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**THE EUROPEAN MARKET
FOR PROCESSED MANGO**

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FINAL REPORT

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AGRICULTURAL MARKETING IMPROVEMENT STRATEGIES PROJECT

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EXECUTIVE SUMMARY

This study provides an overview of the European market for processed mango products. Abt Associates Inc. carried it out at the request of the U.S. Agency for International Development's Regional Economic Development Support Office for West and Central Africa (REDSO/WCA). The Agricultural Marketing and Agribusiness Unit of the Agriculture and Resources Analysis Division of the Office of Analysis, Research and Technical Support of the Bureau for Africa, (AFR/ARTS/FARA/AMA) provided funding through a buy-in to the Agricultural Marketing Improvement Strategies (AMIS) Project, for which Abt Associates is the prime contractor. The study assesses the potential for West African producers to export processed mango products to the countries that comprise the European Community (EC-12) and especially its four largest consumers of processed tropical fruits: Germany, France, the Netherlands and the United Kingdom.

Consumer products that include processed mango in its various forms include nectars and fruit juice drinks; dairy products, including fruit flavored yogurts and ice cream; baby foods; dried mango and mango chutney. Mango is an acquired taste. According to industry experts contacted during this study, consumers often describe mango beverage products as having a "soapy" taste. However, manufacturers appreciate the aroma and flavor mango adds to beverages that are a blend of tropical fruits.

To make these products, Europe imports processed mango in various forms including purée and concentrates; cubed and frozen; dried; and mango chutney. The most common form of packaging for purées and concentrates includes canned, aseptic and frozen.

Marketing processed mango is complicated in that a number of different types of participants get involved in the process. Food and beverage manufactures draw up detailed specifications for the mango products that they incorporate into their operations. Firms tend to rely upon a few, select suppliers with whom they have established long term relationships. Changing formulas used to make food and beverage products is an expensive and time consuming process. As a result manufacturers are reluctant to change their suppliers.

Based on both extrapolations from the readily available data, which do not single out mango products, and interviews with key market participants, this report estimates that the twelve countries that comprise the Community are currently importing 10,000 to 15,000 metric tons of processed mango products per year. Product destined for the beverage segment of the market is the single most important component accounting for sixty to seventy percent of the volume of imports.

Although India is the world's largest exporter of processed mango, Europe's major suppliers are Central and South American countries: Brazil, Colombia, Guatemala, and Peru. However, the purée of the *Alphonso* variety from India is generally recognized as a premium product in the European market.

Ironically, although there is a glut of supply, processed mango is relatively expensive in comparison to other processed tropical fruits. The reason for this is a combination of biological and technological factors. It is currently impossible to produce a marketable product that is more than a double strength concentrate without losing the fruit's most marketable characteristic, its aroma. This puts mango at a disadvantage to fruits that are concentrated at higher levels. The higher the concentration the less water there is to transport. Also, the higher the concentration the more end product a food or beverage manufacturer will be able to produce per unit of import.

Based on data that is readily available for the juice segment of the market, prices for processed mango have been soft and flat for the last two years. However, mango is still more expensive than other tropical fruit products. A number of external factors appear to be at work. Since 1991 India has lost two significant markets, one in the Persian Gulf states and the other in the former Soviet Union. In addition, Europe has been in a persistent recession which has restrained consumption. The market is likely to remain soft for another year or more and growth in demand will be slow.

Potential West African exporters have a few competitive factors in their favor. As signatories of the Lomé Convention, the countries of West Africa can export to the European Community duty free. Current suppliers are subject to duties and import taxes of six to eight percent. In addition, West African suppliers with ready access to port facilities have a transportation advantage.

However, it will take a considerable effort to penetrate the European market. Among other things, potential exporters will need to be able to talk authoritatively and scientifically about the unique characteristics of the products they have to offer. The process might begin by taking samples to the major trade shows: ANUGA in Germany and SIAL in France. Firms with the current capacity to process mango should engage an agent who will work on their behalf to establish and develop market contacts. The focus here should be on potential new products that do not have high capital investment requirements. For example, a study of the market potential for sun dried mango slices, that could be sold as a premium, all natural product, may be worth investigating.

As for recommendations for A.I.D., its efforts should concentrate on firms with existing processing capability, rather than creating new firms or expanding existing ones. Also, funding research efforts to catalogue existing varieties and documenting their characteristics would be worthwhile. The identification of varieties most suited for the different segments of the market is an important first step on the road to developing a competitive West African processed mango industry.

CHAPTER 1

INTRODUCTION

The mango, *Mangifera indica*, originated in Myanmar (Burma) and Malaysia, but now can now be found in almost every tropical and subtropical country. India, with over 1 million hectares in production, accounted for over half the world's fresh mango production in 1984. Other important producers are Pakistan, Mexico, the Philippines, Brazil, China, Indonesia and Haiti. India and South America are currently the most important source of mango concentrate. Other exporters of concentrate are Pakistan and Kenya.

Several nations in West Africa export significant quantities of fresh mangoes to the European market. Mali, Burkino Faso, the Gambia and Guinea rank in the top 20 exporters. Malian and Gambian exports to the E.C. have tripled since 1987 while Guinean exports have doubled in size. Given the success of some West African countries in exporting fresh mango, this report addresses the question of whether the European market represents an opportunity for processed mango originating from West Africa.

The impetus for the study came from two sources: the Regional Economic Development Support Office for West and Central Africa (REDSO/WCA) and the Agricultural Marketing and Agribusiness Section of the Food, Agriculture and Resources Analysis Division of the Office of Analysis, Research and Technical Support of the Bureau for Africa (AFR/ARTS/FARA/AMA). The former drafted the original scope of work and provided technical oversight. The latter provided funding through a buy-in to the Agricultural Marketing Improvement Strategies (AMIS) Project.

