in the unit value of product being exported, as well as increases in the overall amounts.

Moroccan Exports of Processed Goods (tons)

	1990/91	*1991/92*	*1992/93*	*1993/94*
All Apricot products	20,477	17,331	19,616	19,162
Tomato Powder products	2,703	3,227	3,249	2,994
Other Tomato Products	3,412	1,034	458	310
Pickles	16,997	11,265	7,005	5,118
Green Beans Frozen	7,150	6,770	5,700	5,562
Green Beans Canned	9,319	4,299	3,132	961
Capers	3,707	4,330	5,102	5,719
Frozen Strawberries	212	68	948	8,421
Olives	69,124	68,826	65,786	71,853
Other Products	11,751	9,940	7,846	9,356
TOTAL[2]	144,892	127,168	120,651	129,456

[1] Olive and paprika products have been reviewed in two other subsector studies, and USAID policy discourages involvement with citrus products.

Among the different products, tomatoes have fared the best, both in terms of total export value and the unit value. With the development of tomato powder by the Lukus Cie, with unit values reaching nearly 30 dhs/kg, this product has been at the base of the increase of the value of total exports. Green beans have seen an important shift away from canned to frozen product, where the unit prices are also higher.

Pickle exports peaked in 1989 at about 16,000 tons and have fluctuated over the last few years, even though the prices have managed to increase along with the overall average. Part of the reason for the increase in unit values is the fact that the quota is labelled in terms of tons, while the duties are based on prices, so the smaller sized/higher value cornichons are the ones benefitting from the quota. The serious drop in 1992/93 was due to the drought. Meanwhile caper export volumes have remained steady.

II. DRIVING FORCES

There have been many forces which have affected this sector, not the least of which has been the European Union (E.U.) policies governing imports. The E.U. duty free import quotas for apricots, pickles, green beans have kept many companies in those products while limiting their scope of action to the products which fall within the quota. These products tend to be lower value semi-processed or bulk products rather than finished, retail sized products.

Within Morocco, the linkages between growers, processors, and the markets changed drastically stemming largely from the policies of the 1960's and 1970's (land reform, corporate ownership, and marketing through the OCE). Changes in Government of Morocco (GOM) policy over the last eight years, beginning with the de-monopolization of the subsector, are gradually returning the direct links between growing, processing and marketing, allowing them to receive and respond to signals from foreign markets.

The Moroccanization of the processing companies (question of corporate ownership), moved the French owners out of Morocco, but they still maintained very strong ties with their old companies, in many cases just taking over the marketing function within Europe while relying on their old company for supply. This effectively concentrated Moroccan exports on France, which often re-exported the product, rather than forcing the Moroccan firms to develop direct market links.

The GOM's agricultural development policy, focussing heavily on the development of large scale irrigation schemes has prepared the infrastructure for a sound and steady development of the raw material base if the growers and the processors can establish better contracts and working relationships.

Foreign investment and technological transfer has been an important factor shaping the structure of several of the industries in this sector, bringing the Moroccan companies into

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[2]Source, EACCE. Two very important products, caroube and vegetable cord were not included.

closer contact with the markets and providing them with the know-how to deliver the products.

III. OPPORTUNITIES

There are numerous opportunities available for Moroccan firms, both to improve their market positions for existing products by opening new markets and to develop new products which can be sold to their traditional markets as well as new markets.

1. New Products

The existing Moroccan product list has changed very little over the last 20 years, and there are many well known products which exist based on raw material which is available in Morocco, but which have not been developed, for the reasons presented above. New products may involve new/different processing technologies (such as freezing or drying/dehydrating) or redefining and repackaging existing products, or developing new prepared foods.

The product line with perhaps the greatest immediate potential is for *individually quick frozen* (IQF) products. Some of those products which are possible, but not yet developed include: Apricot halves, melon and watermelon balls, artichokes, peaches (halves and slices), nectarines (in halves or segments), small fruit/berries, and many different vegetables either whole or already partially prepared (sliced/diced/ or mixed).

Dried/dehydrated products are another area of great potential. At present, Morocco exports very limited quantities of dried/dehydrated fruits and vegetables, and yet these can be very high value products. The exported products include primarily apricots and tomatoes, but there is potential for other fruits which are currently being dried for the local market such as prunes, apples, or figs. Among the dehydrated vegetables, many products are possible.

Among the more traditional processed products there is also potential to prepare existing product under a new form or packaging. For example, while Morocco produces quite a bit of processed artichoke bottoms[3], it does not produce artichoke hearts which actually use more of the fruit, providing a higher return on investment.

There is potential for making better use of the by-products, such as pressing apricot almonds into oil (which has just begun) and turning the remaining apricot pits (fragments) into briquettes .

Finally, there has been very limited development of prepared foods by Moroccan processors, such as canned soups or ready to eat meals for the local market (including for the army).

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[3]Fonds d'artichaut

2. New markets - Countries or Market Segments

The majority of Morocco's processed goods exports have been going to France, with many of those concentrated at the lowest end in the marketing chain (either importer/brokers or industrial processors) rather than reaching the end users directly. There are important opportunities to target new countries but also to develop new markets within the traditional countries (France) by taking the product more directly to the consumer. This latter usually relies on establishing relations with the wholesaler/distributors or the supermarkets and becoming a private label producer for them. This has already been accomplished by a few Moroccan firms producing for French firms like Laroche or Casino. This is rarely easy, but will lead to greater value added products leaving Morocco and higher profits for the exporting companies, as well as more certain orders and market share.

The principal focus should be to identify the concrete opportunities in Germany, Northern Europe, and for some products, the U.S.. Identification of good joint venture partners, either commercial or investment/technological, will greatly help the targeting at new market segments.

3. New Packaging

Closely related to both greater linkages into the market and new products is the packaging of the products. There are clear opportunities for increasing the value of exports by shifting from bulk packaging to retail packaging (for capers and pickles) which provides greater mark-ups. In addition to cans and jars, there are new flexible packaging for condiments (pickles and capers) which will reduce the cost of production and the cost of transport.

4. Developing more synergies

There are additional chances for creating more synergies, either within the factories (processing and technical complementarities to make greater use of by-products), between fresh and processed goods (fresh and frozen strawberries, artichokes, or raspberries), or between supplying the local and export markets (marketing). These synergies are currently being underutilized.

IV. CONSTRAINTS

While Morocco has already expanded its processed food exports considerably, there are many factors which constrain Morocco's ability to respond to these opportunities to the maximum. These are areas where the project can provide some assistance to firms and help the local institutions to address. These constraints are evident at the supply, technology, and market development levels of the subsector.

1. Supply

The supply of good quality, inexpensive raw material to the processors remains one of the largest constraints. Even though the productive potential exists and the surrounding

environment is more favorable every day, the industry suffers from the following handicaps:

- Availability and delivery are unreliable. Processing plants need the raw material at specific times and with specific varieties to function efficiently.

- The varieties of the raw materials being used are not necessarily adapted to processing, since the industries have developed from surplus production for the fresh market.

Contracting procedures/problems, the interchangeability between the fresh and the processed products, the lack of vertical integration/effective communication between processors and growers, and the agricultural practices of the small farmers severely limit the ability to deliver the right raw material, at the right time, in the right quantity, at the right price.

Overall, product supply is an intermediary dominated and leached process, both on the supply and the processing end. Local intermediaries take their percentage/markup on the product before it reaches the factory and this supply channel causes a delay in the delivery of the product which hampers the freshness for sensitive products like green beans (less impact on gherkins). U.S. and successful Moroccan processors control the supply process much better to guarantee appropriate raw material at the factory gate.

2. Technological Issues

Many of the processors have evolved into the market from being traders or gotten into a new product through imitation. They rarely have technical mastery of the production process for their product. Processes such as IQF, drying/dehydrating, and prepared foods are still rudimentary for many companies, not well understood, and the systems are not in place to make them work. Even for products such as green beans, which have been an important export from Morocco to France, there appears to be uneven control of the process of preparing the product.

Overall industry practices in food processing and food safety appear to be irregular and weak. Processing technicians have insufficient understanding of quality control, either at the microbiological level (food safety), or for the quality of the finished product as defined by the customers in different marketplaces - regularity, appearance, consistency of the product in taste/flavor/aromas.

There are few trained food processing technicians. There is a heavy emphasis on degrees with little practical experience or lots of practical experience but no scientific basing (re-training). For the food safety questions, there is very little use of Good Manufacturing Processes (GMP) and negligible use of Hazard Analysis and Critical Control Points (HACCP). Companies are exporting which have little respect for sanitary conditions (open plants, dirty equipment, cracked floors, no slopes for draining, open beams for accumulating dust and moisture, little concern for flies and insects in the plants) and rarely have the laboratory facilities necessary to control their products..

3. Markets for the products

Moroccan processed goods are primarily produced for export. The Moroccan consumer prefers the fresh product when he can get it and canned foods are not in their dietary habits. They are also generally unsophisticated consumers of processed products when they do consume them. This both decreases the overall market for processed goods while allowing the processors an outlet for lower quality product which is not admissible into the E.U. or U.S. markets.

Compared to other countries with sophisticated processing industries, Morocco has relatively weak marketing practices: they produce a standard product, not a market specified product, which then needs to be reprocessed or repackaged.

The E.U. market is heavily regulated and protected by quotas and duties. These restrictions orient Morocco's production. For example, the country's access in the apricot products is primarily with the halves and pulp, no jams. However, there is some potential with the dried apricots.

Export to the U.S. is difficult due to sanitary requirements of the U.S. market and U.S. Food and Drug Administration (FDA) regulations and certification process. While these are applied to all processors, whether foreign or U.S., they are quite confusing to the Moroccan processors.

4. Market Reputation

A final, but critical category relates to market reputation which affects the competitiveness of Moroccan products. Buyers' perspective of Moroccan product. Comments from the importing firms which were intrviewed concentrated on the following areas of concern for Moroccan supply:

- uneven quality coming out of the factories, which is closely related to the quality of the product going in but also including the consistency of sizing practices;
- slow follow-up on the part of the exporter to the problems and complaints of the buyers;
- respect for contracts in terms of timing, quantity, labelling, packaging and quality.

5. Internal Management of the Companies

The majority of Moroccan food processing companies are family businesses with a [illegible] internal management structure and organization. In most plants, the owner has few qualified employees working for him, and often handles many of the functions himself (marketing, technical control, and product design), even if he has no formal training in the specific domains. However, world markets are becoming more demanding and specially trained personnel are needed as plant managers, quality control people (someone who has power to shut down the plant if a problem arises), and food scientists. In a small plant, one properly trained person can know the entire process and implement it.

With interest rates reaching 17%, efficient management the processing activities becomes important. Use of the correct technologies, the right raw materials, and proper layout of the plant is necessary to reduce waste in time, effort, energy and raw material which add up quickly. Sound organization of the processing plant and its efficiency will increase profitability. Poor internal organization of a processing facility often results from weaknesses in the technical training of the management staff.

V. VISION OF THE FUTURE

For Morocco to increase its competitiveness in processed fruits and vegetables this study has identified where there must be numerous changes at all levels of the industry. We know that the export markets are becoming more competitive every day as large European, American and Asian firms apply state of the art technology, economies of scale, and benefit from favorable government programs and some trade barriers. For Morocco to compete in this environment cheap labor will not be sufficient, its industry should take on most of the following characteristics:

- *There will be greater vertical integration between the production of raw material, its processing, and its marketing, allowing market incentives to direct the raw material qualities and the research and development programs.*

- *There will be a fair and enforceable basis for production contracts between the growers and the processors which will resolve problems around supply. This will include the presence of an independent arbiter.*

- *It is likely that the larger farmers will develop the contract relations with the processors, while smaller farmers will end up targeting the fresh market.*

- *All factories will be producing food which respects common food safety law (regardless of whether it is for the local market or for export) and have in place the process control mechanisms to guarantee this. At the same time, the government will have the enforcement mechanisms in place.*

- *Moroccan agribusinesses will be providing products with more value added in them, having moved away from supplying either a semi-finished product or a low value commodity product.*

- *Government of Morocco support institutions will be providing Moroccan processors with reliable forecasting information, appropriate regulatory services, and assistance to carry out strategic analysis.*

VI. RECOMMENDATIONS

A. GENERAL RECOMMENDATIONS TO THE GOVERNMENT OF MOROCCO

There are a number of areas in which the project cannot intervene but which are critical for maintaining the competitiveness of the Moroccan agribusiness sector. The Moroccan

processors request the government to help them to address these macro-economic and regulatory policy issues. These recommendations include:

- bringing down the high real rates of interest (real rates of 9-11 %);
- installing an adequate judiciary structure to resolve conflicts between processors and growers (discussed below);
- providing access to land by the processors so that they can be allowed to integrate vertically and protect against ruptures of supply; and
- helping address the subsidies which are being provided by competing countries or high duties charged by markets, particularly members of the European Union, which are diminishing the competitiveness of Morocco's products.

The Government of Morocco needs to seriously address these problems.

B. RECOMMENDATIONS FOR PROJECT ACTIONS

1. Concentrate new product introduction in the Individually Quick Frozen (IQF) and dried/dehydrated product arenas.

Proposed Project actions:

- Carry out a feasibility study on the cost effectiveness of introducing mobile IQF units and, if viable, introduce one into Morocco;
- Continue to identify and develop relations with the leading importers of IQF products into the E.U.;
- Help speed the introduction of new IQF products with greater value added; and
- Use the Promotion and Investment Fund to assist processors to develop their quality control capacity to produce sanitary dried products.

2. Address the issues of food safety which can become one of the largest threats to the Moroccan processing industry.

Proposed Project actions:

- Work with the E.A.C.C.E. and the processing companies to increase their understanding of the issues surrounding Food Safety - GMP, HACCP, LACF/AF, and BPCS;
- work directly with firms to help them develop and implement GMP and HACCP plans;
- Help the E.A.C.C.E. to establish the differences between a regulatory agency and an advisory body and introduce more process service companies (*process authorities*) which can assist the processors with technical problems;
- Demonstrate the importance of having the same regulations which are currently applicable to export products, also applicable to products for the local market;
- Identify a list of U.S. firms interested in assisting Moroccan processors to respond to their food safety deficiencies; and
- Work with the FICOPAM to help it to increase the flow of information and services in this area to its members.

3. Increase the exposure of the Moroccan processors to new product ideas in overseas markets and strengthen their relations with the buyers and suppliers overseas.

Proposed Project Actions:

- Continue to organize Moroccan participation in foreign trade shows;
- Maintain a reasonable set of product samples, both Moroccan and foreign, at the project offices in Casablanca to be able to demonstrate differences in product quality and innovation;
- Convince the leading importers in the U.S.A. and Europe to work closely with the Moroccan processors; and
- Actively sensitize the buyers in the U.S.A. to the potential for Moroccan suppliers to be long term partners.

4. Continue to identify and highlight problems which affect transport and marketing of Moroccan products to the export markets.

Proposed Project Actions:

- Disseminate the findings of the transport study through the local economic press, radio and television, and prepare presentations for the appropriate ministries; and
- Prepare a prospective study on the implications of the changing foreign trade policy environment on world markets for the Moroccan food processing industry.

5. Sponsor activities which will increase the linkages between research, processors, and growers within Morocco, as well as linkages with foreign suppliers from without.

Proposed Project Actions:

- Bring in a consultant who is a specialist in contract procurement mechanisms to work with the processors, growers, and MAMVA to develop different possible scenarios for apricots, olives, tomatoes, and paprika; and
- Financially and technically support efforts between the processors and the researchers to introduce or adapt new varieties for processing.

6. Assist the food processors to gain access to suppliers of good, appropriately scaled, used equipment.

Project Actions:

- Explore the feasibility of an all U.S. suppliers' show in Casablanca and implement it if there is sufficient interest; and
- Develop a system by which Moroccan processors can access information about U.S. equipment and access to consulting firms which can help them accurately define their true requirements.

7. FICOPAM must play a more important role as a coordinating body for the processors and to provide relevant services to its members.

Proposed Project Actions:

- Continue to work with FICOPAM leadership whenever they seek assistance;
- Organize an industry awareness tour, through FICOPAM, to the U.S. for the Moroccan processors; and
- Promote the participation of processors, through the FICOPAM, in the Purdue short courses on marketing and other training programs.

8. Disseminate the findings of this report as widely as possible through use of the local press and presentations with the industry.

Proposed Project Actions:

- Provide copies to the economic press for them to present the highlights in the local press; and
- Make copies available to the private sector for the cost of the photocopying.

I. OVERVIEW OF MOROCCAN PROCESSED FRUITS AND VEGETABLES

This study analyzes processed fruits and vegetables other than those from olives, citrus products, and paprika. As defined, this sector accounts for about 700 million dirhams worth of exported products (roughly $80 million). Therefore, it represents about ten percent of Morocco's total agribusiness exports.

Over the last ten years, the growth of this sector has been very strong, averaging on the order of 13 percent per year in terms of value (20 percent if we exclude 1992 which was a bad year due to drought). Figure 1 depicts the shift between the growth in value and in tonnage.

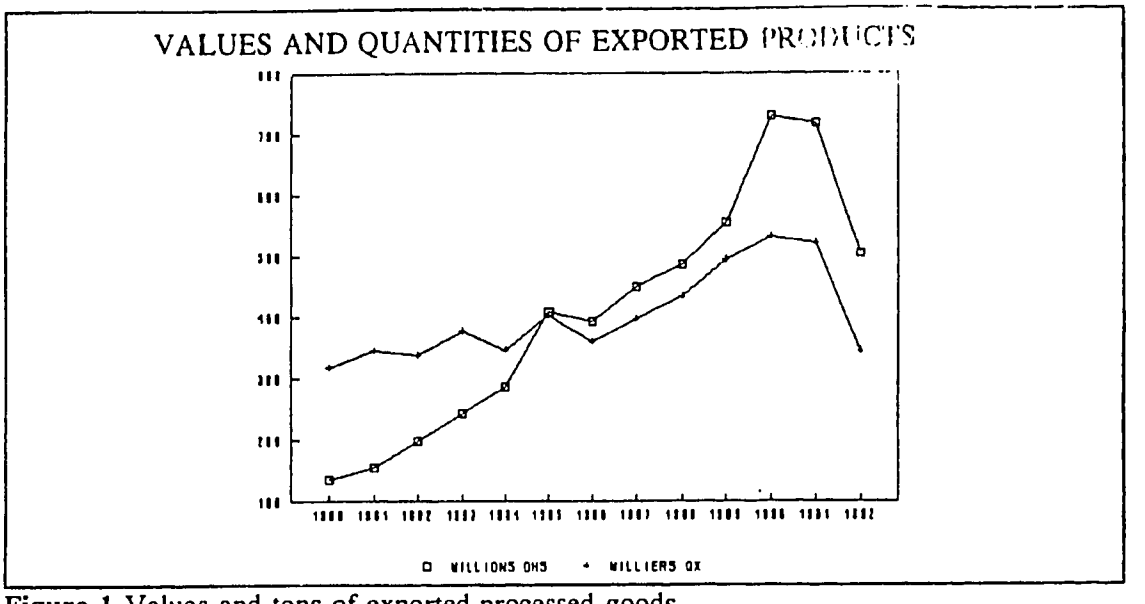

Figure 1 Values and tons of exported processed goods.

The unit value of exports of processed fruits and vegetables has more than tripled between 1980 and 1992 (from 4 to 15 Dhs/kg. The charts also show the effect of the two years of recession in 1991 and 1992, where the quantities of exports dropped, along with the overall value of the exports. Some of this is certainly due to the drought, but some is also due to marketing problems, which will be highlighted in the study.

A. PRINCIPAL PRODUCTS

The global tendencies highlighted above hide very different situations for the various products. The products exported from Morocco are from the following basic raw materials:

- apricots
- green beans
- tomatoes
- pickles and capers

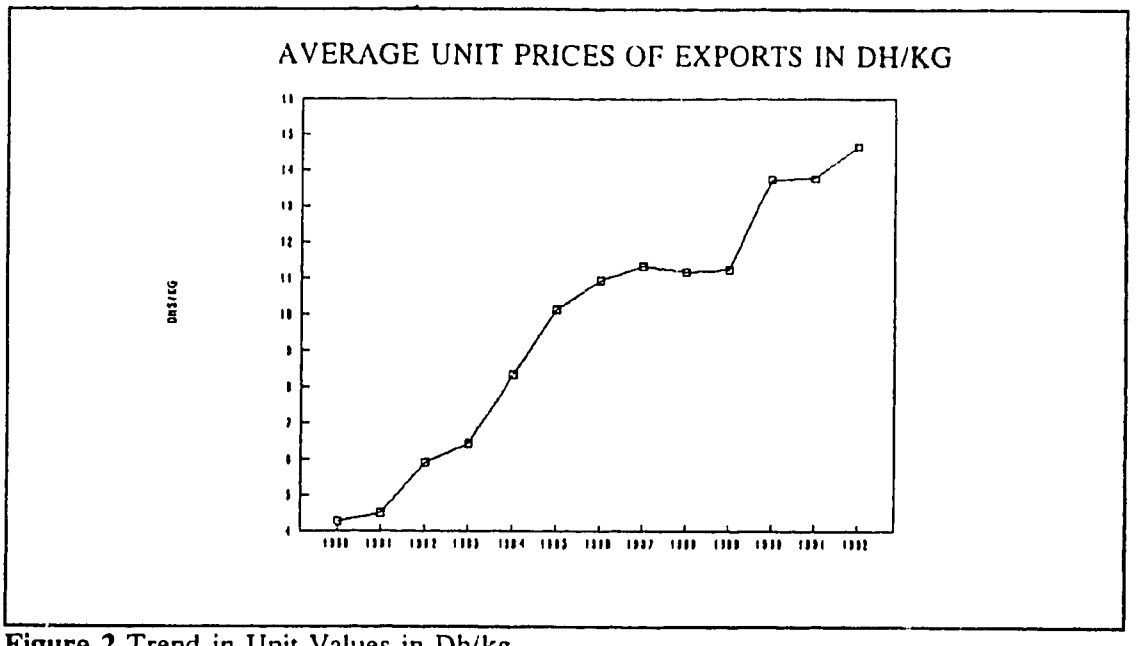

Figure 2 Trend in Unit Values in Dh/kg

In terms of value, the products derived from these crops account for 90 percent of the defined sector.

Figure 3 demonstrates the evolution of the composition of the exports. The growth of the share of tomato based products is the most evident trend which we see. The current split of the exports between the four major products is fairly balanced, though in the early 1980's, the division heavily favored apricot and green bean products.

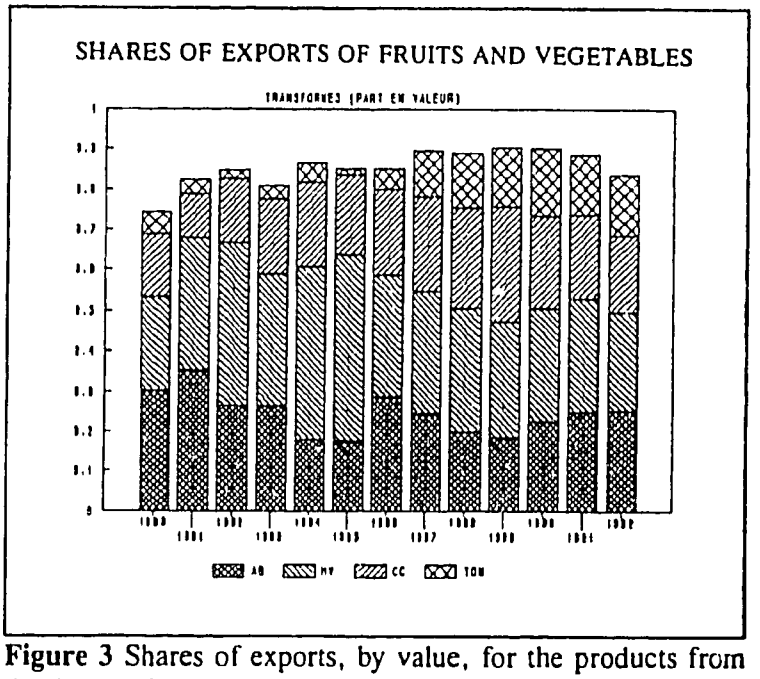

Figure 3 Shares of exports, by value, for the products from the four major crops.

1. Apricot Products

Moroccan apricot orchards cover about 13,500 ha. with an average production of 80,000 tons and average yields of about 6 tons/ha. The region of the Haouz is the primary producing region. In 1992, it had 7,100 ha in the Irrigated Zone and 1,400 ha in the non irrigated, for a total of 8,500 ha and 45,000 tons of apricot production. The irrigation districts of Berkane and Ouarzazate are second and third, with productions of 11,500 and 2,500 tons respectively.

The manufactured products are numerous, including 12 different types of product in the EACCE Nomenclature. Of these, however, two products dominate the exports: halves and pulp with between 60 and 25 percent of all exports, respectively.

Table 1: Exports of Apricot Products: tons and values

% of total apricot products 91-93	in tons	in value
Apricot halves in syrup	58	59
Apricot pulp with halves	23	26
Apricot pulp	8	7
Natural apricot halves	5	4
Apricot almonds	2	1
Frozen Apricot pulp	1	1
Frozen Apricots	1	1
Frozen Apricot halves	1	1
Strained Apricot pulp	1	1
Other	<0	<0

The markets for the apricot products are primarily European. France buys 88% of the halves destined for pastries thanks to the duty free quota. The pulp is destined for jams and goes mainly to France and the Benelux countries.

Table 2: Share of Different Apricot Exports 90-92

Share of value over 3 seasons (%)	France	Belgium+ Holland	Germany
Apricot halves in syrup	88	3,6	3,3
Apricot pulp with pieces of halves	59	34	4
Apricot pulp	55	16	24
Apricot halves without sugar	40	3,5	43

Prices in this product line are marked by two trends: a variation of the farm price from year to year and a decrease in the relative export prices. Table 3 provides the price ranges for the last five harvests based on the information from the Office of the Haouz.

Table 3: Apricot Production and farm prices - 88-93

Season	Production in tons	Price ranges at the farm
88/89	36000	1,5 à 2 DH/Kg
89/90	33000	1,5 à 2,5 DH/Kg
90/91	43000	1,4 à 2,4 DH/Kg
91/92	36000	2 à 3,8 DH/Kg
92/93	66000	0,5 à 1 DH/Kg

These numbers indicate a variation in the farmgate prices closely related to overall harvests, ensuring a stable return per ha (total acreage has remained fairly constant over this time). In theory, local supply and demand should not be the mechanism for setting prices for products which are destined primarily for export onto the world market. The variations of the Moroccan supply should not affect the world market price, but the world price should affect the local price. The narrowness of the Moroccan export market (two products to two countries) is the major factor behind this anomaly.

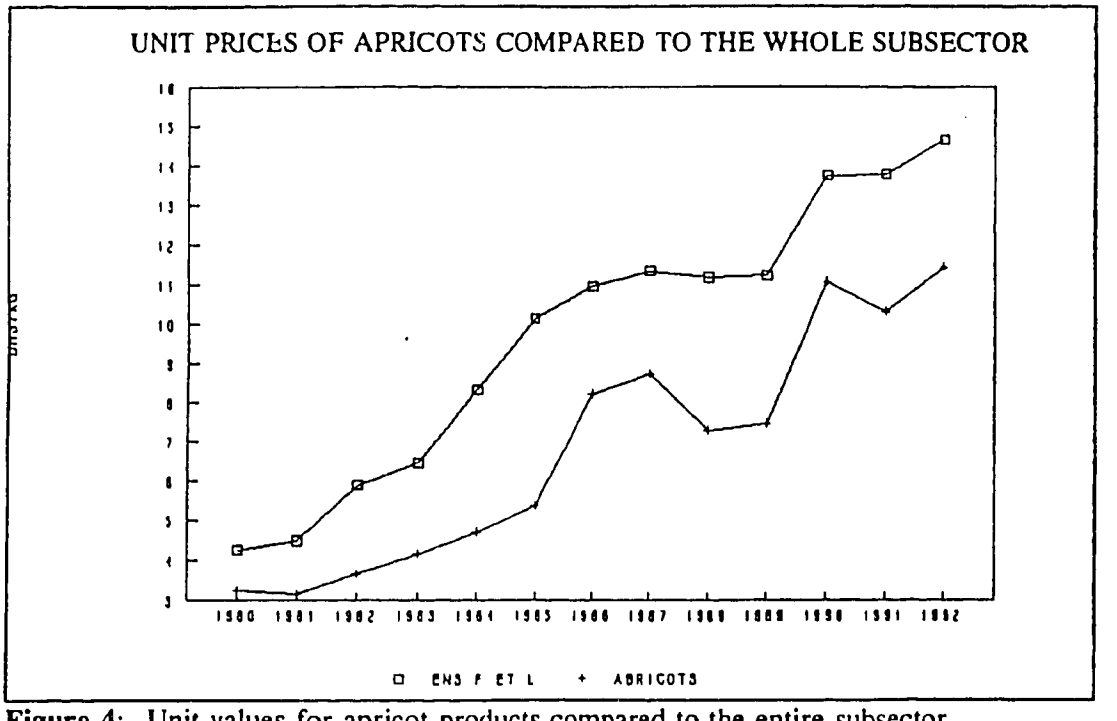

Figure 4: Unit values for apricot products compared to the entire subsector.

Based on the information from the Office des Changes, the absolute difference between the unit value of exports of processed fruits and vegetables and those of products based on apricots has increased, as the two curves in the figure four demonstrate.

In summary, apricot based products have specific advantages (regional specialization, high barriers to entry for the competition, and price competitiveness). However, these

assets are not leveraged due to the narrowness of the market, which has been channelled by the preferential status provided to Morocco by the E.U. and France[4]. As a result, the importance of this product line has decreased.

2. Green Beans

There are about 3,000 hectares of green beans grown in Morocco of which 1200 were destined for the processing industry (roughly 6,000 tons). Production for processing is split between the irrigated zones of the Loukkos, the Gharb, the Doukkala, the Tadla and the zone around Rabat. The green beans are either frozen, deep frozen, or canned in jars and cans. The relative shares of the different products, based on the EACCE data are in table four.

Table 4: Green Bean Exports

Type of process	91		92		93	
	T	V	T	V	T	V
Frozen (%)	32	34	48	48	36	34
Deep Frozen (%)	8	9	10	10	22	24
Canned (%)	59	56	41	40	40	40
Total in M Ton	13,4		10,3		7,7	
Total in MDHS		18,3		14,5		11,2

Over the long term, based on the figures from the Office des Changes, the decrease in the share of the canned green beans is pronounced (see figure 5).

The French market represented 98 percent of the Moroccan sales in the early 1980's,. Today it is still about 94 percent. Interior production prices are relatively stable, reflecting the clear transmission of the French prices and the limited Moroccan share of this market.

The relative prices of green beans have evolved with the average prices of other products in the processed fruits and vegetables subsector. If there is a relative drop in the share of the sector, this is due to the weakness of the Moroccan offer and not to low prices as the graph below shows, tracing the evolution of the share in value and volume of the subsector.

In summary, this product line is losing momentum due to the decrease in canned product which is put on the French market. The resurgence begun in 1986 and 1990 based on the frozen products risks to encounter the same future based on the latest figures. Morocco's assets (low cost of labor and proximity to the E.U.) are no longer sufficient to maintain the product line in only one market.

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[4] see the Chapter 5 on commercial policies

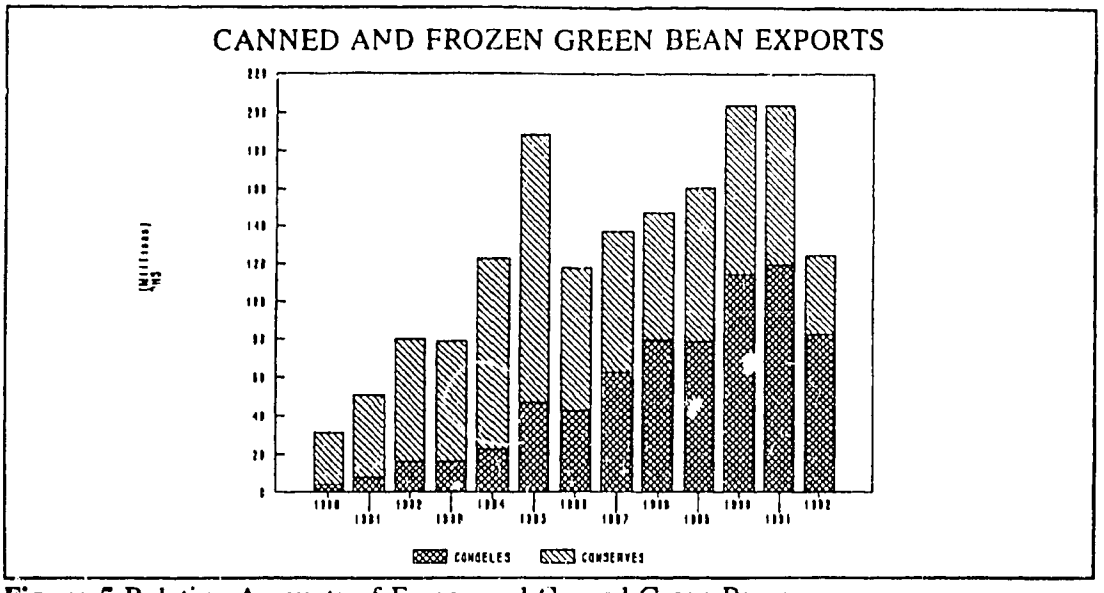

Figure 5 Relative Amounts of Frozen and Canned Green Beans

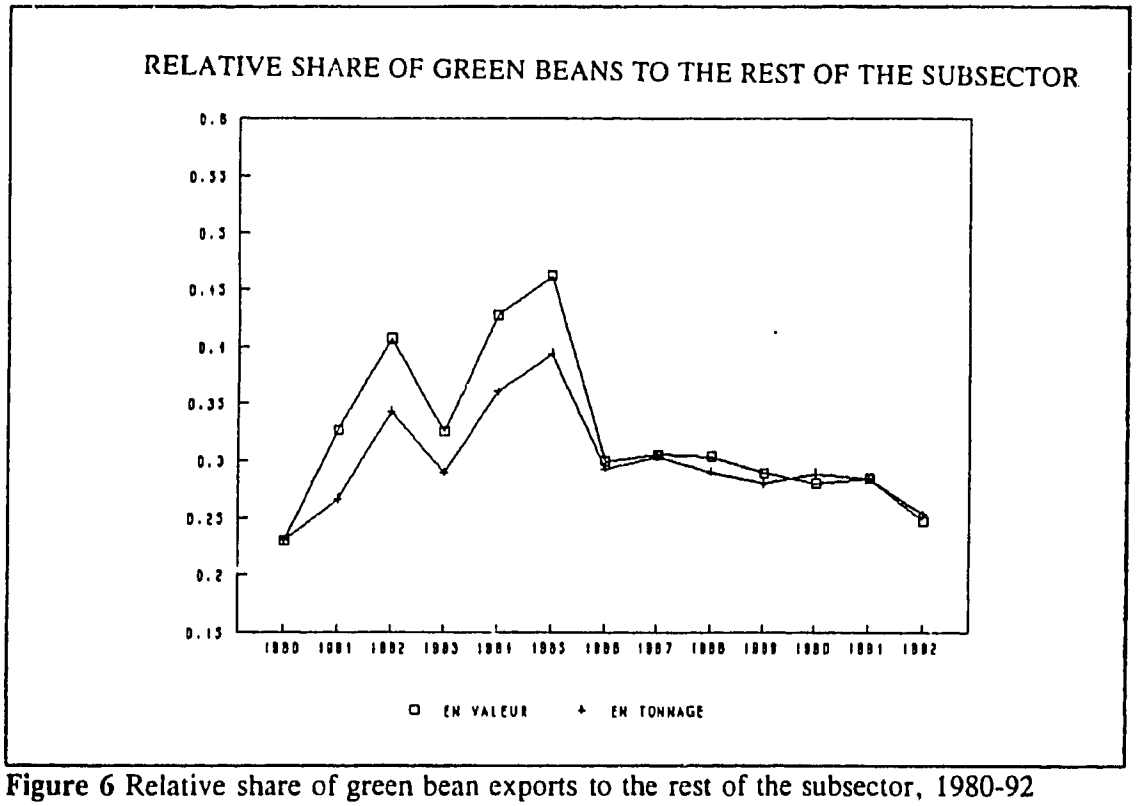

Figure 6 Relative share of green bean exports to the rest of the subsector, 1980-92

3. Pickles

Pickles destined for processing averaged about 2,250 ha between 1985 and 1992, yielding about 9,000 tons. The major producing regions are the Tadla, the Doukkala, the Gharb and the Chaouia. These averages hide some strong variations from year to year, from 4,000 ha in 1991 to 870 ha in 1992. Table five outlines the principal products and markets in the pickle industry.

Table 5: Cornichon Exports

	Average 91/92/93		
	% of total	% France	% Germany
Pasteurized Cornichons in vinegar in jars or cans.	71	66	2
Sweet/Sour Cornichons in cans or jars	13	2	11
Cornichons in white wine in cans or jars	9	9	0
Sub-total	93	77	13
Total in thousands of Tons	12,7	10,5	6,7

Source: EACCE

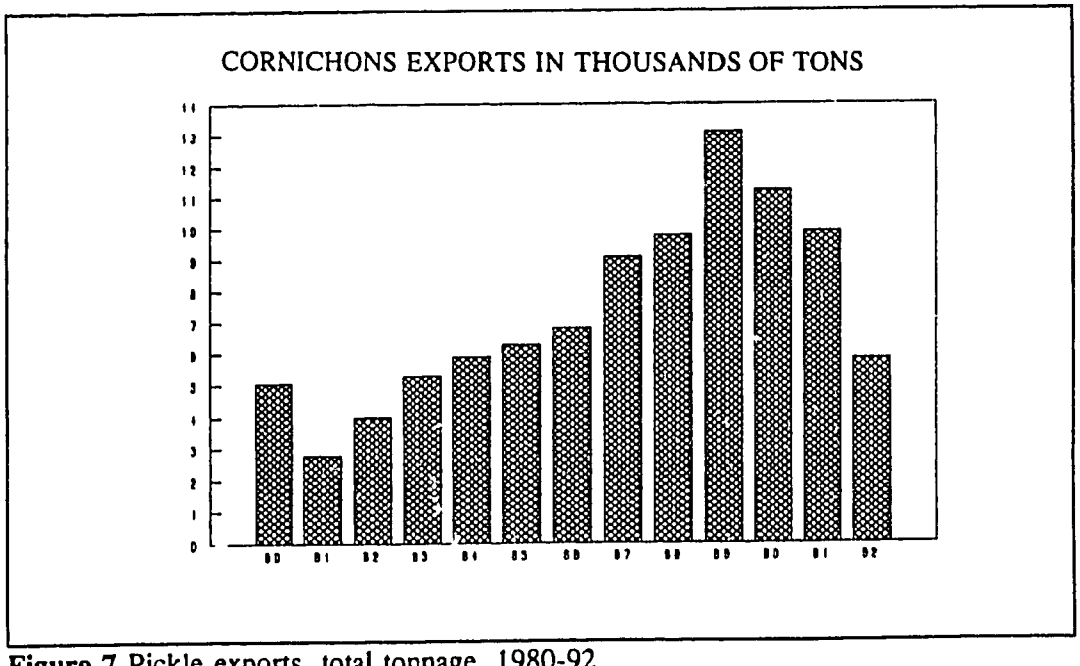

Figure 7 Pickle exports, total tonnage, 1980-92

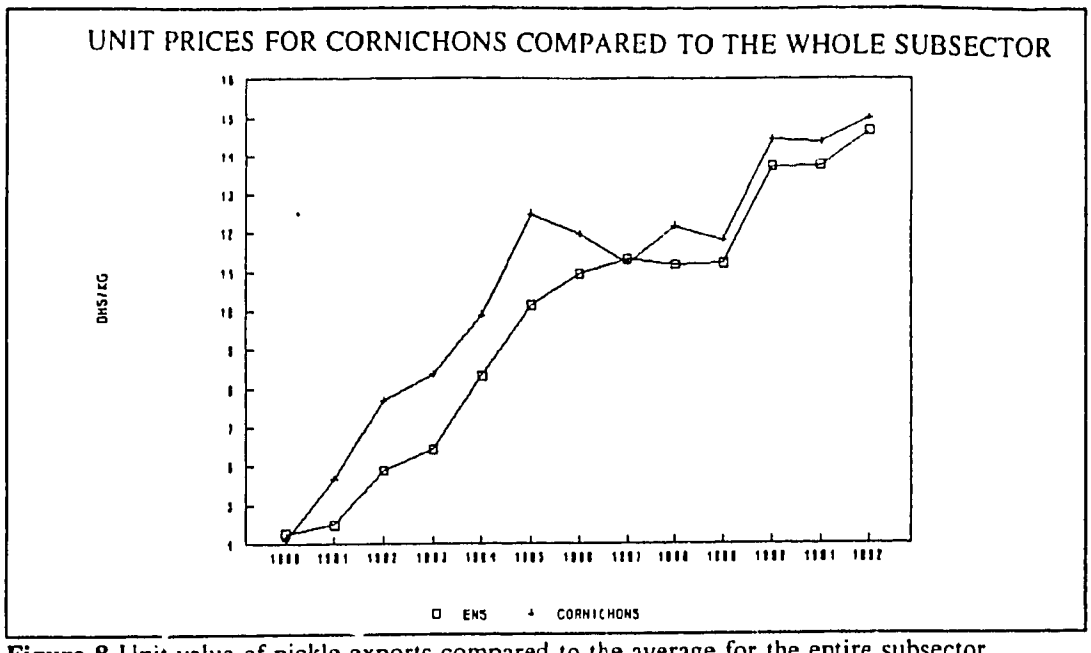

Figure 8 Unit value of pickle exports compared to the average for the entire subsector.

Based on data from the EACCE, two products and markets dominate the product line with 85 percent of the traded volumes over the past three years: pickles in vinegar for France and sweet and sour pickles for Germany.

The complementarily which exists between these two markets in terms of size preferences (small in France and larger in Germany) probably explains the split destination. The relative prices have remained stable with respect to the other exported processed products, as shown in figure 8.

The exported quantities are clearly decreasing despite maintaining the export prices. Based on the statistics from the EACCE and the Office des Changes, the decrease has been on the order of 50 percent between 1991 and 1993. The product line now finds itself at the same volume of exports as in the beginning of the 1980's, see figure 7.

Two reasons can explain this drop in exports: the drought and the increasing competitiveness of the Turkish supply on the European market (it is exempted from the 22 percent import duties which Moroccans must pay once they go over their 3200 tons duty free quota). In fact, as the sector works largely through subcontracting, the important factor is the decision of the French importers. This explains the apparent paradox over holding the prices while decreasing the total quantity. From this perspective, the product line is similar to green beans.

4. Processed Tomatoes

Tomatoes planted specifically for processing are limited to about 4,000 ha across Morocco with a production of about 160,000 tons. This production comes mainly from

the Loukkos and the Gharb.