1.1 Purpose of the Study

Many countries in West and Central Africa face the problem of seasonal excess mango production that cannot be sold. Limited markets for fresh mangoes result in surpluses which inevitably spoil. While the local West African market for juices, concentrates, pulps, dried mango and other products is limited, the demand by the European consumer for tropical juices and flavors has increased in the past few years. Before investments in plant and equipment can be made, West African countries must assess their actual competitive position in the market. AID/ARTS/FARA has sponsored this study, initiated by REDSO/WCA, as part of the overall research agenda for analyzing constraints on agribusiness development in Africa. REDSO/WCA developed the scope of work, which considered the following issues:

USAID missions in the region are approached by farmers to help them by supporting the development of mango processing plants. In order to be able to formulate an appropriate strategy for this issue, the first question that should be answered is: Does the world market situation enable

profitable processing of mango in West African countries? The question is presently relevant in Mali, Guinea-Bissau, and Guinea, and probably The Gambia, but it is very probable that other missions will face it as well.

The present study is the first step in the process to provide an answer. Its focus is to identify the potential of the Western European market with regard to quantities demanded, specifications, prices, competition and trends of processed mango. Appendix A provides the complete statement of work (SOW).

1.2 Methodology and Limitations

Responding to the issues raised in the SOW required a multifaceted approach. Part of this study includes an analysis of trade data, including the creation of time series for both the volume and price of different processed mango products moving into the European market. Unfortunately, the data that is readily available from *Eurostat* does not fully disaggregate mango products from those of other tropical and exotic fruits. The same can be said about volume data readily available through the Market News Service of the International Trade Center (UNCTAD/GATT). The collection of disaggregated data for processed mango products was beyond the financial scope of the present study.¹

In addition to this quantitative analysis, interviews with major participants in the mango market provided additional data and information for this study. Interviews with over 30 agents, brokers, importers, blenders, and manufacturers of both food ingredients and food and beverage products in France, Germany, the Netherlands, and the United Kingdom provided a wealth of information about the structure, conduct and performance of the markets in those countries and by extrapolation the entire European Community.

Appendix B reproduces the informal interview guidelines used to help standardize the collection of data from these discussions with key market participants. Annex C provides a list of persons contacted over the course of the study.

1.3 Structure of the Report

An understanding of the factors that ultimately drive demand is provided in Chapter 2, which includes a brief overview of the retail market for products that include imported processed mango. It is important that potential African exporters, and those who would support their enterprises, understand what European consumers are looking for in the supermarket or on

¹ The team conducting this study also researched data from the Comité de Liaison de Europe - Afrique - Caraïbes - Pacifiques pour la Promotion des Fruits Tropicaux, Légumes de Contre-Saison, Fleurs, Plantes Ornementales et Épices (COLEACP) which covers primarily the fresh fruit trade.

restaurant menus and the factors that will lead to increased demand for mango concentrate and purée, frozen cubes, mango chutney, dried mango, and other processed products.

Chapter 3 provides an overview of the structure of the market. The purpose is to provide an understanding of how product moves from the point of disembarkation to the food and beverage manufacturers who in turn produce the mango products that consumers are seeking. Despite the relatively small importance of mango in comparison with orange, grapefruit, and pineapple juice, there are a number of different types of market participants involved in the trade. It is not unusual for firms in the trade to play different roles in the process from one transaction to the next.

Chapter 4 provides a quantitative analysis of the factors at work in the European market. It includes analyses of both volume and price trends, as well as a discussion of the regulatory factors that have an impact on the market in Europe.

The report concludes with a set of recommendations about the next steps REDSO/WCA and A.I.D. Missions in the region may wish to consider to develop West Africa's potential to export processed mango products to the European Community.

CHAPTER 2

OVERVIEW OF THE MARKET

Europe imports processed mango product in various different forms including dried, purée, concentrate, cubed and chutney. Purée and concentrate are destined for the beverage market and are generally packaged in one of three ways: canned (or hot pack), aseptic, or frozen. Cubes also come in frozen form. These products are the raw materials for several different kinds of consumer products. The most important are beverages, followed by dairy products, chutney, and dried, snack and baby foods. Figure 1 provides an overview of the European market in schematic form.

This study begins with a brief summary of the retail market for processed mango. European consumers' increasing demand for diversified and exotic food products such as mango-flavored beverages, yogurt, ice cream, and chutney is the principal factor that drives demand for processed mango products. To respond to their consumers' demands, food and beverage manufacturers need to have a source of exotic tropical ingredients to include in their product lines. It is the juice industry's demand for these products that may create a market opportunity for West African mango processors.

As European consumers have become more and more health conscious, the consumption of fruit juices, including tropical juices like mango, has increased. Trade statistics on the volume of total EC-12 imports of "other" juice concentrates support this observation. After pineapple, the best selling tropical fruit juices are passion fruit and mango. The exceptional growth of the nonalcoholic beverage market seen in some countries in the second half of the 1980s appears to have slowed in 1991 and 1992. However, a number of factors that boosted sales in the late 1980s continue to exist and will support consumer spending in the immediate future. Those factors include: the move away from alcohol and in some countries, from coffee and tea; the healthy image of many nonalcoholic drinks, notably fruit juices; the increasing demand for low calorie drinks; growing concern over the quality of tap water; generally slowly rising prices; and a constant stream of new products. Although the weakness of Europe's overall economy will limit growth, it may accelerate the switch from alcoholic to the usually cheaper nonalcoholic drinks. Sales of fruit juice in France are showing strong growth. Forecasts estimate close to a 4-percent increase in consumer expenditures for all types of fruit juices in 1993 and 1994. German consumers are expected to increase their spending on fruit juices by only 1.5-2 percent in 1993-94, but prospects for eastern Germany remain excellent as consumption per head accelerates to western levels. Increasing demand is also expected from eastern Europe and the former Soviet Union, although rapid developments cannot be expected due to political and economic circumstances.

To understand the dynamics of any market, it is essential to comprehend four key factors: product, price, place, and promotion. These are known as the four "P's" of marketing. The product must satisfy the consumers needs and tastes. In setting product prices, firms must

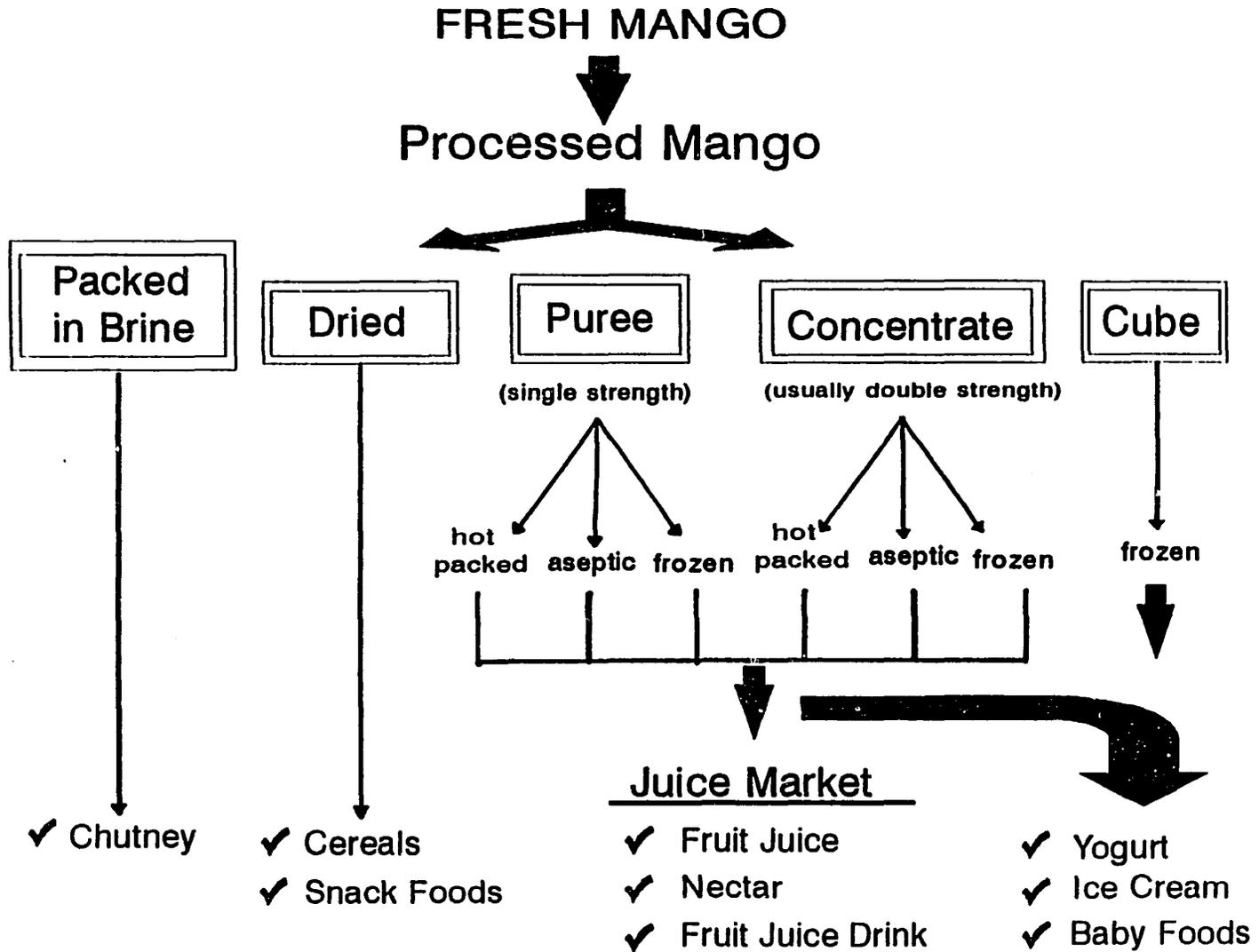


Figure 1

consider not only whether the product is competitive on the market but also the perception of its quality. A good product priced too low may not be appealing to consumers who would consider it a "cheap" and, therefore flawed, product. "Place" refers to the channels of distribution a product moves through to get from procurer to consumer. Finally, promotion stimulates interest in the product among consumers and the retailers and restaurants that serve them.²

2.1 Products

Processed mango is used as an ingredient in a number of different retail food products. Mango products that are on the shelves of European supermarkets and the menus of restaurants include beverages, yogurt, ice cream, and chutney. Processed mango is also used for baby food, and dried mango is another distinct product, often used for breakfast cereals. Both of these are sold in very limited quantities.

2.1.1 Beverage Market

The beverage market is the single most important user of processed mango. The market for fruit-based beverages is segmented into three broad categories:

- Fruit juices that are 100-percent fruit
- Nectars that contain up to 50-percent fruit
- Fruit juice drinks that may have as little as 10-percent fruit

The latter two categories include mainly water and fructose, or some other form of sweetener.

Due to its viscosity, mango is not sold as a pure, 100-percent fruit juice the way apple, orange, and grapefruit juices are. Rather, processed mango is mixed into fruit nectars or fruit juice drinks. In addition to single fruit beverages, mango is an important ingredient in blends (i.e., beverages that include multiple fruits).

Madiana and *Maaza* are two products representative of the fruit nectar and fruit juice drink segments of the fruit beverage market. Each product was purchased in the course of surveying mango beverage products sold at retail. In France, SECAA sells a one 100-centiliter bottle of Mango Nectar under the *Madiana* brand name. The label listed the following

² Generally speaking, food and beverage products move through one of two final points in the distribution process. "Retailers" refer to grocery stores, including supermarkets and convenience stores. The industry generally refers to the other major component of the market as the HRI trade (hotels, restaurants and institutions).

ingredients in declining order of importance: water; mango purée (35%); fructose; and ascorbic acid.