The list of processed products from the tomato base is quite large: concentrates, powders, dehydrated, peeled, crushed, etc. Table 6 splits out the relative parts by value over the last three campaigns.

Table 6: Processed Tomato Exports

% of total value	'91	'92	'93
Concentrate	19	5	5
Powder	67	82	77
Dehydrated	9	12	17
Peeled, Crushed, Other	5	2	0
Total in thousands of T	5,7	4	3,7
Total in millions of Dhs	118	124	119

Source: EACCE

This table indicates the trend towards stabilizing the value of the exports despite the decrease in volume, leading to more value added in the exports.

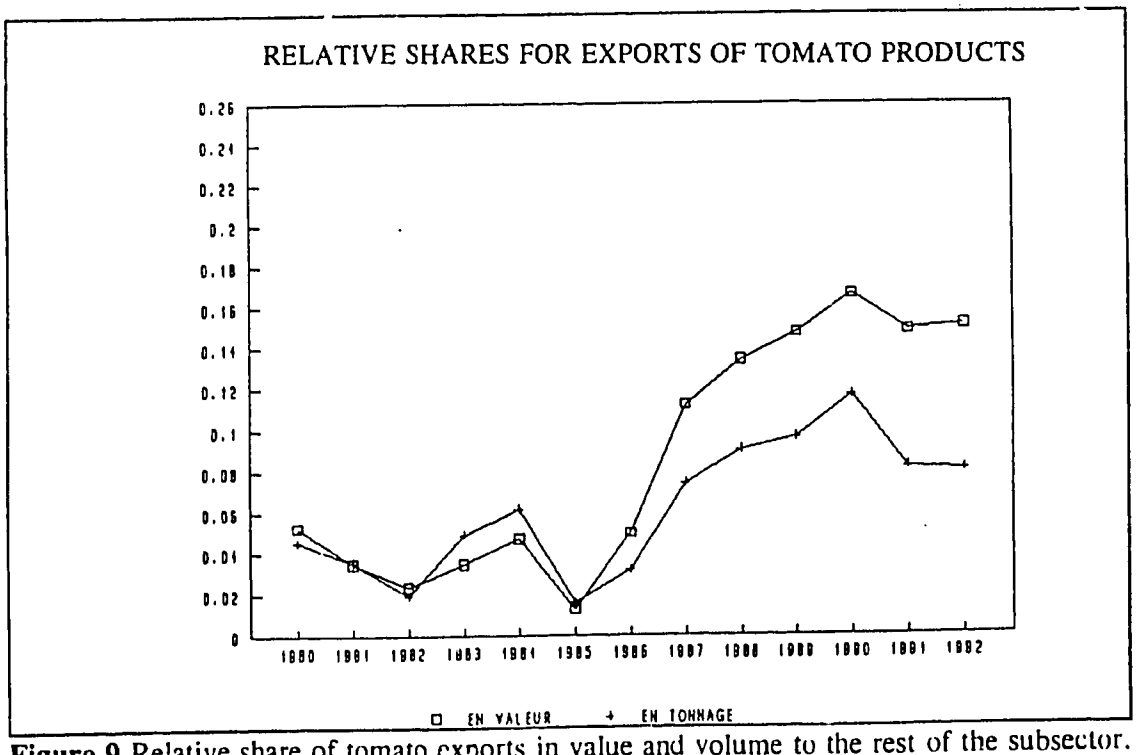

Figure 9 Relative share of tomato exports in value and volume to the rest of the subsector.

The important decrease of tomato concentrates and canned goods in favor of tomato powder and dehydrated product explain this increased value per kg. The increase in

powder and dehydrated product explain this increased value per kg. The increase in prices for export since 1986, correspond to the beginning of exports to the USA, according to the statistics from the Office des Changes (see figure 9).

Table 7 shows that powdered tomato products go to three primary destinations: the U.S., Japan and France.

Table 7: Tomato Powder Exports to Major Clients

in % of total value	91	92	93
USA	36	34	39
Japan	10	24	13
France	15	14	17
Sub-total	61	68	69

In summary, the tomato products have been the most dynamic processed foods since the middle of the 1980's. They have increased their share of exports due to an improved

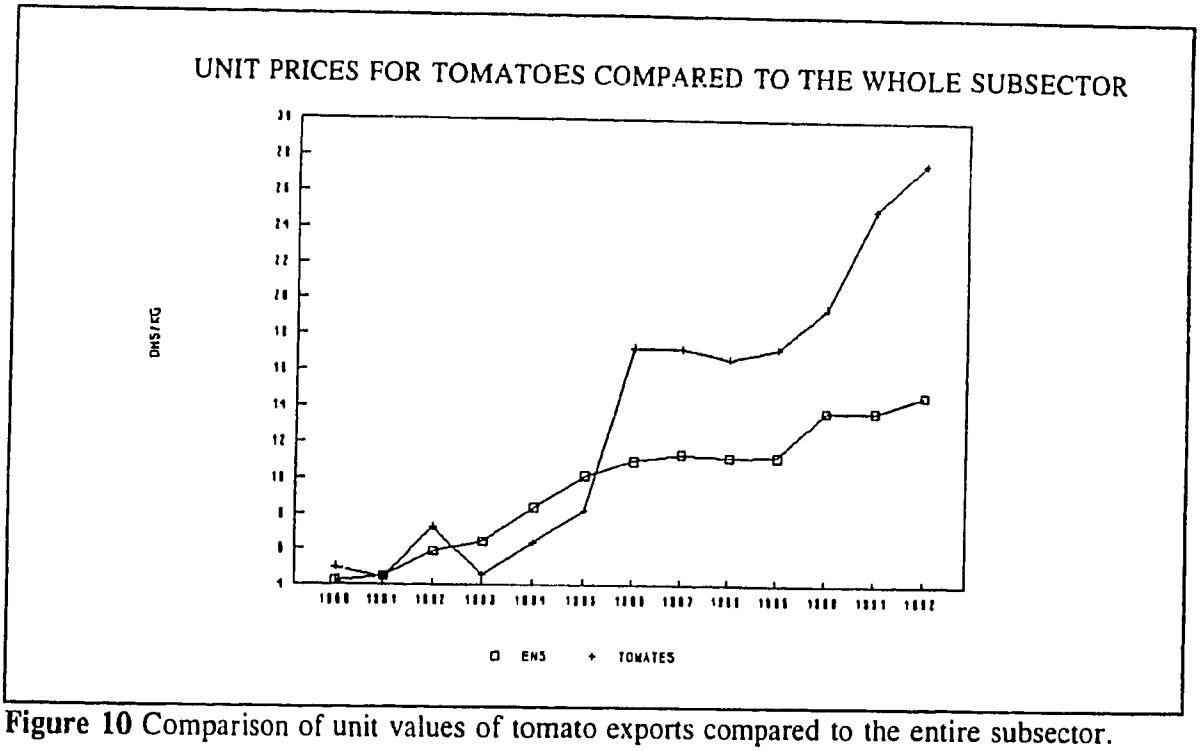

Figure 10 Comparison of unit values of tomato exports compared to the entire subsector.

value added to the products (moving from concentrate to powder, etc.), and a diversification of their markets (Japan, U.S.A.).

To the extent that this subsector is protected in France by the Common Agricultural Policy, the success of this strategy in Morocco goes largely against the current of the conventional ideas.

5. Other Processed Products

The trend towards diversification of products has been accompanied by the trend to diversify processes. The dehydrated vegetable products are the most important ones. Because they benefit from tariff concessions on the European market, they are more competitive than dehydrated fruits which face subsidies arranged for the CAP (raisins, prunes, and figs) and tariff concessions which have been offered to Turkey (apricots and figs).

B. PRINCIPAL TENDENCIES

After this review of the products exported by Morocco in the processed fruits and vegetables subsector, a clear difference appears between two groups of products. Traditional products and processes (apricots, green beans, and canned and concentrated tomatoes) which are declining in volume (green beans) and prices (apricots) and the new innovative products and processes which are exported in increasing quantities (frozen, powdered, dehydrated products). These dynamics of this subsector are analyzed in relation to the individual product groupings and the policy environment in the rest of the report.

II. DESCRIPTION OF THE MOROCCAN PRODUCTION SYSTEMS

The flow of products in the processed fruits and vegetables industry can be presented with the help of a map of the system which takes the products from production through to final markets. Taken on a commodity by commodity basis, this highlights the different channels through which product can flow within the overall framework of the subsector. The subsector can be mapped from two perspectives: its structure and the division of tasks. The subsector maps, which will be presented later in this chapter, try to capture these differences to give us a good idea of the different actors in the sector and their marketing channels.

In order to be able to prepare the maps for the individual commodities, we must first review the technologies which are in use, the circuits of supply, the marketing circuits which are generally used by the actors working with these commodities. The maps will link the different functions (supply, processing, and marketing) and then differentiate the channels based on differences in the way the companies process their product, get their supply or market their product.

A. DIFFERENTIATING FUNCTIONS WITHIN THE PROCESSED FRUIT AND VEGETABLE MAPS

1. The existing processing technologies

a. Canned/Jarred Foods

Canned/jarred foods can be divided between two important groups which require very different technological processes: acidified and low acid canned foods. Chapter four provides a better description of the technical/food safety considerations.

i. Acidified Food and Low Acid Canned Foods

Low acid canned foods are those with a pH greater than 4.6. Low acid canned foods must be sterilized to ensure food safety, requiring sterilizers (retort cookers). Low acid foods include most green vegetables (green beans, peas, spinach). The retort systems being used include horizontal steam/air or cascading water horizontal retorts and steam filled vertical still retorts. The identified horizontal retorts are Barriquand, Prominox, LaGarde, Ghizzoni, and Talleres Castello, with the first two being the most common. The only rotary retort cooker witnessed was a LaGarde.

The acidified foods simply require pasteurizing, using commonly found pasteurizing lines.

ii. Batch versus Continuous

Many of the processing lines are doing batch processes. This is particularly true for the older more artisanal lines.

b. Concentration

At present there are two principal products being concentrated: tomatoes and juices.

The concentrating lines which are in place are generally of European manufacture (Manzini is the most common line) and are hotbreak double effect. There are no cold break lines in use in Morocco.

c. Dried/Dehydrated Foods

The principal techniques being used to dry products for export are sun drying (tomatoes, apricots, and most herbs), tray driers which burn diesel fuel to generate the heat for the drying, and flow through driers such as Proctor and Schwartz Driers (Bisma) and Binder (Lukus).

There are fewer than a dozen firms which are active in the drying industry, and most of them supply the local market with products like prunes, raisins, and figs.

Most of the flow-through driers in use are for leeks and other vegetables (higher value per kg), rather than for fruit. The tray dryers are being used for tomatoes and raisins.

Lukus is the only firm which dehydrates tomato paste, making a tomato powder. It uses a triple effect Manzini concentrating line, before passing it through the Manzini dehydrator.

There has been a German financed project to introduce solar driers. While they have tried to target the apricot industry, these are of extremely small capacity and are not suited to handling the quantities of raw material which are available.

d. Frozen Foods

Frozen foods have become more important in Morocco over the past decade. At present there are two different products being produced using three different kinds of technology. The products are individually quick frozen (IQF) and semi-block frozen. They are produced using the following technologies:

- mechanical tunnel with conveyor belt to produce IQF products which can process between 10 and 16 tons/day of product using liquid nitrogen or ammonia as the freezing agents; and

- static cold rooms, where product is frozen on sheets (IQF) or in blocks.

The IQF processing plants for low acid products require installations similar to the canning process: sorting, cleaning, sizing, and blanching, so there is a synergy between the two kinds of activities.

From a quality standpoint, the tunnels are better, yielding individually frozen product which has not been deformed by being stationary on a tray during freezing and which has no freezer burns.

Out of a total of 21 companies with freezing tunnels (both flow through and freezer rooms) in the country concentrating on fruits and vegetables, there are approximately 13 companies which are currently operating. The others have either shut down for reasons of lack of supply or poor management/bankruptcy. The majority of the operating freezing companies are located in the Rabat to Casablanca axis (nine out of thirteen). They concentrate on green beans.

2. Packaging Materials

Most of the common types of packaging are available and manufactured in Morocco. Metal, glass, plastic, and wax/polymer impregnated cardboard (tetrapak), packaging dominate in the food service and retail pack lines. Substantial volumes of bulk products (gherkin pickles, peppers, artichokes) are exported in bulk plastic or metal drums, buckets, and bags.

Four domestic can manufacturers are present in Morocco. The two largest are Carnaud (with a Metalbox plant) and Gouvernec, followed by Mutronic and Metalgrafic. Can sizes are European/metric standard, although for large orders manufacturers can provide U.S. can sizes. The conversion factors do cause some confusion in trade with the USA. A substantial quantity of metal cans, particularly own-brand lithographed cans for chain stores in Europe are imported under temporary admission. Lithographed cans are manufactured in Morocco as well.

Processors frequently complain about the quality of cans provided, and problems that they encounter with damaged cans with enamel failure. Some of their problems relate to rough transport of cans from the manufacturer, and others originate in rough handling at the processing plant, before they are moved to the line. Can inspection and statistical control at arrival is not practiced in the industry. Most plants do not have personnel well-versed in metal container specifications. A major problem during processing is seamer adjustment. The can manufacturer services to processing plants during the packing season so prevalent in the U.S. is not very frequent in Morocco. Nor are contract services from seamer manufacturers used very often. Seamer adjustment by the manufacturers may occur infrequently (only once or twice a shift in some plants). Loss rates from seam defects are higher (sometimes twice as high) than they should be in many cases. Rough handling and infrequent seamer adjustment also results in scarred seams which favor rust and microleaks. Can handling at the the end of the lines is generally manual.

Processors also use water which is frequently high in natural salts, generally aggressive carbonate and phosphate compounds. Exacerbated by high storage temperatures in warehouses during the summer, these compounds can increase the development of rust on the inside of the cans. In plant water treatment would reduce some of these problems.

Glass jars and bottles are manufactured by one plant in Casablanca, SEVAM. Processors complain of problems with out of round jars and bottles and thin glass. SEVAM produces a limited line of sizes and shapes of jars. The manufacturer has instituted new quality control procedures. Many processors import glass jars, and more and more chain buyers supply glass jars as part of their partnering activities with processors. Glass jar closures and seals are manufactured in Morocco by Crown Cork Company and Pechiney. Branded closures are relatively rare in the export industry in Morocco. Own-brand importers and distributors may send their own caps to Moroccan manufacturers. This is particularly true of own-brand caps where colors other than white, and logo's, are used.

Plastics, especially plastic barrels for bulk products, are used extensively. Plastic bags are being used increasing as well. Most polymer and aluminum laminated and printed packaging is imported in rolls and used in the beverage and dairy industry. Retortable pouches are not yet used in thermally processed foods. The corollary investments in automated fillers and sealers is seen as too high except possibly for table olives. Plastic buckets and bags are used in the freezing industry. The freezing plants which supply European supermarkets with retail packs import most of their packaging, primarily because of artwork, paper stock, ink, and print work quality. While there are a few notable exceptions, many of the commercial artwork service companies in Morocco produce what would be considered mediocre work in many European and North American marketplaces.

Packaging is one of the most important cost centers in fruit and vegetable processing in any country. Morocco is no exception. Packaging represents around 40-60% of the cost of the final product for many fruit and vegetables packed for the food service or retail trade. This is not an unreasonable percentage in general. However, Moroccan processors do not get very high value from the packaging that they use. With some notable exceptions, many Moroccan processors do not see packaging as an area in which they can add value to their product. Since many have little knowledge of their end consumer, they do not invest very much money in package design or in artwork. This creates a vicious circle in the industry, leading to very repetitive and unimaginative packaging even for retail packs.

Increasingly stringent label requirements on retail packages in the USA, Canada, and, to a certain extent, Europe will require Moroccan manufacturers to pay more attention to nutritional and component labeling on their packaging. This will force some adjustments in package design.

3. Circuits of supply of raw material

Steady supply of low cost, good quality raw material is probably the single most important constraint to the processing industry. Moroccan processors are supplied through a variety of channels, including their own production, contract relationships, direct purchase of product from the farmer, or purchase through an intermediary. Any one processor may use more than one of these choices to supply his factory with product, with definite tradeoffs.

a. Vertical integration

A few companies have the land to produce at least some of raw material which is required by the factory. Lukus is the largest such producer, with 6,000 ha of its own land. Using

one's own production guarantees supply, and ensure the proper varieties for processing at the proper levels of maturity. In addition, the tax benefits favoring agricultural production (see chapter 5) are an incentive. The downside of integrated production is the fixed investment in land and the diversion of efforts away from the principal business.

The principal reasons for the lack of vertical integration stem back to two events, the law which made it illegal for foreigners to own agricultural land, followed by the Moroccanization of the food processing industry in 1972. These are discussed in greater depth in chapter 5.

b. Contracting - big grower or small grower

While many processing companies contract for supply of raw materials (apricots, tomatoes, paprika, leeks, and other vegetables) it is still a very underutilized system compared to the countries with which Morocco is competing. Contract growing provides many advantages for processors, because they can specify the variety of product they want planted to ensure the optimal raw material for their process, predict the timing of delivery of the product, and insure themselves of a better quality product delivered to the factory.

Contracting in Morocco is fraught with problems. Both parties (growers and processors) complain about the other and accuse them of not respecting the contracts. Most people agree that both sides always cheat a little, but the loudest complainer depends on the year. In years of short supply, the processor needs more, yet the grower gets better prices on the fresh market and diverts some supply there to optimize his profits. In years of abundant supply, the processors are accused by the growers of rejecting inordinate amounts of product or paying with a long delay.

Morocco is faced with two very different scales of producers (growers): small (a few ha) and very large (50-400 ha). In theory the large growers should be more amenable to establishing reliable contracts with processors because they have less incentive to try to speculate and divert product to the fresh market. The large growers need to treat their operations more like businesses and should be trying to maximize long term profits, which come from consistent and predictable markets which will justify the investments needed. But even large growers in Morocco have been known to break supply contracts to respond to higher yielding short term opportunities. Among the larger estates, there are an important number of absentee landlords. They generally turn the management over to a technician and do not follow the day to day activities very closely, which often leads to problems of optimizing production and respect of contracts.

Contract growing with small farmers in Morocco is highly perilous, since a small increase in selling price has far more impact on their annual income. They can be easily turned from their contract by higher prices in the fresh market or from unethical processors trying to get extra supply. In addition, the small farmers are less well equipped to produce quality product.

The problems surrounding contractual relations, as well as the solution used in many developed countries are covered in Annex Three.

c. Direct purchase from the farmers (other than contract)

Many of the smaller companies do not have large fixed contracts to supply export markets, so are hesitant to contract for large quantities of product in advance. But if they do get the contracts, they must then find the raw material to meet that demand. They, or their agents, will often do this by going directly to farmers and try to buy the available product from a farmer who may have contracted to grow for someone else (a small farmer seeking to maximize his profits) or one who has not yet contracted to sell his product.

Processors are also able to directly buy product from the local markets or Souks. The souk may either be a central sales point, as for green beans in Skirhat, or simply numerous sales points along the road where the growers bring their product for sale (as is the case with olives). The effect is the same - it increases transparency by bringing more product to a point of open competition. However, it usually leads to a drop in quality since it takes longer and the product needs to be handled at least one or two more times.

Processors can also buy at auction from the State owned farms. SODEA and SOGETA often auction off their production, on the tree, which a factory can bid on. This process, however, tends to be dominated by the intermediaries, since thy already mobilize the harvesting labor force and arrange for transport.

d. Purchase through an intermediary

For many perennial products which are grown throughout Morocco (such as olives and apricots) or annual products which can go easily towards fresh or towards processing (green beans) there are well established sets of intermediaries who will buy the product in the market for resale or will even buy it in the field and then take charge of the harvesting and delivery to a factory.

They gain even more prominence given the ownership/management structures of the larger landholdings. Most of the larger farms are owned by absentee owners who leave the farms under the management of a caretaker. For products like apricots, the absentee landlords prefer to sell the product on the tree to the intermediary and not have to bother with the difficulties of harvest, even though they might earn more money[5].

4. Marketing circuits

Many of the marketing circuits in use now trace their origins to the days before Moroccanization, in 1973. With the exodus of the French processors, they did not abandon the sector entirely, but often simply moved their part of the operation into France and developed the marketing and distribution channels within France, while relying on their old partners in Morocco to provide them with the raw material. The impact of the OCE on the marketing circuits is discussed in Chapter 5.

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[5]See Annex Three of the Olive Subsector Study, for more details on the different constraints introduced by the intermediaries.

There are four normal channels used by the processor exporters for getting their products to the market:

Moroccan exporter -> Importer -> Retail store chain
Moroccan exporter -> Importer -> Distributor -> Retail store or store chain
Moroccan exporter -> Importer/Distributor/Repacker -> Retail store
Moroccan exporter -> Importer/Distributor -> Institutional buyer

What is clear from all of these is that the product nearly always changes hands a few times before getting to the end user, distancing the processor/exporter from the end consumer.

a. Fixed contract linkages

Some Moroccan firms maintain fixed contract linkages with their distribution arms in Europe. For many products, the orders for quantities are placed either before the campaign, or at its beginning, allowing the processors to determine their requirements and better program their pack requirements. These contracts can be with agents (the case of BISMA) or with distributors such as Patissiers de France, the dominant distributor of apricot halves for the pastry industry.

b. Spot Sales

These sales are made during the season and after the pack, based on the spot demand and the evolution of prices. Most firms make some spot sales every year. The smaller and less developed firms have a greater dependence on the spot sales.

c. Integration

There are firms which are completely integrated into the European market with exclusive agreements or with European capital in their companies. Examples include VCR which processes for Amora, MCS which is part of the Lomagenais corporation (their other plants are in Europe), and Yasmine Gel which manufactures frozen goods for Bergerac. The integration usually leads to the processing and packing for the retail level under the more stringent specifications, rather than for the food service industry or reprocessing.

B. THE TRADITIONAL PRODUCTS AND THEIR MAPS

1. Apricots (Halves, Pulp, First Strength Juice, Dried)

As of October, 1993, there were twenty two processing plants which were certified to export processed apricot products from Morocco. They are distributed between six cities, with the bulk of them located in Marrakech.

Table 8: Moroccan Apricot Processing Industry

LOCATION	NO. OF COMPANIES (1991)	NO. OF COMPANIES (1993)	PERCENT (1993)
MARRAKECH	21	14	64
SAFI	3	3	14%
CASABLANCA	0	2	9%
AGADIR	3	1	0.5%
MEKNES	1	1	0.5%
LARACHE	1	0	0
EL KELAA	0	1	0.5%

Source: EACCE, IBRD

The current total of 22 processing plants is down from 29, in 1989. According to the World Bank report, the installed capacity for all plants in 1988 was between 52,000 tons and 63,500 tons. However, given the technologies in use, this variation is quite possible.

Flow of Product

According to the MAMVA 1988 report, the supply for the factories comes primarily from direct purchase (61.7%) of which only 26.2 percent is through contracts. Another 10.8 percent is from their own production, and the remainder, 27.5 percent, is purchased by intermediaries. The map, below, differentiates the exports by supply, technology, and marketing channels.

The processing plants all use roughly the same technologies: elementary sorting and cutting tables, and traditional canning and pasteurizing units. Since the target product of the industry is a clean cut apricot half, destined for the high price French pastry market, the cutting must be extremely good. The factories usually rely on hand sorting and cutting of the fruit to get the best cut. Even though most factories are equipped with Spanish Chaconza Apricot Pitter/Cutters, they are not reliable cutters, often missing the seam, and the factories only use them in periods of extreme oversupply when the hand cutting cannot keep up.

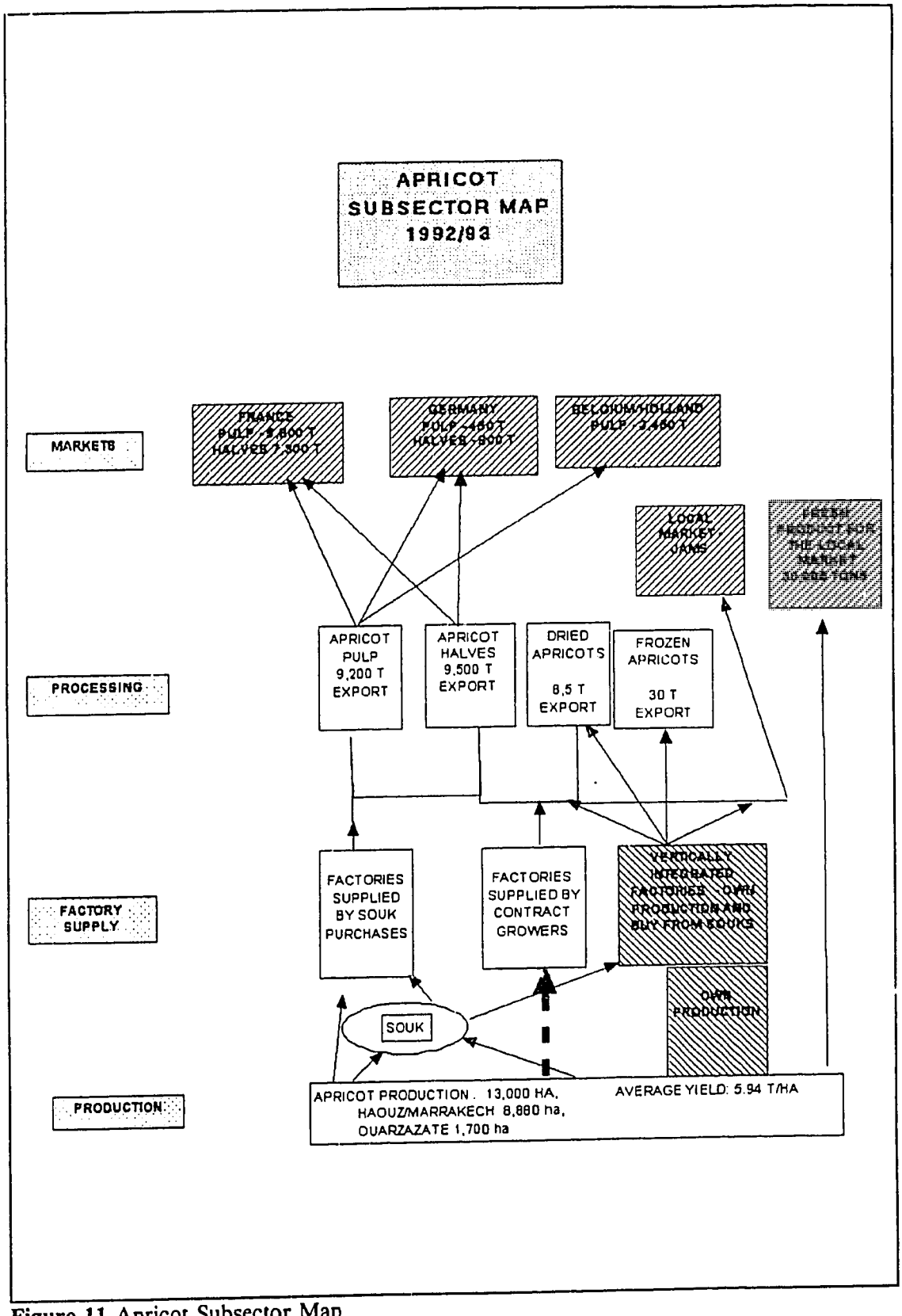

Figure 11 Apricot Subsector Map

Depending on the source of information (EACCE or Customs) the quantity of product which is exported as halves varies between 52% and 64%, respectively, with another 23 percent of halves in the piefill (pulp) (see chart on the preceding page).

One factory achieved a yield of over 80 percent apricot halves for export, but the average is much lower. Even with hand cutting the quality of the raw material is usually only good enough to yield 65 percent for halves. The factory which reaches 80 percent halves buys 75 percent of his product on contract, with a pre-sort done in the fields to ensure that he gets only good quality product. He then does not use any cutting machines. Whereas those factories buying form the souks, directly from farmers without a contract, or through intermediaries get much lower quality product.

The apricot halves are put into cans, weighed, filled with syrup (over 90 percent), heated, sealed and pasteurized.

Only one factory visited claimed to do as much of their cutting and pitting by machine as possible, with the surplus going to hand cutting.

Since a clean apricot half for the pastry industry is the target, any product with blemishes or which is not perfect, goes to apricot pulp, also called pie fill in the U.S.. In most cases the apricot halves are run through a pulping machine and then into filler/weighers before being sealed and pasteurized. There is no syrup added. Most of the apricot pulp which is produced is with the halves, commonly referred to as pie-fill, whereas in the U.S., a first strength juice or pureed apricot pulp is produced. Much of the apricot pulp export is destined for jam making in Europe. The apricot pulp is also used in Morocco for jam making.

Since the apricot season in Morocco is only between three and four weeks in which to process the entire pack, the factories must run at full capacity through-out the season, often working 24 hours a day. This is the most limiting factor in the production of processed apricots. Companies employ up to 500 people per day for a production of about 60 tons.

E.U. regulations determine much of the structure of production. As will be discussed in chapter five, any product exported in cans weighing one kg or less face a 24.9 percent duty, whereas product in larger cans, automatically destined for the food service industry, enter under a duty free quota.

Costs of Production

Breaking out the costs of production for apricot products cannot be done with much precision because the processing techniques vary so much. The two most important factors in production are the cost of raw material and the cost of the cans. These usually average about 1/3 of the cost of the final product before transport. However, while the cost of cans remains fairly stable from year to year, the price of fruit fluctuates tremendously, as seen below. Labor is a small component (about one fifth of the value of the cans).

The cost of fruit has fluctuated considerably over the past three years, due to climatic problems as well as some speculation on the part of the processors. The figures from the Office de l'Haouz, in Marrakech, the region which supplies the majority of the apricots in the country are presented as farmgate prices below. The prices from Patisfrance for their highest quality imported product are also listed, FOB/Casa, as a comparison.

	1988/89	1989/90	1990/91	1991/92	1992/93
Farmgate	1.5-2.0 dh	1.5-2.5 dh	1.4-2.4 DH	2-3.8 DH	.5-1.00 DH
FOB/Casa[6]	17 dh	13 dh	21 dh	19.5 dh	15 dh

In these figures, we note that the peak prices during 1991 probably had an impact on the bidding up of prices of apricots in the 1992 harvest, where verbal reports claim that the processors were speculating on another good price season. When the prices dropped in Europe, the Moroccan processors were stuck with lots of high priced product.

Special considerations and Conclusions

Almost all of the factories canning apricots are also canning olives. This provides a food safety issue, since the two products have inherently different qualities and require very different canning processes. Of the two, however, apricots are acid, and therefore present less risk. Given the formal level of training of the technicians charged with monitoring the processing of the products, there is always an inherent risk.

Even though Morocco has been an important producer of apricots and exporter of processed apricot products, we note that there has been very little innovation and development of new products over the last 20 years, despite the tremendous range which is available: dried, frozen, sliced and diced, etc. Granted, the European Union's policies have favored keeping Morocco channeled into producing a bulk item for reprocessing, but Moroccan processors have done little to fight out of that situation.

The actual linkages between the processors and the growers have been quite weak, limiting the quality of the fruit which is harvested (often with green shoulders). The increasing trend towards at least some integration by the processors will be a favorable factor for future production.

2. Green Beans (canned, fresh, IQF)

In October 1993, there were nine companies certified by the EACCE to export canned/jarred green beans from Morocco. They are primarily concentrated in the Rabat-Casablanca axis (5 companies) with a smattering around the country. In addition, most of these same companies run IQF/deep frozen lines for the green beans and other products.

[6] This is the average price for the top quality 2L5 can, which has handpacked halves, drained weight is 1.35 kg, FOB/Casablanca

Table 9: Green Bean Processing Industry

LOCATION	NO. OF CO.'S (1993)	PERCENT (1993)
MARRAKECH	1	11%
MOHAMEDIA	1	11%
CASABLANCA	3	33%
AGADIR	1	11%
MEKNES	1	11%
LARACHE	1	11%
TEMARA	1	11%

Source: EACCE, IBRD

Flow of Product

According to the MAMVA 1988 report, 82 percent of the green beans were purchased directly from the farmers (24 percent at the souk, 45 percent on contract, and 13 percent without contract) in 1984-85. Only 5 percent of the supply came from integrated production, and another 4 percent came from intermediaries. Though these figures are now ten years old, they probably still reflect the structure of the supply.

The IQF stations were usually attached to the canning lines because they required many of the same steps (sorting, cutting/destringing, washing, and blanching). Figure 12 shows the division in the uses for the harvested greenbeans. According the Ministry of Agriculture, in the 1991/92 season, there were 6,100 tons of beans grown on contract for the processors and an additional 14,400 tons without contracts.

The greenbeans are usually purchased during the day, often arriving at the factory by nightfall where they are put in cold storage. Product rarely makes it to the processing line in the same day. The beans are graded (extra fine, fine, regular) with the regular sized beans being reoriented into the local fresh market. The extra fine and fine beans are then hand cut and destrung prior to being washed.

The blanching takes place either in open kettles (bring to a boil in a batch system or steam blanched in a flow through) before being transported to the hand filling stations. They are then weighed, brined, capped, and retorted.

Numerous problems were identified along the lines visited, particularly on the blanching of the product. This appeared to be carried out using a home recipe that varied by batch, often resulting in what the technicians considered to be overcooked beans.

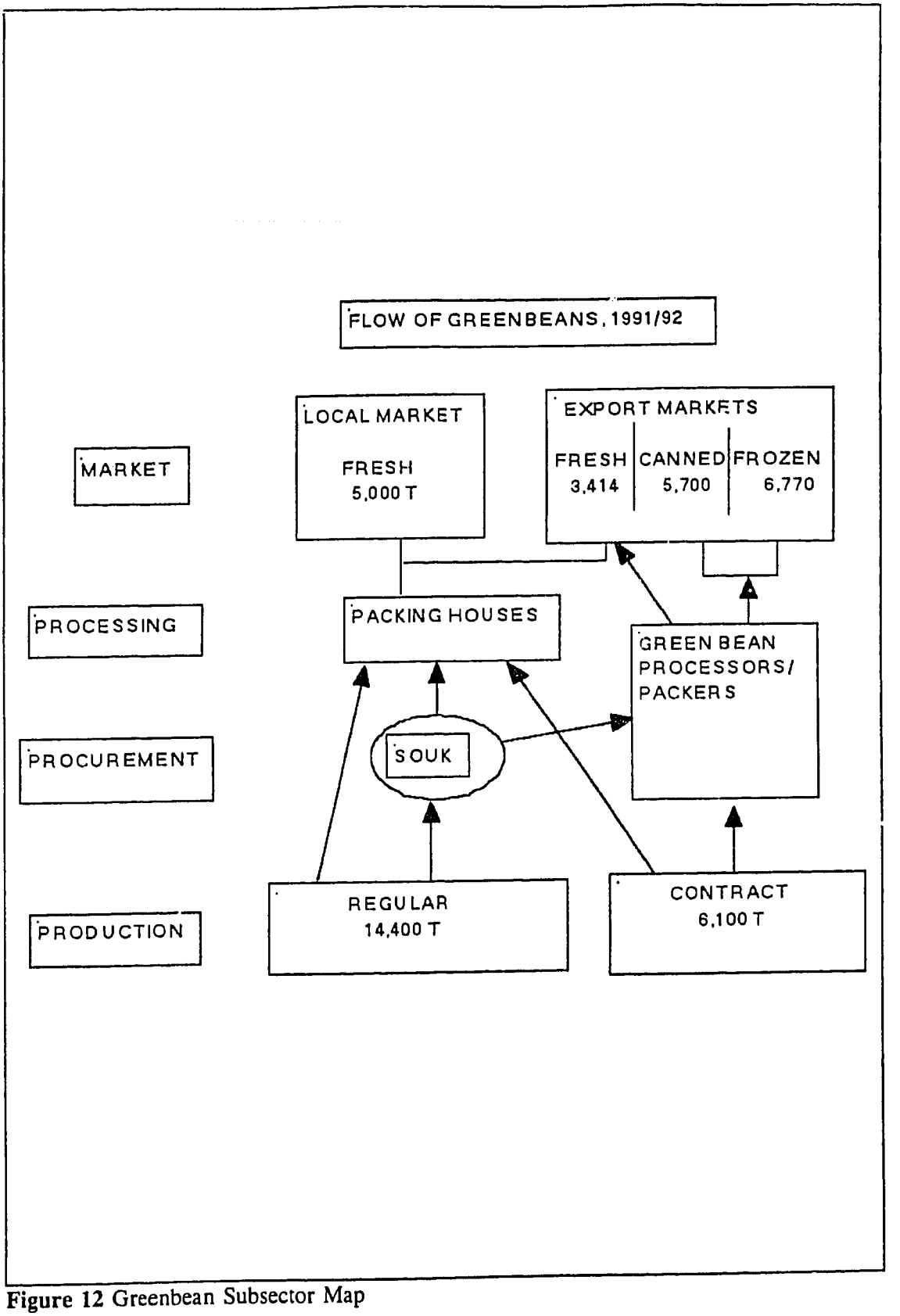

Figure 12 Greenbean Subsector Map

All of the lines visited were fully equipped with cutters and snippers for the greenbeans, but none of the lines were using them. The general consensus was that the product was too flexible to be run through the cutters and snippers, making it more efficient to snip and destring by hand This had the multiple benefit of reducing loss and improving quality, so that even though it used more labor, it was more profitable for the plants.

The processors should not have a problem with the snippers, but the twenty four hour delay between harvesting the beans and running them through the snippers is too long for the beans to maintain their firmness, which is a condition for the successful use of the snipper.

Table 10: Change in the Structure of Moroccan Green Bean Exports: Fresh, Processed, and Frozen

	1991/92		1992/93	
	TONS	PERCENT	TONS	PERCENT
FRESH	3,414	21 %	3,189	26 %
CANNED	5,700	36 %	3,250	27 %
FROZEN	6,770	42 %	5,700	47 %

Source: EACCE, FICOPAM

This implies that the least profitable of all the operations is canning, since it is the product line which suffers the most during a bad year.

Costs of Production

The farmgate costs for greenbeans vary between 2 and 7 dirhams for the fresh market, depending on the time of year and the quality of the greenbean, but vary between 5 and 7 dh/kg for industrial use greenbeans, which must be the extra-fin.

Over the last three years, the average cost of extra fine canned greenbeans has been 15 dh/kg, while fine greenbeans averaged only 7.77 dh/kg. Meanwhile frozen greenbeans have averaged 14.4 dh/kg. Since the cost of freezing is only about 2 DH/kg, it is clearly very profitable to invest in frozen greenbeans, as long as the storage charges for the greenbeans can be minimized.

Conclusions:

The overriding problem for the green bean processors is supply. During the April season, there is competition between fresh for export, fresh for the local market, canning, and freezing. In the October season, there is less demand for the fresh for export, so they are better able to program the production.

Even though we note that there is an increasing focus on IQF green beans, there is still very little diversification into new products which might be developed out of the opportunities offered by freezing: pre-cut, prepared, etc.

Perhaps the most important issue facing the processors for improving their cost of production is the question of delay between the farm and the factory. The periods of up to 24 hours between field and processing are far too long to ensure the quality of product which is increasingly demanded, as well as making it possible to use mechanized cutting and snipping machines. The processors recognize the inability to use the mechanized processes, but do not attribute this to the delay in processing. Improved contracting, harvest and delivery mechanisms should lead to better product.

3. Pickles (canned/jarred)

Pickles (cornichons) are very similar to green beans in many respects: supply, structure of the processing industry, and markets. As with green beans, there are two seasons (May-July, and August to October) and about 45% were purchased directly from farmers with most of the rest purchased in the souks. There is almost no vertical integration in the sector.

The table below shows that there has been a sizeable change in the industry over the last few years. Where there were 15 firms authorized to export cornichons in 1990/91, by the end of 1993, there were only 10 left, and one of those (Iphim in Larrache) is temporarily closed.

Table 11: Moroccan Cornichon Processing Industry: Distribution

LOCATION	NO. OF COMPANIES (1991)	NO. OF COMPANIES (1993)	PERCENT (1993)
MARRAKECH	2	2	20%
CASABLANCA	7	4	40%
AGADIR	1	0	0%
MEKNES	2	2	20%
LARACHE	1	1 (CLOSED)	10%
KENITRA	1	(MOVED TO TEMARA)	10%
RABAT	1	0	0%

Source: Eacce and IBRD

The bulk of the processing firms remains in the Rabat-Casablanca axis, as with green beans, though there are two important plants in Marrakech which get their supply primarily from the Beni Mellal region.

The supply comes mainly from four regions: Beni Mellal (55%), the Gharb (20%), Settat (5%), and El Jadida (20%). Since the cornichons are grown largely on non-irrigated land (outside of Beni Mellal), the production is highly dependent on the weather and rainfall. 1993 was a very bad season for cornichons. The leading companies develop contract relationships with their suppliers, providing seed and technical assistance, but there is always the possibility of broken contracts.

In 1992/93, many of the processing plants produced only limited quantities of cornichons, with two firms accounting for the vast majority of the production and exports. Both of these firms are directly integrated either through ownership or fixed production contracts with European partners.

Cornichons will sell for between 0.5 and 4.5 dh/kg. Prices are highest for the smaller sized cornichons, which capture the highest price in the E.U. market.

Conclusions:

As with green beans and other products, the lack of a reliable functioning contractual linkage between production and processing presents the largest problem to the sector. The farmgate prices of pickles have been high and the production low due to the drought.

Moroccan exports of cornichons have concentrated on the smallest sizes which capture the highest prices. Since the export quota is based on tons, not on value, the quota is filled with the highest value product, leaving the lower value product to pay the 22% duty.

4. Strawberries (Frozen vs. fresh)

Strawberries are still a relatively new product for Morocco. The EACCE only started breaking out the export of fresh strawberries this past year. There is a strong complementarity between the fresh strawberries and the frozen. Discussions with grower/exporters show that they prefer to export the fresh product, which usually captures a higher price, up until June when the European production becomes more important, and then they will switch more of their production towards the IQF. This is gradually changing, however, as the demand for IQF strawberries is increasing and the European distributors are trying to lock in more contracts earlier on. It also allows the grower processor to get a firm advance contract for his product, which helps with production planning.