In the Netherlands, fruit juice drinks sold under the *Maaza* brand are some of the more popular, judging by their presence on supermarket shelves. The mango fruit drink purchased as part of this study was a 75-centiliter carton (Tetra Brik®) comprised of the following ingredients (again, in declining order of importance): water, mango pulp (18%), sugar, citric acid, and natural flavors.

The label on the *Madiana* product provided nutritional information.³ In contrast, the *Maaza* package did not provide any nutritional information, but instead offered the following assurance of its quality and nutritional benefits, appealing to consumers' health concerns:

Of the many varieties Alphonso is the "king of the mangoes" grown in India. This low calorie fruit is rich in potassium, phosphorous and calcium.

In Germany, shoppers will not easily find a pure, "mango-only" fruit juice, nectar, or fruit juice drink on their supermarket shelves. Typically, beverage manufacturers include mango as one of several tropical ingredients, along with pineapple, passion fruit, guava, and banana, in a mixed fruit drink that contains temperate climate fruits including apples, peaches and apricots as well.

Of the four European markets surveyed, France shows strong growth in nectar sales. The appeal of exotic, unusual flavors, such as mango, that are not found in pure juice form has stimulated sales in recent years. Of total juice sales in France (approximately US\$ 1 billion) nectar sales account for about one quarter or US\$ 250 million. However, while the market for tropical flavors is growing, market research data indicate that the "exotic/mixed" category, of which mango represents only a portion, accounts for only 6 percent of total nectar sales. Therefore, mango's estimated market share is not more than several million dollars.⁴

2.1.2 Mango-flavored Dairy Products

The second most popular use of processed mango is as flavoring in dairy products, principally yogurt and ice cream. This is a relatively recent phenomenon according to industry sources. In yogurt products, mango generally plays a subsidiary role to another fruit ingredient. Consumers in Europe prefer fruit-flavored yogurt products that contain small bits of fruit. Until recently, the industry has not been able to source mango in a form that would render bits of fruit

³ The product contains 0.27 grams protein, 13.40 grams carbohydrates, 0.10 grams fats, and 0.20 grams acid per 100 grams. It has a caloric value of 56 kilocalories per 100 grams.

⁴Market Research Europe. June 1993. "Fruit Juices." *Euromonitor*. vol. 25. 1-24.

after processing. The response has been to blend mango, in the form of a purée or concentrate, with another fruit. A combination of apricot and mango is fairly popular, at least in the United Kingdom. But again, mango accounts for a very small percentage of the overall product. A 150-gram container of fruit-flavored yogurt might have 20 percent fruit. Given mango's subordinate role, it will account for less than half of this, or less than 10 percent of the total volume of the product.

Ice cream is another product that includes mango. It is a prevalent feature on the menus of Indian and Pakistani restaurants.

2.1.3 Other Mango Products

Another mango product that is particularly popular with British consumers is chutney. Chutney is a relish made with fruit, spices, and herbs and usually served with meat, fish, cheese, and curried dishes. Mango is often the prime ingredient in chutney or is mixed with other fruit and spices such as ginger. Chutney is imported into the EC in finished form primarily from India, but is processed in the UK as well. Most chutney processed within the EC is processed in the UK, where the key player in the processing and distribution is J.A. Sharwood & Co. Ltd. In 1992 imports of chutney into the EC were nearly 3.4 million kilograms. Again, as the analysis of trade data in chapter 4 will detail, the United Kingdom is the dominant European market for this product.

Although the volumes of chutney produced are not by themselves particularly significant, the percentage of mango as an ingredient in chutney is. In a finished mango chutney, mango is the greatest percent of ingredient by content. This is in sharp contrast to beverages, juices, yogurts and ice cream, which contain only a very small percentage of mango fruit or pulp.

In the U.S. more and more dried tropical fruit is appearing in trail mixes, a blend of dried fruit, nuts, and cereals, but there was not much evidence of dried fruit in the European market except in the UK, where health food stores are increasing their market share.⁵

One other mango product currently available in Europe is mango slices, packed in water, sugar, and citric acid. Dole Thailand had a 439-gram can (225-gram drained weight, i.e. fruit content) on the shelves in The Netherlands.

⁵ Recently, the author paid \$4.79 per half pound, i.e. approximately \$21 per kilogram, for dried mango at Logan Airport in Boston, Massachusetts.)

2.2 Price

"Expensive" best describes the prices of retail products that contain mango. The *Madiana* brand of mango nectar sells for between fourteen and eighteen French francs per liter bottle (equivalent to \$3.00 and \$3.40 per quart) depending on the retail outlet. Competition comes from brand name orange juice, *Tropicana*, which sells for about the same price or a little less, and orange juice made from Israeli concentrate, which retails for eight-nine French francs per liter (\$1.50-\$1.70 per quart). Even stronger price competition comes from the much less nutritious soft drink segment of the beverage market. A two-liter bottle of *Coca Cola* retails for only eight French francs (\$.75 per quart). In comparison, using an average retail price of sixteen francs per liter, the *Madiana* mango product is four times as expensive.

The 75-centiliter carton of *Maaza* mango fruit drink was on sale for 2.39 Dutch guilders, approximately \$1.29 at current exchange rates, or \$1.62 per quart for a product that has only slightly more than half the fruit content of the *Madiana* product

The yogurt products purchased as part of this study also were expensive. The 150-gram cup of "low-fat pasteurized" apricot-mango yogurt cost 42 pence, about \$.62. The "extra creamy" version of the same product sold for 53 pence, a 26-percent premium over the less expensive offering, or almost US\$.80. These prices are the equivalent of US\$.94 and US\$1.22 per eight ounce serving.

Given these high prices for tropical juices and the availability of much lower priced alternative beverages, it is not hard to understand why retail demand is limited. The ITC study of world markets for fruit juices reports that "demand for tropical flavors (other than pineapple) remains comparatively low on most markets, though tropical fruit beverages and dairy products are growing in popularity".⁶

One explanation for the high retail prices for mango nectars, fruit drinks, and yogurt products may be the relatively high price of imported concentrate and purée. As the table below shows, a double strength mango concentrate sells for slightly less than the much more concentrated forms of orange, grapefruit and pineapple juice. A 60° Brix⁷ concentrate will make twice as much end product as the 30°Brix mango concentrate.

⁶ ITC, Fruit Juices: A Study of the World Market. p. 27.

⁷ The Brix scale measures in degree Brix the amount of soluble solids in a solution. In fruits, the soluble solids include sugar, salts, protein, and acids. The Brix scale indicates how many grams of cane sugar there are in a solution.

Table 1. Overview of Prices \$US, CIF/ton		
Flavor	Strength (°Brix)	Price Variations in 1991 and early 1992
Orange	65-66.5	1,500-1,700
Grapefruit	55-58	1,500-2,000
Pineapple	60	2,000-2,500
Passion fruit	50	5,500-7000
Mango	28-30	1,200-1,500
Source: CDI Market Study of Fruit Juice Concentrates		

2.3 Channels of Distribution

The channels of distribution that are in place to move processed mango product from its European port of entry to the final consumer vary considerably. Some channels are comprised of small, specialized firms that use contractual and other mechanisms to integrate the operations that take place to import, transform and market the final product. In other cases, these activities take place under the guidance of one, fully integrated operation. There is no industry norm or standard. A brief description of how the beverage and yogurt products discussed above reached the supermarket bears this out.

In two cases, that of the *Madiana* mango nectar and the *Fruit Basket* yogurt, it was a marketing firm subcontracting out various tasks that was responsible for propelling the imported mango through the channels of distribution. SECAA, the manufacturer of the *Madiana* product, contracts with an importer in Rotterdam to acquire its tropical fruit raw materials. It then arranges to have this raw material shipped to its manufacturer in Germany, as well as to transport the end product from there into France to supermarkets and other points of sale. The company's marketing and sales efforts are run out of a one room office in the Paris suburbs.

The *Fruit Basket* yogurt products follow a similar pattern. The two yogurt containers purchased in London for this study bear the same information, "Packed in W. Germany for Bailey Milk Products Ltd., Horsham, W. Sussex." Based on interviews with industry sources, it is reasonable to assume that the mango that went into these products came through the port of Rotterdam in the Netherlands.

The case of *Maaza* is completely different. A conversation with Infra International, the product's Dutch manufacturer, revealed that they sell it under licensing agreement to a

company based in India. According to information provided on the package, the licensor is Maaza Beverages Inc. of Maspeth, New York. This would appear to be an example of a fully integrated operation, with a U.S.-based company coordinating the sourcing of supply in India for manufacture in Europe under its own brand name.

2.4 Promotion

None of the companies contacted for this study cited any extensive advertising and promotion for their mango. This is largely attributable to the fact that mango products make up a very small portion of their overall product lines.

By and large, the purveyors of mango products rely on point of purchase advertising and promotion. The label and top of the *Madiana* mango nectar bottle are works of art.⁸ As mentioned above, the *Maaza* product extols the virtues of the Alphonso variety of the fruit.

With the exception of this promotion, it is unlikely that European consumers are knowledgeable about or care about the source of the mango in products they purchase and consume. As one German manufacturer said, "we put enough mango into the product to be able to show a mango on our label."

⁸ Upon seeing a bottle of *Madiana* mango nectar displayed on the desk of this study's principal investigator, one member of the Abt Associates staff stated that she would buy the product on the basis of the packaging alone.

CHAPTER 3

MARKET STRUCTURE

Although relatively small, about 1/50th the size of the market for frozen orange juice concentrate, the market for processed mango products is complicated. A large number of different types of participants define the structure of the market. These participants include: agents, brokers, importers, and blenders as well as the manufacturers of bases, compounds, essences, and flavorings used by the food industry and food manufacturers themselves.

Further complicating the market structure is the fact that the same firm may play different roles on different transactions. For example, a firm that normally acts as an agent may, under certain circumstances, find itself in the broker's role or even that of the importer, actually taking possession of a shipment of purée, concentrate or frozen, cubed mango.

This chapter provides a brief summary of the different roles each of these actors plays in the marketplace.

3.1 Agents

Agents represent the interests of the exporter. Agents do not take physical possession of the goods as they move along the channels of distribution from exporter to consumer. Finally, and perhaps most important, agents are paid, usually on a commission basis, by the exporter. The normal fee of 2-3 percent of the value of a shipment, therefore, adds to the exporter's cost of doing business. Serving as the exporters' "eyes and ears" in the marketplace, the agent plays a valuable role corroborating market information an exporter receives.

It is unlikely that a West African producer of processed mango would make much progress establishing an effective presence in the European marketplace without hiring a competent and effective agent.

As far as mango is concerned, Mr. Klaus Böker, the principal of Klaus Böker GmbH, is considered by many in the industry to be the most knowledgeable and influential agent handling mango. By its own estimate, the company may be involved in as much as one-third of Europe's imports of processed mango product. The firm serves as the agent for numerous companies around the world exploring processed fruit products to Europe. Another very knowledgeable firm is that of Nölting Gebrüder GmbH & Co. (See list of Persons Contacted in Annex C for complete addresses.)

3.2 Brokers

Brokers match sellers and buyers, exporters and importers. Unlike agents, however, brokers work for their own account. Their compensation comes from the spread, or difference, between what the exporter sells for and what the buyer pays. Like the agent, the broker does not take physical possession of a shipment.

Profits margins for brokers are typically small, ranging from 1 to 2 percent of landed import costs, depending on negotiated commissions. A broker makes money by keeping the product moving through the system. As a result, brokers tend to be conservative about whom they buy from, because unanticipated problems from new sources can be very costly.