Table 12: Moroccan IQF Strawberry Exports

	1990/91	1991/92	1992/93
Strawberry products (mt)	212	69	1,831
average price	7.67 DH/kg	19 DH/kg	7.65 DH/kg

Source: EACCE

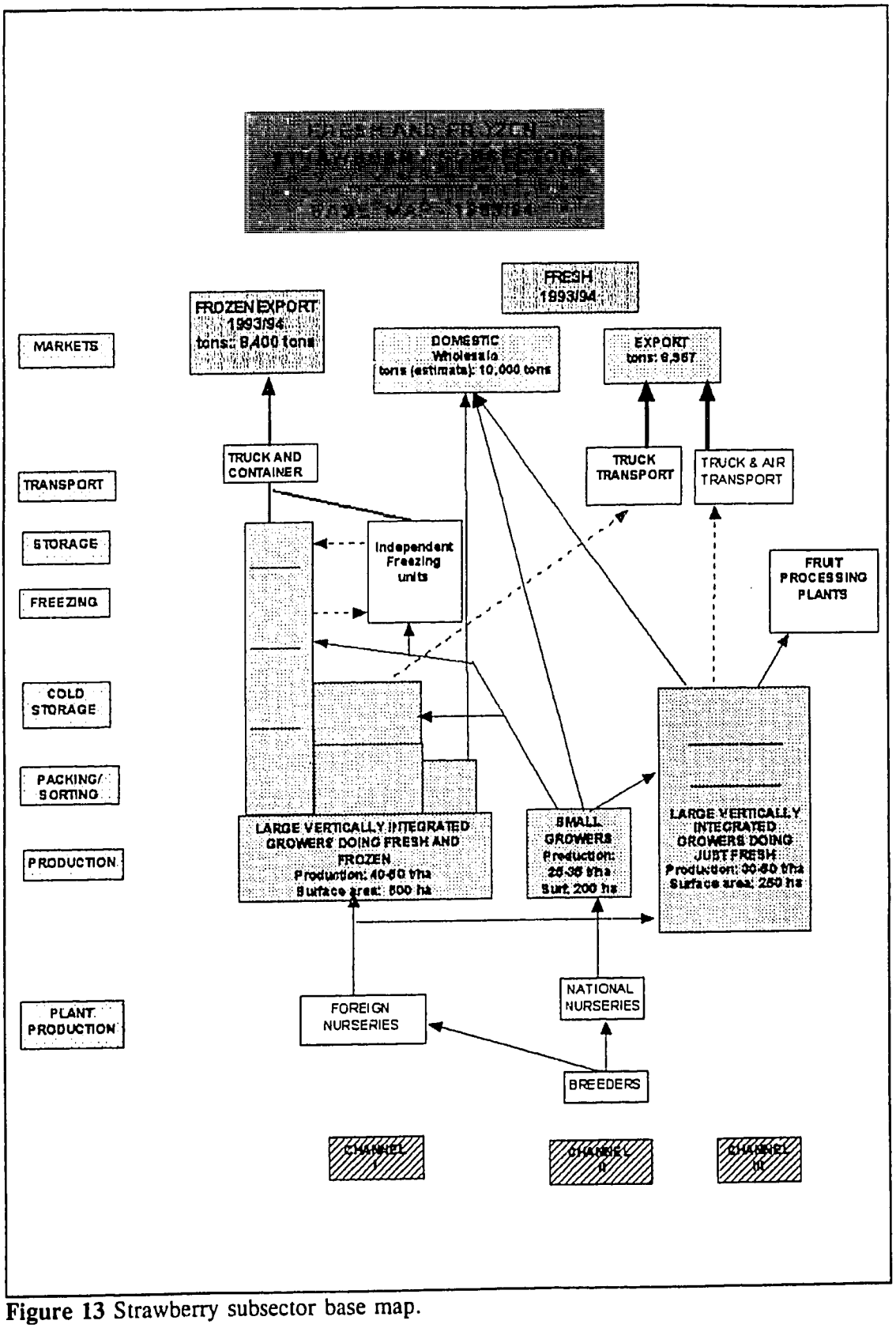

Figure 13 Strawberry subsector base map.

Moroccan exports of strawberries in 1992/93 were split nearly evenly between normally cultivated strawberries and wild strawberries, but the wild strawberries capture a far greater price. 10 DH/kg compared to 5.5 DH/kg for the regular strawberries.

In 1993, there were only eight companies which exported the frozen strawberries and only two of them exported both kinds of products. The exports of frozen strawberries are going to increase substantially in 1994.

The main producing region of the country is the North, where 500 of the 600 ha of production are located. The other 100 ha. are in Agadir. The increase in production in the North is being driven by Spanish growers who are moving their production base South to take advantage of cheaper production costs and slightly earlier harvest dates. In Agadir, the acreage is being planted by a few of the large producer/export groups, targeting the fresh market. The total area under production will probably double before the 1995 season, as strawberries are the most popular new crop. There are likely to be two hundred new hectares in Agadir alone.

The costs of production for strawberries grown under tunnels in the early part of the year, are conservatively estimated to be 3.75 dh/kg. Strawberries which are not grown using tunnels achieve a lower yield, but have much lower costs/kg, farmgate. The estimated cost of freezing a kg of strawberries is about 2.5 DH using the liquid nitrogen, 2 DH using the ammonia freezing tunnels, and less using the static chamber. Therefore, the margins can be quite slim if we are basing the cost on the tunnel grown strawberries. In 1994, regular frozen strawberry exports are capturing 5.5 FF/kg or about 8.8 dh/kg, so there is about a 40% margin available to the growers and the processors.

The structure of the industry is awkward. Since the strawberries start as fresh product, the freezing was initially just a by-product. However, given the great demand for IQF strawberries more production plans are being made just to supply the frozen market. In the South, around Agadir where there will be several hundred hectares of production, there are currently no operational freezing plants. Installation of freezing capacity, either fixed but preferably mobile, in the Souss-Massa will be able to pick up lots of additional production. In contrast, in the North, there risks to be a glut of freezing capacity, with several new units being installed driven by the demand for strawberries. There is already a lot of underutilized capacity in the North, however, so new investors should be wary.

Conclusions

Morocco is moving rapidly into the frozen strawberry field, but has been doing it as a complement to the fresh product. While its IQF exports will continue to increase substantially over the next few years, there is also significant room for the freezing companies to use this high demand product as a base for diversification of their other frozen products. In particular, freezers should be trying to identify products with greater value added (i.e. sliced strawberries or melon balls) which would feed right into Morocco's area of greatest competitive advantage - cheap labor.

During the 1994 season, there was insufficient supply to meet the rapidly increasing demand for Moroccan production. Frozen strawberries will most likely remain one of Morocco's most rapidly expanding export products over the next few years, if supply can keep up with the demand.

There will always be a strong dynamic between the strawberries for the fresh and the frozen markets. There are difficulties with the consolidation and transport of fresh strawberries to the E.U., which makes the freezing alternative very attractive, especially for growers with a small surface area.

5. Tomatoes (peeled, concentrate, powder)

As was seen in chapter one, processed tomato products are one Morocco's most dynamic areas. However, the bulk of Morocco's tomato production still goes to the local market. Moroccan tomato processors contract for about 200,000 tons of industrial variety tomatoes, on 4620 ha. primarily in the Loukkos and the Gharb regions. In addition, there is a lot of production of tomatoes for the fresh market which goes into the processing lines, even though it has lower levels of solids. Given the time of year, there can also be quite serious competition between the fresh market and the processors for industrial tomatoes.

The structure of the industry is changing slowly. With the increase in production of tomatoes in the South, new plants have opened there to take advantage of the surplus production of product destined for the fresh market. The number of factories authorized to export from Larache has dropped significantly from seven to two, and one of those two has been closed for a year.

Table 13: Moroccan Tomato Processing Industry: Distribution

LOCATION	NO. OF COMPANIES (1991)	NO. OF COMPANIES (1993)	PERCENT (1993)
MARRAKECH	1	1	20%
CASABLANCA	2	2	40%
AGADIR	3	4	0%
MEKNES	2	2	20%
LARACHE	7	2	10%
SAFI	2	3	10%
MOHAMEDIA	1	1	0%

Source: EACCE, IBRD

Despite the relatively large number of companies, one company accounts for 80 percent of Morocco's tomato product exports: Lukus et Cie. They have pioneered the development of tomato powder for their joint venture with McCormick.

Costs

Only two firms contract for the production of tomatoes on a large scale: Lukus and Covem. The contract price for the varieties of tomatoes supplied by these firms is .6 dh/kg at the farm gate, but transport costs can reach up to .35 dh/kg depending on where the product is coming from.

As with apricots, the cost of the can is worth nearly as much as the product within the cans (before transport).

C. NEW PRODUCTS

There are a few new products which are under trial for processing in Morocco. These include roasted peppers, some new frozen products, both vegetables and fruit, and dried products, particularly tomatoes and apricots. The review of these new products during the study revealed that introduction is difficult for a number of reasons:

- Limited knowledge of the proper varieties to be growing and the growing techniques;
- Lack of awareness of the technical requirements to produce the products properly;
- No experience with the packaging;
- Limited available advisory services to resolve the technical issues; and
- Little knowledge of the market demands for product specification.

These factors have slowed the growth of new product development and are being addressed gradually by several programs.

D. CONCLUSION: MAJOR LIMITING FACTORS

The Moroccan processed fruit and vegetable exports developed very rapidly because they were highly competitive: raw materials were cheap, industrial lands were available at good prices, labor was cheap, and there had been a good infrastructure (compared to most other developing countries) left over from the French colonial period. In addition Morocco initially benefitted from longstanding working relationships with French marketers and distributors who had formerly been producers in Morocco.

But the rapid growth in Moroccan exports has slowed, owing in large part to the industry itself. There was increased investment, rarely well rationalized, which has led to the surplus in productive capacity (Morocco currently uses only 1/3 of its installed processing capacity).

Increased demand within Morocco for raw material to export, led to increased prices. High prices captured for these products in France have led to increased competition from other countries. Morocco's increased standard of living has led to higher wage levels. Meanwhile, speculators, used to high profit margins, have often hurt the development of a strong professional industry with good forward and backward linkages. In addition, due to government policies, many of the factor costs of production (electricity, labor, water, credit, transport, etc.) which are general to the economy as a whole, are higher than those in some competing countries.[7]

As world trade becomes more transparent and the markets drive the trade flows more than the suppliers, many of the rules of the game are changing. Service costs are increasing relative to the cost of the raw material (transport costs account for up to 50 % of the sales price for many Moroccan products) and, as more supply and a greater number of suppliers become available, the buyers are becoming more demanding, passing the cost of storage onto the suppliers.

These are many of the realities of today's international trade. These factors, which are often beyond the control of the processors, make it all that much more important for the Moroccan processed fruit and vegetable industry do all that it can to increase the competitiveness of its products through increased efficiency and producing to the specifications of the markets.

Many important issues come out of this analysis, factors which affect the competitiveness of Morocco's food processing sector and limit its capacity to steadily increase exports of their old products, add greater value to them, and develop new products.

1. Raw material availability and quality,

The irregularity of supply is a major constraining factor for the Moroccan food processing industry. Even when they have the markets, the supply fluctuates considerably from year to year due to weather conditions and lack of reliable contract arrangements which will guarantee the supply from larger growers with irrigated lands. The fluctuation of overall supply also leads to greater competition from the fresh market for the processing raw material. In years of low production, much product gets siphoned off for the fresh market or by other processors who are in short supply.

The quality of the available supply is another important factor. This stems from the lack of good harvesting techniques, post-harvest storage and transport, delays in delivery to the factory, and the nature of the buying agreements. Passing the production through intermediaries before it gets to the factories delays the arrival of some product, affecting the processing techniques which can be applied (the case of green beans). Harvesting the material before it has reached full maturity (maximum brix level) will lower the solid matter or sugar content (tomatoes and apricots) or have an impact on the visual presentation of the product (green shoulders on apricots).

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[7]see chapter V. A.M.I. will be producing a report on the Factor Costs of Production between Morocco and several of its main competitors.

Many growers have not mastered the production techniques for raw material, lowering their yields and the quality of the production, which reduces the profitability and interest in producing the product. Lack of awareness of the different characteristics which are needed for processing raw material as opposed to products for the fresh market hamper the processing industry greatly by reducing giving a lower output from the throughput.

The kinds of contracts which are in use both with large and small growers are rarely designed to provide maximum benefits to both the processor and the grower. The nature of the processing industry for most products favors contracts with larger growers over contracts with small growers.

The limited adoption of the appropriate varieties for processing as opposed to fresh production leads to many problems of profitability and competitiveness.

2. Plant layout and scale of operations

Few of the processing factories were designed and equipped for the products which they are currently processing. This makes the movement of product through the plants inefficient and has resulting impacts on the food safety/sanitation questions (below), as well as increasing costs.

Most of the processors are small and the equipment purchased for the companies is rarely of the appropriate scale for their operations. European manufacturers have often sold equipment to the processors with a far greater throughput capacity than is or ever will be used, increasing the costs to run the equipment as well as the amount of fixed investment.

The generally small scale of operations is a constraint for long run competitiveness, where greater throughput reduces the fixed cost element of the total price.

3. Quality control and food safety

Food safety issues are rarely a concern for the Moroccan processor. Chapter Four is devoted to the different elements of food safety and commercial quality which are missing or weak in Morocco. As long as Morocco has been exporting a semi-processed product for the food industry or a bulk item to be repackaged, food safety is not as great a concern as if the product is for a retail pack where it will be consumed directly by the consumer.

4. Lack of new product development

There has clearly been a lack of new product development over the last twenty years. Moroccans are still exporting essentially the same products today as then: apricots, olives, green beans, pickles. Only in the face of stagnating markets have the processors gone after new products which respond to the changing market.

5. Transport distances to the places of processing

Processing is concentrated in a few major cities in the interior and along the coast. However, the production of the raw material is often at a 3-4 hour drive from the point of

processing, particularly for tomatoes, paprika, cornichons, and apricots. For some products this adds up to 50% of the cost of the raw material in transport costs (processing tomatoes are 0.60 Dh/kg and the transport cost from the Doukkala to Marrakech is about 0.30 Dh/kg).

6. Decreasing numbers of operational factories.

There has been a net decrease in the number of processing plants around the country. In every single product line examined. Many factories have closed (either permanently or temporarily) and there have been no new starts in the canning sector. Among the IQF stations, there has been a significant drop over the last decade, but this trend now appears to have reversed itself as there are several new operations starting up in 1994. It is important to note that many of the factories which have shown the greatest ability to continue in the face of difficult markets are those companies which have firm relationships with companies in Europe, either serving as private label producers or as joint venture partners (Yasminegel, MCS, VCR, Lukus). Therefore the partnership aspect is a critical factor which cannot be overlooked, either in terms of guaranteeing markets or in terms of technological transfer and new product development.

7. Impact of foreign partnerships on technology and new product development

Closely related to the previous point is the tremendous advantages which solid foreign partnerships can bring. Firms which have strong relationships with foreign companies have been more dynamic in the introduction of new technologies, the development of new products, and the penetration of new markets, either in new countries or taking their product farther down the distribution channel in existing markets.

III. EXPORT MARKETS FOR MOROCCAN PROCESSED FRUITS AND VEGETABLES

This chapter is divided into two sections which will respectively analyze the major characteristics of the two leading markets for processed goods in the world: the European Union and the U.S.A. Each section will begin with a brief overview of the market and the major trends driving those markets. The section on the E.U. will look briefly at the three main importing countries, before taking a product by product analysis. For each product, there is a review of the consumption and import trends, key regulatory factors (duties), and the potential for Morocco in that product line. In the E.U. analyses, there is also a review of U.S. exports to determine whether this is a sensitive product for the project to assist (Bumpers amendment) and in the U.S. analysis, there is an evaluation of the impact of Moroccan exports on the U.S. producers. Finally, there is a summary of the major opportunities in each market.

The market analysis was a combination of statistical analysis as well as field interviews with importers/buyers/wholesalers in Europe and the U.S. carried out during the Fall of 1993.

A. THE EUROPEAN UNION MARKET

1. Introduction

The E.U. market for frozen and canned foods is a dynamic one which has undergone substantial change in recent years. Altered market structures and business practices have narrowed opportunities for non-E.U. suppliers. However, opportunities exist for Moroccan firms that are able to identify how these changes can be incorporated into future company strategies for penetrating niche markets.

This part of the report examines the European Community market for Moroccan processed fruit and vegetables. First, we look at the E.U. market in general, pointing out trends in production, distribution, and consumption that may have a bearing on Moroccan exports. Then we examine Morocco's current position in the E.U. market through an analysis of Morocco's share in E.U. imports from third countries, giving first an overall view of the situation, then taking up each of Morocco's exports individually. Each section concludes with remarks on the market potential for the particular Moroccan product in the E.U. market.

2. Overview of the E.U. Market

a. Market Trends

Increasing vertical and horizontal integration within the E.U.'s food retail sector has resulted in fewer buyers having greater influence over product specifications. The trend in Europe, as in the U.S., is toward concentration in the retail food marketing sector. Large supermarket and discount chains are increasingly dominant and -- as major buyers of

processed food products -- they have a strong influence over product price, quality, diversity, and packaging of goods offered by processors and distributors. Their enormous buying power allows them to bargain with suppliers for the lowest possible prices and to require the products to be packaged according to their specifications, frequently under their own label.

Because of high volume buying of these store chains, suppliers (processors and distributors) also have to be low cost and efficient, and it is reported that large food distributors in Europe are increasingly able to demand price reductions from growers and processors.[8]

In order to maintain their competitive position, European food manufacturers are restructuring their operations. To achieve greater economies of scale, these firms are rationalizing production into centers strategically located throughout Europe, allowing maximum flexibility in production and distribution. These firms are in always in search of low-cost reliable suppliers, and these suppliers need to be informed on location, product timing and competing suppliers to these plants to identify market niches in order to compete.

Within the E.U., market outlets for lower quality, cheaper packaged food products are dwindling steadily. In the 1970's the widespread use of private or own labels raised opportunities for suppliers of less than top quality product. The widespread success of private labeling has raised many of these to the status of quasi-brand labels and, as a result, few major retailers are compromising on quality. These buyers now demand delivery of large volumes of high quality goods in a reliable, timely manner.

For most of the processed products within this study, new sources of supply are emerging on the market place. Central and South American countries have made considerable strides in improving product quality, packaging and transportation routes to Europe and have captured market share as a result. South Africa and China are rapidly gaining market share for some products based on their strongly competitive pricing practices.

The high level of competition from E.U. and third country suppliers has had a downward effect on prices for many products. This is particularly true for canned products where stagnant or declining consumer demand has resulted in periodic supply gluts and heavily discounted prices.

Changing consumer preferences have shifted the types of products demanded by E.U. importers. A recent trend in Europe is toward healthy "natural" foods -- those with a minimum of additives and a low fat content. Consumers are also concerned about the amount of packaging materials which reach waste disposal systems. A survey showed that Dutch consumers were willing to pay up to 25% extra for food products which they consider to be environmentally friendly (limited use of plastics, phosphates, and propellant gases).[9] To many consumers this translates into frozen product (or fresh) rather than canned. These trends impose additional requirements on food processors, but are also a value-added feature which can add to profit margins.

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[8] "Le Monde au peigne fin", in La Vie Francaise, 8-14 May 1993

[9] Food News, September 24, 1993

E.U. consumption of all types of frozen food is much lower on a per capita basis than the U.S. -- 21 kg. in the E.U. vs. 51 kg. in the U.S. -- and this had led to projections of rapid growth in consumption in Europe in the future. Steady growth in frozen fruit and vegetables did take place between 1988 and 1992 but has since slowed, in part because of the economic recession, but also because of the increased availability of fresh product -- the same trend which occurred in the U.S. The growth rate in consumption of all frozen foods in Germany fell from 13% in 1990 to 4% in 1993. In the U.K. it fell from 3% in 1991 to 1% in 1993. Nonetheless, in absolute terms, imports continued to increase. Consumption in Austria and Finland grew the fastest -- on the order of 20% last year. Much of this growth has come at the expense of canned foods.

Future import opportunities will be in highly specialized niche markets and suppliers must develop a market strategy and product lines which cater to specific market niches. Identification of solid market opportunities will depend on product and market-specific research.

A recent World Bank report[10] suggests that Moroccan processors should develop markets for frozen artichokes, broccoli, asparagus, and miniature vegetables such as squash and eggplant. Others with potential are red, yellow and green peppers, as well as mixed vegetables. A more pronounced recent trend is toward value-added products such as pre-cut vegetables ("quatriemme gamme" in France), and pre-cooked frozen convenience foods (dishes, not whole meals).

b. Country markets trends

Despite strong moves towards E.U. integration in the market place, individual country markets remain distinct and the types of opportunities vary by country.

Germany

According to importers, distributors and large food retailers, few German firms have direct experience with Moroccan firms as suppliers. Those that do tend to be familiar with only a small selection of products and have associations with only one or two firms within Morocco. Products most commonly associated with Morocco were fresh fruit and off-season vegetables, and processed olives. A common theme from most firms was a lack of awareness of the quality, quantities, prices and product types which Morocco could supply.

The German market has growing demand for high quality specialty foods. Packaging and reliable quality are the key factors to penetrating markets for these products. Most of the products Morocco could export are being sourced from competitors or from European manufacturers which reprocess Morocco's bulk shipments. Because of this practice, importers have a very low awareness of Morocco's production amounts, quality and variety.

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10 "The Kingdom of Morocco: Agro-Industrial Development, Constraints and Opportunities", The World Bank, 25 March 1993.

In several cases, purchasers were aware of Morocco's products and did not consider them competitive with others on the market. Morocco's exporters must differentiate their products in terms of flavor or appearance to develop a long-lasting market niche. Morocco's unsteady reputation for quality relative to major competitors such as Turkey, Greece, Italy and Spain will be a major barrier in many processed product categories.

Many of Germany's major specialty retailers and food service distributors are actively promoting new food items such as dried tomatoes, artichokes, eggplant and peppers in olive oil packets. To date, Italy is the only country providing offers for many of these products. Because importers are still testing markets and suppliers, these products offer an opportunity to establish a strong reputation in a new market.

The German market is dominated by a handful of large retail chains. Each carries own-label products and sources many of its ingredients directly from production areas. Many of these firms are establishing relations with Eastern European suppliers, including joint ventures to source frozen fruits and vegetables, which are popular ingredients for many of the frozen convenience food products. Because frozen foods are growing in popularity, there is an opportunity for suppliers of IQF fruits and vegetables. German consumption of frozen mixed vegetables, for example, increased by 10% between 1991 and 1992.

An interesting trend in Germany is to import processed fruit and vegetables from non-E.U. countries in bulk at low prices and have them reprocessed and packaged in third countries, such as Greece and Spain in the E.U., and Hungary. For this market, German importers are ready to receive quotes on bulk products, which would then be shipped directly to the third country re-processing plant. This trend also serves to illustrate a trend toward increasing integration of processing and marketing within the E.U..

The United Kingdom.

The U.K. has traditionally been a large consumer of processed products, particularly canned. Slow income growth over the past decade, relative to most other E.U. countries, hampered the growth in popularity of frozen and fresh produce consumption. However, in recent years, consumption of frozen and fresh foods has risen, though much of the demand has been met by domestic supplies.

The U.K. is not a major consumer of Mediterranean products and U.K. importers have little knowledge of Moroccan exports. No Moroccan products were in evidence during a recent visit to a Safeway store in London. One company which had imported Moroccan frozen green beans 15 years ago, said it had stopped importing "since the E.U. had gained momentum" and countries like Morocco had lost the tariff benefits it once enjoyed. African countries with duty-free imports under the Lome Convention now had an advantage. Another importer knew of the good reputation of Moroccan cornichons and would like to receive quotes. There have been some imports of apricot pulp from Morocco for jam making. In general, British consumers are less demanding when it comes to fruit and vegetables than are those on the continent; much less variety is in evidence in the stores.

U.K. consumption of frozen vegetables continues to increase at a slow rate, with supplies coming mostly from other E.U. countries. Mixed vegetable and green beans are the largest categories, followed by peppers, peas, mushrooms, and spinach.

Frozen products are of interest to U.K. importers with whom we talked, especially frozen corn-on-the-cob. Other frozen vegetables for which Moroccan exporters should offer quotations are: green beans, peppers, aubergines, and baby corn. It was surprising to note a particular interest in frozen corn-on-the-cob. It seems that British consumers, having already accepted canned and IQF corn, are now showing a liking for eating it the American way. IQF corn kernels are also in oversupply at present. Israel is a big exporter of this product to the U.K., and the quality is said by importers to be better than that of France or Spain.

British importers contacted were not optimistic about canned fruit and vegetables, seeing little or no growth in this market. There is currently an oversupply of canned peaches and fruit cocktail, for example.

3. Morocco's Position in the E.U. Market

a. Overview: Morocco - E.U. Trade

E.U. imports from Morocco in 1992 are shown in Table 14 by E.U. country in metric tons and in Table 15 by value. Canned and frozen green beans, canned apricots, pickles and capers accounted for 87% by value of E.U. imports of the eleven principal processed products traded (excluding orange juice and olives, which are not covered by this study).

France is the predominant buyer of Moroccan processed products, importing 72% by value in 1992 of the eleven Moroccan products listed in Tables 14 and 15. The concentration is particularly marked in the case of frozen green beans (99%) and canned green beans (92%), and somewhat less so with cornichons (83%) and canned apricots (77%). Italy is be far the biggest importer of capers -- the one exception to the concentration on France. Comparison with figures for 1990 (see Annex Eight) shows that this concentration on the French market has improved only marginally over the three year period.

Table 16 compares 1988 and 1992 E.U. import figures by volume for Morocco's principal export products. The figures reveal an alarming decline in Morocco's share of E.U. imports. While the E.U. has increased its imports from third countries for these products, Morocco has lost market share in every category. Although Morocco has managed to maintain or slightly increase the quantity exported in the case of frozen green beans, canned apricots, and capers, exports of every other product have declined, some by as much as half (canned green beans, cornichons.

In Section 4, below, we look at each product individually and show how exports varied over five years. It will be noted from these figures that 1992 export performance was much worse than 1991 (except for capers). Data for 1993, when available, will show whether the decline in 1992 is part of a long-term trend or was due to some combination of unfavorable factors, such as lack of rainfall.

While E.U. imports of other frozen vegetables increased dramatically during the four year period, Morocco did not take advantage of this trend, registering only a slight increase in volume but losing market share. The same is true to a lesser extent for mixed vegetables.

Table 14: Principal E.U. Imports from Morocco, 1992 - (metric tons)

	E.U. Total	France	Belg/Lux	Netherlands	Germany	Italy	UK	Denmark	Spain
Canned Green Beans	3,485	3,266	66	7	0	0	0	0	146
Frozen Green Beans	6,237	6,164	39	0	0	0	0	0	34
Canned Apricots	13,665	10,273	1,202	1,379	719	0	92	0	0
Cornichons	7,879	6,050	59	192	1,524	0	25	29	0
Capers, bulk	3,193	392	90	0	97	1,823	94	2	695
Tomatoes, dried	253	147	0	38	2	0	28	0	38
Other veg., dried	381	189	0	173	1	0	16	0	2
Other veg., frozen	396	354	0	10	0	0	0	0	32
Other veg., canned	502	386	0	14	6	20	0	0	63
Tomato concentrate	385	385	0	0	0	0	0	0	0

Table 15: Principal E.U. Imports from Morocco, 1992 - (1000 ecu)

	E.U. Total	France	Belg/Lux	Netherlands	Germany	Italy	UK	Denmark	Spain
Canned Green Beans	4,245	3,893	163	10	0	0	0	0	179
Frozen Green Beans	8,877	8,805	0	0	0	0	0	0	15
Canned Apricots	12,279	9,424	976	1,145	657	0	77	0	0
Cornichons	8,246	6,803	111	135	1,153	0	17	27	0
Capers, bulk	8,407	1,042	300	0	291	5,176	150	9	1,439
Tomatoes, dried	1228	713	0	199	8	0	119	0	189
Other veg., dried	734	0	571	2	0	0	19	0	7
Other veg., frozen	302	302	0	0	0	0	0	0	0
Other veg., canned	1,502	1,124	0	46	27	52	0	0	227
Tomato concentrate	1,442	1,442	0	0	0	0	0	0	1,442

Table 16: E.U. Imports of Moroccan Products, 1988 vs. 1992,
(metric tons)

	1988			1992		
	Total E.U. Imports	Imports from Morocco	% of Market	Total E.U. Imports	Imports from Morocco	% of Market
Canned Green Beans	24,895	6,291	25.3	25,066	3,485	13.9
Frozen Green Beans	16,198	5,220	32.2	32,159	6,237	19.4
Canned Apricots	23,065	13,884	60.2	30,908	13,665	44.2
Cornichons	46,682	15,845	33.9	88,718	7,879	8.88
Capers, bulk	3,629	2,373	65.4	5,331	3,193	59.9
Dried Tomatoes	2,646	261	9.86	4,104	253	6.16
Other veg., dried	12,509	306	2.4	18,099	381	2.1
Other veg., frozen	3,747	491	13.1	4,877	420	8.6
Other veg., canned	33,247	438	1.3	56,253	502	.9
Tomato Concentrate	33,641	578	1.7	19,336	385	2.0

Source: Eurostat

Table 17 presents average unit values (in current ECUs) for E.U. imports from Morocco from 1990 to 1992 in ECU/ton. These values are calculated from import data, not from information supplied by importers. They reveal some broad trends in prices, which seem to be against Morocco, as there has been a steady decline in per unit values for frozen and canned green beans and capers. Per unit values have held more or less steady for canned apricots and cornichons.

Table 17: Average Unit Values of Selected E.U. Imported Products, 1990 - 1992 (ecu/mt)

	1990	1991	1992
Frozen Green Beans	1,527	1,504	1,423
Canned Apricots	903	880	898
Canned Green Beans	1,436	1,392	1,218
Cornichons	1,014	1,098	1,047
Capers, bulk	3,233	2,978	2,633

Source: Eurostat

In the following paragraphs, we examine each of these categories of processed fruit and vegetables in turn, looking at Morocco's export performance and indicating where the competition is coming from, and what trade barriers Morocco faces in the E.U..[11] In each case, we have included Eurostat data showing imports from Morocco over five years and comparing them to total E.U. imports, imports within the E.U. and imports from non-E.U. countries.

4. Opportunities for Moroccan Products

Table 18 on the next page rapidly reviews the evolution of Morocco's major exports to the E.U. between 1988 and 1992, along with those of Morocco's leading competitors, both from outside and inside the E.U.. Each of these products will be analyzed in greater detail below, with the E.U. trends and the potential for Moroccan exports. In table 18, it is important to note that in the intra-E.U. trade, some figures may represent a reexport of product imported from outside the E.U..

[11] These sections draw on material in Food News., the "Europe '93" issue of September 1993, and the "Canned Foods '93" issue of July 1993.

Table 18: Comparative analysis of Moroccan Exports into the European Union Between leading competitors between 1988 and 1992

Product	Morocco	South Africa	China	Kenya	Poland	Hungary	Turkey	Extra-E.U. imports	% of total Trade	Italy	Greece	Spain	Benelux	France	Holland	Germ.	Total Traded
Canned Apricots 1988	9.4 %	5 %						23,605	15.95 %	18.1 %	34.7 %	24%					147,999
Canned Apricots 1992	9.2 %	8.5 %						30,908	20.7 %								149,162
Canned Green Beans 1988	4.7%		8.5 %	3.1 %				24,895	18.5 %	7.3 %				23.5 %	18 %		134,735
Canned Green Beans 1988	1.8 %		7.4 %	1.9 %				25,066	13.2 %	19.8 %				22.2 %	26.1 %		190,488
Frozen Green Beans 1988	7.3 %				9.9 %			16,198	22.7				32.9 %	20.8 %	12 %		71,206
Frozen Green Beans 1992	7.2 %				18 %			32,159	37 %				28.2 %	12.6 %	13.1 %		86,912
Frozen Mixed Veg. 1988	1.2 %							3,747	9 %								41,831
Frozen Mixed Veg 1992	0.5 %							4,877	6 %								81,237
Pickles 1988	20 %					18.1 %	2.7 %	46,682	59 %						13.5 %	11.5 %	79,154
Pickles 1992	5.8 %					21.5 %	25.8 %	88,718	65.6 %						13.8 %	14.3 %	135,174
Capers 1988	54.8 %						23.1 %	3,629	83.8 %			15 %					4,330
Capers 1992	56.2 %						32.8 %	5,331	93.8 %			3.2 %					5,686
Tomato Conc 1988	0.16 %						5.6 %	33,641	9.4 %	48 %	31.7 %						357,398
Tomato Conc 1992	0.1 %						5.6 %	19,336	5.3 %	54.6%	25.8%						361,480

a. Apricots

E.U. consumption and import trends: Germany is the largest importer of canned apricots (64,551 tons in 1992), the bulk of which come from Italy and Greece. South Africa is its largest non-E.U. supplier (6583 tons in 1992). France, the second largest importer of canned apricots, sources primarily from Greece and Portugal. Morrocco is the largest non-E.U. supplier, followed by South Africa.

Based on analysis of annual per ton values of imports in Ecu, Morocco is one of the higher-valued suppliers of canned apricots to the French and German market. The charts in Annex 10 graphically depict the per unit value differences between major suppliers to the German and French markets.

E.U. imports from non-E.U. countries increased steadily until 1991 before dropping off in 1992, a trend which imports from Morocco followed. The high figures for 1991 is apparently due to a very large South African pack in the 1991/92 season and favorable prices, which led to high inventories in Europe and a drop in imports for 1992.[12] Another large South African pack in 1993 may lead to an over-supply situation and diminishing prices, at least for retail packs. Greece also had a large pack in 1992. Demand from the bakery trade in Europe for institutional sizes remains stable. However, Morocco's share of extra-E.U. imports of canned apricots dropped from 60% to 44%, suggesting that Morocco is less competitive in this product than before.

E.U. trade restrictions: Duties are imposed when imports exceed stated "reference quantities" or quotas. France imposes limits separately from the E.U. as a whole, thereby increasing the overall quota. The import duty varies according to the sugar content and may be increased, depending on market conditions for sugar in the E.U.. While the specifics are outlined in chapter five, the details are:

- French quota: 2,500 tons apricots in syrup, 2,500 tons natural, 7,000 tons pulp, for packs greater than 1.5 kg.
- E.U. quota: 6,300 tons in syrup, 6,000 tons natural, 8,250 tons pulp.
- E.U. duties: 17.6% on in syrup, 11.5% on natural, 17% on pulp

Because the E.U. imposes additional duties for high sugar content, there is a tendency toward "light" pack, not jams.

Market potential for Morocco: The retail market for canned fruit is not a growth area in Europe -- sales are flat or even declining -- even if Morocco was not limited by the duties.. As in the United States, consumer preference is definitely in the direction of fresh and frozen, in that order. One indication of this trend is the small, and usually not centrally-located, canned fruit displays in European supermarkets. However, Morocco does not at present compete in this market; sales are almost exclusively in institutional sizes for reprocessing.

Greece has a well developed industry and as an E.U. member country has an advantage over Morocco, which is still subject to reference quantities and duties -- though these are gradually disappearing. Morocco's exports are well above the E.U. quota, subjecting much of its export to a 11.5% to 17.6% duty, making competition with Greece that much more difficult. South Africa

[12] Food News, "Canned Foods '93", July 1993.

has established itself as a quality producer of canned apricots in retail sizes, and has access to the recognized Del Monte label. Morocco is currently positioned to serve institutional users, but will have to become a more efficient and lower cost producer if it is to protect the market share it now has from Greek producers, and possibly eventually China. To expand sales, and especially to enter the retail market, would require a major effort to modernize the Moroccan processors and integrate production with processing, not to mention a vigorous marketing job with the European distributors.

U.S. market position in the E.U.: According to Eurostat data, the U.S. exported 394 tons of canned apricots to the E.U. in 1992, compared with 932 tons in 1991. This constitutes less than one percent market share of all imports into the E.U.. Germany and the Netherlands have been the primary importers.

b. Canned Green Beans

E.U. consumption and import trends: Germany is by far the largest import market for canned green beans (108,502 tons in 1992), but roughly 90 percent of its imports come from the Netherlands, France, Belgium-Luxembourg, and Italy. China is its largest non-E.U. supplier (4699 tons). Most Germans consume the canned bobby variety rather than the fine and very fine varieties. France is the third largest importer of canned green beans (19,864 tons in 1992) but more than half are sourced outside of the E.U.. Of non-E.U. suppliers, Morocco held a 32 percent market share, compared to China's 40 percent.

An analysis of value per ton of imported canned green beans illustrates the specialty nature of its bean exports to France (see annex 10). Its value per ton is close to double that of other major supplying countries.

Imports from outside the E.U. have been around 25,000 tons, except for 1991. However, Morocco's share of these imports have declined from 25% in 1988 to 14% in 1992. The bulk of the increased demand was met by the Netherlands, which doubled its exports to other E.U. countries, and Italy, which increased its E.U. exports by 280 percent. Of the non-E.U. suppliers, China's exports to the E.U. grew by 24 percent to 14,180 tons. After China, Kenya is now the second largest exporter to the E.U., just ahead of Morocco.

E.U. trade restrictions: The E.U. has a 24 percent ad valorem import duty for canned green beans.[13] Kenya pays no duty under the terms of the Lome Convention. China pays full duty.

The Moroccan E.U. quota for canned vegetables (green beans and tomato concentrate combined) is 8,500 tons. Morocco is well below this level and thus is not paying any duties. The French quota for canned vegetables (green beans and peas) is 4,500 tons. Above these levels they pay 19.2% duty (though this is scheduled to reduce to zero by 1996).

Market potential for Morocco: France has developed a hybrid variety (*mange tout*) which can be machine harvested, thereby undercutting Morocco's cost advantage. E.U. production is increasing

[13] EU tariffs usually take the form of percentage ad valorem duties applied to the CIF value of goods. The values listed are for 'Conventional Duties', and do not apply to countries receiving preferential rates.

generally, mainly from the Netherlands and Italy. These trends have contributed to reduced imports from Morocco, though there is a residual demand for the beans produced in Morocco among some consumers because of its better flavor. This is only part of the story, however. The general decline in prices indicated in Section a above, is probably also due to lower prices of Chinese imports. This is a signal to Morocco that it must become a more efficient producer if it is not to lose more market share. Tariffs are not a problem: Moroccan exports are still below the E.U. quota of 8,500 tons and therefore not subject to duty.

U.S. market position in the E.U.: US exports to the E.U. totaled 298 tons in 1992, down from 5249 tons in 1991, and up from 1990's 146 tons. Germany was the the primary market for US exporters in 1991 and 1992, however, quantities shipped fluctuate significantly from year to year.

c. Frozen Green Beans:

E.U. consumption and import trends: E.U. imports of frozen green beans from third countries doubled between 1988 and 1992. Poland, which is the largest non-Member supplier, has increased its frozen bean exports grow by 120 percent since 1988 to 15,660 tons in 1992. Morocco, which is the second largest foreign supplier, experienced a 20 percent growth over the same period. However, Morocco's share of the import market has dropped from 32% by volume in 1988 to 19% in 1992. The charts in Annex Ten summarize 5-year import trends into France and Germany by major supplier.

Germany is the largest import market for frozen green beans (22,932 tons in 1992), of which almost all of which are supplied by France, Belgium-Luxembourg, the Netherlands and Poland. France (14,369 tons in 1992) sources half of its imports from non-E.U. countries, of which Morocco supplies roughly 80 percent.

On a per ton basis, the value of Morocco's exports to France of frozen green beans are roughly 80 to 90 percent higher than those from Belgium-Luxembourg, the largest supplier, and over three times the per ton value of Poland's shipments to Germany. This is largely due to the specialty nature of the hand-picked beans produced by Morocco.

E.U. Trade Restrictions: There is an 18% ad valorem duty on frozen green beans from Morocco.

Market Potential for Morocco: Generally increasing consumption of frozen products in Europe should benefit Moroccan exports of IQF green beans, provided processors remain price competitive. Reduced transit times and the convenience of shipment in refrigerated trucks directly to European buyers ought to give Morocco an advantage over more distant countries. However, Poland would have an advantage of proximity to the German market. "Extra fin" frozen green beans is a high potential crop for Morocco and the processors should do everything possible to overcome supply problems and control costs to avoid further erosion of its market share. The remarks of the French importer indicate that close supervision of production was necessary. This is an added cost for the importer, and suggests that if the company could find a similar product elsewhere without the cost, Morocco could lose its market. This again points up the need for Moroccan processors to exercise strict quality control of every exported product.

It would be advisable at the same time to look into the growing of varieties which can be produced at lower cost on a large scale and machine harvested. Processors would have to have access or control sizeable blocks of irrigated land for this to succeed.

U.S. market position in the E.U.: The U.S. exported 2971 tons of frozen green beans to the E.U. market, accounting for 9 percent of total non-E.U. imports. The bulk of imports went to Spain. In 1991, U.S. exports totaled 1561 tons, most of which went to Belgium-Luxembourg.

d. Mixed Frozen Vegetables

E.U. consumption and import trends: While E.U. imports of frozen mixed vegetables have risen steadily over the past 5 years, almost all of the growth was captured by E.U. suppliers. Although Morocco has increased its exports over most of the five years, it has not kept pace with E.U. suppliers. The composition of vegetables imported differ somewhat so that comparisons across markets can only be made at a very general level. According to 1992 data, Germany is the largest importer (38,851 tons), followed by the United Kingdom (12,508 tons).

Market potential for Morocco: The export experience of a few Moroccan companies proves that it is possible to produce a product which can compete in the European market. Morocco is a niche player and exports frozen vegetables for couscous, ratatouille, and other niche markets. However, the remarks above relative to green beans about the necessity to control quality and costs apply equally to these products. There is an 18 % ad valorem duty on imports from Morocco.

U.S. market position in the E.U.: The U.S. is a minor exporter of frozen vegetables to the E.U., mixed vegetables included.

e. Cornichons

E.U. consumption and import trends: E.U. total imports of all types of pickles rose by 41 percent over the past five years and much of this growth was captured by non-E.U. suppliers. Turkey and Hungary are now the principal suppliers of pickles to the E.U., accounting for 44% and 33% respectively of imports by volume from non-E.U. countries in 1992, however majority of pickles shipped are not the small cornichons. Morocco supplied 9% of imports in that year.

Germany is the largest importer of pickles (62,446 tons in 1992), with Hungary (25,146 tons) and Turkey being its largest non-E.U. suppliers. The cornichon style pickle represents a small share of the pickles consumed in Germany. France, which is the third largest importer of pickles, sourced 77 percent of its imports from non-E.U. suppliers. In 1992, Turkey (7896 tons) and Morocco (6050 tons) were its largest non-E.U. suppliers. The most popular style of pickle in France is the cornichon.

An analysis of per ton values of pickle imports shows Morocco to be in the upper range of Germany's major suppliers and slightly below the per ton values of France's major suppliers. Annex 10 demonstrates the differences in pickle per unit values between supplying countries to France.

Market potential for Morocco: Morocco's recognition as a supplier of pickles is restricted to the cornichon style of pickle, which is largely consumed in France. Based on rough estimates of per unit values of France's imported pickles, Morocco is, on average, below the per unit values of Turkey,

its closest competitor. However, the trend has been a steady decline in volume of Morocco's exports to France while Turkey's exports have increased ten-fold. Further research is needed to determine the reasons behind the apparent shift in suppliers.

US market position in the E.U.: The U.S. exported a negligible amount of pickles to the E.U. in 1992 (79 tons). The U.S. also has no one regular market within the E.U..

f. Capers

E.U. consumption and import trends: E.U. imports of bulk capers have shown strong growth over the past five years. Italy, the largest importer accounts for much of the growth in bulk capers, and accounts for just under 60 percent of Morocco's 1992 exports to the E.U.. France and Germany are the next largest markets for bulk capers and neither have had significant growth in caper imports. In both markets, Morocco has lost market share to Turkey.

An analysis of unit value of imported capers to Italy shows that Morocco is at levels similar to those of Spain but well above those calculated for Turkey. Similar results are found in the Germany, although price differences with Turkey are smaller. In both markets, the trend over the past five years has been downward in nominal Ecu. In France, Morocco's per unit value has averaged below that of its major competitors, Spain and Turkey and, overall, per unit values have not tended downward since 1988. Figures in Annex Ten shows differences is per unit values of capers to Italy, France, and Germany by major supplying country.

Market potential for Morocco: Morocco enjoys a strong reputation in processed capers in Europe's major import markets. It needs to take advantage of the growing import demand in Germany and Italy through more aggressive marketing. Further research is needed into quality and price differences between Morocco and Turkey, its major competitor to explain why Turkey has been able to expand its market share so rapidly.

g. Tomato Concentrate (Paste):

E.U. consumption and import trends: The E.U. is a major producer and exporter of tomato concentrate. Italy produced 1.6 million tons of tomato concentrate in 1992/93, followed by Greece at 869,000 tons, Spain at 535,000 tons, Portugal at 443,000 tons and France at 190,000 tons. Imports from third countries amounted to only 52,000 tons in 1992, compared to a total supply of 440,000 tons and over 200,000 tons exported by the E.U. to other countries. Principal non-E.U. suppliers were Turkey (40% of the total), followed by China, Hungary and Israel, each with about 10% Moroccan exports in 1992 amounted to less than 1% of total E.U. imports.

Whole peeled tomato production by Italy for the same year was 955,000 tons, which was 85% of total E.U. production.[14]

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[14] "Food News: Europe 1993", Supplement to Food News, Kent, England, September 1993.

The E.U. has gradually lost its export markets for tomato products in North America due to increased production in many other countries. In fact the list of exporting countries continues to grow. E.U. exports of 214,00 tons in 1991 were 100,000 tons lower than the previous year. Accordingly, E.U. processors reduced production beginning in 1990 and stocks of tomato concentrate are down to manageable levels. Canned tomato stocks are not a problem. Production of concentrate absorbs 65 % of production, whole peeled 20%, and other products (such as chopped, diced, and sieved) 15%. Some limited imports have come in from Bulgaria and Israel in the past, but this trade has almost disappeared. Italy is a dominant factor in the E.U. trade in tomatoes; even Spain is finding it hard to compete. Italy is also a strong force in frozen tomatoes, although here imports from non--E.U. countries is more important. Hungary is the largest exporter to the E.U., followed by Turkey.

E.U. trade restrictions: The E.U. has an 18 percent import duty on tomato paste. French quota - 4,500 tons (combined with green beans).

Market potential for Morocco: It is clear that Morocco is a very small force in world market production of canned tomato paste. Exports to the E.U. are very small in comparison to other countries. To attempt to compete in any major way with these other producers would not be a good use of resources. Tomato paste should continue to be a supplementary product of food processors in Morocco, producing for the local market. New products such as tomato powder, tomato flakes, peeled, and sun dried tomatoes may offer better opportunities for growth.

U.S. market position in the E.U.: The U.S. exported 2220 tons of tomato concentrate to the E.U. in 1992. The Netherlands and United Kingdom are its main import markets.

h. Other Canned Fruit

Morocco is not currently an exporter of other types of canned fruit. Competition for E.U. markets from E.U. and third country producers in canned peaches and mixed fruit is intense in what is basically a static or declining market.

Greece is the main supplier of canned peaches (16 million cases in 1992), apricots (2 million cases) and mixed fruit (600 thousand cases). Faced with static markets in the E.U., Greek exporters have succeeded over the last few years in expanding sales to Canada, Mexico, and Japan. Even so, large stocks remain and prices are down.

Spanish exports of canned apricots and apricot pulp (2.4 million cases) were down in 1992 due mainly to tight credit and high interest rates. Canned peach exports (700 thousand cases) increased slightly.

Italy is Europe's leading exporter of canned pears (1.6 million cases in 1992). Canned mixed fruit (3 million cases) and peaches (2.2 million cases) were Italy's other large export products. Higher production costs in Italy are making it increasingly difficult to compete with canned peaches from Greece.

i. Special Products

Paprika oleoresin: The Lukus joint venture in Larache is the sole producer of this specialized product. It is a concentrated resinous substance obtained by solvent extraction and is used both as

a spice (the concentrated form giving it advantages in shipping and handling costs) and as a natural red coloring substance. The product is marketed in Europe and the U.S. by McCormick, one of the joint venture partners. The production process for paprika oleoresin is capital intensive, requiring specialized equipment and a supply of solvent (imported). A joint venture with a major spice company, along the lines of the LUKUS company, would have distinct advantages in that the foreign partner could provide the know-how, a portion of the capital and market access.

Dehydrated vegetables: Dried vegetables are imported primarily for the food manufacturing sector for dried and canned soups and sauce mixes, and convenience foods. Major types of dried vegetables imported are onions, carrots, peas, peppers, celery, etc.

Germany's imports of dried vegetables grew by 32 percent between 1988 and 1992. E.U. member countries account for roughly 30 percent of the total imports. Poland, Hungary, Egypt and China are its major external suppliers.

Tomato powder: Moroccan has successfully exported 200 to 300 tons of tomato powder annually, mostly from the Lukus enterprise.

j. Other Frozen Vegetables

Consumption of frozen vegetables in Europe continues to increase. The figures below for E.U. imports of other types of frozen vegetables over the past five years show a doubling of imports from third countries during this period. Morocco's share of this market is minuscule but for many of the products listed, Morocco is capable of producing for export to the E.U.. (The U.S. is also a minor exporter of frozen vegetables grouped in this category-- 966 tons in 1992).

Table 19: Imports of Other Vegetables, Frozen (tons)*

	1988	1989	1990	1991	1992
Morocco	272	184	549	614	396
Total non-E.U.	77,676	84,045	107,459	145,037	143,009
Intra-E.U.	292,642	331,090	363,414	427,460	433,310
World	370,378	470,970	470,970	572,517	576,334

Source: Eurostat, CN Code: 071080

* Includes frozen mushrooms, green peppers, hot peppers, tomatoes, artichokes, others not otherwise specified.

Frozen sweet peppers: E.U. imports of frozen sweet peppers have grown by 32 percent over the past five years to a total of 42,629 tons in 1992. Almost all of the growth was met by Spain, the Netherlands and Italy. Turkey, the largest non-E.U. supplier, increased its exports by over three-fold in the same period. Morocco has exported since 1990, though quantities have been small (86 tons in 1990, 69 tons in 1991, and 31 tons in 1992) and limited mostly to the French market. The largest import markets for peppers are Germany and the Netherlands.

Other frozen peppers: E.U. imports of frozen specialty peppers have more than doubled in volume since 1988 (5108 tons in 1992), but quantities imported from outside the E.U. are small (1543 tons in 1992). Turkey has established a market for its peppers, having accounted for 38 percent of 1992's imports. Morocco's exports to the E.U., which have been negligible in the past two years, are to the French market.

Frozen mushrooms: Growth in E.U. imports of frozen mushrooms has also been substantial, from 17,216 tons in 1988 to 32,143 tons in 1992. France is the largest supplier (12,547 tons), followed by the Netherlands. Non-E.U. market share has remained constant over the past five years-- 20 percent, with Poland (1138 tons), China (2645 tons) and Chile (855 tons) being major suppliers. Based on interviews with several importers in Germany, Morocco's fresh mushrooms enjoy a small market niche in some European markets. Mushroom consumption patterns vary substantially by variety and further research is needed to determine if Morocco's mushrooms can gain in popularity in the E.U..

Frozen Artichokes: E.U. imports of frozen artichokes grew by 42 percent between 1988 and 1992, but almost all of the import growth was captured by Belgium-Luxembourg (6485 tons) and Spain (3845 tons). Morocco has, however, a small market niche in the French market. In 1992, it exported 53 tons to the E.U., of which 45 tons went to France. France is the largest import market within the E.U., having imported 8346 tons of the total 11,001 tons.

Frozen sweet corn: France and Spain are the only substantial producers in the E.U.. The E.U. is an importer of frozen sweet corn, a total of 66,000 tons in 1992, of which the U.K. accounted for 57%, Germany 13%, and Belgium, Netherlands, Denmark, France and Ireland most of the rest. The EFTA countries -- Scandinavian , Switzerland and Austria -- imported another 10,000 tons. Hungary and Israel, each of which exported 17,000 tons 1992, account for 90% of imports from non-E.U. countries, the balance coming from Canada and South Africa. Hungary was able to export frozen sweet corn to the U.S. in 1993 due to a very short American crop.

France increased imports from Hungary also, after the largest French supplier, Gelcorn S.A. withdrew from the market.[15] This product may provide opportunities for Moroccan processors, depending on how Moroccan production costs compare with other producers.

k. Other New Products

Canned Sweet Corn: Although production of sweet corn grew rapidly in France, Italy, and Spain in recent years, consumer preference has resulted in imports continuing to come in from the U.S., despite shipping costs, an import duty of 8% and a variable levy on grain of 10% in 1993. As a result, "U.S. Fancy Grade" has become the standard to shoot for. U.S. corn is generally sweeter and can be packed without sugar or salt, whereas growing conditions in Europe are not as favorable. Bad weather in the U.S. and France during the 1993 season greatly reduced the pack of canned sweet corn and led to higher prices in Europe, illustrating the vulnerability of the crop to weather in these areas. Morocco is not subject to such vagaries of weather and may be able to profit from that advantage. One Moroccan processor, Surgelstar, is now installing a canning line for sweet corn, having purchased modern equipment from the U.S.

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[15] Food News, October 8, 1993

Frozen strawberries: Poland has become the major supplier of frozen strawberries to the E.U., increasing by 11% to 17,000 tons in 1992. Serbia, once the major supplier of frozen raspberries is now shut out by the UN trade embargo. Poland profited from this situation by increasing its exports. However, consumption is down as consumers resist the high prices. Spanish investors have set up an operation in Morocco and are successfully exporting to the E.U..

Frozen processed potatoes: Morocco could become an exporter of frozen french fries if the Russet Burbank variety can be grown there. The spread of fast food restaurants in Europe and the Mediterranean countries is creating a demand for this product. For example, it was recently reported that Israel is now allowing the temporary importation of frozen french fries since it is unable to produce enough product to the processing plant supplying the McDonald franchise.

Frozen raspberries: A recent article in Food News noted the short supply in Europe of frozen raspberries. Yugoslavian supplies have been much reduced by the war, leaving Poland as one of the largest suppliers to the E.U. Chile has been able to take advantage of this situation, greatly increasing shipments to the E.U. in 1993.

Dried apricots: The bulk of the dried apricots reaching the E.U. are consumed through the retail market sector and are sold either in bulk, in small packets, or in combination of packets with other dried fruits. Turkey is a major supplier of apricots aimed at the retail market because of their bright orange color and soft texture. Breads and pastries are the largest manufactured food products using dried apricots. Iran and South Africa are suppliers to the processing sector. A very small share of dried apricots are channeled through the food sector.

Imports of dried apricots grew by 93 percent between 1988 and 1992 to a total of 6588 metric tons. Turkey, its largest supplier, moved from a market share of 66 percent to 78 percent during the same period, indicating that much of the growth in demand came from retail consumption.

Turkey's 1993 crop was a short one, only 25,000 tons. In December 1993, just before the Christmas season, Turkish exporters were obtaining favorable prices for the product: US$ 3,100 to 3,200 for US fancy grade No. 4s, fob Izmir, compared with $2,900 to 3,000 in early November and 2,500 at harvest. California production fell by 10% compared to last year, to 14,000 tons. Prices were firm at US$ 5.30/lb fob for 25 lb. jumbos, up from $4.95 during the summer. Fancy grade is selling at $4.75/lb.[16]

1. Conclusions and summary of main product and market opportunities

As is evident from the preceding list of products and from the market analysis, the areas of the most dynamic growth are in the frozen and dried products for Moroccan processor/exporters. Morocco has missed out on the majority of the growth in the canned green beans, which went to Turkey based on its duty free advantages and France, with its new technologies.

To date, foreign suppliers have captured very little of the growth in the mixed frozen vegetable category, probably due to the lack of good market contacts for this specialized product. However,

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[16] Food News, November 26, 1993.

there are real opportunities with frozen artichokes, frozen strawberries, frozen raspberries, and dried apricots.

For the dehydrated products, serious processors with good equipment and with solid marketing links have been able to export steadily.

B. THE US MARKET

1. Overview of the U.S. Market

a. Consumption Trends

U.S. consumption of canned fruits and vegetables has shown little growth over the past ten years, and for many product groups per capita consumption has actually declined. Much of the decline occurred because consumers have turned to fresh or frozen forms of the same fruits and vegetables. Per capita consumption of frozen fruit rose from 3.1 lb. in 1980 to 4.1 lb in 1987. Dried fruit and vegetable per capita consumption has also risen over the same period.

US consumers are demanding "lite" canned and frozen fruit and vegetable products, containing less sugar or other additives high in calories, and low in sodium. Growth has been particularly strong for "real fruit juices" and dried fruit and nut snacks; nutritious, microwavable fruits and vegetable combinations; and frozen entrees which include processed fruits and vegetables as side dishes or as main ingredients.

The introduction of aseptic packaging has revitalized somewhat the processed fruit and vegetable industry, particularly for fruit drinks and concentrates, and tomato sauce and paste. However, consumption is not expected to rebound in the near future.

b. Import Trends

US import demand for many processed fruits and vegetables, including frozen and canned, is dependent to a large part on domestic production and consumption patterns. Most processors rely on contracted tonnage for raw product supplies and resort to import markets when shortfalls occur. For this reason, imported tonnage of processed fruit and vegetable products can fluctuate considerably from year to year. Despite potentially large annual fluctuations in imports, however, over the past two decades the U.S. has increased its reliance on imported processed food products to meet consumer demand. The trend reflects the improvements in the quality of internationally traded food products and the price competitiveness of many suppliers.

The US' largest supplier of processed vegetables has traditionally been the E.U., particularly Italy and Spain, and Asia, primarily Taiwan, Thailand and more recently, China. Canned tomatoes, including paste and sauce are the major canned vegetable import. For most canned vegetables, particularly asparagus, green beans, carrots, corn, pickles, peas and tomatoes, imports account for a relatively small share of total U.S. supplies (roughly 5 percent), and this share has been growing at very modest levels. US imports of canned fruit have been growing over the past 15 years, and also account for a small but growing share of total consumption.

Considered by consumers as healthier and more flavorful than canned products, frozen fruits and vegetables, and convenience foods containing fruits and vegetables will be imported in growing amounts for years to come.

U.S. demand for imported specialty products is growing. (Specialty foods include baby foods, soups, beans, canned specialties and ethnic foods.) Much of this is due to higher incomes, the perceived higher quality of many imported products, both in terms of flavor and texture, the greater availability of imported products in supermarkets, and the growing interest in ethnic foods. For processed fruits and vegetables, specialty imports are taking new forms -- dried, canned, frozen, and aseptically packaged. Many of these products contain the finest quality or "extra fancy" grades of raw product. Most products are foreign-branded, and promoted. (Examples are preserves and marmalades, with unique flavor and texture). In general, quantities of imported specialty products are small, compared to other more generic food items.

c. Market Channels

Morocco's imported processed products flow through the US market system to three groups of end users: the wholesale/retail system, the foodservice industry, and the food manufacturer. Overall there are 20 large distribution companies in the U.S.

Wholesale - Retail Channel:

The food wholesale and retail channels for processed fruits and vegetables are controlled by a small number of large and influential firms which dominate procurement through centralized purchasing of products carried throughout a particular chain. Most of these large firms market their products under branded labels.

The growing popularity of private labels, where processors rely on the retailer to market the product, has also resulted in more retail chains vertically integrating into the processing of fruits and vegetables. Morocco could find market outlets through this network if they have good quality but very competitively priced products.

Many of Morocco's processed products are considered by the food industry to be specialty items. Specialty foods are distributed both by large distributors and by brokers and distributors focused on the specialty retail and institutional markets. Retail outlets of specialty products tend to be small in size (fewer than 20 employees). The number of US firms producing, distributing and retailing these items has grown slightly over the past few years, and the industry concentration levels are well below those found for the large-volume processed products.

The Food Service Industry:

The foodservice industry, which caters to "food away from home" consumption, which has experienced substantial growth over the last two decades. US consumers now spend almost 46 percent of each dollar on food away from home, and this share is expected to reach 50 percent by the mid-

1990s.[17]

Market penetration of the food service sector is achieved through linkage with distributors. These food service distributors assume the essential functions of buying, consolidating, warehousing, and delivering product specifically for the foodservice operators. Within the network of foodservice distributors, specialized firms, usually small in size, often handle a particular product line. To gain a foothold in the foodservice market, it is necessary to develop marketing outlets with a fairly large number of distributors.

Food manufacturers and food ingredient suppliers:

Some of Morocco's targeted export products are intermediate food items to be used in the further manufacturing of final food products, such as Moroccan capers used in sauces. Large food manufacturers usually rely on regular suppliers on whom they can depend for timely, large deliveries of a product with consistent quality, taste and appearance. Breaking into the food manufacturing industry with unknown products usually requires the services of specialized brokers. To date, Morocco has exported very little to the food ingredient suppliers.

d. Import Policies

The U.S. imposes tariffs on most fruit and vegetable products. Morocco receives Generalized System of Preferences (GSP) status for many of its exports of fruits and vegetables to the U.S. GSP provides duty free status for the accepted products. Duty-free status is granted for many products from the 21 countries covered by the Caribbean Basin Economic Recovery Act and the Andean Free Trade Agreement. The least developed countries also receive a preferential duty on some products, as does Israel. Annex Nine lists countries receiving GSP, Caribbean Basin and Andean Free Trade status.

With the signature of the GATT Uruguay Round in Marrakech in 1994, there will be many changes in world tariff systems, leading to increasing transparency and smoothing out of the tariff levels. In the U.S. there has already been an impact on the attributes given to GSP for 1995, and will likely lead to an elimination of GSP in 1996. A.M.I. is currently carrying out a study to examine the change in competitiveness from the Uruguay Round.

The North American Free Trade Agreement (NAFTA) has also led to changes in the competitve status of Mexico and Canada vis-à-vis other exporters.

2. The U.S. Market for Moroccan Processed Fruit and Vegetables

a. Overview: U.S. - Morocco trade

The only Moroccan products entering the U.S. in 1992 were pickles, capers, canned apricots, and tomato powder. The total value of these shipments was just under $8 million, of which 96% was

[17] Peavey, S, Kezis, A. and Smith D., "The Foodservice Industry: A Profile and Examination of Eastern Foodservice Distributors" Journal of Food Distribution Research, September, 1989. p. 39-53.

made up of high value tomato powder shipped to the McCormick Co. from the Lukus Cie, its partner in Larache. Some dehydrated peppers from the same operation were imported in 1991, but do not appear in the 1992 figures. Data for the first half of 1993 show imports of 132 tons of paprika oleoresin worth $4.65 million, which undoubtedly came from the same company, the only producer of this product in Morocco.

During a recent set of interviews with U.S. importers of specialty products, it was found that few of those contacted had recent experience with Moroccan suppliers. This situation emphasizes again Morocco's traditional dependence on the French market and the failure of Moroccan exporters to diversify their markets. Moroccan food processors recognize this problem and have universally expressed their desire to correct it.

However, Moroccan processors face a number of obstacles to increasing exports to the U.S. There are few direct sea links to the U.S. and most goods have to be transshipped through European ports, adding considerably to the cost. Fruit and vegetable processors, which have traditionally shipped product to France, have never had to meet FDA standards with respect to sterilization equipment and plant sanitation. Currently, the MAP Project is assisting in this regard by arranging seminars and workshops with instruction by FDA specialists.

Problems mentioned elsewhere in this report which may hinder Moroccan access to U.S. markets are the small scale of most processing plants in Morocco and the unreliability of raw material supply, two factors which make for high costs and lack of competitivity.

In addition, processors have typically packaged their products in bulk, not in retail packs. While retail size can and jar lines do exist, processors are not accustomed to producing a high quality pack with attractive label. Moroccan processors also have problems getting high quality retail size packaging in jars. This latter problem is, however, fairly easily corrected.

In the following paragraphs, we look at the U.S. market for four categories of products: those which Morocco already exports to the U.S. (paras b,c,d,e and f), traditional Moroccan export products which are shipped regularly to other markets but not to the U.S. and which should be further developed (para g), new products which have potential to be exported (para h), and finally those which have little or no potential and which in our opinion do not warrant market development efforts (para i).

b. Processed Apricots

According to USDA estimates, the U.S. produced 108,000 tons of apricots in 1992, of which 84,700 tons were processed. California is the predominant producer of apricots and is the sole producer for the processed market. Average price per ton of apricots for processing have risen slightly since 1990. Table 20 shows quantity and price movements of canned, frozen and dried apricots in California. Over the past three years, total bearing acreage of apricots rose by less than one percent, which reflects the poor consumer market for processed apricots. According to industry contacts, consumer demand for apricots is declining modestly, in part from a greater substitution of canned peaches.

Table 20: U.S. processed apricots, utilization and price. 1990-1992

	1990	1991	1992
Canned			
Tons utilized	64,000	43,000	53,000
Dollars Per Ton	274	287	305
Frozen			
Tons Utilized	11,000	11,000	13,000
Dollars Per Ton	305	308	320
Dried			
Tons Utilized	21,000	17,000	18,000
Dollars Per Ton	287	319	310
Total Tons Utilized	96,000	71,000	84,000

Source: Noncitrus Fruits and Nuts, 1992 Summary, USDA/NASS. July 1993.

U.S. Import Situation:

US imports of canned apricots fluctuate according to prices on domestic and foreign markets. Israel profited from its duty free status to capture a majority of imports in 1990 and 1992. An import duty of 35% is imposed on countries not covered by the GSP -- a device intended to protect California apricot growers and processors. Despite this, Spain managed to ship a substantial tonnage in 1992 (though first half 1993 figures indicate a return to much lower exports). Morocco has had difficulty overcoming the 35% cost disadvantage and shipments have been very small. In the first half of 1993, South Africa exported 278 tons of processed apricots to the U.S. Industry reports are that South African production has increased greatly in the past few years, and processors are offering the product at very favorable prices. (See similar report in Section B above on the E.U. market.)

Apricots are imported in institutional sizes for food service and in cans and jars for the retail trade. Demand is flat for all types and packs but prices have remained firm in the past few years. Imports from Morocco are exclusively unpeeled fruit in institutional sizes (#10 can). Importers of fancy food items seek high quality apricots in glass jars (8, 15, and 32 ounce sizes). This is a narrow market but a new one which Morocco is capable of exploiting if costs are low enough to overcome the duty barrier. The quality of Moroccan canned apricots is not an issue. Importers are generally satisfied on this count.

The U.S. also imports apricot pulp in #10 cans and aseptically -packed drums which is used in jam making and by the confectionary industry. Apricot pulp is basically a by-product of apricot canning since it utilizes fruit which doesn't meet standards for half apricots. Morocco already exports this product to Europe. U.S. imports come mainly from Argentina and South Africa. This is a low value product with very small margins, but it might be profitable for Moroccan exporters if they can negotiate contracts which include both products in one shipment.

Table 21: U.S. Imports of Canned Apricots
(Metric tons)

	1990	1991	1992
Total	874	487	1,379
Israel	549	153	813
Spain	7	60	395
Others	318	274	171
Of which, Morocco	11	18	29

Source: U.S. Bureau of Census (2008504000)

The U.S. import market for dried apricots is much more important. Between 1990 and 1992, the U.S. imported and average of about 8,300 tons of dried apricots per year, of which 8,100 tons come from Turkey at an average price of $2/kg. There is a tremendous potential for Morocco in this area, if it can organize the production.

c. Pickles

U.S. production of cucumbers for processing totaled 589,620 tons in 1992. Florida, Texas and the Carolinas are the major producers for the processed market. Acreages planted and total production of processed cucumbers have been on the decline over the past decade. Per ton values, as reported by USDA, have remained stagnant in nominal terms, and have trended downwards in real terms. The U.S. exported 27,514 tons of cucumber pickles in 1992.

U.S. Import Market:

Table 22: U.S. Imports of Pickles
(Metric tons)

	1990	1991	1992
Total	3,966	3,910	4,754
Poland	648	916	949
Sri Lanka	849	359	785
Israel	669	624	569
Canada	42	196	527
Germany	351	315	500
Other	1,407	1,500	1,424
Of which, Morocco	77	204	120

Source: U.S. Bureau of Census (2001100000)

The U.S. imported about 4700 tons of processed pickles (excluding pickles in brine) in 1990 and 1991. It is too early to tell if the higher figure for 1992 marks an upward trend. Fifty-five percent of the 1990 total came from three countries: Sri Lanka, Israel, and Poland. By 1992 this figure had dropped to 48% as Canada and Germany increased their exports. German shipments are probably reprocessed product from Eastern Europe. The balance of imports in 1992 came from 43 other countries. The sources of these smaller purchases vary from year according to price. Morocco is in this category, U.S. imports having varied from 77 tons to 204 tons over the three years.

Through its GSP status, Morocco's exports of processed pickles are duty-free. Israel, the Caribbean and Andean countries also receive duty-free status. Countries not receiving GSP status, face a 12 percent duty on a per kilo basis.

The U.S. also imports about 2,500 tons annually of pickles in brine for reprocessing. Mexico and Guatemala supply almost all of this quantity, Morocco none.

Demand for pickles in general is not expected to grow in the medium term in the US. Most pickle consumers are older, and many potential young consumers perceive pickles as unhealthy due to their high salt content. Per capita utilization of pickles was at an all time low in 1992, at 4.6 pounds (farm weight).

Cucumber pickles vary considerably in taste and size; consumer preferences differ by region and by ethnic group. The primary types of pickles marketed in the U.S. are dill, sour and sweet. The small gherkins are a popular style of sweet pickle, and the French version, cornichons are a less sweet version of gherkins. Demand for this type of pickle -- the French styled "cornichon" -- in the US is limited primarily to restaurants and specialty shops. Many U.S. food brokers are not interested in importing the product because quantities are so small, so importers tend to be in the specialty or fine food line. One broker indicated that he imported Moroccan pickles only in institutional sizes for food service, mainly because Moroccan retail packing was not reliable. This would indicate that the specialty or retail market requires exceptionally good packaging and labeling. While the market is limited, Moroccan exporters could probably increase their sales by offering brokers quality cornichons together with capers, both attractively packaged for the retail trade.

d. Capers

U.S. production and consumption: U.S. production of capers is negligible and statistical data is not available. Considered a condiment at the retail level, capers are consumed in small amounts and irregularly by consumers. Capers are used by food manufacturers as flavor enhancer in sauces.

Table 23: U.S. Imports of Capers, Finished
(Metric tons)

	1990	1991	1992
Total	556	395	290
Spain	453	329	253
Others	103	66	37
Of which, Morocco	12	28	2

Source: U.S. Bureau of Census (2001902000)

U.S. imports of finished capers (ready for consumption) declined between 1990 and 1992. Spain has been the predominant supplier during these years, while Morocco supplied only 2 tons in 1992, after reaching as high as 28 tons in 1991 (7% of total imports). Morocco has had more success in the "provisionally preserved" category (capers packed in brine for further processing) Of the total U.S. imports of 162 tons, Turkey supplied 96 tons, Spain 35 tons, and Morocco 31 tons. Both Morocco and Spain benefit from duty free entry of bulk capers into the U.S. Food brokers importing capers from Spain in retail packs (3 and 5 oz jars) report that at least some Spanish suppliers buy their capers in bulk from Morocco for reprocessing.

Capers imported in smaller than 3.4 kilogram containers face an 8 percent rate of duty. Israel, the Caribbean and Andean countries receive duty-free status for both container sizes.

One American importer stated that he currently brokers imports for a reprocessor in 55 gal drums--240 drums so far this year, though amounts vary from year to year. According to several importers, Turkey is Morocco's major competitor in this product and is successful because of better prices and better business practices.

While importers do not foresee strong growth in this market, Moroccan capers are well regarded and additional sales could be achieved by aggressive marketing. Morocco should ship capers in retail packs and take advantage of the additional value added, rather than letting Spain benefit in this way from Moroccan goods. Promotion at the U.S. "Fancy Foods" trade show would be a good way to do this.

e. Dehydrated Tomatoes

U.S. Production and Consumption: U.S. production of dried tomatoes is not currently recorded separately from that of fresh tomatoes. Most production of dried tomatoes is concentrated in California. Being a relatively new product to consumers, quantities consumed of this product remain small; however, it is considered a product with growing demand.

Table 24: U.S. Imports of Dehydrated Tomatoes
(Metric tons)

	1990	1991	1992
Total	8,030	5,887	7,786
Morocco	3,184	1,887	2,759
Spain	1,605	1,437	1,846
Switzerland	1,548	719	1,444
Others	1,723	676	1,737

Source: U.S. Bureau of Census (07129075000)

U.S. imports of dried tomato (powder, flakes, and whole dried), which have been between 6,000 and 8,000 tons annually, come mostly from Spain, Morocco, and Switzerland (imported from other countries and repacked). Morocco's success with this high-value product is due to one firm, Cie. Industrielle de Lukus in Larache. The same company produces dried pepper for the U.S. market. Figures on U.S. imports of dried peppers were not available. Further investigation of this "niche" market is needed to determine if there is scope for expansion of exports of this product to the U.S.

Morocco's exports of tomato products to the U.S. are subject to a 13 percent rate of duty. Caribbean Basin and Andean countries receive duty-free status.

f. Paprika Oleoresin

This highly specialized product, extracted from paprika, is used in the food industry as a flavoring. Official U.S. trade statistics do not record any imports of this product until the first half of 1993, at which time the data show that 194 tons worth $6.7 million was imported. We suspect that the McCormick Co. is the exclusive importer of the product, which is made at its joint venture plant in Larache, LUKCOR. McCormick supplies the majority market. Additional production in Morocco should not be attempted without further investigation. South Africa is becoming an increasingly important supplier of paprika oleoresin, and is able to produce the raw material for well below Moroccan prices.

g. Other Moroccan Export Products

Canned specialty vegetables: Specialty varieties and sizes of canned vegetables may represent potential market niches for some of Morocco's products. Competition between foreign suppliers of standard processed vegetables, such as tomato products, canned green beans, peas, artichokes, and sweet corn, is based strongly on price, and Morocco does not appear to have a comparative advantage in these markets. Further market research is needed into individual specialty products to gather information on taste, appearance and packaging of selected specialty vegetables.

However, importers in these markets are looking for high-quality, well-packaged product. One specialty product importer in New York is perhaps typical; he imports canned green beans from

several sources-- primarily Germany, France and Italy -- wherever the quality and price are best. He states that he imported several shipments from Hungary on a trial basis "but it did not work out". Buyers of these products can afford to be "fickle" because of the amount of product on the market, but they are always on the lookout for a "better deal". Exporters need to develop long-term relationships based on delivery of consistent quality at competitive prices.

Frozen vegetables: U.S. imports of frozen vegetables have skyrocketed in the past decade, from 72,762 tons in 1982 to 643,429 tons in 1992. The bulk of this growth has been in frozen broccoli, cauliflower and green peas, sourced from Central and South America. There have been no imports from Morocco in this category.

Competition from Central and South America will intensify for frozen IQF fruits and vegetables. Many countries are benefiting from major investments in freezing, storage and transport facilities, and processors are fine-tuning their production to the U.S. market. In addition, investments at the production level have improved raw product quality. Morocco will have difficulty competing against these suppliers, particularly with those countries eligible for special tariff reductions.

While there is considerable potential for the production of IQF vegetables in Morocco, the chief market will be the E.U. countries.

Other dehydrated vegetables: between 1987 and 1991, the U.S. imported an average of 112,293 tons of dehydrated vegetables. The average price of these products has been increasing steadily from $.79/kg in 1987 to $1.27/kg, in 1991. Morocco's exports under this category, primarily the dried tomato powder and paprika averaged 1,500 tons/year in 1990-91 with an average price of $4/kg. This category needs further study in order to be able to identify the specific opportunities.

h. New Moroccan Exports

Canned Artichokes: U.S. imports of canned artichokes totaled 39,357 tons in 1992, a small rise from previous years. The International Executive Service Corps in Morocco, together with MAPP, is assisting a joint Spanish - Moroccan venture to produce canned or jarred artichokes. A New York importer, Joseph Caragol, is advising on marketing of the product. He is optimistic about the US market for marinated artichokes in 6 oz. glass jars and 3 kg. cans. There is no duty on the product as Morocco has GSP status for this product. The Caribbean Basin and Andean countries also receive duty-free status. Canada and Israel receive reduced rates of duty. Other countries are subject to a 17.5 percent rate of duty.

Dried apricots: A Moroccan company, Top Foods, has exported samples to several U.S. companies over the past year, with mixed results. One importer recently requested a 50 pound sample for evaluation. The MAP Project is assisting in this effort. The first samples were not as sweet as Turkish products, which have had some success in the U.S. market, and it remains to be determined if this is a question of variety or maturity of the fruit.

Morocco is eligible for duty-free status from its GSP agreement. Canada, Israel, the Caribbean basin and Andean countries also receive duty-free status. Other countries are subject to a 2.2 cents/kg. rate of duty.

Roasted Peppers: The MAP Project and the IESC are assisting a Moroccan grower/processor with this project, intended to develop both roasted bell peppers and roasted pimentos (hot peppers) which are acceptable in the U.S. and European markets.

3. Conclusions on the U.S. Market

a. Summary of Opportunities to the U.S.

Morocco could increase the dollar volume of its exports to the U.S. of such products as pickles and capers by progressively shifting from bulk packaging to higher value-added retail packaging. The buyers of these products are importers and brokers who deal in specialty products of high quality. The markets are not large and are also not expanding, but Moroccan exporters could capitalize on its reputation for quality in these goods if they can produce them competitively in glass. It is recommended that exporters participate in the next "Fancy Foods" trade show, if not with a booth at least by attending, talking to importers and learning more about the market.

There is no shortage of canned apricots, both retail and institutional packs, in the U.S. and the market is highly competitive. Morocco has to overcome a 35% import duty and the only way to do that is to offer large lots at the lowest possible prices. However, U.S. imports will demand quality and on-time delivery. Processors will also have to be equipped to pack in the #10 U.S. can size.

The Lukus group has had considerable success exporting high-value dehydrated tomatoes (tomato powder) to the U.S. Their success is due in large part to the "captive market" it enjoys, since the buyer -- McCormick -- has an exclusive supply arrangement with them. The same remark applies to dehydrated paprika and paprika oleoresin. Further study is needed to determine if there is potential for sales of these products outside the McCormick system. The success of the Lukus group is a good example of the benefits of a joint venture partner which provides both the technology and a major part of the market for the final product.

The potential for other canned fruit and vegetables is quite limited, in our view. Canned apricots, peaches and pears are in chronic oversupply on world markets. Some 49 countries export canned vegetables to the U.S. and buyers are able to shift purchases to whoever offers the best price. Morocco has a comparative advantage in French-style (extra fin) green beans, but Americans have unfortunately not developed a taste for this product. It could, however, be promoted through specialty food stores (along with cornichons and capers, as mentioned above).

Canned artichokes in glass -- another specialty food item -- is currently being investigated and may offer some potential. The same is true of roasted peppers. Finally, dried apricots and sun dried tomatoes may have promise, though it remains to be shown that the less sweet product from Morocco will satisfy American tastes for apricots and whether Morocco can compete with Italian tomatoes.

b. Products Not Recommended

Tomato paste: The U.S. is a major producer and importer of tomato paste (concentrate), most of it in institutional sizes or bulk in drums. In the face of increasing U.S. production, imports declined sharply -- from 62,000 tons (retail and bulk pack combined) in 1990 to 20,000 tons in 1992. Italy, Mexico, Chile, and Hungary supplied most of this product. Morocco exported a few hundred tons

to the U.S. in 1990 and 1991. This is a highly competitive market yielding small profit margins only to the most efficient producers. Morocco should not attempt to compete in this market. Instead, more attention should be given to other tomato products, such as powder and flakes, and possibly sun-dried tomatoes packed in olive oil.

Canned asparagus: In the opinion of U.S. importers, the market for this product is small, both for the white and the green, and the U.S. market has been saturated by cheap suppliers, especially China and Chile.

Frozen strawberries: There is an abundant supply of frozen strawberries in the U.S., with Mexico and Ecuador being the main shippers supplementing the large domestic supply. Morocco should concentrate on the European market for this product.

IV. QUALITY OF PROCESSED FOODS

Quality in processed fruits and vegetables is a combination of two elements: food safety and commercial quality. Food safety focuses on methods to eliminate health hazards to the final consumer. A valid food safety program will insure that every container of processed food is free of microorganism with public health significance capable of reproducing under normal condition of storage and distribution (commercially sterile). In the US, food safety is regulated by the Food and Drug Administration (FDA) and if the product contains animal particulates, the Food Safety Inspection Service (FSIS). Control records must be on file and available for inspection by the FDA and FSIS at all times.

While a Food safety control program addresses health risks, a commercial quality program assures that the product meets USDA standards such as size, color, fill weight, etc. (7 CFR Part 52) and quality specifications of the buyer. The control program for commercial quality is completely independent from the Food Safety program and normally monitored by the company's quality control team. Commercial specifications generally start with FDA and FSIS standards as a minimum requirement.

A. FOOD SAFETY

As mentioned above, food safety concentrates on eliminating potential public health risks in products. Health risks are caused by contamination of a product due to presence of microogranisms, the most dangerous being Clostridium botulinum, Staphylococcus aureus, and Salmonella.

A food safety program can be divided into three areas of concern:

(1) Sanitation and Good Manufacturing Practices

(2) Thermal Processing

(3) Container Integrity

These areas are interdependent and equally important to the food safety program. Each plant is individually responsible for designing, implementing and monitoring their food safety program. In fact in the U.S., plants are required not to analyze the flow of their products to identify hazardous points in the process and to determine which are the critical points for controlling any deviations in the process (hazard analysis and critical control points -- HACCP).

1. Sanitation and Good Manufacturing Practices (GMP)

Sanitation and Good Manufacturing Practices (GMP) insure that the product being placed in a container is as clean as possible (minimal level of microorganisms) and does not contain any foreign objects that may cause injury to the consumer. To accomplish this goal, US food processors have developed standard practices to follow in all plants.

Safeguards such as screening all windows to keep out birds, constructing a separate closed warehouse for ingredients to avoid pest infestation, and leaving one meter walkways in storage areas to impede rat infestation are used to establish and maintain a clean processing environment. Training personnel to wear hair restraints, remove jewelry, wash their hands upon entering the factory and after using the toilets reduces the chance of contamination in the processing line. Stainless steel easy-to-clean processing equipment and a structured clean-up procedure with proper cleaning equipment helps reduce microbial buildup on processing machinery.

In November 1993, two specialists from PhF, a U.S. process authority, visited several Moroccan plants applying US FDA Inspection Standards. The following observations on sanitation and GMP were noted[18]:

1. Lack of adequate clean-up equipment and protocols. Little respect is given for the cleaning procedures that are used.

2. Poor sanitary design of processing equipment make it difficult to clean.

3. Pest control programs were not in place. Problems witnessed were fruitfly infestation, rat infestation and birds in the processing areas.

5. Sanitary (toilet and handwash) facilities were not equipped with hot water, soap or sanitizers, towel or driers.

6. Plant tear-downs are not conducted on a seasonal basis.

2. Thermal Processing

Thermal Processing is used to inactivate microorganisms present in the product. This is accomplished through pasteurization or sterilization of the product. To effectively control a thermal process, the superviosr must understand the various types of microbial organisms, why thermal treatment is necessary, the difference between low-acid and acidified foods and how they should be thermally treated, records that should be kept, and the risks of contamination before, during and after processing.

To determine the type of thermal process, the product is placed in one of two groups: low-acid (pH above 4.6) and high-acid (pH of 4.6 or below).

Low-acid foods (non-acidified black olives, green beans, fish) must be sterilized (use of high heat) for a precise period of time and at a precise temperature in order to render a safe product. The time and temperature of sterilization depend on the can size, the ingredients (sugar, starch), the product style (chopped, sliced, whole), the fill weight, and many other parameters. It is highly recommended by the FDA, and for certain products required that the sterilization process be established by a process authority (see "What is a Process Authority" below).

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[18]It is important to note that these problems were not universal to Moroccan processing plants, though many of these problems were noted in most processing plants.

High-acid foods (pineapple and apricots) can be pasteurized because the low pH inactivates some of the microorganisms. These foods only require a low-temperature treatment (pasteurisation) to kill the remaining microorganisms.

The microogranism Clostridium Botulinum is of most concern to processors for two reasons: (1) when the bacteria grows, it produces a deadly toxin (.2 g can kill a 100 kg man) and (2) the bacteria is found in the soil and water almost everywhere in the world. High-acid products are not at risk as long as the pH is 4.6 or below. Low-acid products are very much at risk and must be given a complete sterilization treatment to achieve a safe product.

PhF is recognized by the FDA as a competent process authority.[19] The PhF Specialists noted the following observations in the Thermal Processing area[20]:

1. Long delays between can seaming and retorting

2. Sterilization and Pasteurisation process were not established by processing authorities and did not have valid temperatures and times.

3. During sterilization and pasteurisation cycles, temperature and time were not verified and not recorded.

4. The time and temperature required for each product and each can size were not available at the autoclave.

5. Different size cans and jars were being sterilized and pasteurized at the same time.

6. High-acid products were not checked to see if pH was less than 4.6.

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[19]A process authority is a group of qualified persons having expert knowledge in thermal processing requirements for high and low-acid foods in closed containers. They establish thermal processes, handle deviations, keep permanent records of their work, and act as a liason between the FDA and the plant. They are legally responsible for the processes they establish.

Adequate facilities, instrumentation and equipment must be used to determine the heat processing requirements of the food product. The process authority must take into account type, range and combinations of variables that could be encountered at the plant. They are routinely engaged in making thermal process determinations in a processing environment. Individuals are highly trained with knowledge of microbiology, engineering mathematics, food technology, chemistry, metallurgy, and physics.

At the present time, there is not a competent processing authority present in Morocco to determine the temperature and time of sterilisation for low-acid products. Companies are taking thermal processes from books, sterilizer manufacturers and individuals without having the necessary laboratory tests completed. This poses a serious health threat in low-acid products.

[20]As with, GMP, these problems were not universal, though they were commonly found.

3. Container Integrity

Containers must be evaluated before use and after closing to insure that all seams are sealed correctly. If the seams are not intact, spoilage of the product will occur. An evaluation is a standard procedure by which the can is examined for external defects and then cut open and measurements taken of the seam itself.

The PhF specialists noted the following observations concerning container evaluation and handling, present in most of the companies visited:

1. Although the can evaluation procedure is almost identical between France and the United States, complete can evaluations were not being conducted in any of the plants and jar evaluations were not done on a regular basis. The source of the problem was two-fold: lack of training and lack of basic tools to accomplish evaluation (micrometers).