3.3 Importers

An importer does take physical possession or ownership of a product. Importers have physical assets to store product and in some cases transport product. Several of the larger European importers of tropical fruit products are "backward integrated" in some commodities. That is, they own and operate assets involved in the production, processing, and/or transport of these imported products. For example, both Cargill BV and EuroCitrus BV in the Netherlands are part of enterprises that include shipping and orange juice processing plants in Brazil. There is circumstantial evidence to suggest that the Maaza organization exemplifies this type of extensive integration in processed mango.

3.4 Blenders

Blenders play an important role in the market for processed tropical products. It is the blenders' job to combine different raw materials into a product that meets its customers' specifications. For example, in the mango market the purée or concentrate that goes into a beverage is likely to be a blend of several different varieties of mango. Recipes for these blends are the proprietary information of the food manufacturers that formulate them.

In Europe the blending component of the mango market is concentrated in the port of Rotterdam. Several of the more important firms engaged in this activity are Hikoma, which is headquartered in Switzerland, Cargill BV, and EuroCitrus BV.

3.5 Manufacturers of Bases, Compounds, Essences and Flavorings

The manufacturers of bases, compounds, essences, and flavorings play an important niche role in the food and beverage industry. These firms apply their specialized expertise to make the ingredients required by the large food and beverage manufacturers. For the beverage

industry, bases are compositions of one or more concentrates, aromas, and emulsions to which bottlers will add water and a label. Some firms in this segment of the market specialize in producing ingredients for a specific type of manufacturer: beverage, dairy, or bakery. Others produce products to meet customer specifications across a broad spectrum of the food processing industry.

3.6 Food and Beverage Manufacturers

The food and beverage manufacturers make the products that European consumers buy in the grocery stores and other retail outlets and consume in the hotel, restaurant, and institutional segment of the market as well. Generally speaking, products with mango as an important or featured ingredient are not the most important in their product lines. Even the most specialized firms have a product line that includes many other things besides mango.

SECCA, the producer of the *Madiana* brand of tropical nectars, specializes in six products. In addition to its mango nectar, it produces and sells lime, banana, passion fruit, and guava nectars, as well as tropical fruit cocktail. In addition, the company markets beverages that combine tropical fruits with soybean, wheat germ, and other whole grain products.

The most specialized firms, as far as mango is concerned, may be the chutney producers. However, none of the firms contacted for this study agreed to be interviewed, so the data are conjectural.

As with the other firms that use processed mango in Europe, the fruit is of minor importance to the overall product line of most food and beverage manufacturers.

CHAPTER 4

EUROPE'S IMPORTS OF PROCESSED MANGO PRODUCTS

The European Economic Community imports a variety of processed mango products. The varieties differ principally according to their end use and type of packaging. Data on quantities and prices of imports are not readily available. However, making some reasonable assumptions based on information provided by this study's key informants, it is possible to estimate the importance of mango products in this consolidated data and to make some preliminary conclusions about the overall size of the market.

Processed mango products exported from tropical countries around the globe come in various forms. Mangoes can range from 85 to 97 percent water. The Kent, Palmer, Tommy Atkins, and Hayden varieties tend to have a higher pulp to water ratio. The more water that needs to be processed out of a mango, the costlier the processing becomes due to the higher energy demand.

4.1 Product Specifications

Processing of mangoes includes mango juice of various concentrates of pulp or purée, as well as green mango slices in brine for pickling or chutney, and drying and freezing mango slices or mango halves for direct consumption. Mangoes are also processed into ice creams, jellies and other items. Note that mango pulp, purée and juice concentrate are all essentially the same product with varying content or concentration.

4.1.1 Purée and concentrate

Mango destined for the beverage market comes in both a purée and concentrated form. The typical mango processing plant mashes mango pulp into a purée/juice with mild concentration, which requires pasteurization and refrigerated transportation to market. Aseptic processing includes further concentration of the juice, eliminating more of the water from the product, thus reducing the cost of transporting the raw processed product.⁹ Pulp or purée, also referred to in trade data as single strength. Single strength mango juice generally falls between 12 and 16 degrees Brix. Another common form of mango destined for the beverage market is concentrate. Double strength concentrate ranges from 26° to 28° Brix. According to industry sources, mango loses its unique characteristics, including its aroma, if concentrated beyond double strength. (By contrast pineapple concentrate of 60°Brix is a commonly traded product.)

⁹ Aseptic processing eliminates the need for pasteurization and therefore for refrigerated transportation.

The market generally recognizes the purée from the Alphonso variety, which is indigenous to India, as the premium product in the juice segment of the market. Blenders and manufacturers mix this expensive product with less expensive Tota Puri and Ras Puri varieties to make a price-competitive ingredient for the beverage industry.

4.1.2 Frozen, cubed

Mangoes imported in cubed form are a recent innovation. As noted above, the dairy industry in particular prefers a form of fruit that will endure processing and render bits of fruit. The standard size for this product is 10 cubic centimeters. The product is deep frozen at temperatures of -20 to -25 degrees centigrade.¹⁰ According to industry sources, Europe's current imports of frozen cubes originate in Central and South America. The Crillo and Chateau de Ica varieties are the favorites in this product category.

Another product that Europe imports frozen is the mango cube. After peeling, removing the stone, and being sliced in half, the fruit is cut into cubes. The standard size is a cube that is 10 millimeters (approximately 0.4 inches) in length along each dimension, but exporters can vary the size to meet a customer's needs. The standard product is deep frozen at minus 20 to minus 25 degrees Celsius and shipped in ten kilogram (22 pound) cartons.

4.1.3 Mango Chutney

Mango destined for the chutney market is picked green, peeled, sliced and packed in brine.

4.1.4 Other Specifications

In addition to specifying the form of the processed mango product, an importer will often specify the degrees Brix, the variety, acidity, the ratio of acidity to Brix, and the level of ascorbic acid in the product. To talk knowledgeably with a prospective customer in Europe, the potential exporter should have a detailed understanding of his products' characteristics in these major categories.