2. Containers were not examined on arrival to evaluate the quality and dimensions of the lids, cans, caps and jars.

3. Metal cans did not come with manufacturing specifications.

4. Can evaluation after closing was limited to visual exams of the outside. No records were kept.

5. Jars were given a security evaluation but not on a regular basis (every 4 hours) and a few plants kept records.

6. Cans and jars were roughly handled which could easily lead to spoilage.

7. Cans and jars were handled while still damp and warm and wiped with rags. There is a high risk that the seam will momentarily relax and "inhale" microorganisms.

8. Cooling water was not sanitized which could lead to contamination in the cooling stage when the cans constrict and may inhale microorganisms in the cooling water.

9. Coding of cans was done after the thermal processing instead of after the closer. This could easily lead to a mix-up of products and giving the wrong thermal process to a can.

10. Baskets in the autoclave were not marked with heat sensitive tape or paint to indicate if the cans in the basket had been sterilized. High risk that a basket could go directly to the warehouse without being sterilized.

Recordkeeping and HACCP: Outside of the fish and milk industries, records are not kept on any aspect of production on a consistent and timely basis. This does not necessarily come from a lack of desire to keep records, but rather a lack of training on which elements to control.

The HACCP approach focuses on in-line control rather than the traditional end-of-line statistical sampling. Critical points are identified that must be controlled with documentation. Loss of control of any critical point would represent a compromise to food safety and the product would be isolated

for observation.

The FDA requires that a HACCP approach is used in every plant - sampling and statistical control are not enough to protect the consumer. The FDA regulations 21 CFR were constructed using HACCP and require that documents are kept of critical points in the processing line.

Deviations: Even the best HACCP Plan does not work perfectly 100% of the time. When a critical point is out of control it is called a deviation. The FDA requires that all of the cans association with the deviation (with the same code) are isolated for observation and, if necessary, lab analysis. A process authority should be contacted to determine what analysis needs to be done and to give a recommended course of action. This may involve incubation time, reprocessing the product, or even destroying the product if a dangerous toxin has been found.

At present, plants in Morocco do not address deviations in their production lines. Instead they watch for problems in the warehouse - either by sampling or finding swollen or exploded cans. This issue needs to be addressed through training plant supervisors and establishing deviation procedures with the EACCE.

B. COMMERCIAL QUALITY

Commercial Quality Standards are a combination of international norms and buyer requirements. The international norms are embodied in Codex Alimentarius. Individual buyer requirements vary by country, by product and by market demands. Thus the Moroccan norms should meet the international norms, but be flexible enough to allow for the buyer to find what their looking for. For example, tomato paste can have a variety of colors. Some countries prefer darker red color and others an almost orange shade of paste.

C. INSTITUTIONAL FRAMEWORK

1. Present Role of the EACCE:

The EACCE was designed to control and coordinate fresh, frozen and processed foods exported from Morocco. Regulations were formed based on European codes of plant safety and sanitation. The EACCE administration hired food engineers and veterinarians from IAV in Rabat as inspectors to enforce these codes. At the main office in Casablanca, an in-house labortaory was equipped to conduct microbial counts on export samples.

Regulatory versus Advisory: The current program of the EACCE concerning processed foods consists of both advisory and regulatory activities. The advisory actions include seminars on quality, accumulation of technical documention, and work on technology transfer. They would like to expand these activities to include performing heat distribution and penetration tests, establishing thermal processes, handling process deviations, and receiving all technical documents concerning food processing. The regulatory activities include development of regulations for processed foods, plant inspections, product testing, licensing of plants and administrative action for non-compliance with the regulations.

There is a conflict of interest inherent in these two roles of advisor and controller. One cannot recommend a process and then objectively conduct a control to verify its validity. In the US, the roles are separated to avoid such a conflict. The FDA focuses on regulation and inspection while process authorities and associations concentrate on advisory services. The Moroccan government needs to develop a similar division of roles in order to move forward in the development of the Moroccan processed food industry.

Domestic versus export regulations: There are dual standards for processed food - one set of regulations enforced by the EACCE for exported products and another set of standards for products geared toward the domestic market. A plant that processes product for both the export and the domestic markets has essentially two standards operating in the same establishment. During the visit of the FDA agent, the dual standard system was identified as a danger to the commercial sterility of products being exported because there is no way of assuring that the product was processed under export standards. The FDA requires that the same standards be used for domestic and export production to insure that every container processed is safe for consumption.

Currently the control over domestic products is not clearly designated to one body. Control of domestic products is currently under discussion by various members of the Moroccan Administration as an issue of great concern (just as it is to the FDA). Certainly the ideal situation would be for the same standards of food safety to be applied to all products produced in a plant and by the same inspectors.

2. Future Role of EACCE

The FDA is looking to the EACCE as a regulatory body to establish and control norms which meet US FDA Regulations. The first part of this project is the translation of specific sections of 21 CFR into French. The goal of the project is to use the translation as a base for developing and adopting a set of Moroccan food processing regulations. Assuming that this takes place, what role should the EACCE be playing to guarantee to the FDA that products exported out of Morocco are up to US Standards?

The EACCE would need to limit itself to a regulatory function rather than advisory, coordinative, etc. Their role would consist of developing regulation, inspecting plants for compliance, registering processes (does not mean verifying process - simply a written file that must be complied with), distributing information concerning processing norms for Morocco (which must be up to US and E.U. standards). The outreach work would include seminars, posters, booklets and other publicity to educate Moroccan Processors on Moroccan Food Processing Regulations. The concept that each plant is responsible for designing, implementing and maintaining a Food Safety Program must be emphasized. The responsibility of the EACCE should be expanded to include domestic and export production in order to have the same standards for all processed foods. If the EACCE concentrates on implementing their regulatory functions in an organized and motivated fashion, they will provide a structured base for fod safety and quality control in the processing industry.

3. Accompanying Changes

If the EACCE is to concentrate on regulatory functions, changes must occur in several areas simultaneously in order to support the long-term growth of the industry.

1. A Commissioner (or equivalent thereof see 21 CFR Section 108) would have to be appointed to review violators of the code and issue emergency permits to processors.

2. A court of justice would have to be set-up or reserved to hear trials concerning processing violations. A system of monetary penalities for infractions of code should be developed. A plant must be legally responsible for their processes and their final product.

3. A FDA recognized competent processing authority would need to be present in Morocco to address process filings and deviations.

4. An institute, processing authority or association would need to organize a Better Processing Control School at least once a year.

5. Assocations would have to take a more active role (i.e. support some of the costs of lab tests for members, report on sector activities, sell documentation and books on food processing etc.)

NOTE: The above changes are recommended for the long-term growth of the Food Processing Industry. However it should be noted that individual plants, on their own intiative, can upgrade their food safety programs to FDA Standards and raise commercial quality levels to buyer requirements for exporting products to the US.

D. TRAINING

The FDA has recommended that a training program be implemented in Morocco for plant supervisors and EACCE inspectors. They suggested the following series of three courses:
GMP/HACCP: Good Manufacturing Practices/Hazard Analysis and Critical Control Points would cover basic sanitation, plant operations, anlysis of possible hazards in the plant and the critical points that must be controlled by written records.

LACF/ACF: Low Acid Foods/Acidified Foods would focus on thermal processing: understanding the basic science, low-acid and high-acid foods, techniques of sterilization, critical points of thermal processing that must be controlled by written records.

BPCS: Better Processing Control School would review previous two courses and require a series of exams on the FDA Regulations (sections of 21 CFR).

The courses must be followed in sequence by the same individual who would receive a Better Processing and Control School certificate upon successful completetion of all exams. The certificate states that the recipient is aware of US FDA regulations and therefore is able to supervise thermal processing, container evaluation and quality control.

While the solution of training will address the Food Safety issues mentioned above, it will not be an end-all solution. There are some significant barriers to effective implementation of a responsible Food Safety Control Program in the plants that need to be considered: information flow, quick fix-it solutions, the work environment, and focus on consumer safety.

Information Flow

Knowledge still means power in the Moroccan industry and thus there is an unwillingness to share information. Documentation is kept in the office of one person under lock and key. This is true at the EACCE, just as it is true in each plant. Without well-informed employees even the best quality program will not work.

Quick Fix-it Solutions

The tendency to use quick fix-it soluctions also known as the "receipe approach". Instead of performing an indepth analysis on a problem, a solution for a similar problem is applied whether or not the situation is identical. The key to a good solution is a good problem definition. If the employee, supervisor or inspector does not understand the real problem, how can he offer a solution?

Work Environment

In general, the work environment in Morocco does not contain the same level of work ethic, team spirit and loyalty to the company as in many developed countries. Naturally these elements play a critical part in the success of any Food Safety program and can be developed through a variety of motivational programs (employees participate in developing programs) over a period of several months. Moroccan processors should understand that the key to food safety and quality control programs is the dedication of each employee to his job, his fellow employees and the company.

Focus on Consumer Safety

At present, there is little to any focus on the final consumer in terms of food safety. The reason is fairly simple. There are no direct reprecussions on a company if a case of food contamination is reported. If the company is not concerned about the final consumer, then the employee's working for that company are not concerned either. A Food Safety Program must have every employee focused on achieving 100% commercially sterile containers.

V. SUPPORTING ENVIRONMENT FOR PRIVATE ENTERPRISES

The development of the agro industrial sector in Morocco has been affected by numerous factors in the surrounding environment both in and out of Morocco, which includes policies and supporting institutions. The first part of this chapter looks at the supporting institutional environment, while the second and third parts look at the Moroccan policies and the European trade and production policies.

The main conclusions of the chapter are that the environment surrounding the supply of raw material is generally positive and improving, due to investments in irrigation, and policy reforms surrounding land ownership, use of irrigated lands and other investment policies. On the trade front, the E.U. has provided a double edged sword in its trade advantages to Morocco. While facilitating access to their markets, they have channelled the Moroccan production and investments into a few limited lower value product lines. The future is still unclear based on the continuing negotiations in the post GATT period. Financially, as long as interest rates remain high, the export financing subsidy program should be continued. Additionally, the private sector's internal organization is quite weak, food safety issues need greater focus, and the MAMVA should redefine the role that it is playing vis-à-vis the private processors.

A. INSTITUTIONAL SUPPORT

1. Trade Associations

The professional organization of the processed fruit and vegetable sector is in the hands of the oldest trade association in Morocco the Federation of Food Processing Industries in Morocco (FICOPAM). Created in 1932, the FICOPAM worked primarily with French owned and managed companies up until 1972, when the firms changed hands to Moroccan owners. From 1972 to 1984, the FICOPAM was still fairly dynamic, serving as the industry's interface with the OCE which managed all of the exports. Since the de-monopolization of the OCE, in 1984, the role of the FICOPAM has decreased steadily and membership participation has been less active.

The federation is made up seven associations[21], and many of the members belong to more than one association, which strengthens the overall federation. At present, the FICOPAM is trying to define its role. In December 1993, it held its first general assembly in four years. It has recently hired a new director who is charged with developing a program of activities for the association, but it continues to be hampered by lack of funding. Now that the processors are free to export as they wish, no longer requiring membership to the FICOPAM to get their share of the exports, the FICOPAM's membership has suffered.

From a listed membership of 80 firms, which account for over 90 percent of Moroccan processed food exports, the FICOPAM has only between 30 and 45 active members (31 members paid their dues in 1993). However, these are the largest and most dynamic firms in Morocco and still account for the vast majority of production and exports.

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[21] Fruits and Jams, Condiments (olives), Various Vegetables, Pickles, Dehydrated products and Paprika, Capers, and Frozen Products

The definition of a role for the FICOPAM, identification of services which are needed by its members and their application will be a necessary step for improving the future of the industry. However, this can only occur if the member companies are willing to commit financially to making it succeed.

2. Government of Morocco Support to the Food Processing Sector

The government policies affect agribusiness development through a number of different institutions and regulations:

- the Regional Offices for Agricultural Development (ORMVA) which manage the distribution of irrigation water;
- agencies which support the production and marketing of product: SASMA, EACCE, CMPE, etc...
- government policies concerning credit and financing

a. ORMVA and agribusiness

Supply of fresh fruits and vegetables for processing comes primarily from the irrigated zones:

- green beans from the Loukkos, the Doukkala, and the Tadla;
- pickles from the Tadla;
- tomato in the Loukkos and the Gharb;
- and apricots from the Haouz.

This distribution is due primarily to the facilities which public investment has developed in the irrigated perimeters. The availability of water, roads, and electricity have led to lower production costs by dropping the costs associated with delivering the product to the factories and benefitting from economies of scale. However, if the numbers of successful businesses in these regions, there are still a number of constraints which slow the increase of production in the irrigated perimeters.

The irrigated perimeters are managed by the ORMVAs cover about 500,000 ha divided between 125,000 farms in the nine regions.

These perimeters have had an intensive development since the promulgation in 1969 of the Code for Agricultural Investment (CIA). The CIA has defined the rules and the respective roles of the State, the ORMVAs and the farmers.

Table 25: Breakout of the irrigable regions

	Irrigable Surface (ha)	Gravity Irrigated (ha)	Irrigated by aspersion (ha)	Total	Traditional
Doukkala	61000	27500	33500	61000	-
Gharb	85000	69500	16300	85800	-
Haouz	77400	47100	300	47400	30000
Loukkos	19400		19400	19400	-
Moulouya	65300	51000	14300	65300	-
Ouarzazate	26400	400		400	26000
Sous-Massa	32700		30500	30500	2200
Tadla	97000	97000		97000	-
Total	20800	1500		1500	19300
	485800	294000	114300	408300	77500

Source : LSIAP 2, March 1993 - World Bank "Evaluation Report "

The State manages the vast majority of the hydro-agricultural equipment (60% in theory but 80 % in reality[22]). The ORMVAs are supposed to develop and manage this irrigation network. They are financed by the sale of water and state subsidies. The farmers plant based on a plan decreed by the Ministry of Agriculture. They are only free to plant whatever they want on one fifth of the surface they have available. The land title laws were changed at the time of the application of water (restructuring of lands with firm title and interdiction to divide them into smaller parcels, ..). The CIA had focused on the policies targeting self sufficiency up to the middle of the 1980's, such as sugar, dairy, and cereals, as indicated in the table below.

The preassigned land usages (cereals, forage, and sugar crops) excluded new tree plantations and limited the amount of space available for vegetable production on free land or for intermittent crops, which were liberalized in 1990.

Often the tree and vegetable crops were developed after the development of the pumping irrigation in the Tadla, Gharb, Loukkos, Souss, in particular.

[22] Study on Tariffication of Water in Morocco, Agroconcept for the Administration of the Public Works, 1993.

Table 26: Land Use in the irrigated perimeters

	Doukk.	Gharb	Haouz	Louk.	Moul.	Souss-Massa	Tadla	Total
Cereals	25700	24600	11500	800	14200	17700	47500	142000
Legumes		4000	500	6100				10600
Sugar Beets	14500	7100			4000		19400	45000
Sugar Cane		9500		5700	1100			16300
Cotton	1100	1600	1900		100		11500	16200
Vegetables	16600	2200	1900	2200	8900	4000	10100	45900
Fodder	11900	9900	2600	600	3000	2100	18000	48100
Floriculture	100	9600	14500	400	17800	2800	17400	62600
Other	4800	10600			2900	1700	800	20800
Total	74700	79100	32900	15000	52000	28300	124700	407500
Intensity of cultures	125%	92%	69%	101%	88%		129%	102%

Source : LSIAP 2

Since beginning the policies of adjustment, a new irrigation policy is being developed. This policy is guided by new principles:

- improve the efficiency of investment and the flexibility of the irrigation networks (passing to irrigation on demand);
- improving the use of the water by liberalizing the use of land and revising the tariff structures; and
- catching up on equipping the perimeters for hydro-agriculture (especially the Haouz).

This new policy is very clearly in favor of developing fruit tree and vegetable crops which are both more demanding for reliable water supply and add greater value per cubic meter of water used. In addition, the placement of future hydro-agricultural investment, in particular those foreseen in the Tessaout is well adapted to the needs of these cultures.

An experience with the new division of responsibilities flowing out of this policy is evident in the sugar sector. This is based on the cooperation between factories, the ORMVA's, and the grower associations to establish annual work plans, purchasing inputs, negotiating prices and extension. The potential for spreading this cooperation to the other sectors is good. Only the rules of the game must be defined in the new CIA.

b. Supporting Agencies

Several public and parastatal agencies has a role to play supporting the production, processing and commercialization of fruits and vegetables. However this role is rarely realized.

At the production level, the SASMA has had little impact on research. Private enterprises organize most of their own research and trials for new varieties or limit themselves to the information provided by the seed companies to make their choices (with mixed results as demonstrated by the SICOPA experience with red peppers).

At the processing level, the EACCE plays an important role in terms of managing the licensing for exports and technical information on the standards for processing, while the IMEC offers services to analyze and develop packaging materials. Unfortunately neither one of these agencies has a particularly outward orientation (disseminating information towards private companies and educating them), focused more on regulatory control of the sector (see chapter 4 for a fuller description of the role of the EACCE and its additional challenges, and the project's possible interventions). The EACCE concentrates just on the export sector, leaving the local market without clear legal regulators.

For marketing, the CMPE plays a role in the collection of commercial information, analyzing markets and putting Moroccan firms in contact with partners through trade shows and trade missions. This service covers all manufactures and fresh products, however, so agriculture gets only a limited place in their activities.

In general, the processed fruit and vegetable sector has received but little support from the support agencies, beyond the regulatory assistance from the EACCE. There is ongoing discussion of reform for the roles of these agencies, and the sector should benefit from them if the private businesses are able to formulate their needs and participate in the public programs.

c. Credit and Financing

The requirements for financing in the processed fruits and vegetables sector are relatively high. In the short term, they must finance the raw material purchases, their storage, their processing, and the delays in payment from the importers (both commercial delays plus bank transfers). All tolled these represent from three months to one year.

In the medium term, the future of the sectors depends largely on new investments to re-equip the factories in new processing, storage, and transport facilities which respond to the needs of the importers.

The supply of credit in Morocco is expensive and demanding in terms of guarantees, largely for macro-economic reasons[23]. For short term credit, these restrictions are compensated by special lines for pre-financing and advances on export related receivables. The beneficiaries of these credits are the exporting companies residing in Morocco. These credits are to finance the working capital

[23] see Berrada Mohamed Azzeding, Les Techniques de Banque et de Credit au Maroc, SECEA, Casablanca - 1991 - 3rd edition.

requirements (market studies, supply, processing, storage, export risks, ...). The ceilings to the available credits are based on the following categories:

Export Sales < = 4 mn DH:	ceiling for special credit = 1 mn DH (or 25% of sales)
Export Sales < = 10 mn DH:	ceiling for special credit = 2 mn DH (or 20% of sales)
Export Sales < = 30 mn DH:	ceiling for special credit = 4.5 mn DH (or 15% of sales)
Export Sales > = 30 mn DH:	ceiling for special credit = 10% of Sales

The access to this subsidized pre-financing is digressive. The credits are for one year, renewable, at 10 percent interest, a 4 percent reduction from the market rates.

d. Conclusions on the institutional environment

The overall environment for exporting industries is favorable for their development in terms of infrastructure and hydraulic equipment. The polices on liberalizing agriculture should remove the principal constraints related to the mandatory cropping patterns which favor import substitution. Under this policy, new roles will need to be assumed by the growers, the agro-industries, and the ORMVA's. The absence of good coordination and active professional associations constitute the main limiting factors for the evolution of these roles.

The public sector agencies supporting this sector are little used by the enterprises which don't see them as real partners. This is most notable at the level of agricultural production where the public agencies are weakest.

Even if credit is expensive in Morocco and demanding in terms of guarantees, the exporting sector benefits from a preferential treatment in terms of interest rates and access to bank resources for short term working capital loans.

B. MOROCCAN INTERNAL AND TRADE POLICIES

Policies have had an important role in shaping the structure of the agro-industrial sector over the last thirty years. Moroccan policies have addressed two areas: internal ownership of companies and land; and trade policies (both for import and export).

1. Land and Corporate Ownership Policies

Moroccan agribusiness was quite developed at independence in 1963, but was heavily dominated by the French owned companies, many of which were integrated backwards into production. In the decade from 1963-1973 laws were enacted which gradually led to the Moroccanization of the agribusiness sector. While the process of Moroccanization was more gradual and better managed than in most other African countries, resulting in limited immediate shock to the agribusiness sector, the impact on the long term development of the sector was important.

First of all, the laws changed the structure of the industry, eliminating any integration between the processors and the production of the raw material when it became illegal for non Moroccans to own agricultural land. Many companies which had invested in the proper varieties for their processing,

lost the control of that production. The effects of this change are still being felt today in the complaints about reliability of supply, even though there is now increasing investment in raw material production by the processors, improving vertical integration and communication.

The transfer of the processing companies themselves to the Moroccan owners had several impacts. They reduced the technological competence of the exporting companies and led to the establishment of marketing ties with the old owners who had moved to Europe where they developed and managed the marketing and distribution circuits for many of the products. Even twenty years after their departure, many of the old processors still import the semi-processed or bulk product from their old factory in Morocco for reprocessing and/or distribution in France and some for re-export.

This comfortable marketing arrangement, which was profitable to both Moroccans and the links in France, removed the competitive pressure on the Moroccan firms to be in touch with the markets, to follow the changes in consumer demand, and to develop the products which would allow them to remain competitive. Because there was still room for growth within the French market and the ties existed to penetrate that market, there was little immediate incentive for the Moroccan processors to change.

Therefore, these policies led to a reduction in the integration of the industry between supply and processing, a reduction in the technical capacities of the processors, but maintained solid marketing ties with the old partners inside France. The impact for about 20 years was a virtual stagnation in the development of new products and few attempts to diversify away from the French market.

Over the last five or six years, however, as the French market has become saturated for many Moroccan products, and there was a lot of lost ground in some sectors (such as green beans and cornichons) as the Moroccan product came under increasing price pressure and the European importers switched suppliers (moving mainly to Kenya), there has been more investment in the industry by the more forward thinking and advanced processors, and interest in developing the direct market links. This positive evolution is the only way for the Moroccan agribusinesses to maintain their competitive edge. The policy changes on the part of the Moroccan Government to once again allow foreign ownership of companies and even to allow foreigners to lease land for certain processing ventures have been steps in the right direction to re-establishing Moroccan competitivity.

The Office for Export Marketing (OCE), was created in 1965 to facilitate the export process for processors and strengthen Morocco's position in agricultural exports (both fresh and processed). It was given the monopoly for all exports to provide greater equity in the distribution of market share among the Moroccan processors as well as to provide a united presentation and strategic development of Morocco's marketing program. The monopoly was removed in 1984 under the program of liberalization and the realization that it had not been an effective tool. One of the important impacts from the private sector standpoint was to remove some of the onus for market development and market linkages from them.

An important advantage offered to the agricultural sector as an incentive is to exempt all agricultural operations from taxes. Initially this was only through the year 2000, but has recently been extended to the year 2020. This is an important attribute for the companies which might want to integrate vertically back into production.

2. Trade Policy Environment

The performance of the export sector is affected by protectionist measures from the importing countries, as described below. In addition, they are indirectly influenced by Morocco's own trade policies which modify prices relative to profitability between the export sector and the import substitutions sector.

a. Protection and Dualism

Protection in the agro-industrial sector is high, in particular for milk, sugar, oil seeds, and cereals. Many studies have confirmed this conclusion since the early 1980's.

Globally, this protection began with quantitative control of imports by the monopolies (ONICL, ONTS, BURAPRO, ...), regulation of prices all along the channel, and the licensing and approval procedures for investments to control internal competition. This policy had negative consequences on the development of the sector, diverting resources to the protected subsectors away from the export oriented ones.

At the same time, the small capacity of the local market generated a dualist structure, where exporters ignored the local market, assigning to it the by-products, the production from lower quality installations, and the product which did not meet the export standards.

These distortions have not led to a strong development of the quality products on the local market and therefore on the overall value added of the processed fruits and vegetables subsector. This is corroborated by the problems of standards identified in the olive and olive oil subsector study.

b. Policy of Liberalization

One of the major objectives of the policy reform begun in Morocco with the assistance of several loans from the World Bank (ASAP 1 and 2, ITPA 1 and 2, SAP 1 and 2) is to improve the efficiency of the Moroccan economy by reducing the distortions between the exporting sector and the protected import substitution sector. The idea to complete this policy relies on applying the agreements of the Uruguay Round and to liberalize external commerce and the whole of internal market prices. This means:

- elimination of all quotas and monopolies for importation and their replacement with tariff equivalents (customs duties which align the internal prices with the actual world prices).
- applying the same standards to imports and as for locally produced products for the consumer protection and food safety.

If this policy is put into effect, the distortions between the protected internal sector and the agricultural export sector, between the local market and the export markets will be gradually removed.

3. Factor Costs of Production.

While the Moroccan government has executed many good policies, it is important to also note that, compared to many of its key competitors (Turkey and Tunisia for example) Morocco maintains

favorable comparisons. In nearly all categories of factors of production Morocco's costs were competitive in 1991 with Turkey's. Tunisia maintained an advantage of 30 % in both gasoline, fuel, and electric costs. Morocco had the advantage over Turkey in real costs of credit (28 % cheaper), water (55% cheaper) diesel fuel (15% cheaper), average industrial salary (23 % cheaper), and social security (23 % cheaper. Turkey had small advantages on ordinary gas (5%), industrial fuel (14 %), and electricity (10 %).[24]

An updated version of this analysis is being prepared to be presented in a future document.

C. THE EUROPEAN POLICY ENVIRONMENT

Access to this market depends on internal policies and commercial agreements between the European Union (E.U.) and its trading partners. These two aspects are analyzed along with their general implications for Moroccan exports. These agreements will be modified under the Uruguay round, for which there is an upcoming series of publications from A.M.I. which should update this section.

1. The Common Agricultural Policy (CAP) and its Impacts

Under the title of processed fruits and vegetables, the CAP concerns: frozen or dehydrated vegetables; canned goods; frozen, dried, or preserved fruits; and pastes and fruit juices.

The tools to support the sector within the E.U. include: processing subsidies; the sugar surtax; the minimum price and the compensatory taxes; and export subsidies.

a. Processing subsidies

Begun in 19.8 to ensure the flow of European production, this support targets tomatoes (juice, concentrate, flakes,...); figs; prunes; grapes; pears; and peaches.

The operating mechanism is quite simple. For processing companies which respect the standards of quality and quantity, a subsidy is available per ton of raw material purchased. This subsidy is calculated to ensure the competitivity of the European product in its own markets. To benefit from the assistance, the processors must commit to pay at least the agricultural prices which are fixed in Brussels.

The amount of the subsidy takes into consideration three points:

- the amount of assistance which was provided during the previous marketing campaign;
- the difference between the cost of the raw material within the E.U. and that in the principal competing countries; and
- the evolution of the volume of trade.

[24]see annex 11.

For example, the assistance for the processing of tomatoes in 1992 was equal to the price paid to the Moroccan producer.

b. Deduction and rebates for sugar.

The objective of this deduction, carried out in addition to the customs duties is to compensate the european producers for the effects of the protection on sugar within the E.U.. Two mechanisms are provided for:

- deduction of 2 percent ad valorem for prepared fruits in syrup with or without alcohol (pineapples, citrus, pears, apricots, cherries, peaches, strawberries, mixed fruits, other)
- variable deduction calculated as the difference between the interior price of sugar and the world price for prepared jams with a high level of sugar.

A mechanism to rebate exported products which contain added sugars is foreseen to facilitate E.U. exports.

c. Minimum Price and Compensatory Taxes

This protective mechanism is for those products which are largely in deficit: raisins and processed cherries.

d. Export Rebates

Article 11 of the E.U.'s regulations on the organization of the processed fruit and vegetable markets stipulates that:

> "To the extent necessary to permit the export of important quantities of products targeted in article 1, based on the world market price for these products, the difference between these prices and the price in the E.U. can be covered by an export rebate."

e. Cost of European Subsidies

In summary, fruit and vegetable based processed products are doubly protected:

- within the E.U. by the mechanism of support to the processors;
- on the outside of the E.U. with the series of export rebates.

The principal protected products are the tomato, fig, prunes, pears, and peaches, as well as all products containing sugar.

The annual report on agriculture of the European Commission in 1992 explains that the principal beneficiaries of the subsidies have been the tomato and peach based products, which are in surplus in Europe. The total amount of these finances has increased regularly since 1990 to reach 750 million ECU.

in millions ECU[25]	1990	1991	1992	1993
Rebates (export)	13,6	17,9	23	23
Subsidies (help to processors)	569	599	632	725

In 1992, this total amount was spent on 7,146 tons of processed products, of which 6427 tons of tomatoes. The subsidy per processed ton is on the magnitude of 100 ECU/ton. As a comparison, the average value of Moroccan exports is 1,400 ECU/ton. Applied to Morocco, this policy would be worth a transfer equivalent to seven percent of the final value of the processed products.

2. The TARIC and Trade Agreements

The tariff policy of the E.U. is defined in the TARIC (integrated community tariff). The annual publication of the TARIC includes one heading entitled: preparation of vegetables, fruits, and other parts of plants. For each product, the applicable customs duties are listed, along with the list of concessions by group of countries. The average level of customs duties is high on average: around 20 percent (see annex 8 for the more detailed list of E.U. duties for manufactured product imports). Therefore the tariff concessions which are accorded in the agreements become an important tool for orienting trade.

a. Additional Protocol of 1988

This protocol follows the accord of 1976 and takes into consideration the constraints encountered by the addition of Spain and Portugal to the E.U. It covers the elimination of customs duties for the five following heading related to processed fruits and vegetables:

- vegetables and plants prepared and preserved without vinegar or acid. This includes mushrooms, truffles, pealed tomatoes, asparagus, peas, green beans, and mixed vegetables.
- fruits otherwise prepared or preserved with or without the addition of sugar or alcohol, including preparations in packages greater that one kg of ground citrus and apricots with added sugar and preparations without addition of sugar of pulps and halves of apricots.
- fruit juices, which includes orange juices;
- purees and pastes of fruits, jams, gelatins, and marmalades.
- dried apricots.

b. The duty free quotas

This is the quantity which is exempt from customs duties following the trade agreements. The quota is limited either by a referenced quantity which, if surpassed, can cause application of duties, or by

[25] 1 ECU = 10 Dhs

a direct quota where taxation is automatic if the quota is surpassed.

c. Effects of these concessions

To evaluate the impact of the tariff concessions, an in depth study done product by product would be necessary. We limit ourselves here to a few comments. The theoretical literature on impact of tariff concessions shows that the dynamic effects of trade agreements on the development of export prices, the choice of quality of the exported products, and the diversification of products is of the utmost importance.

Table 27: Summary of Moroccan Trade Advantages with the E.U.

Products processed	Quantity Reference	Duty Free Quota	TARIC Rate	E.U. Tariff	France
Green Beans and Peas		8700 T	19%	3%	4500 T
Cornichons			22%		3200 T
Apricots - with sugar + package > 1 kg	6300 T		23%	2%	2500 T
- without sugar + pack > 4,5 kg . pulp . halves		8250 T	17% 17%		8000 T
+ pack < 4,5 kg . halves	6000 T		23%		2500 T

Apricots

The E.U. production of apricots is broken out as follows:

Table 28: European Production of Apricots 1985-1991

in thousands of tons	1985	1990	1991
Germany	2	2	1
Greece	131	113	65
Spain	151	120	207
France	102	110	107
Italy	196	185	156
Portugal	5	5	8
Total	587	535	544

Given that production of raw material does not meet demand within the E.U., Morocco is an important supplier. The major effect of the trade concessions has been to direct the Moroccan choice

of export products towards the halves and pulp which the European industry allows, enabling them to protect the higher value segments of the market. Therefore, Morocco becomes a price taker on the market as a subcontractor to the E.U. industries.

Cornichons. Morocco's ability to compete in the German market, in the face of Turkish imports benefitting from trade concessions seems to indicate the potential of the sector. Morocco's E.U. quota is based on tonnage, despite the range in quality of the products. This has led the Moroccans to push as much of their high quality, small cornichons into that allotment, where they make the highest margins. The lower margin products (larger sized cornichons) are being squeezed out of the exports.

Peeled tomatoes. The concessions have not had an impact on Moroccan exports, since those exports focus on other products which do not benefit from special trade considerations (tomato powder).

Green beans and peas. The trade concessions do not specify the size and nature of the package allowed the industry to adapt to the market better than apricots. Product adaptation has led a progression towards more freezing.

VI. FUTURE OF THE INDUSTRY AND RECOMMENDATIONS FOR PROJECT ACTIONS

A. MAJOR MARKET TRENDS AND OPPORTUNITIES

The following table presents Morocco's evolution in its principal products compared to the trends in the E.U.

Table 29: Trends in the Change in Moroccan Market Share

Product	Change in Extra EU Imports 1988-92	Change in Total EU traded product 1988-92	% Change of tons of Moroccan exports 1988-92	Change in Morocco's Relative Share of EU imports
Canned Apricots	+ 2 .1 %	+ 0.8%	- 1.6 %	- 2.1 %
Canned Green Beans	+ 0.7 %	+ 41.4 %	- 44.6 %	- 61.7 %
Frozen Green Beans	+ 98.5 %	+ 22.1 %	+ 19.5 %	- 1.4 %
Frozen Mixed Veg.	+ 30.1 %	+ 94.2 %	- 14.5 %	-58.3 %
Pickles	+ 90 %	+ 70.8 %	- 50 %	-71%
Capers	+ 46.8 %	+ 31.3 %	+ 34.5 %	+ 2.5 %
Dried Tomato Products	+ 55 %		- 3 %	- 37.5 %
Tomato Concentrate	- 42.5 %	+ 1.1 %	- 33.3 %	- 37.5 %

Source: Eurostat

It is clear from this table that Morocco is losing ground in nearly every single product line from its previous positions, both in total market share and in share of extra E.U exports. Exports have not always declined in real tonnage, but Morocco's pace of growth is slower than the pace of total extra-EU import growth for all products. The challenge is clearly before Morocco to regain its edge in as many of the product lines as possible in its traditional markets and to seek new markets when it cannot overcome competitive barriers such as trade agreements.

1. Driving Forces

a. Market Trends

The Moroccan processors must be aware of, acknowledge, and either prepare for or take advantage of the major trends in the international markets. In nearly every single category of product exported by Morocco covered in this report, Morocco has lost significant share of the extra-E.U. imports of those products (see table 15 in Chapter Three for the details) between 1988 and 1992. The only new

product which has increased rapidly in the last year is exports of frozen strawberries, a product which was not even exported in 1988 (though it was a limited export product 20 years earlier).

As a recap from Chapter Three we note the major trends in European and U.S. markets.

- Increasing vertical and horizontal integration with the E.U.'s food retail sector has resulted in fewer buyers, each having greater influence over product specifications.
- European food manufacturers are restructuring their operations to remain competitive;
- Market outlets for lower quality, cheaper packaged food products are dwindling steadily;
- Europeans are sourcing Morocco's traditional products from new competitors such as Central and South American countries, along with South Africa and China;
- the high level of competition from E.U. and third country suppliers has pushed down the prices for many products (average unit values for most products in 1992 were below those of 1990);
- changing consumer preferences have shifted the types of products demanded by the E.U. importers to reflect more natural, healthier foods which are packaged using recyclable materials. For many consumers this translates into preference for frozen over canned products; and
- consumption of frozen fruits and vegetable products is increasing steadily around the world, though Europe still consumes less than half the amount of their American colleagues.
- future import opportunities will be in highly specialized markets and suppliers must develop a market strategy and product lines which respond to those particular markets.
- the U.S. traditionally imports to supplement local production, but the trend has been for increasing reliance on imported processed food products to meet consumer demand.
- traditional Moroccan products are primarily sourced from within the U.S. with only five percent of consumption coming from imports.
- the U.S. demand for specialty products is growing (these include baby foods, soups, beans, canned specialties, and ethnic foods), but these require high quality inputs.

Under these trends and considerations, market opportunities will depend on each product and on each country. From the analysis in the report, we identify the following items and markets as particularly interesting for the Moroccan processors.

b. Policy Environment

The policies implemented by the Moroccan government in the 1960's and 1970's led to a gradual delinking of the different actors in the channels from supply through to the market. This policy environment began changing in the mid 1980's. With the demonopolization of the OCE, the

Government's decision to allow complete foreign ownership of private companies, and the recent agreements to begin long term leases of agricultural land to foreign companies, the government has opened up the conditions for reestablishing vertically integrated channels of production which are interesting to foreign companies.

The major uncertainty at present is the fall out from the 1994 GATT signing in Marrakech. The lack of clarity in the future status of Moroccan processed goods. If the European offer, made in December 1993, stands as the basis for the final agreement, then Moroccan Agribusinesses will have to become much more competitive very rapidly, within a time frame of a couple of years instead of ten years. This would require substantial investment and training.

A further driving force in the policy environment will be the gradually more stringent regulations concerning food safety issues which the European markets will apply, particularly related to thermal processing, container integrity, and good manufacturing practices (GMPs) and HACCP plans.

2. New Opportunities

a. Individually Quick Frozen Products

Foremost among the opportunities for development of new products by Moroccan processors are foods in the individually quick frozen categories. This is the fastest growing product area in Europe and in the U.S. among the processed foods. For Morocco to be competitive in these frozen products, they need to provide extra value to the product which takes advantage of their comparative advantage in labor costs. The greatest opportunity lies with three categories of products:

- products which Morocco can already produce cheaper than the European countries (such as apricots or clementines),
- Products which are either naturally expensive to harvest due to their high labor content, such as white asparagus or small fruits and berries which must be harvested by hand; or
- products which use added labor to take the product beyond the semi finished stage such as melon balls, artichoke hearts, clementine segments, etc.

b. Dehydrated and dried products

In general, the Moroccan processors have barely begun developing the dried and dehydrated product lines. Despite a large production base and good climate for drying product, only two Moroccan processors have developed dried and dehydrated products very extensively. While others are investigating the possibility, appropriate techniques and technologies for drying heavily consumed products like sun dried tomatoes, apricots, figs, and raisins have not been adapted to allow for successful export of these products. The major problems occur in the cost of drying if using mechanical processes or in controlling the cleanliness if they are sun dried.

c. New products from existing resources.

Europeans, using trade agreements and quotas have successfully channelled Moroccan exports into categories for food service and reprocessing, preventing them from exporting into the higher value

added end user markets. Improving and changing the packaging is the first step towards reaching this goal. This will mean passing up the easier opportunities to make money, by exporting the traditional products such as apricot halves in 1.5 kg cans, towards applying themselves to developing the products and markets for more value added products. This will be more expensive in the short run, but will open up greater opportunities in the long run and will move Morocco out from being simply a commodity supplier, which is always the lowest end of the market.

To become competitive in these areas will require lower cost packaging materials, which will probably require opening up the packaging industry to more competition.

This will also include the definition of new products such as artichoke hearts in lieu of artichoke bottoms, or the development of new by-products from processed waste, such as charcoal briquettes from apricot almonds.

d. Establishing closer ties to the buyers

As noted above, there is increasing integration between the importers, distributors and retailers with very specifically defined products. Therefore to remain in the market, the processor/exporters must have close ties directly into the buyer or they will not produce the product which meets the buyer's specifications.

In addition, this will be the only way that Moroccan processors can effectively penetrate the end-user markets.

e. Increasing the range of target markets

Clearly the largest importing markets should be the priority targets for Moroccan exports. Broadly speaking, this maintains a focus on Europe and North America, to whom Morocco is already exporting most of its production. However, there are many sub markets within those regional breakdowns which are not being effectively pierced. Since Morocco already sells most of its exports to France, Germany and the U.K are the largest two available markets for its products.

Among the major Moroccan exports, the only countries which take any appreciative quantity of products besides France are:

- Germany for cornichons and apricots,
- Spain and Italy for capers,
- The Netherlands and Belgium for canned apricots

Therefore, there should be important opportunities to increase exports of Morocco's traditional products to these countries by displacing their traditional suppliers.

B. VISION OF THE FUTURE

World trade of all products is becoming more transparent and the markets are driving the trade flows more than the suppliers. More than just about any time in history, the rules of the game for

international trade have changed greatly over the last decade. Raw material is being treated increasingly as commodity products, and service costs are increasing relative to the cost of the raw material (transport costs account for up to 50 % of the sales price for many Moroccan products). As more supply and a greaer number of suppliers become available, the buyers are becoming more demanding, passing many costs onto the suppliers (storage, financing, etc.).

These are many of the realities of today's international trade. These factors, which are often beyond the control of the processors, make it all that much more important that the Moroccan processed fruit and vegetable industry do all that it can to increase the competitiveness of its products through increased efficiency and producing more to the specifications of the markets.

For Morocco to increase its competitiveness in processed fruits and vegetables this study has identified where there must be numerous changes at all levels of the industry. We know that the export markets are becoming more competitive every day as large European, American and Asian firms apply state of the art technology, economies of scale, and benefit from favorable government programs and some trade barriers. For Morocco to compete in this environment, cheap labor will not be sufficient. Its industry must take on the following characteristics:

There will be greater vertical integration between the production of raw material, its processing, and its marketing, allowing market incentives to direct the raw material qualities and the research and development programs.

During the 1960's and 1970's, the structure of Moroccan food processing industry changed, first with a separation of the production and the processing functions, followed by the distancing of the processors from the markets with the creation of the OCE. This trend has changed and, increasingly, large processors are privately reinvesting in agricultural land to ensure at least part of their supply. Morocco's largest exporter of processed goods, Lukus, is perhaps the most vertically integrated processor in the country with 6,000 hectares of agricultural land and firm contracts and joint ventures with leading importers on the world market.

The increased linkages will be able to transmit price/product information from the market down through the processors to the growers. This will facilitate the introduction of new varieties which respond to the market's desires.

Many potential synergies exist right now within factories and between fresh and processed products which will need to be developed to lower costs and maximize return on investment. These are not being fully exploited, but the increased linkages will make them more achievable.

There will be a fair and enforceable basis for production contracts between the growers and the processors which will resolve problems around supply. This will include the presence of an independent arbiter.

This will address many of the logistic problems of getting the produce from the field to the plant, of growing the right varieties of produce which are best adapted to processing, ensuring good postharvest handling, and that the produce will be picked at the optimal time for processing (ripeness, brix).

These closer ties must be based on the **mutual benefit** to both parties in these relations. They will either come about through greater integration of the processors (becoming growers themselves), or

tighter linkages between the processors and the growers through established contracts which will promote increased production through better returns to the growers and greater profits to the processors through increased throughput.

If sound, mutually beneficial contract mechanisms can be established, there will still need to be an efficient legal structure to enforce them. Without such a legal structure, the contracts will never be fully respected.

It is likely that the larger farmers will develop contract relations with the processors, while smaller farmers will target the fresh market.

Larger growers have an interest in developing long term relations which yield a steady but low risk return to ensure their ability to pay off the investments. Realistically, it is easier for processors to deal effectively with larger growers. Meanwhile, smaller growers which are family operated farms with limited investment but which also have limited amounts of production will always be seeking to maximize their return every year, which will lead them to place their product in the market with the highest price and where their limited production will have no overall impact on market prices.