¹⁰ -4 to -13 degrees fahrenheit

4.2 Packaging

Processed mango arrives in the European market in several different forms of packaging. The older processing plants, particularly those in India, hot pack purée¹¹ and concentrate in cans. The normal size is the A/10 can, which holds approximately 3.1 kilograms and is packed six cans to the carton.

A more recent innovation is aseptic packaging. Aseptic processing eliminates the need for pasteurization and therefore for refrigerated transportation. The aseptic product is packed in "Scholle" bags, named after this technology's inventor, of various sizes, but the most common size is the 200-liter, 55-gallon drum double-lined with these polyurethane bags.

Several Central and South American producers ship frozen concentrate in 200 liter drums. The price data suggest that this product sells for a slight premium of \$50 per ton.

4.3 Commercial Terms of Trade

There are some unique features of the commercial terms of trade that govern European importers' purchases of mango products. It is common practice for the industry to "buy for the season." This process begins with the importer estimating what its market requirements will be for the coming year. Importers will begin to negotiate with potential suppliers as the harvest approaches. The terms of the contract will specify a total quantity for the year, as well as a shipment or delivery schedule. The minimum volume of any one shipment or transaction is never less than 18 to 20 tons, the amount it takes to fill a twenty foot container.

Generally, it is customary for European importers to rely upon a few, select suppliers with whom they have established a long term relationship and established a sense of trust. It is unusual that an importer will have more than two suppliers in a single country.

Financial terms vary. A normal *modus operandi* is as follows. Importers commonly write contracts that require payment within thirty days of delivery, which allows enough time to survey the shipment and verify that the product shipped meets the contract specifications. Importers take this precaution because mango is thinly traded. There are not many, if any, alternative outlets for processed mango products that do not meet specifications.

¹¹ Aseptic processing eliminates the need for pasteurization and therefore for refrigerated transport. Cans are filled with hot, sterilized product. As the product cools, a vacuum seal is created.

4.4 Import Trends

The past two-and-one-half year period has one of great turmoil and change in the global market for processed mango products. Primarily as a result of the Gulf War in 1991 and the collapse of the former Soviet Union, there has been a supply/demand imbalance that has resulted in declining prices, which have remained stagnant. This is reflected in the trade data for Europe, as detailed below. To put the quantitative analysis that follows in some perspective, it is important to have an understanding of some of the major factors that influence the global market for processed mango products.

4.4.1 Qualitative Analysis

As in the U.S., there is a noticeable consumer trend towards healthier and more natural foods in Europe. However, recent surveys of the European market by the International Trade Center and Netherland's Center for the Promotion of Imports from Developing Countries (CPI) indicate that the processed fruit market is saturated. Therefore any growth in the sector will come from new product developments and innovations.

India, is by far the world's largest exporter of both fresh and processed mango (India accounts for approximately 65 percent of the world's total production of mango and also leads the world in mango processing and processed mango product innovation.) but is not Europe's largest supplier, has lost important markets in the Persian/Saudi Gulf States and in the former Soviet Union. This has forced Indian exporters to try and take market share away from other suppliers. Its major competitive weapon is price. Although an extreme example, a trade journal reported that Indian exporters were offering U.S. buyers Totapuri canned pulp (i.e., purée) for as little as US \$400 per ton (c&f) during the summer of 1991.¹²

In 1989, the main developing country exporters of intermediate processed fruit products to the EC in general were Israel, India and Mexico, which together accounted for 22.1 percent. However, this share is likely to be higher in the Netherlands where a significant portion of imports enter the EC, and are re-exported within the European community. Some of the imported processed fruit products are further processed, i.e., value added, at the Rotterdam port, while others are re-exported directly to importers within the EC.

Appendix D summarizes the ITC's *Market Reports* for mango purée and concentrate for the last two-and-one-half years.

¹² Foster, Arlene. "Mango pulp sales switched." *Foodnews*. Volume 19, No. 35 August 30, 1991. Sidcup, Kent, England: The Foodnews Company.

4.4.2 Quantitative Analysis

Figures 2, 3, and 4 provide an overview of Europe's imports of "Fresh and Dried Guavas, Mangoes and Mangosteens," "Other Fruits and Vegetable Juices", the trade category that includes statistics for mango products, and "Mango Chutney." The figures show that the four countries that were the principal focus of this study (France, Germany, the Netherlands, and the United Kingdom) account for 80 percent or more of Europe's import of these commodities. These figures are based on data tables given in Appendix E.

The EC-12's imports of fresh and dried mangoes are combined with mangosteens and guava in the European trade data. See Figure 2. Imports of these three fruits, of which mango is the most important, have increased more than 55 percent since 1988, from 27,300 tons to 42,500 tons in 1992. Germany, France, the Netherlands, and the United Kingdom account for approximately 88 percent of these imports, although their share of total imports has fallen slightly over the last two years. The United Kingdom and the Netherlands are the leading importers of dried mangoes. Germany has steadily increased demand over the past five years while French imports have tended to fluctuate more. Dried mango imports are in general on an upward trend, probably exceeding 4,000 tons for the entire EC-12 market in 1992, although this would be an estimate that should be taken with much caution.

According to industry sources, mangoes account for the largest share of the tropical fruit juice category¹³. The Netherlands, the United Kingdom, France, and Germany account for a bulk of total EC-12 "mango category" of juice imports (see Figure 3), although this has declined from 92 percent in 1988 to 80 percent in 1992. Spain and Italy are among the countries that have imported significantly more "mango category" juice in the past five years.

The volume of total imports of mango chutney into the EC-12 market has increased from 1,300 metric tons in 1988 to nearly 2,600 metric tons in 1992 (Figure 4). Although total imports have been steadily increasing since 1988, they fell slightly in 1991 to 1,900, down from 2,000 in 1990. The combined imports of Germany, France, the Netherlands and the United Kingdom constitute approximately 88 percent of total mango chutney into the European market.