All factories will be producing food which respects common food safety law (regardless of whether it is for the local market or for export) and have in place the process control mechanisms to guarantee this. At the same time, the government will have the enforcement mechanisms in place.

Factories will be operated and managed by food processing specialists, trained in all elements of food safety and engineering. This will place the onus of quality control within the factory rather than on the regulatory agency.

Moroccan agribusinesses will be providing products with more value added in them, having moved away from supplying either a semi-finished product or a low value commodity product.

As long as Moroccan agribusinesses are exporting a semi-finished product (such as apricots) or a commodity product (such as paprika or tomato paste), they will be on the weaker end of all market pressures. As greater value added and product differentiation takes place within Morocco, Moroccan products will be able to maintain their market share more easily.

Government of Morocco support institutions will be providing Moroccan processors with reliable forecasting information, appropriate regulatory services, assistance to carry out strategic analysis, and guidance by setting national priorities.

At present there is some disagreement or inconsistency over the appropriate role to be played by many of the supporting institutions. For the regulatory agencies (food safety, pricing, transport), their role must be to regulate, not to provide advice. For the service agencies (production, transport, export marketing, etc.), their tasks must be well defined to respond to the problems in those areas and to provide accurate and helpful advice and information when and where needed.

C. GENERAL RECOMMENDATIONS TO THE GOVERNMENT OF MOROCCO

There are a number of areas in which the project cannot intervene but which are critical for maintaining the competitiveness of the Moroccan agribusiness sector. The Moroccan processors request the government to help them to address these macro-economic and regulatory policy issues. These recommendations include:

- bringing down the high real rates of interest (real rates of 9-11 %);
- installing an adequate judiciary structure to resolve conflicts between processors and growers (discussed below);
- providing access to land by the processors so that they can be allowed to integrate vertically and protect against ruptures of supply; and
- helping address the loss of competitiveness caused by the subsidies which are being provided by competing countries, particularly members of the European Union, which are killing the competitiveness of Morocco's products.

The Government of Morocco needs to address these problems seriously.

D. RECOMMENDATIONS FOR PROJECT ACTIONS TO ENABLE THE MOROCCAN INDUSTRY TO REALIZE THE VISION OF THE FUTURE

A great many changes need to occur for Morocco to meet its potential and to reach the vision of the future. Some of them are institutional, some are practical elements which can be implemented by the processors themselves. Some are policy related issues. The project can concretely only react to those which address some of the institutional aspects or which involve the private operators. It can, however, provide more information about the future of the policy environment and provide indicators for the future.

1. Concentrate new product introduction in the Individually Quick Frozen (IQF) and dried/dehydrated product arenas. With the increasing interest in *fresher* and *healthier* products, the individually quick frozen product seems to be the growth market for the future. Processors need to establish the linkages with the major importer/distributors of these products to define their specific requirements, since Morocco can play on its comparative cost of labor advantage to introduce frozen products with greater value added.

Proposed Project actions:

a. Carry out a feasibility study on the cost effectiveness of introducing mobile IQF units and, if viable, introduce one into Morocco. Mobile IQF units are currently being used in many countries of the world to provide greater freshness in the product by reducing the time between harvest and freezing. They will also reduce transport costs in many parts of Morocco where the production is isolated from the processing plants, by reducing the amount of product which gets transported and reducing the transport distances.

b. Continue to identify and develop relations with the leading importers of IQF products into the E.U. The project has already developed good relations with a few firms and is currently playing a key interface role between the importers and the exporters to ensure that

the exporters are following up with them correctly.

c. **Help speed the introduction of new IQF products with greater value added.** This will require getting the importing partners to specify products which they would like to have, such as melon balls, other diced/chopped fruit, etc. The Promotion and Investment Fund (PIF) could be used in the development of these products.

d. **Use the Promotion and Investment Fund to assist processors to develop their capacity to produce sanitary dried products.**

2. **Address the issues of food safety which can become one of the largest threats to the Moroccan processing industry.** With the unification of the European market and their adoption of more stringent regulations, closer to those of the U.S. FDA, Moroccans must bring their processing standards up to the world norms. This will help to preserve the overall reputation of the quality of Moroccan products. While the major threats are in the canning industry, given our identification of the IQF and Dried/dehydrated products as the leading sectors for the concentration of our activities, programs should pay close attention to the problems in those areas, particularly with respect to GMP and HACCP.

Proposed Project actions:

a. **Work with the E.A.C.C.E. and the processing companies to increase their understanding of the issues surrounding Food Safety.** This will require running training programs in the areas of good manufacturing practices (GMP), Hazard Analysis and Critical Control Points (HACCP), and Low Acid Canned Foods/Acidified Foods (LACF/AF). These training programs will conclude with a Better Process Control School (BPCS), monitored certified by the U.S.F.D.A.

b. **work directly with firms to help them develop and implement GMP and HACCP plans.** This will require sensitizing Moroccan processors to the need for *process authorities* to help them develop proper HACCP plans and thermal processing procedures.

c. **Help the E.A.C.C.E. to establish the differences between a regulatory agency and an advisory body, and introduce more process service companies (*process authorities*) which can assist the processors with technical problems.** As a regulatory agency, the E.A.C.C.E. cannot provide advice to Moroccan processors on how to prepare their products without developing a conflict of interest. The E.A.C.C.E. should, however, sensitize the processors to the need for getting outside assistance, which can be held accountable, to help them master elements which they may not have the resources to control at present.

d. **Demonstrate the importance of making the same regulations which are currently applicable to export products, also be applicable to products for the local market.** The current dual standard system is a danger to commercial sterility of products being exported since there is no way of assuring that the product was actually processed under export standards.

e. **Identify a list of U.S. firms interested in assisting Moroccan processors to respond to their food safety deficiencies.** This will require identifying U.S. process authorities who

could respond to the service requirements, establishing working relationships/contact with them to determine if they are interested in working in Morocco, and encouraging them to be more pro-active in Morocco.

f. **Work with the FICOPAM to help it increase the flow of information and services in this area to its members.** This could include helping to cofinance laboratory tests for members, sell documentation and books on food processing, report more often on sector activities, maintain a list of competent and recognized authorities in food processing who could be called on by their members, maintain better information on the food safety standards and commercial quality levels for exporters to access.

3. **Increase the exposure of the Moroccan processors to new product ideas in overseas markets.** While the Moroccan processors are present at all of the major European trade shows, they do not always take maximum advantage of those shows to identify new products which they might be producing or to proactively seek out the buyers for their products.

Proposed Project Actions:

a. **Continue to organize Moroccan participation in foreign trade shows.** It is important to prepare them before they go and assist them during the show, as the project is doing in conjunction with the IESC for the National Restaurant Association (NRA) show and the Fancy Foods show.

b. **Maintain a reasonable set of product samples, both Moroccan and foreign, at the project offices in Casablanca to be able to demonstrate differences in product quality or innovation.**

c. **Convince the leading importers from major markets to work closely with the Moroccan processors.** Since the importers know the specifications and their needs, direct input from them to the products they would like to develop in Morocco with reliable partners is imperative.

4. **Continue to identify and highlight problems which affect transport and marketing of Moroccan products to the export markets.** Cost of transport still remains an important element in the cost of the final delivered good. Discussions with processors reveal that administrative problems at the port can cause delays in transport for frozen product which significantly increases the cost.

Proposed Project Actions:

a. **Disseminate the findings of the transport study through the local economic press, radio and television, and prepare presentations for the appropriate ministries.**

b. **Prepare a prospective study on the implications of the changing foreign trade policy environment on world markets for the Moroccan food processing industry.** Once the study is completed it will need to be disseminated widely and discussed to provide the Industry with the general information necessary to help it to prepare its future investments.

5. Sponsor activities which will increase the linkages between research, processors, and growers. The past 30 years have gradually eroded the contacts between the different actors the length of the channel from supply to market. These need to be re-established and strengthened. The starting point is to establish an efficient contracting system for at least one product, such as apricots or tomatoes, where the growers are rewarded for producing product which responds to the needs of the processors. In addition, this should seek to bring in additional sources of outside service companies and suppliers who can facilitate this process.

Proposed Project Actions:

a. Bring in a consultant who is a specialist in contract procurement mechanisms to work with the processors, growers, and MAMVA to develop different possible scenarios for apricots, olives, tomatoes, and paprika.

b. Financially and technically support efforts between the processors and the researchers to introduce or adapt new varieties for processing.

6. Assist the food processors to gain access to suppliers of good, appropriately scaled used equipment.

Project Actions:

a. Explore the feasibility of an all U.S. suppliers' show in Casablanca. This show, if there is sufficient interest on the part of the American firms, will introduce new technologies and services to Morocco which are not currently available from the traditional European suppliers.

b. Develop a system by which Moroccan processors can access information about U.S. equipment and access to consulting firms which can help them accurately define their true requirements.

7. FICOPAM must play a more important role as a coordinating body for the processors and to provide relevant services to its members. An audit of FICOPAM has been carried out by the project and a number of possible actions have been proposed to the FICOPAM officers which will lead to more interactive services between the FICOPAM and its membership. This should lead to a stronger organization. Unfortunately, the FICOPAM is not yet even ready to begin these activities.

Proposed Project Actions:

a. Continue to work with FICOPAM leadership whenever they seek assistance. FICOPAM will necessarily need to improve its capacities to provide improved services to its membership, and the project should be ready to accompany any efforts that the FICOPAM membership is willing to initiate, within the realm of activities proposed in the report.

b. Organize an industry awareness tour, through FICOPAM, to the U.S. for the Moroccan processors. The project should work closely with the FICOPAM and its members to identify the issues they would like to cover most, in addition to ones which we think are

important, such as relationships with the regulatory bodies, meet different service suppliers which are critical to the smooth functioning of the industry in the U.S. (process authorities, laboratories, trade associations, etc.), import/distribution/wholesalers, and different supply contract mechanisms. The optimal time for this trip would need to be defined taking into consideration Moroccan processor availability and if there were an appropriate even such as an association conference trade show.

c. Promote the participation of processors, through the FICOPAM, in the Purdue short courses on marketing and other training programs.

8. Disseminate the findings of this report as widely as possible through use of the local press and presentations with the industry.

Proposed Project Actions:

a. Provide copies to the economic press for them to present the highlights in the local press.

b. Make copies available to the private sector for the cost of the photocopying.

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ANNEX ONE

PEOPLE AND COMPANIES CONTACTED DURING THE STUDY

M. Bennani, Abdelhak	Direction de la Production Végétale, Directeur de la Division des Projets de Mise en Valeur et Industries Agricole
M. Raoussi	Direction de la Production Végétale, Division des Projets de Mise en Valeur et Industries Agricole
Kettani, Jaffar	EACCE, Laboratory Director
Laouane	EACCE, Head of Control for Processed Goods
Ghouibi,	FICOPAM, Director
Ben Khaled	FRAMACO, Owner/General Manager
Bouzian, Ahmed	LUKUS, Director of Projecs
Haj Zendafou, Mohamed	MAG Conserves, Owner
Sebellini, Pierre	SESTA, Owner
Raihani, Amal	BISMA, Chef de Control
Alexis, Geraldes	Maghreb Champs Sud, Managing Director
Adel, Aicha	Maroc Nouveau, Chef d'Usine,
Benzakour, Knidel Moncef	SICOPA
M. Ghouzali	La Gazelle, owner
M. Chenoll, Jean Charles	La Gazelle, general manager
	Ste Mansouri
Devico, Dan	Conserves de Meknes.
Alaoui, Hassan	El Kadiria, Managing Director
Bouafia, Mohamed	El Kadiria, Export Manager
El Farissi, M'hamed	Ets. El Farissi
M. Owsianefski	Centre de Développement de l'Energie Renouvelable
	MACARA
M. Ezzamiti,	ORMVA Gharb
M. Bousraef	ORMVA Gharb, Service des Etudes Agro-Economiques
El Moustafa, Moundi	ORMVA Loukous, Chef de Service Vulgarisation et Associations Professionelles
M. Chlouchi	ORMVA Loukous, Chef de Service Production Agricole
M. El Kaissi	ORMVA Loukous, Dir. CMV Oumvira
M. Shmita	ORMVA Tadla, Chef de Service production
M. Salouhi	ORMVA Tadla, Service des Etudes
M. El Yemani	ORMVA Tadla, Service des Etudes
M. Bensouda	ORMVA HAOUZ
Mme Chekrouni, Ouafa	CNCA, Adj. au Chef de Departement
Mme Berrima Fatiha	CNCA, Chef de Departement Agro-industrie
Mme Zaz, Amal	VCR, Directeur Commercial

ANNEX TWO

EXPORT STATISTICS FOR PROCESSED FRUITS AND VEGETABLES

1990-1994

SOURCE: EACCE

ANNEX TWO: EXPORTS OF MOROCCAN PROCESSED PRODUCTS

SUMMARY TABLE OF EXPORTS BY PRODUCT

PRODUCT	DESTINATION	1990/91 QUANTITY (IN KG)	1990/91 VALUE (IN DH)	1991/92 QUANTITY (IN KG)	1991/92 VALUE (IN DH)	1992/93 QUANTITY (IN KG)	1992/93 VALUE (IN DH)	1993/94 QUANTITY (IN KG)	1993/94 VALUE (IN DH)
APRICOT EXPORTS		20,477,190	172,790,941	17,331,313	153,583,070	19,636,017	142,345,084	19,162,038	117,416,990
PICKLE EXPORTS		16,997,265	188,785,980	11,264,939	130,508,194	7,005,385	86,815,596	5,118,188	71,740,967
GREEN BEAN EXPORTS		9,319,027	124,233,790	4,299,436	58,765,387	3,131,982	46,207,322	961,072	16,321,559
FROZEN GREEN BEANS		7,150,000	103,700,000	6,770,000	96,400,000	5,700,000	82,700,000	5,561,964	82,119,118
PROCESSED TOMATO EXPORTS		3,412,335	29,357,218	1,034,875	11,091,203	477,563	6,374,851	308,628	1,757,446
TOMATO POWDER EXPORTS		2,703,556	98,698,274	3,227,959	116,255,909	3,249,484	112,401,532	2,993,901	103,871,876
FROZEN STRAWBERRIES		212,080	1,626,609	68,280	1,259,206	948,354	5,188,773	8,421,547	59,642,400
OTHER FROZEN FRUITS		775,020	5,349,254	0	0	27,900	234,963	605,897	5,880,045
OTHER FROZEN VEGETABLES		1,018,454	7,437,756	989,217	10,126,826	1,165,875	9,568,193	998,696	9,132,813
OTHER DRIED/DEHYDRATED FRUITS		0	0	0	0	8,556	188,622	365,170	4,736,293
OTHER DEHYDRATED VEGETABLES		175,319	5,323,664	497,013	15,095,058	369,936	13,073,904	515,180	26,329,395
TOTAL NUTS AND ALMONDS								1,665,714	39,543,407
VEGETABLE CORDE		6,728,920	16,991,388	4,963,652	13,493,601	2,267,060	7,197,518	66,631,111	544,116,561
CAROUB (LOCUST BEAN) PRODUCTS		12,238,331	69,125,139	14,443,519	75,679,343	10,645,753	63,695,123	5,718,712	148,788,334
Capers		4,322,181	136,441,250	5,204,136	147,520,457	5,101,531	145,154,428	5,106,114	89,643,767
Olives		69,124,438	522,235,252	68,826,235	522,974,229	65,785,842	524,062,378	1,736,970	5,746,069
OTHER MISCELLANEOUS PRODUCTS		(..,628,595)	(23,042,104)	(4,851,421)	(15,739,052)	(2,534,931)	(40,711,426)	9,356,261	56,054,642
		147,025,521	1,459,054,411	134,069,153	1,337,013,432	122,986,307	1,204,496,860	135,227,163	1,382,841,681
LESS CAROUB AND HORSEHAIR		18,967,251	86,116,527	19,407,171	89,172,944	12,912,813	70,892,641	72,349,823	692,904,895
TOTAL OF PROCESSED GOODS		128,058,270	1,372,937,884	114,661,982	1,247,840,488	110,073,494	1,133,604,219	62,877,340	689,936,786

SUMMARY OF EXPORTS BY DESTINATION

PRODUCT	DESTINATION	1990/91 QUANTITY (IN KG)	1990/91 VALUE (IN DH)	1991/92 QUANTITY (IN KG)	1991/92 VALUE (IN DH)	1992/93 QUANTITY (IN KG)	1992/93 VALUE (IN DH)
PROCESSED TOMATO EXPORTS							
Tomato Pastes and Other							
	ESPAGNE	71,208	1,269,642	0	0	0	0
	FRANCE	1,244,276	7,683,534	309,161	2,211,222	54,644	326,449
	HOLLANDE	31,830	154,785	84,000	552,697	0	0
	U.S.A	704,065	4,605,221	84,000	2,376,088	0	0
	JAPON	0	0	0	0	100,000	4,147,314
	RFA	0	0	0	0	0	0
	AUTRES	1,360,956	15,644,036	557,714	5,951,196	322,919	1,901,088
	TOTALS	3,412,335	29,357,218	1,034,875	11,091,203	477,563	6,374,851
Tomato Powders							
	ESPAGNE	37,050	2,591,375	45,000	2,379,758	35,585	1,605,236
	FRANCE	517,891	22,679,211	527,829	23,964,023	648,550	26,062,540
	HOLLANDE	8,010	477,501	36,365	1,942,939	29,706	1,498,607
	U.S.A	1,586,667	49,912,301	1,512,900	43,808,254	1,676,900	50,054,465
	JAPON	300,058	12,391,456	750,000	29,807,320	500,000	20,101,398
	RFA	2,500	151,779	17,145	747,904	36,443	701,613
	AUTRES	251,380	10,494,591	338,720	13,605,711	324,300	12,377,675
	TOTALS	2,703,556	98,698,274	3,227,959	116,255,909	3,249,484	112,401,532
Total Tomato Products		6,115,891	128,055,491	4,262,834	127,347,112	3,727,047	118,776,382
FROZEN GREENBEANS		7,150,000	103,700,000	6,770,000	96,400,000	5,700,000	82,700,000
FROZEN STRAWBERRIES	SUISSE					22,020	92,703
	HOLLANDE	24,000	212,552			66,270	362,575
	ESPAGNE			59,960	847,366	365,401	770,889
	FRANCE	188,080	1,414,057	8,320	411,840	218,995	1,558,733
	R.F.A					275,668	2,403,872
	TOTALS	212,080	1,626,609	68,280	1,259,206	948,354	5,188,773
ALL APRICOT PRODUCTS	FRANCE	14,482,379	124,694,714	13,634,690	122,205,259	13,623,238	101,065,121
	RFA	1,774,154	14,701,321	1,239,813	10,713,483	1,238,127	9,188,761
	BELGIUM	1,178,901	10,224,601	894,649	7,914,168	2,611,363	16,701,754
	USA	0	0	0	0	15,661	128,106
	G. BRETAGNE	20,808	145,987	74,646	603,742	104,366	553,351
	HOLLANDE	1,704,399	13,835,804	668,867	6,086,619	1,468,104	9,766,289
	AUTRES	1,316,549	9,188,514	818,648	6,059,799	575,158	4,943,702
	TOTALS	20,477,190	172,790,941	17,331,313	153,583,070	19,636,017	142,345,084
PICKLE EXPORTS	FRANCE	12,968,625	142,849,233	9,047,659	101,644,515	5,355,885	64,177,684
	RFA	2,649,810	28,549,343	1,141,356	14,336,392	988,467	14,769,688
	USA	135,421	2,249,614	124,522	1,695,924	189,847	2,413,112
	AUTRES	1,243,409	15,137,790	951,402	12,831,363	471,186	5,455,111
	TOTALS	16,997,265	188,785,980	11,264,939	130,508,194	7,005,385	86,815,596
GREEN BEANS	FRANCE	8,736,016	115,660,759	4,026,302	54,723,736	3,039,372	44,183,934
	ESPAGNE	487,493	6,559,050	221,668	2,676,571	16,152	97,265
	HOLLANDE	38,210	446,973	6,721	197,030	0	0
	AUTRES	57,308	1,567,008	44,745	1,168,050	76,458	1,928,123
	TOTAL	9,319,027	124,233,790	4,299,436	58,765,387	3,131,982	46,207,322

SUMMARY TABLE OF EXPORTS BY PRODUCT

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
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GREEN BEAN EXPORTS		9,319,027	124,233,790	4,299,436	58,765,387	3,131,982	48,207,322
FROZEN GREEN BEANS		7,150,000	103,700,000	6,770,000	96,400,000	5,700,000	82,700,000
PROCESSED TOMATO EXPORTS		3,412,335	29,357,218	1,034,875	11,091,203	477,563	6,374,851
TOMATO POWDER EXPORTS		2,703,556	98,698,274	3,227,959	116,255,909	3,249,484	112,401,532
FROZEN STRAWBERRIES		212,080	1,626,609	68,280	1,259,206	948,354	5,188,773
VEGETABLE CORDE		6,728,920	16,991,388	4,963,652	13,493,601	2,267,060	7,197,518
CAROUB (LOCUST BEAN) PRODUCTS		12,238,331	69,125,139	14,443,519	75,679,343	10,645,753	63,695,123
Capers		4,322,181	136,441,250	5,204,136	147,520,457	5,101,531	145,154,428
Olives		69,124,438	522,235,252	68,826,235	522,974,229	65,785,842	524,062,378
OTHER MISCELLANEOUS PRODUCTS		(5,659,802)	(4,931,429)	(3,365,1[illegible]1)	9,482,832	(962,664)	(17,645,744)
		147,025,521	1,459,054,411	134,069,153	1,337,013,432	122,986,307	1,204,496,860
LESS CAROUB AND HORSEHAIR		18,967,251	86,116,527	19,407,171	89,172,944	12,912,813	70,892,641
TOTAL OF PROCESSED GOODS		128,058,270	1,372,937,884	114,661,982	1,247,840,488	110,073,494	1,133,604,219

SUMMARY OF FROZEN AND DEHYDRATED EXPORTS

FROZEN AND DEEP FROZEN PRODUCTS						
FROZEN GREEN BEANS	7,150,000	103,700,000	6,770,000	96,400,000	5,700,000	82,700,000
APRICOTS, FROZEN	242,000	1,826,915			8,460	70,976
APRICOTS, DEEP FROZEN					19,440	163,987
BROCOLLI, DEEP FROZEN	91,924	1,022,838	113,617	1,075,622	88,595	860,225
CEPES, FROZEN			25,132	1,688,252	7,704	496,247
MUSHROOMS, DEEP FROZEN	5,540	161,559	18,641	550,689	11,536	396,660
CAULIFLOWER, DEEP FROZEN	75,247	361,556				
CAULIFLOWER, DEEP FROZEN	57,022	293,721	104,110	601,167	258,655	1,836,568
WHOLE PEELED LEMONS, DEEPFROZEN	60,000	452,617				
ARTICHOKE BASES, DEEPFROZEN	21,278	368,436	49,420	882,077	30,165	702,966
WILD STRAWBERRIES, FROZEN			960	56,448	882,444	8,816,644
STRAWBERRIES DEEP FROZEN	212,080	1,626,609	68,280	1,259,206	948,354	5,188,773
CORN, DEEPFROZEN	160	5,420				
MIXED VEG. FOR RATATOUILLE, DEEPFROZEN	7,150	33,560	29,560	166,679	13,650	56,660
MIXED VEG. FOR COUSCOUS, DEEP FROZEN	745,180	4,995,528	551,430	3,770,081	754,570	5,212,506
APRICOT HALVES, FROZEN	197,020	1,320,085				
PEPPERS, DEEP FROZEN	1,824	16,564	97,307	1,392,259	980	6,360
APRICOT PULP, DEEP FROZEN	276,000	1,949,637				
TOMATOES, DEEPFROZEN	13,109	176,573				
TOTAL DES PRODUITS SURGELES	9,155,554	118,113,619	7,828,457	107,842,480	8,724,573	108,508,772
DEHYDRATED PRODUCTS						
APRICOTS, INDUSTRIALLY DRIED					8,556	188,622
BROCOLLI, DEHYDRATED	4,644	204,233	13,359	119,650		
BROCOLLI, STEMS, DEHYDRATED	22,092	244,338				
DRIED MUSHROOMS	112	9,346	3,748	395,423	1,200	59,959
CAULIFLOWER BUDS, DEHYDRATED	9,930	0				
CAULIFLOWER STEMS, DEHYDRATED	4,256	39,811	6,830	37,050		
CHIVES, DEHYDTRAED	14,340	1,305,720	21,906	1,777,489	19,880	1,672,986
SQUASH, DEHYDRATED					4,900	274,890
GREEN BEANS, DEHYDRATED	2,403	339,584	4,977	732,621	15,816	559,457
LEEKS, DEHYDRATED	82,525	2,371,401	330,510	10,578,715	328,140	10,506,612
SWEET PEPPERS, DEHYDRATED	35,017	809,233	115,683	1,454,110		
TOTAL FOR DEHYDRATED PRODUCTS	175,319	5,323,664	497,013	15,095,058	378,492	13,262,526

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
OTHER PLANT PRODUCTS							
Apricots, Frozen		242,000	1,626,915			8,460	70,976
Apricots, industtrially dried						8,556	188,622
Apricots, Deep Frozen						19,440	163,987
Citrus, finely ground		127,771	730,215			36,506	211,912
Almonds, sweet in the shell						10,000	441,485
Almonds, sweet, no shell		21,302	563,734	2,000	122,664	80,500	1,820,168
Apricot Almonds (nuts)		96,592	821,192	351,190	2,838,578	316,367	2,858,479
Argan Almonds (nuts)		289,500	4,010,891	14,414	332,967	14,222	417,598
Almonds, bitter in the shell		233,500	6,568,075			169,000	3,406,200
Almonds, bitter no shells		657,050	16,763,356	1,236,467	28,323,269	1,388,910	28,856,355
Artichokes in brine						9,860	221,322
Eggplant, Deep Frozen						3,000	48,364
Garlic		2,210	28,196				
Bouillon for Chicken Soup						1,170	77,644
Brochettes of vegetables						547	38,673
Brocolli flowers		82,870	919,955				
Brocolli, powder		56	1,767				
Brocolli, dehydrated flowers		4,644	204,233	13,359	119,650		
Brocolli, deep frozen		91,924	1,022,838	113,617	1,075,622	88,595	860,225
Brocolli, dehydrated stems		22,092	244,338				
Carrots, shredded						18	2,022
Cepes, natural		500	38,111			19,090	411,926
Cepes, natural in cans		60,905	2,553,448	140	13,140	695	65,375
Cepes, frozen				25,132	1,688,252	7,704	496,247
Cepes, in cans for garnishment						2,765	180,714
Mushrooms, deep frozen		5,540	161,559	18,641	550,689	20,436	663,131
Mushrooms in Brine		5,976	210,489	4,025	294,203	8,230	317,732
Mushrooms, dried		177	31,097	3,748	395,423	2,400	119,918
Cauliflower flowers, frozen		79,447	559,783				
Cauliforwer, dehydrated flowers		9,930	0				
Cauliflower , frozen in flowers		57,022	293,721	104,110	601,167	258,655	1,836,568
Caulifolwer , dehydrated stems		4,256	39,811	6,830	37,050		
Chives, dehydrated		17,708	1,506,447	21,906	1,777,489	19,880	1,672,986
Lemon		4,800	14,040	59,647	300,127	10,000	44,543
Lemon, Traditional		25,606	171,878	16,692	87,341	4,100	22,848
Lemon, preserved		480	7,327	8,310	39,621		
Lemon, whole peeled deep frozen		60,000	452,617				
Lemon in brine				4,664	29,030	300	1,992
Fruit Coctail						230	5,527
Celery hearts		735	2,067				
Cucumbers, pickled w/ sacharine						8,443	91,777
Jam, apricot		10,131	92,405	28,103	329,273	27,119	275,181
Jam, orange				2,800	45,100		
Jam, Fig		23,354	278,818	11,804	189,051	20,823	195,443
Jam, Strawberry						6,655	55,511
Jam, Apple						834	10,852
Squash, dehydrated						4,900	274,890
Cord				33,480	68,748		
Squash in slices		44,261	1,646,282	10,570	660,832	7,860	443,619
Couscous		760	3,952	375	3,234		
Vegetable horsehair in rope		6,728,920	16,991,388	4,963,652	13,493,601	2,267,060	7,197,518
Dates, pitted		450,759	4,626,754	388,048	4,740,252	225,429	2,437,157
Guerkins, deli						255,307	3,238,588
Orange peels		87,950	1,388,547	173,328	2,517,892	125,088	1,894,430
FASOUKH						1,047	21,811
Figs				17,303	167,943	97,521	733,147
Artichoke bases		19,160	200,138	12,625	52,394	17,140	371,307
Artichoke bases, deep frozen		21,278	368,436	49,420	882,077	30,165	702,966

PRODUCT	DESTINATION	(IN KG)	(IN DH)	(IN KG)	(IN DH)	(IN KG)	(IN DH)
Wild Strawberries, frozen	HOLLANDE					31,115	461,75[illegible]
	SUISSE					14,600	559,797
	ESPAGNE			960	56,448	428,528	3,217,017
	FRANCE					408,201	4,578,276
	TOTAL			960	56,448	882,444	8,816,844
Strawberries, powdered	FRANCE	40,000	1,674,530	76,650	3,039,641	22,000	873,803
Strawberries, deepfrozen	SUISSE					22,020	92,703
	HOLLANDE	24,000	212,552			66,270	362,575
	ESPAGNE			59,960	847,366	365,401	770,889
	FRANCE	188,080	1,414,057	8,320	411,840	334,995	2,315,583
	R.F.A					1,064,354	6,945,623
	Total	212,080	1,626,609	68,280	1,259,206	1,852,798	14,879,420
	Total Fraises	252,080	3,301,139	145,890	4,355,295	2,757,242	24,570,0[illegible]7
Chanterelle Mushroom, in brine		1,643	62,782	4,000	183,959	12,091	479,277
Caroube beans						43,500	1,570,336
Caroub flour				18,000	1,107,724	575,300	34,944,893
Caroub, crushed		8,649,418	10,822,426	10,819,372	10,302,267	8,015,493	7,882,279
Caroub, grains	C.BRETANGE	97,600	1,455,295	139,750	2,565,850		
	GRECE			105,240	1,937,700		
	IRLANDE					1,048,180	930,000
	U.S.A					18,000	1,001,570
	FRANCE					22,080	1,393,869
	ITALIE	1,006,970	16,247,249	831,620	15,256,918	106,000	2,042,334
	ESPAGNE	1,424,708	22,678,352	1,464,857	25,707,305	683,500	12,249,668
	Total	2,529,278	40,380,896	2,541,467	45,467,773	1,877,760	17,617,441
Caroub, grains	FRANCE			18,000	642,126	100	163
	GRECE			106,400	1,895,909		
	ITALIE	380,825	6,277,308	184,400	3,174,367		
	G.BRETAGNE			208,470	3,649,137		
	U.S.A					400	16,115
	ESPAGNE	678,810	11,644,509	547,410	9,440,040	176,700	3,234,232
	Total	1,059,635	17,921,817	1,064,680	18,801,579	177,200	3,250,510
	TOTAL CAROUBE	12,238,331	69,125,139	14,425,519	74,571,619	10,070,453	28,750,230
Green beans, dehydrated		3,456	476,653	4,977	732,621	15,816	559,457
Ketchup						20	295
Leeks						105	2,790
Yeasts		5,600	25,440				
Mixed vegetables in can		5,700	51,144				
Corn, deep frozen		2,388	108,001				
Basket, empty		2,860	18,694				
Mixed deepfrozen vegetables for Ratatouille		7,150	33,560	29,560	166,879	13,770	57,260
Mixed Vegetables		4,011	239,439	2,643	167,351	832	41,577
Mixed Vegetables for Ratatouille		5,000	23,100	25,970	149,122	76,280	521,816
Mixed deepfrozen vegetables for Couscous		759,285	5,067,381	551,430	3,770,061	774,630	7,348,356
Melon, industrially crushed				36,180	370,190		
Morels, in cans		64	19,483				
Morels, in barrels		220	131,340				
Nuts		450	8,439	400	8,200	3,102	18,135
Apricot pits		13,095	88,171	8,237	90,329	5,080	93,942
Peach pits		20,562	334,479	19,638	318,691	31,260	535,909
Green Olives, fresh, all varieties		88,575	485,628			40,500	301,703
Apricot halves , frozen		197,020	1,320,085				
Parsley						10,508	353,838
Leek powder				3,108	78,155	10,364	372,729
Pignon nuts, dried		14,288	217,426			23,656	18,404
Pimento, crushed				19,000	310,673	206,376	2,783,226

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
Leeks, dehydrated	BELGIQUE	3,750	70,874				
	CANADA	4,160	151,174				
	SUEDE					1,000	34,025
	NORVEGE					972	34,655
	ESPAGNE	2,103	69,330	12,945	133,204	3,000	86,120
	G.BRETAGNE			500	15,257	12,516	356,751
	HOLLANDE			130,794	4,046,456	19,559	663,021
	FRANCE	91,582	2,546,697	161,991	5,544,159	291,093	9,332,040
	R.F.A			24,280	839,639		
	Total	101,595	2,838,075	330,510	10,578,715	328,140	10,506,612
Leeks, sweet, dehydrated		35,017	609,233	182,913	2,280,735		
Peppers, deepfrozen		1,824	16 564	97,307	1,392,259	980	6,360
Food preparation, orange based		18,253	116,064	18,253	110,620		
Prunes				39,362	820,599	60	709
Pulp of Apricot , frozen		276,000	1,949,637				
Pulp of sweet orange,		185,256	881,702	155,710	703,818	44,063	233,453
Pulp of bitter orange, bigardier		765,002	4,312,911	385,594	2,284,014	225,306	1,207,577
Pulp of lemon				2,791	15,081	5,189	29,388
Pulp of white fig		55,476	484,860	121,781	1,104,985	172,125	1,551,516
Pulp of bitter orange		41,083	217,387	73,491	406,141		
Pulp of grapefruit		24,811	123,611	31,601	174,240		
Raisins		250	9,775	200	5,000		
Tarte, of wine						25,000	197,452
TERFAS AU NATUREL AUTREMENT		2,700	299,076	507	100,323		
TERFAS AU NATUREL EN BTEX/BX		982	96,855	885	137,948	986	75,841
Tomatoes, deep frozen		13,109	178,573				
Orange slices, natural		192,761	990,298	108,004	700,263	221,035	1,312,238
Truffles, otherwise packaged		30,185	1,030,760	2,765	189,907		
Truffles in cans		9,205	1,015,371	2,331	212,334	3,840	287,148
Vinegar variations						24	2,022
Vermicelli		760	3,420				
TOTAL MISCELLANEOUS		1,754,269	15,374,471	1,554,005	21,216,982	1,026,748	15,410,316
CANNED APRICOTS							
Apricots, natural	BELGIQUE					100,625	611,542
Apricot halves, natural							
	BELGIQUE			11,520	106,848		
	G.BRETAGNE	20,808	145,987	19,125	136,483	39,091	245,797
	HOLLANDE					83,700	535,140
	ITALIE	41,700	285,390				
	FRANCE	485,477	3,191,894	414,723	2,774,869	413,571	2,351,755
	R.F.A	571,842	4,102,945	370,353	2,670,284	477,890	3,241,753
	SUISSE	125,550	791,820	125,540	896,580		
	Total	1,245,177	8,518,036	941,261	6,585,064	1,014,252	6,374,445
Apricot halves, in syrup							
	G.BRETAGNE			18,537	136,846	5,170	69,357
	U.S.A					15,661	126,106
	AUSTRALIE					18,694	140,979
	HOLLANDE	320,721	3,157,787	131,856	1,388,849	113,898	1,169,138
	BELGIQUE	166,356	1,572,750	353,550	3,478,964	298,057	2,440,482
	R.F.A	274,221	2,657,027	359,982	3,752,047	324,258	2,662,995
	CANADA	159,742	1,024,475	535,976	3,931,157	402,588	3,468,858
	FRANCE	8,694,170	81,833,468	10,152,025	96 487,607	7,257,823	65,863,419
	ITALIE			18,600	133,002		
	Total	9,615,210	90,245,507	11,570,526	109,308,272	8,436,149	75,941,334
Apricot pulp, with halves							
	G.BRETAGNE					20,808	100,172
	R.F.A	477,295	3,939,263	98,490	785,902	92,681	529,240
	SUISSE	41,004	309,186	123,378	870,146	62,252	591,136
	HOLLANDE	678,989	5,281,094	413,633	3,887,770	1,250,004	7,954,572
	BELGIQUE	951,416	8,117,105	511,087	4,192,821	1,791,794	11,260,961
	FRANCE	2,779,478	20,719,390	2,183,548	16,598,881	5,007,183	27,942,107
	Total	4,928,182	38,366,038	3,330,136	26,335,520	8,244,722	48,378,188

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
Apricot pulp, pureed	FRANCE	186,276	1,137,131	130,538	824,330	64,504	382,355
Apricot pulp	AUSTRALIE					20,128	138,433
	BELGIQUE	61,129	534,748	18,492	135,535	420,887	2,388,770
	ESPAGNE	16,884	127,940				
	FRANCE	2,336,978	17,812,831	753,856	5,519,572	880,157	4,525,485
	G.BRETAGNE			36,984	330,613	39,297	138,025
	HOLLANDE	706,689	5,396,923	123,378	810,000	20,502	107,439
	R.F.A	450,998	4,002,086	410,988	3,505,250	343,298	2,754,773
	SUISSE	206,518	1,660,661				
	Total	3,779,194	29,535,187	1,343,698	10,300,970	1,724,269	10,052,924
Apricots, Frozen		242,000	1,626,915			8,460	70,976
Apricots, industtrially dried						8,558	188,622
Apricots, Deep Frozen						19,440	163,987
Jam, apricot		10,131	92,405	15,154	228,914	15,040	180,711
Apricot halves , frozen		197,020	1,320,085				
Pulp of Apricot , frozen		276000	1,949,637				
• *TOTAL all apricots*		20,477,190	172,790,941	17,331,313	153,583,070	19,636,017	142,345,084
PROCESSED GREEN BEANS							
Green beans, extra fine	BELGIQUE	53,282	1,551,021	28,836	893,302	74,299	1,915,367
	CANADA	276	2,882				
	ESPAGNE	452,386	6,148,999	176,371	2,334,013	16,152	97,265
	FRANCE	8,002,159	110,118,730	3,715,233	52,218,958	2,975,922	43,562,640
	HOLLANDE	30,030	215,383	6,721	197,030		
	ITALIE			8,181	241,802		
	LIBYE	3,750	13,125	6,900	24,630	2,159	10,755
	Total	8,541,883	116,050,120	3,942,242	55,909,735	3,068,532	45,586,028
Green beans, fine	CANADA			828	8,316		
	ESPAGNE	35,107	410,051	45,297	342,558		
	FRANCE	733,857	5,542,029	311,069	2,504,778	63,450	621,294
	HOLLANDE	8,180	231,589				
	Total	777,144	6,183,669	357,194	2,855,652	63,450	621,294
Green beans, deep frozen	FRANCE	6,861,471	100,142,280	5,847,943	83,702,184	4,501	65,431,398
	ESPAGNE	190,346	2,231,841	120,861	1,289,162	41	177,340
	SUISSE			51,420	715,477	86	1,259,721
	HOLLANDE	44,060	850,869	17,000	247,860	6	50,592
	BELGIQUE	33,470	499,555				
	Total	7,149,347	103,724,545	6,037,224	85,954,663	4,634	66,919,051
• *Total all Green Beans*		16,468,374	227,958,335	10,336,660	144,720,050	3,136,616	113,126,373
PROCESSED PICKLES (CORNICHONS)							
Cornichons in brine, in can	CANADA	28,720	352,624				
	FRANCE	623,017	4,662,068	258,474	2,245,890	120,790	814,747
	G.BRETAGNE			11,580	131,673		
	R.F.A	30,240	168,419				
	U.S.A	5,113	100,984	19,350	207,765		
	Total	687,090	5,284,095	289,404	2,585,128	120,790	814,747
Cornichons in brine, in barrels	U.S.A			13,600	133,145	20,400	205,220
	CANADA	14,400	154,396	14,400	150,328		
	ESPAGNE			22,050	53,311	60,305	281,478
	FRANCE	92,480	569,308	277,840	1,249,579	153,130	649,712
	Total	106,880	723,704	327,890	1,586,361	211,735	1,049,455
Cornichons in white wine, barrels	BELGIQUE	64,000	461,039				
	FRANCE	11,200	11,439				
	Total	75,200	472,478				

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
Cornichons, pasteurized with vinager in cans							
	MAURITANIE					65	150
	COTE D'IVOIRE	1,081	15,806	1,260	16,109	2,580	9,815
	CAMEROUN	3,181	27,596	1,617	16,829		
	DANEMARK			15,927	304,462	5,250	74,855
	GABON	7,807	108,194	3,034	48,427		
	G.BRETAGNE			8,554	178,084	6,450	68,544
	HOLLANDE	49,083	636,549	7,581	107,707		
	ITALIE	1,680	9,309	420	2,477		
	KOWEIT			7,773	260,053		
	LIBYE	4,932	28,803				
	SENEGALE	17,057	180,943	2,970	27,693	8,490	101,062
	SUEDE	9,945	164,160	4,680	46,493		
	ESPAGNE	23,936	159,701			39,710	222,087
	QATAR			210	2,880		
	R.F.A	566,719	5,241,641	318,557	2,721,230	4,341	285,303
	BELGIQUE	90,231	1,601,702	100,879	2,221,337	15,763	409,570
	CANADA			23,273	295,900	66,223	759,456
	U.S.A	103,315	1,704,097	81,012	1,279,942	165,758	2,167,381
	FRANCE	9,698,351	111,203,563	6,800,602	78,660,636	4,700,564	59,723,178
	Total	10,577,318	121,082,063	7,378,349	86,190,260	4,995,249	63,740,703
Cornichons, pasteurized with vinager in barrels							
	ESPAGNE					29,769	108,920
	ITALY	12,500	100,000				
	FRANCE	22,984	201,189			34,805	538,188
	Total	35,484	301,189			64,574	647,108
Cornichons, sweet/sour in cans							
	CANADA	35,201	427,039				
	SENEGAL	1,680	22,377				
	ESPAGNE					22,983	346,217
	FRANCE	214,500	1,691,520	183,508	2,328,638	265,596	1,939,507
	G.BRETAGNE	6,450	73,723				
	HOLLANDE	98,011	1,063,123	13,776	143,433		
	ITALIE	1,848	10,163			336	2,021
	R.F.A	1,892,330	21,579,821	791,729	11,192,788	984,126	14,484,385
	U.S.A	14,193	328,025				
	Total	2,264,213	25,195,791	989,013	13,664,660	1,273,041	16,772,130
Cornichons, sweet/sour in barrels							
	BELGIQUE	25,600	208,717				
	FRANCE					7,814	146,564
	R.F.A	89,335	1,181,440	31,070	422,374		
	Total	114,935	1,390,157	31,070	422,374	7,814	146,564
Cornichons in vinegar	U.S.A					3,689	40,511
	FRANCE					55,976	289,687
	Total					59,665	330,199
Cornichons in white wine, cans							
	CAMEROUN			3,456	28,690		
	CANADA	19,505	200,391	4,455	90,022		
	ITALY	840	4,509				
	HOLLAND	112,393	1,681,719				
	ARAB EMIRATE	5,634	90,833				
	BELGIQUE	22,239	510,235				
	BRITAIN	5,160	57,013				
	FRANCE	2,174,131	23,670,129	1,477,916	16,951,966		
	R.F.A	71,186	378,022				
	SUEDE	32,600	299,727				
	U.S.A			10,560	75,072		
	Total	2,443,688	26,892,578	1,496,387	17,145,750		
Sliced Cornichons	CANADA	160	1,120				
	ESPAGNE			22,540	55,129		
	SUEDE	50	938				
	FRANCE	131,962	840,017	49,319	208,006	17,210	76,101
	U.S.A	12,800	116,508				
	Total	144,972	958,583	71,859	263,135	17,210	76,101
Guerkins, deli		547,485	6,485,342	680,967	8,650,328	255,307	3,238,588
* *TOTAL ALL CORNICHONS*		16,997,265	188,785,980	11,264,939	130,508,194	7,005,385	86,815,596

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
PROCESSED TOMATOES							
Tomato Concentrate	CHYPRE	20,200	133,239	19,175	140,547		
	ANGOLA			250,000	3,493,860		
	COTE D'IVOIRE	196,566	1,348,154				
	ESPAGNE	71,208	1,269,642				
	FRANCE	607,712	4,690,639	74,700	982,819	25,000	177,049
	GABON			72	3,095		
	HOLLANDE			68,000	456,057		
	ILES MAURICES			625	1,941		
	JAPON	150,061	5,359,940				
	LIBYE	1,000	7,000	8,987	81,895	14,651	186,548
	JAPON					100,000	4,147,314
	PALESTINE	208,003	2,684,620				
	SUEDE	19,360	141,741	102,904	942,903	252,800	1,350,106
	SENEGALE	41,343	330,286				
	SUISSE			82,400	648,837	16,000	113,790
	U.S.A	60,000	1,810,165	84,000	2,376,088		
	Total	1,375,453	17,975,426	690,863	9,128,042	408,451	5,974,807
Tomato concentrate, powedered	JAPON	200,058	8,260,840				
	LIBYE	2,300	19,000				
	NORVEGE	14,400	618,745				
	U.S.A	157,600	5,819,875				
	Total	374,358	14,718,460				
Double Concentrate of Tomato	BELGIQUE			17,631	145,271		
	CANADA					39,468	250,644
	CHYPRE			15,200	109,393		
	COTE D'IVOIRE	77,280	495,495	19,320	117,936		
	FRANCE	636,752	4,417,567	41,400	265,518		
	Total	714,032	4,913,062	93,551	638,118	39,468	250,644
Dehydrated Tomato flakes	SUEDE					250	11,833
	VENEZUELA			2,500	124,343	2,100	127,436
	IRLANDE			6,000	325,177	4,000	192,837
	CANADA	250	12,835	3,400	181,261	3,800	220,982
	R.F.A	2,500	151,779	5,500	307,544	5,800	295,142
	ARGENTINE					9,100	614,553
	HOLLANDE	6,000	365,040	25,000	1,368,664	23,006	1,324,322
	ESPAGNE	36,750	2,572,368	37,500	1,991,611	31,000	1,458,322
	G.BRETAGNE	22,375	1,222,273	42,500	2,168,075	41,725	1,949,077
	U.S.A	45,000	2,706,072	22,500	1,234,402	75,000	4,151,755
	JAPON					100,000	4,210,173
	FRANCE	42,950	2,630,251	67,244	4,248,516	81,000	4,626,866
	SUEDE	500	28,529				
	SUISSE	6,000	382,587	2,000	105,094		
	Total	162,325	10,071,734	214,144	12,054,687	376,781	19,183,298
Dehydrated tomato semoulina	HOLLANDE	2,010	112,461	3,000	169,283	6,200	155,625
	FRANCE	12,810	710,034	11,760	649,032	13,290	709,682
	Total	14,820	822,495	14,760	818,315	19,490	865,307
Tomato Powder	HOLLANDE			6,000	332,618	500	18,660
	KOREA	3,000	142,490			1,000	39,257
	TUNISIE					2,300	69,000
	ESPAGNE					4,585	146,914
	R.F.A			10,000	391,300	30,643	406,471
	CANADA	100,000	3,868,690	33,000	1,336,035	19,000	575,852
	G.BRETAGNE	280	8,378	27,340	1,089,852	40,000	1,315,892
	SUEDE			54,250	1,586,581	52,000	1,676,064
	AUTRICHE			20,000	876,315	40,000	1,722,610
	NORVEGE	86,400	3,555,700	144,000	5,703,731	106,400	3,805,267
	JAPON	100,000	4,130,616	750,000	29,807,320	400,000	15,891,223
	FRANCE	454,081	18,961,202	407,630	17,184,138	539,790	20,234,008
	SUISSE	11,000	474,397				
	TUNISIE			1,000	30,000		
	U.S.A	1,379,000	41,124,088	1,490,400	42,573,852	1,601,900	45,902,710
	Total	2,133,761	72,265,561	2,943,620	100,911,742	2,838,118	91,803,928

PRODUCT	DESTINATION	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)	QUANTITY (IN KG)	VALUE (IN DH)
Tomato grit	FRANCE	525	15,615	14,395	644,425	4,535	105,673
	G.BRETAGNE	4,375	130,279	2,730	79,247	2,625	57,015
	HOLLANDE			1,365	41,085		
	IRLANDE	500	30,688				
	R.F.A			1,645	49,060		
	Total	5,400	176,582	20,135	813,817	7,160	162,688
Peeled Tomatoes	BELGIQUE	10,391	525,994				
	FRANCE	17,460	67,658	68,640	360,714	12,220	56,852
	U.S.A	57,780	317,077				
	Total	85,631	910,729	68,640	360,714	12,220	56,852
Dehydrated Tomatoes	ESPAGNE	300	19,007	7,500	388,147		
	FRANCE	7,525	362,109	26,800	1,237,912	7,935	386,311
	HOLLANDE			1,000	31,289		
	U.S.A	5,067	262,326				
	Total	12,892	643,442	35,300	1,657,348	7,935	386,311
C rushed peeled Tomatoes	FRANCE	619,104	2,925,237	165,821	867,689	17,424	92,548
	HOLLANDE	31,830	154,785	16,000	96,640		
	U.S.A	586,285	2,477,979				
	Total	1,237,219	5,558,001	181,821	964,329	17,424	92,548
TOTAL ALL TOMATOES		6,115,891	128,055,491	4,262,834	127,347,112	3,727,047	118,776,382

ANNEX THREE

CONTRACTING FOR RAW MATERIAL

The quality of food products processing is less sensitive to equipment sophistication but more so to technical know-how and quality of raw material. The quality of the finished product is a function of: the quality of raw product, efficient sorting, crushing, pulping, correct concentration procedures and strict sanitation.

The problem cited most often by both the processors and the growers was the lack of respect for supply contracts established between the two parties. This is a problem area for processing all over the world, the U.S. included, as parties on both sides will usually try to take advantage of the other for short term gains, ignoring the potential longer term cost due to strained relations.

Buying standards for processing

The selection of the raw product input is the most important factor in producing a high quality product.. High quality raw materials are a function of :

- the degree of moisture
- the degree of maturity; and
- the freshness

One well adapted technique for assuring the purchase of high quality raw material for processing is to buy on the basis of soluble solids. This is applicable for all products which are destined for concentrating, juicing, or dehydrating, particularly fruits such as apricots, figs, tomatoes, peaches, pears, strawberries, etc. This is less applicable for products to be frozen or canned (olives, pickles, greenbeans).

Operationally, both the grower and the processor use a refracto-meter to determine the amount of solids and sugars in a fruit or vegetable. Payment then is proportionate to the degree of sugars. This technique gives incentives to the grower to produce pounds of soluble solids per hectare and not just pounds of fruit.

The following numerical examples demonstrate the utility of these procurement system in yielding more juice per amount of fruit purchased and processed.

Kg of solids are calculated as follows : kg soluble solids = weight of juice from 25 kg sample times the fruit degree brix/100 = tot.S.S.

Examples
1) 100 kg fruit give 80 liters of juice (sp gravity 1.045)

At 11.2% Brix: $\frac{(80 \times 1.045) \times 11.2}{100} = 9.3$ Kg of solids

2) 100 kg juice give 80 liters (sp gravity 1.052)

At 13.0 % Brix: $\frac{(80 \times 1.052) \times 13}{100}$ = 10.94 Kg total of solids

Higher soluble solids are desirable because they yield a greater amount of finished product/kg, reducing the cost to the processor. Savings are obtained in several areas, for example:

- the more soluble solids present, the less water there is to be evaporated and less steam must be used (conserving energy):
- higher yield per kg raw material reduces the [illegible] of transport and handling per kg of finished product, which is high in Morocco since the factory is often quite distant from the farms.

The practice of buying fruit on the basis of kilograms of soluble solids will educate the grower to plant fruit with a high content of soluble solids and will assist the industry to receive fruit suitable for processing.

In the U.S. it is common to buy fruit and tomatoes on the basis of weight. Very important for this system is a suitable fruit receiving system which delivers a representative sample of the load, regardless of the size of the load or rate of unloading. For measuring density of the juice a hydrometer should be used.

Implementing an efficient contracting system often requires an outside, impartial judge who can arbitrate between the growers and processors in case of a dispute of the measurement of the. This is a possible role for regulation by the Ministry of Agriculture or another government body to ensure respect of the contracts.

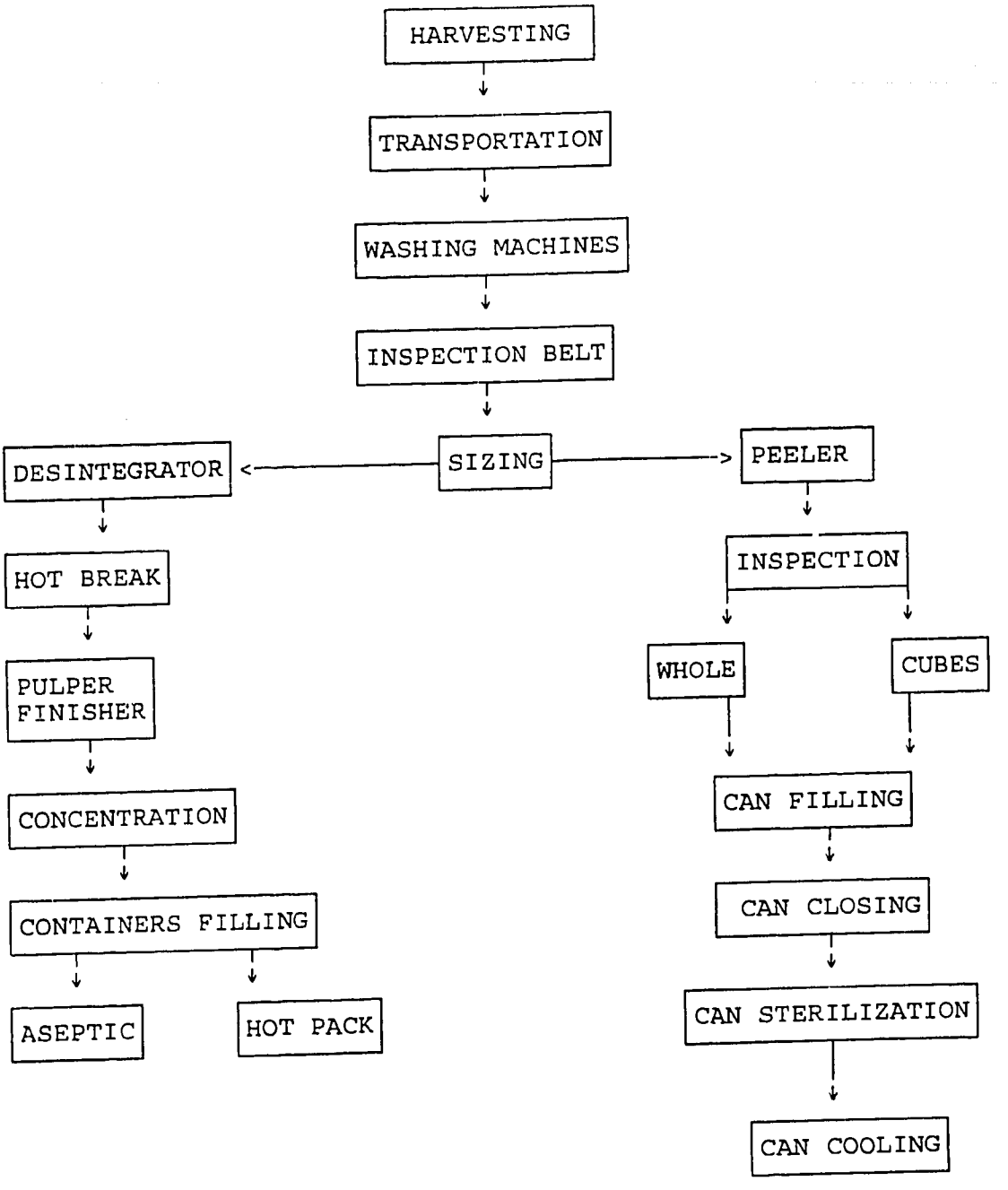
ANNEX FOUR

FIELD TO WAREHOUSE PROCESSING STEPS FOR SELECTED PRODUCTS

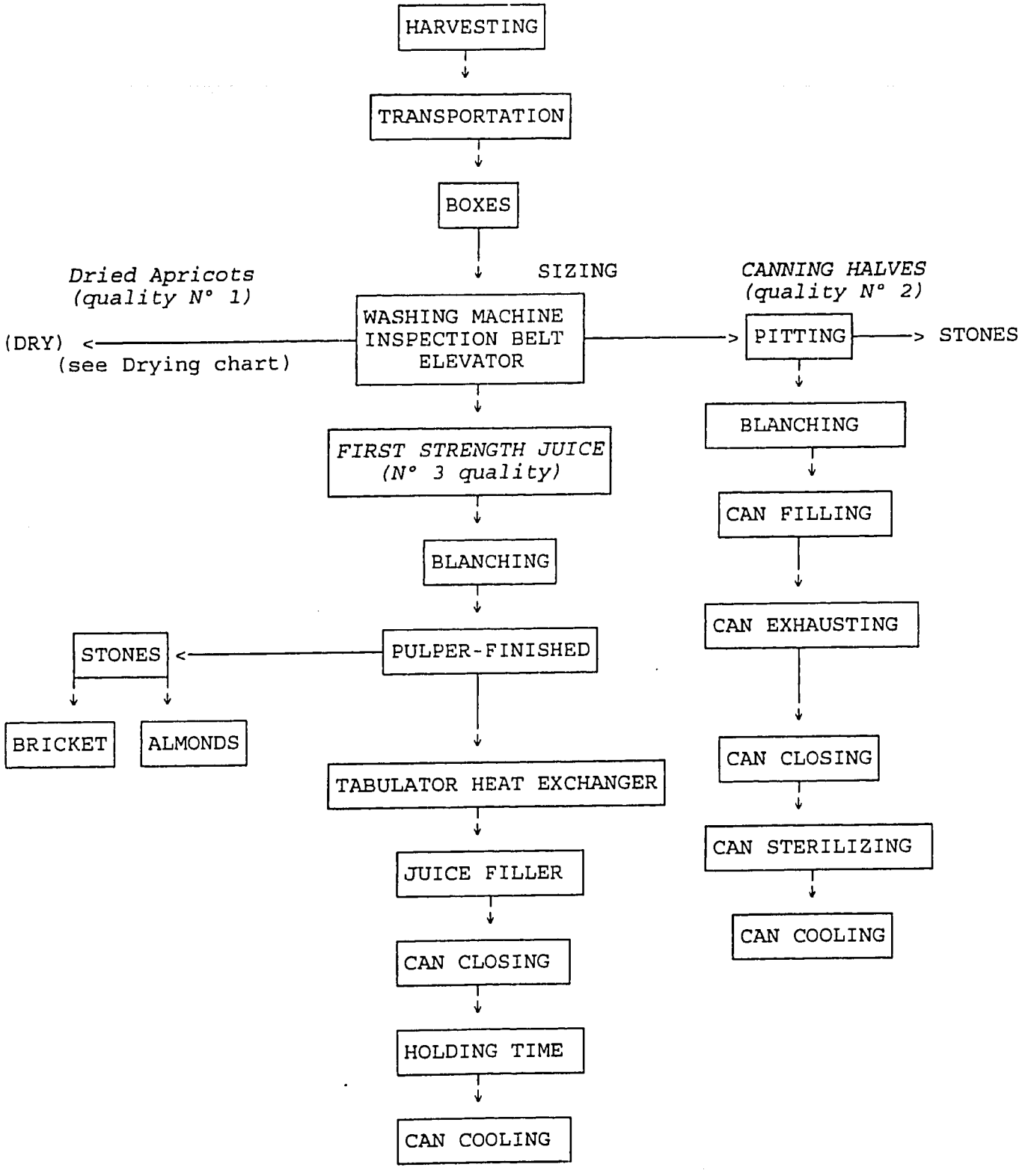
1. Tomatoes
2. Apricots
    - 2a. Dried Apricots
    - 2b. Tenderizing Apricots
3. Artichoke Canning
4. Cucumber Pickling
5. Roasting Peppers

TOMATOES

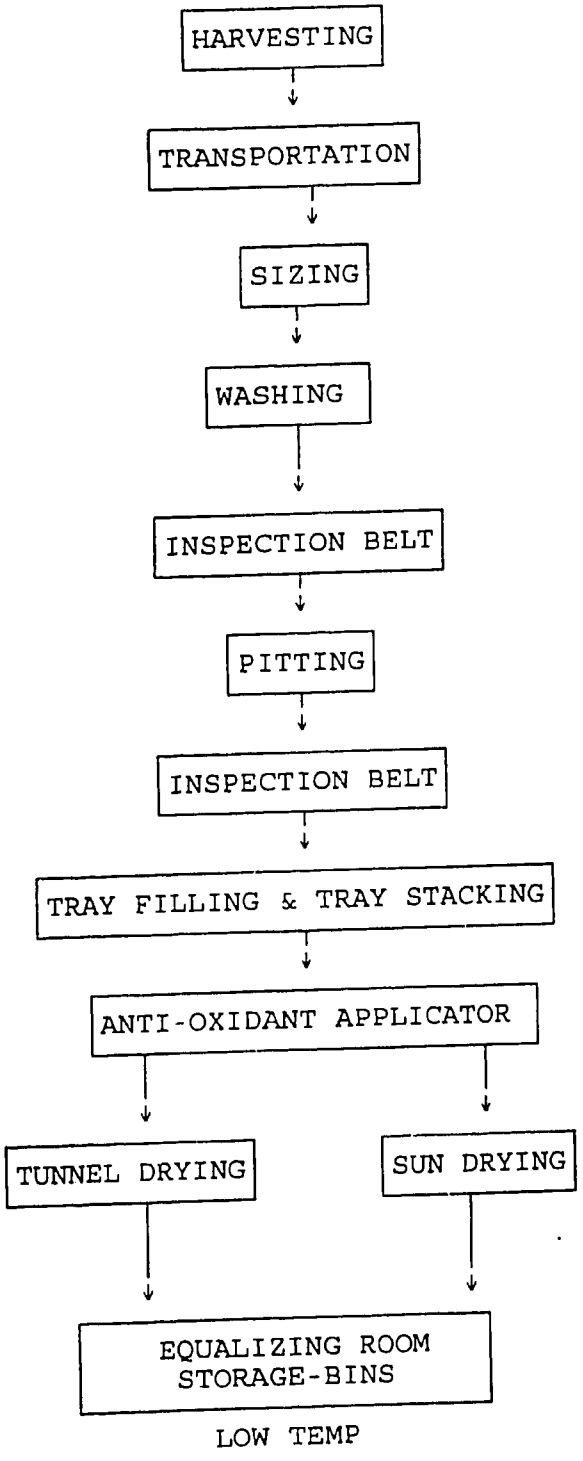
RIPE 95.5 MOISTURE



APRICOTS


HARVESTING
TRANSPORTATION
BOXES
SIZING
Dried Apricots
(quality N° 1)
WASHING MACHINE
INSPECTION BELT
ELEVATOR
(DRY)
(see Drying chart)
CANNING HALVES
(quality N° 2)
PITTING
STONES
BLANCHING
CAN FILLING
CAN EXHAUSTING
CAN CLOSING
CAN STERILIZING
CAN COOLING
FIRST STRENGTH JUICE
(N° 3 quality)
BLANCHING
PULPER-FINISHED
STONES
BRICKET
ALMONDS
TABULATOR HEAT EXCHANGER
JUICE FILLER
CAN CLOSING
HOLDING TIME
CAN COOLING

APRICOTS -DRIED-



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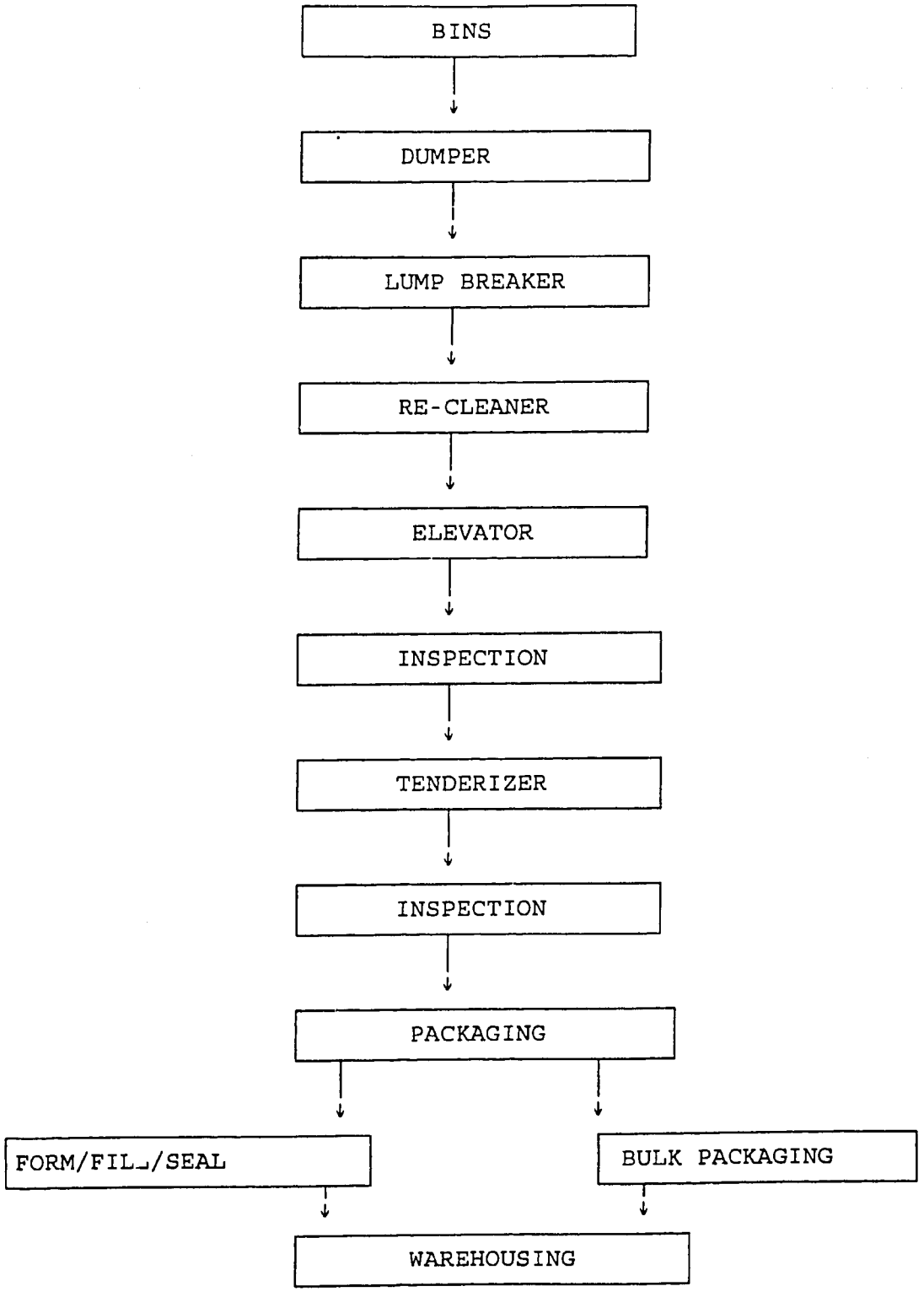
APRICOTS TENDERIZING



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ARTICHOKE CANNING

HARVESTING

TRANSPORTATION

SIZING

CUTTING

HEARTS BOTTOMS

INSPECTION-TRIMMING

BLANCHING

FILLING

BRINING

EXHAUSTING

CLOSING

RETORTING

DRYING-LABELING

CUCUMBER PICKLING

HARVESTING

TRANSPORTATION

SIZING

INSPECTION TABLE

PICKLING FERMENTATION

JAR FILLING TABLE

BRINING

CLOSING

PASTEURIZING

COOLING

DRYING-LABELING

WAREHOUSING

ROASTED PEELED PEPPERS

HARVESTING

TRANSPORTATION

SIZING

FLAME PEELER

WASH TANK

INSPECTION

CUTTING TABLE

JAR FILLING TABLE

BRINING

PASTEURIZING

COOLING

DRYING-LABELING

WAREHOUSING

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ANNEX FIVE

COST OF PRODUCTION CALCULATIONS FOR SELECTED PRODUCTS

1. Canned Apricots
2. Frozen Green Beans and Strawberries
3. Dried Apricots, Tomatoes and Prunes

APRICOT COSTS OF PRODUCTION

ITEM	UNIT COST	CAN SIZE A 10	5X1	5 KG
CANS PER BOX		8	6	4
FRUIT PER CAN		1.8	2.7	4.5
RAW MATERIAL	2000			
LOSS	13%			
MARGINAL COSTS				
RAW MATERIAL	2,299	33.10	37.24	41.38
CANS		33.84	36.6	25.2
BOX		5.00	6.00	6.00
LABEL		4.40	3.60	2.40
LABOR	292	4.20	4.73	5.25
ADDITIVES				
		80.54	88.17	80.23
FIXED COSTS				
DEPRECIATION		20	20	20
OVERHEAD				
POWER				
FIXED COST/CASE DH		20.00	20.00	20.00
TOTAL COST		100.54	108.17	100.23
WEIGHT/CASE		14.40	16.20	18.00
COST/KG DH		6.98	6.68	5.57
COST/KG FF		4.36	4.17	3.48
TRANSPORT TO DEPOT				
UNIT (CAN) COST (in DH)		12.57	18.03	25.06

Sales price

France

1988	*1989*	*1990*	*1991*	*1992*	*1993*	
12.5	14.5	15.5	18	16.5	13	price/can
9.26	10.74	11.48	13.33	12.22	9.63	unit price ff
14.81	17.19	18.37	21.33	19.56	15.41	unit price in dh

Spain

1988	*1989*	*1990*	*1991*	*1992*	*1993*	
			1700	2000	1750	price/can pesetas
			1,096.77	1,290.32	1,129.03	unit price psta
			9.87	2,064.52	1,806.45	unit price in dh

	Green Beans	Strawberries
Raw Material	5000	3000
Freezing cost		2500
Personnel	920	
Electricity	245	
Water, Fuel	240	
Packaging	200	
Maintenance	41	
Depreciation	218.52	
Financial Charges	21	
Storage Cost	??	
Total Cost	6,885.52	5,500.00
Unit Cost (per kg, in DH	6.89	5.5

Dried Fruits and Vegetables (units of raw material per ton of finished product)

	Prunes (6.8)	Apricots (6.28)	Tomatoes (13)
Raw Material	4000	9420	13000
Acid, sulphur	27.78	200	50
Packaging	222.5	650	650
Personnel	56	3800	4000
Electricity	20.84	200	200
Depreciation	118.06	600	600
Misc/Fin. Charges	189	1000	1000
Total Cost	4,634	15,870	19,500
Unit Cos/kg	4.63	15.87	25.5
Yield (in kgs) of dried product per 100 kg of fresh product	14.71	15.92	7.69

ANNEX SIX

PRODUCTION STATISTICS FROM THE MAMVA

1. Regional breakdown of Vegetable crops destined for processing, 1991/92.
2. Evolution of Vegetable crops destined for processing: prices, yields, surface and production.
3. Evolution of Tree crops: surface area, production, yields, and prices.
4. Regional breakdown of tree crops for 1991/92.
5. Regional breakdown of vegetable crop areas and production, 1991/92, by zone office and by zone DPA.
6. Agricultural calendar (planting and harvest) by region and product, 1990/91.

ANNEX VI
CULTURES MARAICHERES DESTINEES A L'AGRO-INDUSTRIE

CAMPAGNE 1991/92

REGIONS	HARICOT VERT		CORNICHON		NIORA		TOMATE		FRAISIER		TOTAL	
	SUP. (ha)	PROD. (T)	SUP. (ha)	PROD. (T)	SUP. (ha)	PROD. (T)	SUP. (ha)	PROD. (T)	SUP. (ha)	PROD. (T)	SUP. (ha)	PROD. (T)
BERKANE	-	-	-	-	1661	2240	-	-	-	-	1661	2240
LOUKKOS	517	2380	-	-	485	8245	2735	112015	53	1272	3790	123912
GHARB	75	450	180	720	625	2422	1885	82641	30	200	2795	86433
DOUKKALA	-	-	4	6	102	71	-	-	-	-	106	77
HAOUZ	-	-	-	-	1208	3020	-	-	-	-	1208	3020
TADLA	-	-	334	2037	4787	19148	-	-	-	-	5121	21185
FES	-	-	-	-	25	75	-	-	-	-	25	75
SETTAT	-	-	100	200	-	-	-	-	-	-	100	200
EL JADIDA	200	1600	250	750	-	-	-	-	-	-	450	2350
OUJDA	-	-	-	-	220	352	-	-	-	-	220	352
ESSAOUIRA	-	-	-	-	33	60	-	-	-	-	33	60
RABAT-SALE	100	500	-	-	-	-	-	-	-	-	100	500
BENI/MELLAL	316	1170	-	-	-	-	-	-	-	-	316	1170
TOTAL GENERAL	1208	6100	868	3713	9146	35633	4620	194656	83	1472	15925	241574

ESPECES	1987/88	1988/89	1989/90	1990/91	1991/92	MOYENNE
MELONS						
SUP. (HA)	18,840	21,740	21,835	20,520	25,800	21,747
PROD. (T)	269,700	314,900	371,160	371,000	313,100	327,972
RDT. (T/HA)	14.30	14.4	19.00	15.90	12.10	15
PRIX (DH/Kg)	1 à 4	1 à 4	1 à 3	1 à 6	1 à 4	
HARICOT VERT						
SUP. (HA)	3,450	3,840	3,910	3,150	3,000	3,470
PROD. (T)	19,860	31,460	26,390	15,820	14,400	21,586
RDT. (T/HA)	5.70	8.20	6.70	5.00	4.80	6
PRIX (DH/Kg)	2 à 5	2 à 5	2 à 5	2 à 8	2 à 7	
TOMATE INDUSTRIELLE						
SUP. (HA)	2,000	2,650	5,480	4,530	4,620	3,856
PROD. (T)	80,000	115,000	205,870	163,680	194,650	151,840
RDT. (T/HA)	40.00	43.40	37.50	36.10	42.10	40
PRIX (DH/Kg)	0,4 à 0,6	0,4 à 0,6	0,3 à 0,6	0,4 à 0,6	0,3 à 0,6	
NIORA						
SUP. (HA)	514	2,050	3,340	10,250	9,146	5,060
PROD. (T)	1,650	2,950	9,700	35,880	35,670	17,170
RDT. (T/HA)	3.20	2.90	2.90	3.50	3.90	3
PRIX (DH/Kg)	10	10	8 à 12	8 à 12	10 à 13	
CORNICHONS						
SUP. (HA)	1,500	2,355	2,525	4,070	870	2,264
PROD. (T)	3,850	11,500	12,660	12,760	3,710	8,896
RDT. (T/HA)	2.5	4.9	5	3.1	4.3	4
PRIX (DH/Kg)	0,5 à 4	0,5 à 4	0,4 à 4	0,5 à 0,6	0,5 à 4,5	
FRAISIER						
SUP. (HA)	150	140	165	205	275	187
PROD. (T)	3,600	3,000	3,500	4,500	6,000	4,120
RDT. (T/HA)	24.00	21.40	21.20	22.00	21.80	22
PRIX (DH/Kg)	1,5 à 4	1,5 à 4	3 à 7	2,5 à 4	2 à 3,5	
ARTICHAUT						
SUP. (HA)	1,930	1,380	1,340	1,580	1,965	1,639
PROD. (T)	24,750	18,740	17,140	24,470	23,920	21,804
RDT. (T/HA)	12.8	13.50	12.70	15.50	12.20	13
PRIX (DH/Kg)	1,5 à 3	1,5 à 3	1 à 2	1 à 3	1,2 à 3	
TOTAL						
SUP. (HA)	28,384	34,155	38,595	44,305	45,676	38,223
PROD. (T)	399960	494690	643085	623815	585725	549455
RDT. (T/HA)	14.09	14.48	16.66	14.08	12.82	14.37

ANNEX VI
ARBORICULTURE FRUITIERE

ESPECE	1987/88	1988/89	1989/90	1990/91	1991/92	MOYENNE
ABRICOTIER						
SUP. (HA)	13,300	13,400	13,500	13,900	13,470	13,514
PRODT. (T)	92,000	81,000	74,000	92,000	66,400	81,080
RDT. (T/HA)	6.72	6.00	5.50	6.60	4.90	5.94
PRIX (DH/Kg)	0.80	1.70	1.90	1.50	2.00	1.58
FIGUIER						
SUP. (HA)	37,000	37,900	38,800	40,000	40,208	38,782
PRODT. (T)	55,500	56,900	58,200	60,000	61,288	58,378
RDT. (T/HA)	1.50	1.50	1.50	1.50	1.52	1.50
PRIX (DH/Kg)	0.80	1.00	1.50	1.50	1.00	1.16
POMMIER						
SUP. (HA)	15,200	17,000	21,000	22,000	23,580	19,756
PRODT. (T)	236,000	295,000	221,000	249,000	278,000	255,800
RDT. (T/HA)	15.50	17.40	10.50	11.30	11.80	13.30
PRIX (DH/Kg)	2.00	2.00	2.50	2.80	2.50	2.36
PECHER						
SUP. (HA)	3,000	3,150	3,250	3,500	3,700	3,320
PRODT. (T)	29,000	28,000	35,200	25,000	33,100	30,060
RDT. (T/HA)	9.70	8.90	10.80	7.10	8.90	9.08
PRIX (DH/Kg)	2.00	2.00	1.90	2.20	2.00	2.02
TOTAL						
SUP. (HA)	68500	71450	76550	79400	80958	75,372
PRODT. (T)	412500	460900	388400	426000	438788	425,318
RDT. (T/HA)	8.355	8.45	7.075	6.625	6.78	7.457

SUPERFICIE DES CULTURES MARAICHERES DE SAISON
(REALISATION EN HA) - CAMPAGNE 1991/92 -

ESPECES / REGIONS	POMME DE TERRE	TOMATE	OIGNON	CAROTT	NAVET	PIMENT	PASTEQU	COURGE COURGET	HARICOT VERT	PETIT POIS	AIL	ARTICHAU	CHOUX FLEUR	CHOUX POMM	CONCOMB	PATAT DOUCE	MENTH	FEVE EN VER	AUBERGIN	BETTERA POTAGER	DIVERS	TOTAL
ZONE OFFICE																						
BERKANE	4705	1307	-	-	-	-	85	78	-	155	2567	-	-	-	-	-	-	1401	-	-	1452	12521
LOUKKOS	1555	-	-	-	-	45	6720	524	116	130	-	-	271	-	-	-	-	-	-	-	659	9753
GHARB	610	580	205	412	244	1580	2620	1080	-	-	-	170	-	-	-	-	-	-	-	-	1560	11173
DOUKKALA	2230	5825	391	850	1990	463	1443	473	1438	1	293	-	1587	-	-	-	-	-	-	-	82	16458
HAOUZ	2040	623	680	420	459	140	1084	610	513	67	345	-	-	189	-	4	300	228	227	-	272	9134
TADLA	1024	123	3171	710	238	-	233	7	110	252	85	-	35	20	-	-	223	1663	163	-	137	7628
S MASSA	1120	331	200	394	298	67	293	1196	277	17	-	-	9	39	18	12	-	1031	28	-	122	4429
OUARZAZATE	850	260	560	340	290	120	200	90	220	-	-	-	-	-	10	35	401	9	-	-	-	3120
TAFILALETE	354	168	238	303	289	82	135	126	139	-	-	60	-	-	-	-	60	-	130	-	201	2082
. SOUS TOTAL	14492	9217	5445	3429	3808	2497	13313	4184	2813	622	3290	230	1902	248	253	51	168	924	4332	595	0	4485	76298
ZONE DPA																						
TANGER	330	130	50	20	20	10	750	-	10	-	-	-	-	-	-	-	-	-	-	-	50	1390
TETOUAN	1067	661	573	100	89	119	641	43	101	66	367	193	8	119	118	20	-	-	81	-	283	5027
AL HOCEIMA	340	45	45	23	18	29	10	-	10	8	30	-	-	-	-	69	11	318	8	-	17	676
NADOR	1390	105	150	80	85	45	140	10	69	-	625	55	-	-	-	8	5	80	-	-	50	4844
CHEFCHAOUE	1343	181	279	336	191	72	630	565	49	307	-	179	-	-	40	-	70	1970	21	-	45	4253
FES	2876	209	1692	291	217	126	518	135	294	-	100	1360	-	20	-	15	-	-	20	-	355	8348
MEKNES	4680	610	4700	700	461	423	1320	150	392	40	-	173	-	151	-	25	10	100	250	-	294	14344
KHEMISSET	1199	250	113	77	99	58	1720	5555	149	-	9	7	-	-	9	50	-	-	40	-	26	9403
TAOUNATE	607	271	175	200	130	80	3831	631	173	-	-	20	14	100	-	80	31	11	115	-	239	6666
CASABLANCA	1060	70	-	102	-	-	-	-	130	25	-	-	-	700	-	-	-	-	-	150	90	2327
SETTAT	4030	320	1710	1820	210	45	-	-	410	-	-	20	-	-	410	-	250	-	45	200	670	10580
EL JADIDA	1110	810	220	350	550	300	340	730	340	-	-	-	-	150	-	50	440	-	-	-	30	5000
OUJDA	340	143	161	135	124	103	182	-	76	60	25	31	1	20	20	22	20	323	4	-	348	2118
TAZA	2540	132	245	95	112	90	1300	150	57	28	-	-	-	-	-	-	-	-	-	-	-	4749
BENI MELLAL	461	55	371	61	64	-	-	-	5	448	74	-	-	-	-	-	93	10	-	-	139	1781
AZILAL	535	88	135	95	28	35	-	-	73	-	83	-	-	-	-	-	-	242	37	-	-	1351
KHOURIBGA	351	30	50	53	42	25	-	-	36	-	-	-	-	-	-	-	-	-	5	-	69	685
MARRAKECH	225	95	90	91	60	63	161	48	49	-	5	20	-	-	-	-	24	385	45	-	42	1679
ESSAOUIRA	265	-	420	145	105	-	6	-	15	-	1575	-	-	-	-	-	300	800	-	-	50	3391
SAFI	68	50	260	375	40	20	80	157	118	5	410	-	-	-	-	-	-	150	10	-	300	2043
KHENIFRA	3918	100	67	115	157	37	-	-	23	-	-	1	-	-	-	-	10	-	34	1	49	4502
BOULMANE	1180	35	25	25	20	-	-	-	-	-	-	-	-	-	-	-	-	60	2	-	90	1375
EL KALAA	30	10	115	50	52	15	120	6	24	-	-	-	-	-	-	-	-	10	-	-	10	494
FIGUIG	10	2	20	15	10	-	-	-	1	-	-	-	-	-	-	-	20	30	20	-	4	72
GUELMIME	70	40	70	50	50	15	30	30	40	-	30	-	-	-	-	-	-	-	-	3	15	510
TIZNIT	32	7	45	66	176	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	97	437
TATA	-	-	25	33	22	-	7	6	5	-	-	-	-	-	-	-	-	-	-	-	-	98
AGADIR	12	5	7	9	9	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3	46
LAAYOUNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
IFRANE	1550	230	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	280	2760
BENSLIMANE	570	111	30	52	40	50	-	-	-	-	-	-	-	-	-	-	-	-	-	10	79	1555
RABAT SALE	2190	230	-	230	150	159	-	-	-	-	-	-	-	-	-	-	-	-	-	90	325	5666
SIDI KACEM	85	24	28	7	8	24	1000	180	180	50	56	-	40	100	57	-	40	30	60	-	-	1815
SOUS TOTAL	34464	5049	12571	5801	3369	1943	12786	8396	867	450	-	-	-	400	105	240	-	-	70	-	280	2760
T.GENERAL	48956	14266	18016	9230	7177	4440	26099	12580	6535	2109	6779	2310	1965	2008	1016	630	677	1869	9151	1482	4049	109985
									14	-	100	21	-	-	4	-	-	130	-	454	8534	186283
									3722	1487	3489	2080	63	1760	763	579	509	945	4819	887		
																			300	20		

									TADLA		MARRAKECH	
ESPECES	SEMIS	RECOLTE	SEMIS	RECOLTE	SEMIS	RECOLTE	SEMIS	RECOLTE	SEMIS	RECOLTE	SEMIS	RECOLTE
POMME DE T												
- Automne	Août-Sept.	Nov-Janv	mi-Août	Oct-Nov			Jut-Août	Sept-Oct	Août-Sept	Nov-Dec.	Decembre	Avril
- Print.	mi-J mi-N	Mai-Jllt	Janv-Fev	Mai-Juin	Janv-Mars	Mai-Juin	Fev-Mars	Mai-Jllt	Janv-Fev	Mai-Juin	Sept	Janv
TOMATE												
- Automne	Août-Sept.	Oct-Janv	T ind.									
- Print.	Mars-Avril	Juin-Sept	Fevrier	Av-Mai	Avr-Juin	Jllt-Sept	Avril	Juillet	Fev	Août-Sept	Mars	Nov
OIGNON	Fev-mi-Av	Juin-Août			Mars-Av	Juin-Août	Nov-Fev	Av-Jllt	Vert: A-S	Dec		
									Sec: J-F	Juin-Jllt	Mars	Août
CAROTTE					Sept-Oct	Dec-Mai	Toute	l'année	mi-At-Oct	Nov-Fev	Octobre	Mars
									Janv-Fev	Juin-Jllt		
NAVET	-	-	-	-	Sept-Oct	Dec-Av	Toute	l'année	-	-	Octobre	Mars
PIMENT	Mars-Av	Jllt-Août	Niora Fev	Sept-Oct	Mars-Av	Juin-A.	Avril	Juillet	Niora J-F	Sept-Oct	-	-
MELON	Mars-Av	Jllt-Sept	Avril	Août-Sept.	Avril	Août-Oct	Mars-mi-Av	Juin-Jllt	-	-	Mars	Août
PASTEQUE	Mars-Av	Jllt-Sept	Mars	Août	-	-	Avril	Jllt	-	-	Mars	Août
COURGETTE	Mai-Av	Juin-Oct	-	-	-	-	Oct	Janv	-	-	Mars	Oct
H VERT												
- Automne	Août-Sept.	Oct-Dec	mi-Août	Oct								
- Print	Mars-Av	Mai-mi-A	Mars	Mai	Fev-Mars	Mai-Juin	-	-	-	-	-	-
FEVE EN V	Dec-Janv	Fev-Av	-	-	Oct-Nov	Fev-Mars	-	-	-	-	Sept	Mars

ANNEX SEVEN

DUTIES FOR MOROCCAN EXPORTS TO THE EUROPEAN UNION AND THE UNITED STATES

I. Moroccan Duties into the European Union

Rapid Review of Moroccan Quotas and subsequent Tariff Rates for Moroccan Products into the EC,

	France	EC	Total HT	Duty
Green Beans	4,500	8700	13,200	19.2%
Tomatoes				
Pickles	3,200	0	3,200	??
Jellies	500	0	500	??
Apricot halves	2,000	6,300	8,300	17.6%
Apricot halves with sugar 4.5 kg > can > 1 kg				
Apricot pulp	8,000	6,000	14,000	11,5%
Apricots, no sugar	0	0	0	17%
Orange Juice		15,000		

Dried prunes	12%
Dried figs	free
Frozen fruit w/ sugar	26%
Frozen fruit no sugar	0
Frozen Vegetables	0
Asperagus (cans)	0
mushrooms	0

Dried Vegetables:

In general this is 16%, except for hybrids for sowing (4%)

Dried Fruits

Dried Figs:	free
Dried Dates:	free
Dried apricots:	7%
Dried Prunes:	12%
Peaches:	7%

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Products preserved in Vinegar or Acetic Acid:

Gherkins:	22%
Onions	20 %
Mushrooms	20 %
Capsicum Peppers	10%

Products preserved <u>otherwise</u> than by vinegar or acetic acid, not frozen

tomatoes	18 %
mushrooms	free
truffles	18 %
Sweet Corn	8 % + MOB
Sauerkraut, capers, olives	free
peas	24 %
onions (cooked)	18 %
artichokes	22 %
Asparagus	22%
Fruit of the Genus Capsicum	10%
Capers	free
Olives:	free

Frozen Fruits and Vegetables

Apricots	
Strawberries, with sugar added	26%
without sugar	18%
Raspberries, with sugar added	26%
without sugar	18%
Blackberries w/out sugar	15%
Frozen citrus fruit or melon peel	2%
Sweet Corn	8 % + MOB
Sauerkraut, capers, olives	free
peas	24 %
onions (cooked)	18 %
artichokes	22 %

Jams Jellies, marmalades

Homogenized Preparations w/out sugar added	30%
with sugar exceeding 13%	30% + AD S/Z

Fruit Juices

Most juices		varies from free - 28% +AD S/Z, depending on weight, concentration, sugar, and value
Tomato Juice	with added sugar	20% + AD S/Z
	no sugar	21%

II. Duties for Moroccan Products into the U.S.

Product name	Duty rate	Leading Competitor and Rate	
A. DRIED VEGETABLES:			
Broccoli	free		
celery stalks	free		
leeks	free		
spinach	free		
garlic	35%	Mexico	32.5%
		Canada	free
Mushrooms	free		
Onions	35%		
potatoes	free		
parsley	free	EC	6 %
tomatoes	13%	Israel, Mexico, Andes: free	
leguminous grains	free		
B. FROZEN VEGETABLES:			
potatoes	17.5%	Israel	free
peas	free		
limabeans	free		
cowpeas	free		
string beans	free		
lentils	free		
chickpeas	free		
spinach	17.5%	Israel, Mex:	free
		Canada	7%
sweetcorn	17.5%	Israel: free, Canada 7%, Mexico 14%	
bamboo shoots	free		
mushrooms	7.1 c/kg +10%		
Tomatoes same as if fresh			
Asparagus	17.5%		
Broccoli	17.5%		
Mixed Vegetables	17.5%		
Provisionally preserved:			
not pit green olives in saline	free up to 4,400 tons, in containers over 8 kg with statement to be repacked and sold green.		
pitted or stuffed	10.8c/kg		
onions	free		
capers	free		
gherkins	free		
mushrooms, same as if frozen			

Product name	Duty rate	Leading Competitor and Rate	
C. FROZEN FRUITS			
strawberries	free		
all other berries (except boysenberry)	free		
Melons	free		
D. Provisionally Preserved Fruits (including in alcohol)			
Strawberries	1.7 c/kg		
mixtures	17.5%		
E. DRIED FRUITS:			
apricots	free	Turkey	2.2 c.kg
whole dates	16.5 c/kg		
whole figs, wholesale	9.9 c/kg		
whole figs, retail size	free		
other figs	11 c/kg		
mixtures of dried fruit and nuts	17.5%		
F. PROCESSED FRUITS AND VEGETABLES: (CHAPTER 20)			
1. Preserved by vinegar or acetic acid			
Gherkins	free	EC	12%
Onions	free	EC	8%
Capers, more than 3.4 kg	free	EC	8%
Capers, other	8%		
Artichokes	free	EC	12%
Beans	free	EC	9%
Capsicums	9.5 %		
2. Prepared or preserved other than by vinegar			
tomatoes,			
whole or in pieces	14.7%		
tomato puree, paste	13.6%		
mushrooms	7.1 c/kg on drained weight + 10%		
French fries	10%		
homogenized vegetables	free		
potato chips & other	free		
peas	free		
asparagus	17.5 %		

Product name	Duty rate	Leading Competitor and Rate	
3. prepared or preserved otherwise than by vinegar, not frozen:			
corn, onions, carrots,	free		
mixed vegetables			
pimientos	9.5 %		
sweet bell peppers	free	EC	17.5%
artichokes	17.5 %		
chickpeas	free		
4. Jams and fruit jellies			
homogenized preparations	15%		
strawberry jam	free		
raspberry jam	free		
other berry jam	3%		
apricot jam	free	EC	7%
paste and purée of strawberry	15%		
fruit jelly of berry	3 %		
other	free		
almonds,	40.8 c/kg		
apricot pulp	free		
apricots	35%	Israel, Mexico, Andes	free
strawberries	14%		
dates	35%		
figs	free		
grapes	7%		
tomato juice	free	EC	0.3 c/liter
mixture of vegetable juices	free	EC	0.3 c/liter
tomato ketchup and sauces	free		
soups and broths and preparatiosn	free	EC	7 %
herbal teas	free	EC	10%

ANNEX 8

COMPARISONS OF EXPORTS BETWEEN MOROCCO AND LEADING COMPETITORS IN THE E.U. MARKET

APRICOTS

Moroccan production and exports: Some 29 firms process and export canned apricots in Morocco, predominantly unpeeled half apricots in 2.5 and 5 kg. institutional size packs. Export of this product to EU member countries is more diversified than some other categories. We have already noted that in 1992, France took 77% by value of imports; the balance goes to the Netherlands, Belgium, Germany and the U.K. in that order. The major French importer is a large supplier to the pastry industry. To make the popular "tarte aux abricots", French pastry cooks prefers the small size fruit Morocco produces and demand a "crown pack" (fruit laid in by hand in a circular pattern), requirements which Moroccan processors are able to meet.

A secondary product is apricot pulp, a by-product of apricot processing which consists of fruit which did not meet standards for halves. This product is used by jam manufacturers in Europe (and Morocco).

Table 1

European Union Imports of Apricots, Canned (tons)					
Suppliers	**1988**	**1989**	**1990**	**1991**	**1992**
Morocco	13,884	17,157	16,267	19,710	13,665
South Africa	7,379	10,069	14,464	13,990	12,677
Total non-EU	23,605	29,726	36,920	40,337	30,908
Italy	26,867	23,600	25,066	26,247	27,896
Greece	51,388	44,288	45,521	40,888	33,587
Spain	35,488	43,176	37,502	53,199	43,652
Intra-EU	124,394	121,543	120,695	134,666	118,248
World	147,999	151,263	157,615	175,004	149,162

Source: Eurostat
CN Code: 200850

GREEN BEANS

Moroccan production and exports: Morocco has successfully exported green beans to France for many years by exploiting the French taste for hand picked and packed *"tres fin* or *extra fin haricot verts"* (immature string beans of small diameter and uniform length). Low labor costs for this labor intensive production was the key to its success. However, the tonnage processed has dropped from 33,600 tons in 1982/83 to 15,800 tons in 1990/91. A 1988 MARA report[1] estimated cannery plant utilization at 25% of theoretical capacity and freezing plant capacity at 12% of theoretical capacity. Most of production is packed in retail sizes under the distributors label. It can be found in French supermarkets in a fancy can which mentions Morocco prominently on the label.

Table 2

Imports of Canned Green Beans (tons)					
	1988	**1989**	**1990**	**1991**	**1992**
Morocco	6,291	7,447	6,089	5,883	3,485
China	11,392	10,592	11,256	18,874	14,180
Kenya	4,288	2,391	4,614	6,432	3,656
Total non-EU	24,895	21,810	23,808	39,271	25,066
France	31,715	30,607	34,257	42,829	42,381
Netherlands	24,210	32,181	43,420	45,932	49,650
Italy	9,883	12,223	19,207	29,799	37,639
Intra-EU	109,839	113,792	128,968	148,615	165,421
World	134,735	135,605	152,783	187,883	190,488

Source: Eurostat
CN Code: 200559

FROZEN GREEN BEANS

Moroccan production and export: Moroccan IQF green beans were seen on a recent visit to a store of the French frozen food chain PICARD. The package carried the PICARD brand but indicated Moroccan origin. After tracking down the supplier, the EUROFROID company in Bergerac (Bordeaux), we learned that this company imports from three Moroccan suppliers: Yasmingel (Skhirat), El Kadiria (Meknes), and LCS (Safi). The buyer at EUROFROID reported that the product was of good quality, but that

[1] Situation du Secteur des Conserves vegetales", MARA, September 1988.

it was necessary to have one of their staff present at the processing plants during the season to assure that quality standards were met.

Table 3

Total EU Imports of Beans, Frozen (tons)					
	1988	**1989**	**1990**	**1991**	**1992**
Morocco	5,220	6,182	8,232	8,371	6,237
Poland	7,057	7,818	11,030	17,564	15,660
Extra-EU	16,198	18,049	24,951	38,327	32,159
France	14,828	10,519	11,003	11,818	10,948
Belg/Lux	23,459	22,668	23,497	23,721	24,519
Netherlands	8,585	7,932	8,118	11,797	11,416
Intra-EU	54,479	47,899	58,805	59,625	54,589
World	71,206	66,459	84,180	98,381	86,912

Source: Eurostat
CN Code: 071022

FROZEN MIXED VEGETABLES

Moroccan production and export: Several Moroccan companies are successfully exporting IQF mixed vegetables in poly bags to France. In a recent visit to a CASINO supermarket in France, we saw sizeable displays of Moroccan IQF mixed vegetables, one labeled "for cous-cous" and one "for ratatouille", along with IQF green beans. These products were imported by the "Prodar" company, but were clearly labeled as a product of Morocco.

Table 4

Total EU Imports of Mix. of Veg., Frozen (tons)					
	1988	**1989**	**1990**	**1991**	**1992**
Morocco	491	704	687	616	420
Total non-EU	3,747	4,716	4,647	4,914	4,877
Intra-EU	38,086	43,510	49,570	68,451	76,226
World	41,831	48,225	54,214	73,365	81,237

Source: Eurostat
CN Code: 071090

PICKLED CUCUMBERS

Moroccan production and export: Production and export of the small cornichon type pickle has increased rapidly in the past few years. Exports almost doubled between the 1980-85 average and the 1990/91 season. However, the value of exports increased by more than a factor or four during this period, reflecting a .narked trend toward consumer packaged products with higher value added, as opposed to bulk shipments. (Increased cost due to higher labor rates for hand harvesting is also a factor.) The fifteen producers of cornichons are located in all the major cities of the country, with a concentration n Casablanca. Three producers account for 64% of the total production.[2]

Table 5

Total EU Imports of Pickled Cucumbers (tons)					
	1988	**1989**	**1990**	**1991**	**1992**
Morocco	15.845	15,845	15,441	13,044	7,879
Hungary	14,355	14,574	12,443	20,287	29,014
Turkey	2,144	9,312	20,373	35,567	34,922
Total non-EU	46,682	52,534	58,486	87,127	88,718
Netherlands	10,678	10,265	11,328	15,317	18,708
Germany	15,495	15,530	17,739	16,833	19,402
Intra-EU	32,473	32,588	35,181	38,806	46,457
World	79,154	85,135	93,823	125,932	135,174

Source: Eurostat
CN Code: 200110

CAPERS

Moroccan production and exports: Morocco is the world leader in production of capers. They are processed in 20 plants around Morocco, half of them located in the Fez area. Exports have increased slowly, rising from about 3000 tons in the early 1980s to roughly 4,500 tons in the early 90s. Unit values, however, have tripled, probably reflecting higher labor costs for hand harvesting.

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[2] Kingdom of Morocco: Agro-Industrial Development, Constraints and Opportunities, The World Bank, 25 March 1993.

Table 6

Total EU Imports of Capers (tons)					
	1988	1989	1990	1991	1992
Morocco	2,373	2,552	3,168	3,173	3,193
Turkey	999	745	1,866	2,103	1,867
Total non-EU	3,629	3,592	5,252	5,576	5,331
Spain	641	502	420	337	180
Intra-EU	701	565	489	457	352
WORLD	4330	4161	5741	6033	5686

Source: Eurostat
CN Code: 071130

TOMATO CONCENTRATE

Moroccan production and exports: Moroccan canning plants produce relatively small quantities of tomato concentrate and whole peeled tomatoes for export. As a late summer crop following beans and pickles, processors can make use of canning lines which would otherwise be idle (though they must invest in an evaporator).

Table 7

Total EU Imports of Tomato Concentrate (tons)					
	1988	1989	1990	1991	1992
Morocco	578	560	664	531	385
Turkey	19,907	34,378	30,144	29,827	20,224
Total non-EU	33,641	44,565	38,198	38,325	19,336
Greece	113,348	95,701	81,770	80,344	93,109
Italy	171,809	168,140	188,376	193,763	197,417
Intra-EU	323,759	299,358	289,917	319,569	342,145
World	357,398	343,921	328,114	357,897	361,480

Source: Eurostat
CN Code: 200290

ANNEX NINE

CATEGORIES OF COUNTRIES FOR U.S. DUTIES

General note 4(a) (con.):

Non-Independent Countries and Territories

Anguilla
Aruba
British Indian Ocean Territory
Cayman Islands
Christmas Island (Australia)
Cocos (Keeling) Islands
Cook Islands
Falkland Islands (Islas Malvinas)
French Polynesia
Gibraltar
Greenland
Heard Island and McDonald Islands
Macau
Montserrat
Netherlands Antilles
New Caledonia
Niue
Norfolk Island
Pitcairn Islands
Saint Helena
Tokelau
Trust Territory of the Pacific Islands (Palau)
Turks and Caicos Islands
Virgin Islands, British
Wallis and Futuna
Western Sahara

Associations of Countries (treated as one country)

Member Countries of the Cartagena Agreement (Andean Group)

Consisting of:

Bolivia
Colombia
Ecuador
Peru
Venezuela

Members of the Association of South East Asian Nations (ASEAN) Eligible for GSP except Brunei Darussalam and Singapore

Consisting of:

Indonesia
Malaysia
Philippines
Thailand

Member Countries of the Caribbean Common Market (CARICOM)

Consisting of:

Antigua and Barbuda
Bahamas, The
Barbados
Belize
Dominica
Grenada
Guyana
Jamaica
Montserrat
St. Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Trinidad and Tobago

General note 3(c) (con.):

(iv) Whenever any rate of duty set forth in the "Special" subcolumn in chapters 1 to 98 is equal to or higher than, the corresponding rate of duty provided in the "General" subcolumn in such chapters, such rate of duty in the "Special" subcolumn shall be deleted; except that, if the rate of duty in the "Special" subcolumn is an intermediate stage in a series of staged rate reductions for that provision, such rate shall be treated as a suspended rate and shall be set forth in the "Special" subcolumn, followed by one or more symbols described above, and followed by an "s" in parentheses. If no rate of duty for which the article may be eligible is provided in the "Special" subcolumn for a particular provision in chapters 1 to 98, the rate of duty provided in the "General" subcolumn shall apply.

4. Products of Countries Designated Beneficiary Developing Countries for Purposes of the Generalized System of Preferences (GSP).

(a) The following countries, territories and associations of countries eligible for treatment as one country (pursuant to section 502(a)(3) of the Trade Act of 1974 (19 U.S.C. 2462(a)(3)) are designated beneficiary developing countries for the purposes of the Generalized System of Preferences, provided for in Title V of the Trade Act of 1974, as amended (19 U.S.C. 2461 *et seq.*):

Independent Countries

Albania
Angola
Antigua and Barbuda
Argentina
Bahamas, The
Bahrain
Bangladesh
Barbados
Belize
Benin
Bhutan
Bolivia
Botswana
Brazil
Bulgaria
Burkina Faso
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Chile
Colombia
Comoros
Congo
Costa Rica
Cote d'Ivoire
Cyprus
Czech Republic
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Estonia
Ethiopia
Fiji
Gambia, The
Ghana
Grenada
Guatemala
Guinea
Guinea Bissau
Guyana
Haiti
Honduras
Hungary
India
Indonesia
Israel
Jamaica
Jordan
Kenya
Kiribati
Kyrgyzstan
Latvia
Lebanon
Lesotho
Lithuania
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Mauritius
Morocco
Mozambique
Namibia
Nepal
Niger
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland
Russia
Rwanda
St. Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Slovakia
Solomon Islands
Somalia
Sri Lanka
Suriname
Swaziland
Syria 1/
Tanzania
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
Turkey
Tuvalu
Uganda
Uruguay
Vanuatu
Venezuela
Western Samoa
Yemen Arab Republic (Sanaa)
Zaire
Zambia
Zimbabwe
Each of the former republics of the Socialist Federal Republic of Yugoslavia other than Serbia and Montenegro

1/ Syria deleted, effective August 16,1992.

General note 4 (con.):

(b) The following beneficiary countries are designated as least-developed beneficiary developing countries pursuant to section 504(c)(6) of the Trade Act of 1974, as amended:

Bangladesh
Benin
Bhutan
Botswana
Burkina Faso
Burundi
Cape Verde
Central African Republic
Chad
Comoros
Djibouti
Equatorial Guinea
Gambia, The
Guinea
Guinea-Bissau
Haiti
Kiribati
Lesotho
Malawi
Maldives
Mali
Mauritania
Mozambique
Nepal
Niger
Rwanda
Sao Tome and Principe
Sierra Leone
Somalia
Tanzania
Togo
Tuvalu
Uganda
Vanuatu
Western Samoa
Yemen Arab Republic (Sanaa)

Whenever an eligible article which is the growth, product or manufacture of one of the countries designated as a least-developed beneficiary developing country is imported into the customs territory of the United States directly from such country, such article shall be entitled to receive the duty-free treatment provided for in subdivision (c) of this note without regard to the limitations on preferential treatment of eligible articles in section 504(c) of the Trade Act, as amended (19 U.S.C. 2464(c)).

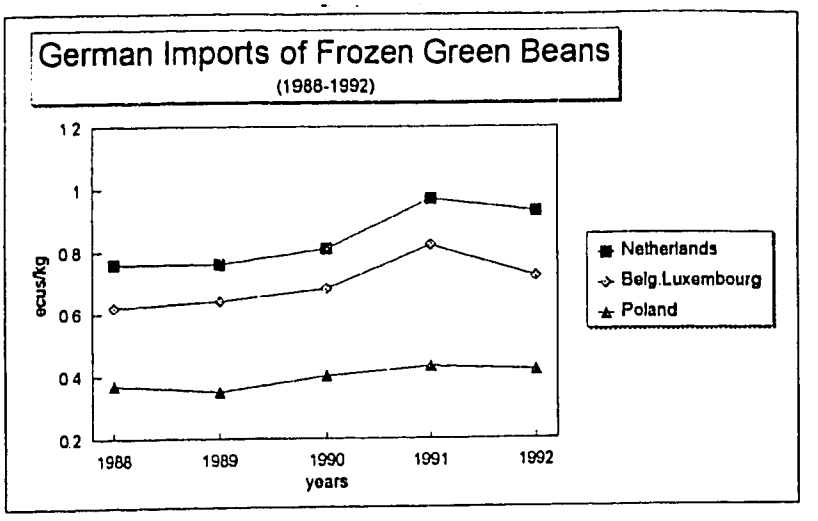
(c) Articles provided for in a provision for which a rate of duty of "Free" appears in the "Special" subcolumn followed by the symbols "A" or "A*" in parentheses are those designated by the President to be eligible articles for purposes of the GSP pursuant to section 503 of the Trade Act of 1974. The symbol "A" indicates that all beneficiary developing countries are eligible for preferential treatment with respect to all articles provided for in the designated provision. The symbol "A*" indicates that certain beneficiary developing countries, specifically enumerated in subdivision (d) of this note, are not eligible for such preferential treatment with regard to any article provided for in the designated provision. Whenever an eligible article which is the growth, product, or manufacture of a designated beneficiary developing country listed in subdivision (a) of this note is imported into the customs territory of the United States directly from such country or territory, such article shall be eligible for duty-free treatment as set forth in the "Special" subcolumn, unless excluded from such treatment by subdivision (d) of this note; provided that, in accordance with regulations promulgated by the Secretary of the Treasury the sum of (1) the cost or value of the materials produced in the beneficiary developing country or any 2 or more countries which are members of the same association of countries which is treated as one country under section 502(a)(3) of the Trade Act of 1974, plus (2) the direct costs of processing operations performed in such beneficiary developing country or such member countries is not less than 35 percent of the appraised value of such article at the time of its entry into the customs territory of the United States. No article or material of a beneficiary developing country shall be eligible for such treatment by virtue of having merely undergone simple combining or packing operations, or mere dilution with water or mere dilution with another substance that does not materially alter the characteristics of the article.

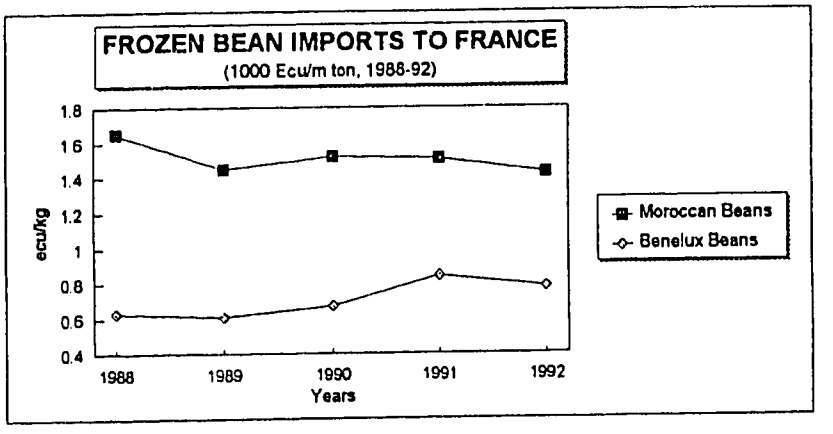
ANNEX TEN

IMPORT PRICES FOR SELECTED PRODUCTS INTO MAIN EUROPEAN MARKETS

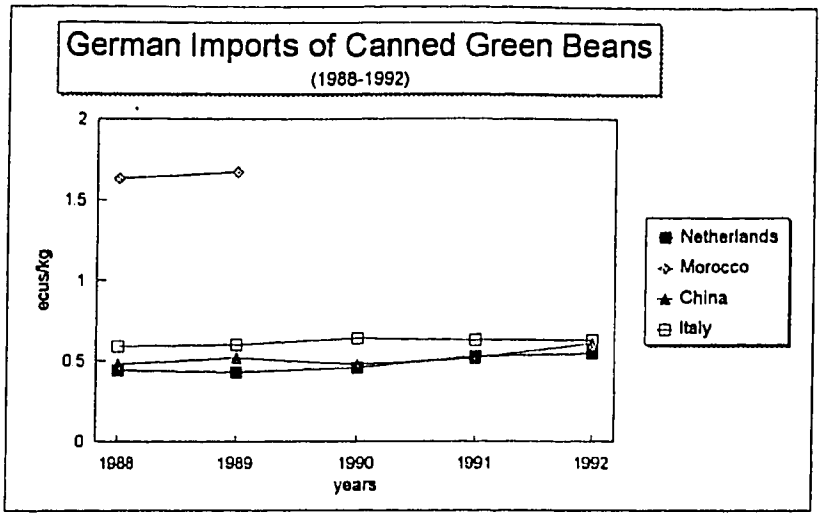
1. Frozen Green Beans to France and Germany
2. Canned Green Beans to France and Germany
3. Canned Apricots to France and Germany
4. Cornichons to France and Germany
5. Capers to Italy, France, and Germany

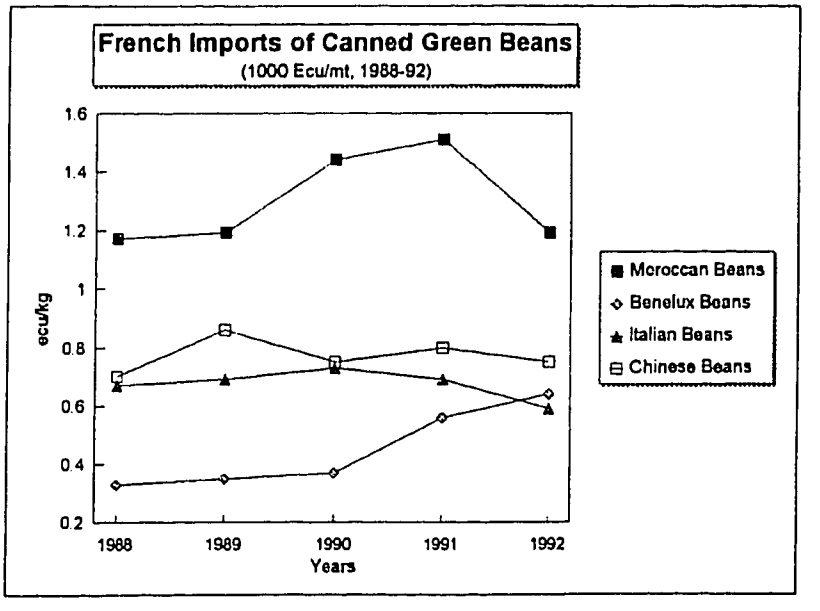
IMPORT PRICES FOR FROZEN GREEN BEANS



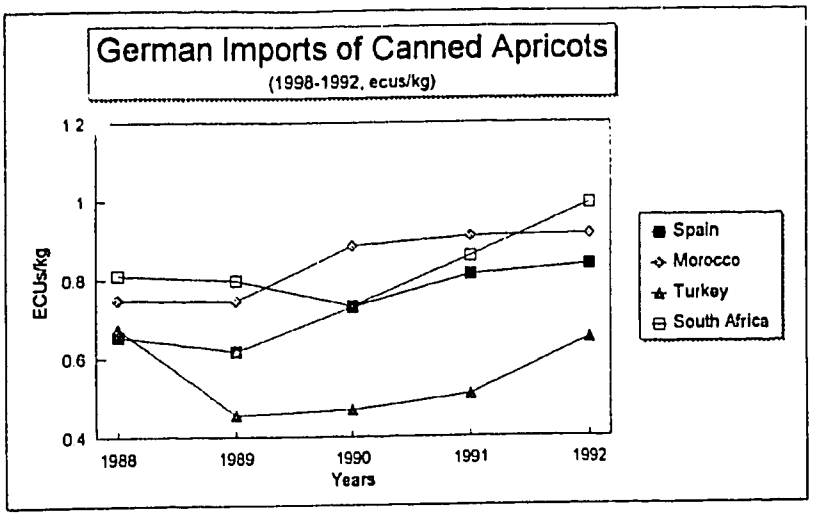


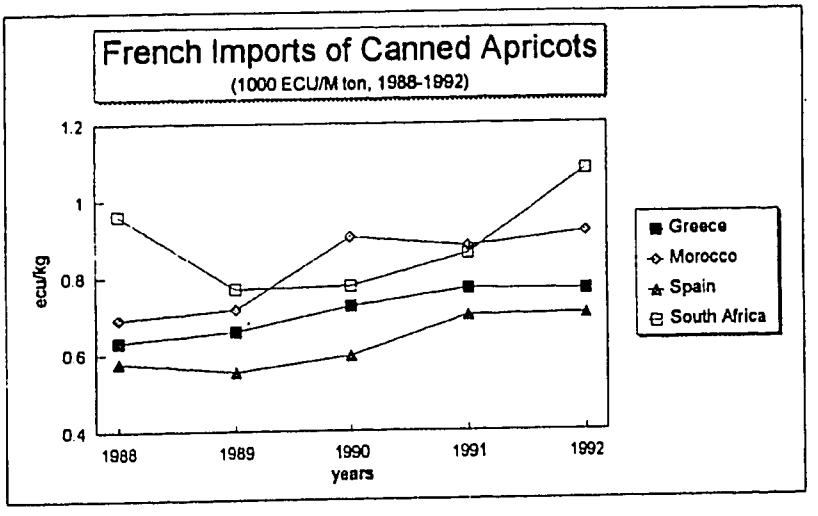
IMPORT PRICES FOR CANNED GREEN BEANS



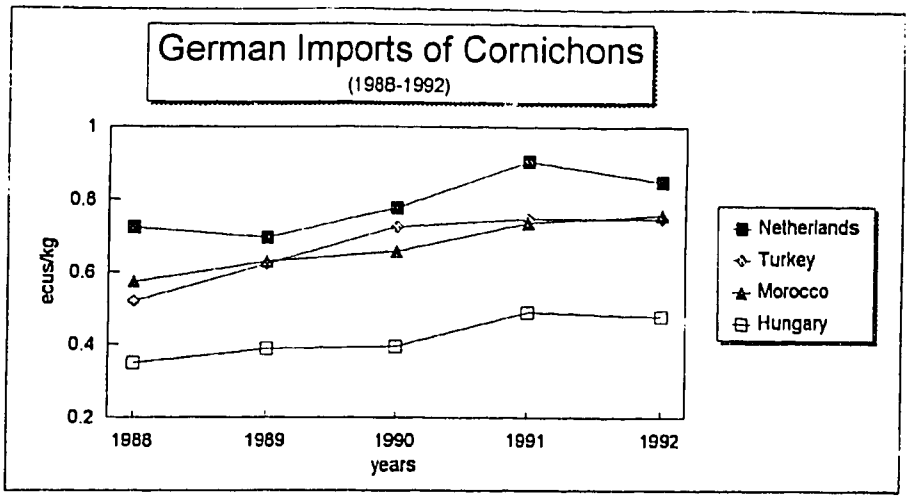


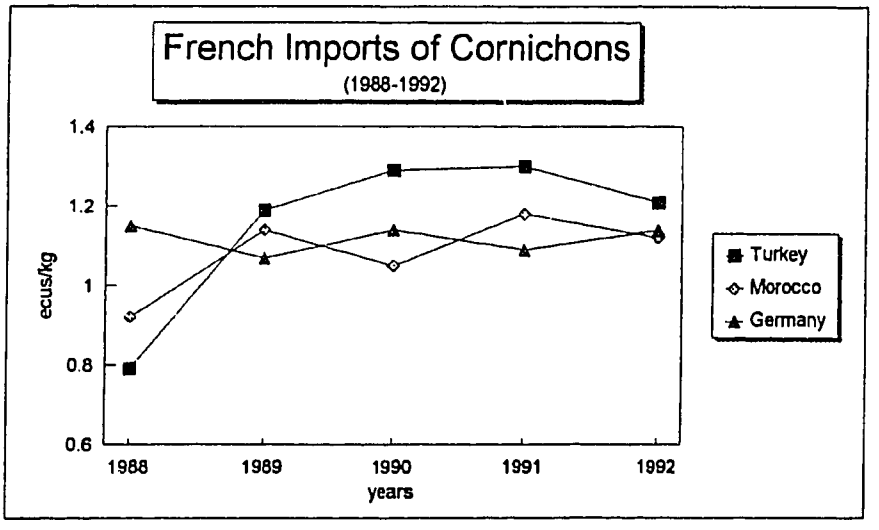
IMPORT PRICES FOR CANNED APRICOTS



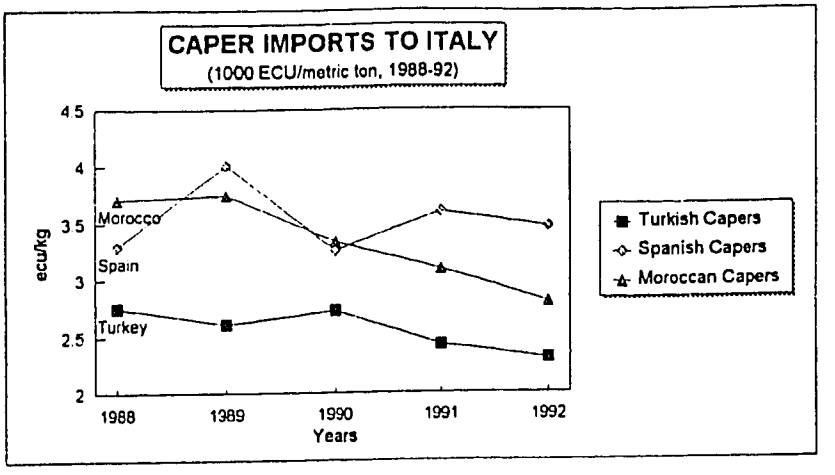


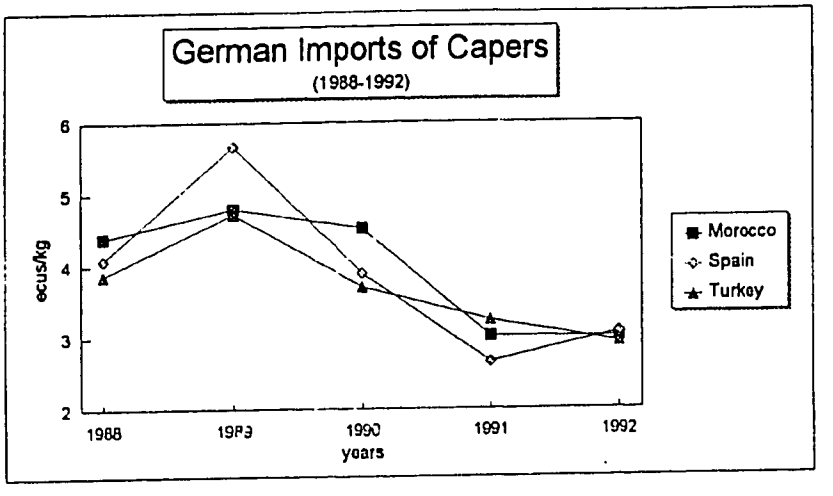
IMPORT PRICES FOR CORNICHONS

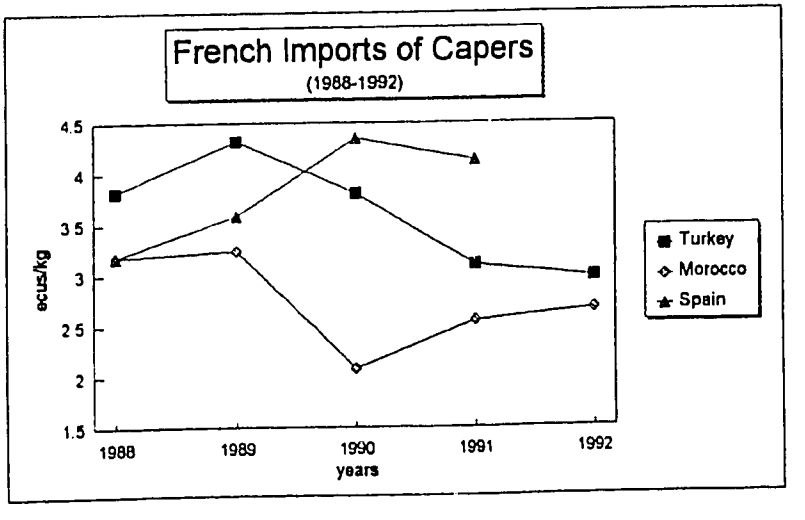




IMPORT PRICES FOR CAPERS







ANNEX ELEVEN

FACTOR COSTS OF PRODUCTION FROM MOROCCO AND LEADING COMPETITORS

	MAROC	COREE	ESPAGNE	FRANCE	TUNISIE	TURQUIE
SALAIRES ET CHARGES SOCIALES : SMIG (le mois)	1,248	5,839 (1989)	9,851 (1989)	8,430	1,232	1,273
Salaire indust moyen (le mois)	2,548 (ouv. qual)	833 (1990)	12,384	14,311	2,268	3,293 (1990)
Securite sociale (% salaire)	15.4		24.0	35.6	17.5	19.5-27
TERRAIN						
Zone amenagee (m2)						
minimum	35		155	2		1
maximum	1,000		1,215	154		1,227
moyen	186		425	64		
mediane	75		355	46		
zone de libre echange						
CREDIT: Taux d'interet réel (1990)						
Moyen terme (% par an)	8.1%	1.1-3.1%	8.4%	14.0%	7.6%	>11.0%
A l'expoit (% pr an)	4.1%	1.1-26%	6.0% (1/92)	n.a	3.1%	n.a.

	MAROC	COREE	ESPAGNE	FRANCE	TUNISIE	TURQUIE
ENERGIE:						
Essence ordinaire (le litre)	6.7	7.2	7.4	8.3	4.6	6.4
dont taxes et impots			4.9	6.2		3.6
Diesel (le titre)	4.0	2.1	5.3	4.8	3.0	4.7
dont taxes et impots			2.7	2.6		2.5
Fuel industriel (l tonne)	1,858	1,116	1,203	1,010	999	1,591
dont taxes et impots			142	207		681
Gax en vrac						
- la tonne	2,800					
- milion Kcal GCV			2,456	1,305		1,189
dont taxes et impots			36	0		67

	MAROC	COREE	ESPAGNE	FRANCE	TUNISIE	TURQUIE
ELECTRICITE (haute tension)						
Heures de pointe (KWh)	0.71				0.64	
Heures creuses (KWh)	0.57				0.32	
Moyen (KWh)		0.59 (1990)	1.00	0.65	0.46	0.73
EAU POTABLE						
Usage industriel (m3, 1990)	3.7		8.5	8.1	4.0	8.3
TRANSPORT DE MARCHANDISES						
Routier (le km-tonne)	0.38	0.50		8.99		
(le km par camion de 22 tonnes)			11.55			
Ferroviaire (le km-tonne)	0.43	2.1-2.5				
Maritime (cont. rendu France)	8,092					
(container rendu Casablanca)			6,287	9,112		
Aerien (le kg a Paris)	11		11			
TELECOMMUNICATIONS						
Appel local (la minute)		59		12		
Habitants par ligne	68	4	3	2	24	11

	MAROC	COREE	ESPAGNE	FRANCE	TUNISIE	TURQUIE
FISCALITE						
Revenue publique/PIB (1990)	25	16	21	41	30	19
Composition des revenus:						
taxes sur salaires, revenus et benefices	22.1%	38.9%	66.3%	61.2%	24.0%	43.3%
taxes sur biens et services						
domestiques	34.4%	33.5%	24.1%	28.3%	20.1%	32.1%
importations/exportations	19.6%	10.6%	2.5%	0.0%	27.9%	6.2%
autres taxes	23.9%	17.0%	7.1%	10.5%	28.0%	18.4%
TAUX D'ECHANGE (moyen 1991/us$)	1.0	84.2	11.9	0.6	0.1	479.2
- autre taux d'echange						325 (12/90)
						815 (8/92)
INFLATION (1990)	6	9	8 (6,9% en 1991)	3	6	59

Sources:

SALAIRES ET CHARGES SOCIALES: Maroc: "Cout des facteurs de production" dans Revue d'Information BMCE - Avril 1992 et Ministere de Commerce et de l'Industrie. Espagne: "Avance del Anuario Estadistico de Espana, 1991 published by Institute national de estadistica, 1992.

France: " Country Report - France, N. 2 1992 "Economist Inteligence Unit; "Annuaire Statistique de la France 1990, " Institut National de la Statistique et des Etudes Economiques (INSE), 1991; ET "Tableaux de l' Economie Francaise, 1991-92 INSEE, 1992. Koree: "Doing Busness in Korea, "Price Waterhouse, 1992.

Tunisie: donnees de la Banque Mondiale, reçu octobre 1992.

Turquie: "Doing Busness le Turkey", Price Waterhouse , 1991: data from the state Institute of Statistics in Turkey provided by the Embassy of Turkey in Washington.

TERRAIN: Maroc BMCE op. cic.
France : quotation recues de l' invest. in France Agency, september 1992 . Thurquies dans from "Turkish embassy officials et "Doing Busness in Turkdy" op. cic.
Credit: Tous: "International Financial Statistics", International Monetary Fin mars 1992. Credit a l'export: "Tipos de interets" (1992), published by Boletia Economico ICE 1992 kORC "Monstly Statiscal Bulletin", Bank of Korea, janvier 1992.
Turquie les taux reels moyen des emrents a ete reduit a 11% en janvier 1992 selon "Country Report - Turkey,N. 1 1992", Economist Intelegence Unit 1992.
ENERGIE ET ELECTRICITE: Maroc, Espagne, France, Koree, Tunisie et Turquie: Office National d'Electricite," Annexe a Rapport sur l exercice annuel 1 1991" et "Energy Prices and Taxes", OECD, IO 1992.
EAU POTABLE: Office National d'Eau Potable" Rapport d'Activite, 1991".
TRANSPORT DE MARCHANDISES: (tarif de base). Maroc: BMCE, op cit.
Espagne: Transport routier presente les frais d'un voayge de bar celo na a Paris ou a Hambourg, les frais viennent de Lluch International S2. Barcelona Transportation, 1991. Transport maritime est le cout d'un container de Barcelona a Casablanca, cite en BMCE op, cit; transport series est le prix par kilograme entre Maroc et Lisbon.
France: Transport routier est le tarif en janvier 1992 pour transport 10 tonnes, 501 kg. Les couts unitaire avec distoance et et poid. Connee de CNR, via Invest in France Agency. Transport maritime est le cout d'un container venant de la Mediteranee a Casablanca, cite en BMCE, op. cit. Koree: Frais de transporter 13 tonnes. 513 kms. Le cout km tonne avec distance et poid. "Korea's Trade and Industry 1991," Ministry of Trade and Industry. 1991.
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