In 1992 Britain imported 2,000 metric tons of chutney, much more than Germany, the second largest importer, which imported only 400 tons. The United Kingdom consumes significantly more mango chutney than most other EC-12 countries. In fact, British imports of chutney have experienced a steady rise from 957 tons in 1988 to 2,000 tons in 1992, having registered a modest decline in 1991. German imports of chutney have increased steadily since 1988, while French imports fell from 136 tons in 1988 to just 45 in 1992. Chutney imports in the Netherlands have fluctuated widely, both rising and falling during the 1988-1992 period. In 1992 Dutch imports declined somewhat.

¹³ Mango products are estimated to make up approximately 50% of the Extra-EC trade category (i.e., imports from outside the EC) that they are classed into, based on rapid appraisal findings.

Note on Statistical Data

Mango juice concentrates are not a separate category in the trade statistics but are included with other products in an "other fruit and vegetable juice" category. As the text box explains, this report bases its quantitative analysis of the subset of this other category that excludes pear, passion fruit and guava juice, as well as the major imported items, including orange, grapefruit, apple and tomato juices, which have their own sub-categories within the data. Thus, the numbers and the graph displayed in Figure 3 must be interpreted with caution. However, there is a clear upward trend in the volume of tropical juices imported.

European Community data disaggregates import statistics by intra-EC and extra-EC sources. Since mango is not indigenous to these countries, it is reasonable to assume that the Extra EC category captures the importation of mango coming into the community and that the Intra-EC data is not relevant to an analysis of determining the volume of the Community's imports of mango products.

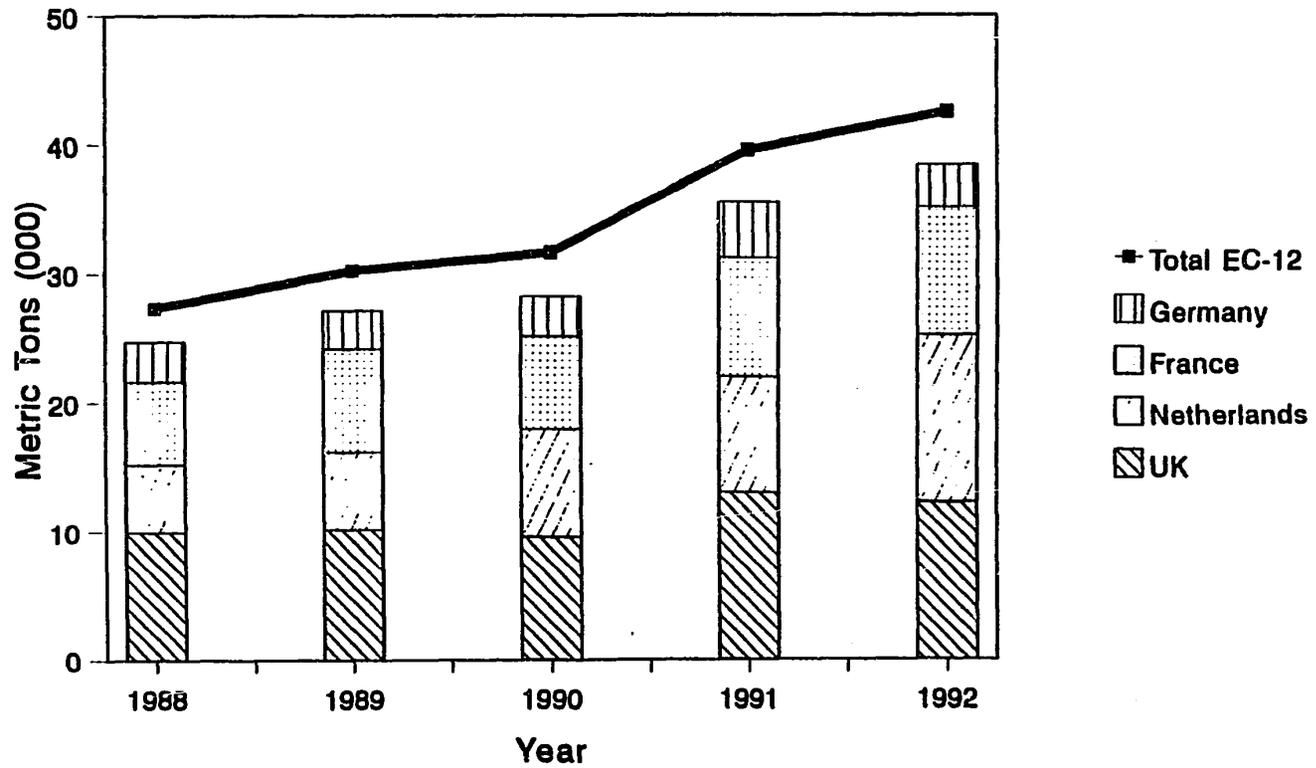
CN Code 20.09 covers "Fruit Juices (Including Grape Must) and Vegetable Juices, Unfermented and Not Containing Added Spirit, Whether or Not Containing Added Sugar or Other Sweetening Matter."

The fruit and vegetable juices of this heading are generally obtained by pressing fresh, healthy and ripe fruit or vegetables. . . . The juices of this heading may be concentrated (whether or not frozen). . . .

CN Code 2009.80 covers the "Juice of any other single fruit or vegetable." By other, this category excludes: orange juice (frozen and other), grapefruit juice, juice of any other single citrus fruit, tomato juice, grape juice (including grape must), and apple juice. For example, several categories within the 2009.80 series cover pear juice and juices of passion fruit and guava. The latter two are lumped into a single category. Mango juice is covered in CN Code 2009.80-99. Other tropical fruits included here include banana, pineapple, papaya, pomegranate; and naranjilla/lulo, cherimoya and acerola from Central and South America.

It is difficult to estimate precisely the importance of mango in this other category. Based on this study's interviews with key informants, it is safe to assume that mango is the most important tropical fruit in this category. This study estimates that mango accounts for half of the Extra-EC portion of CN Code 2009.80-99.

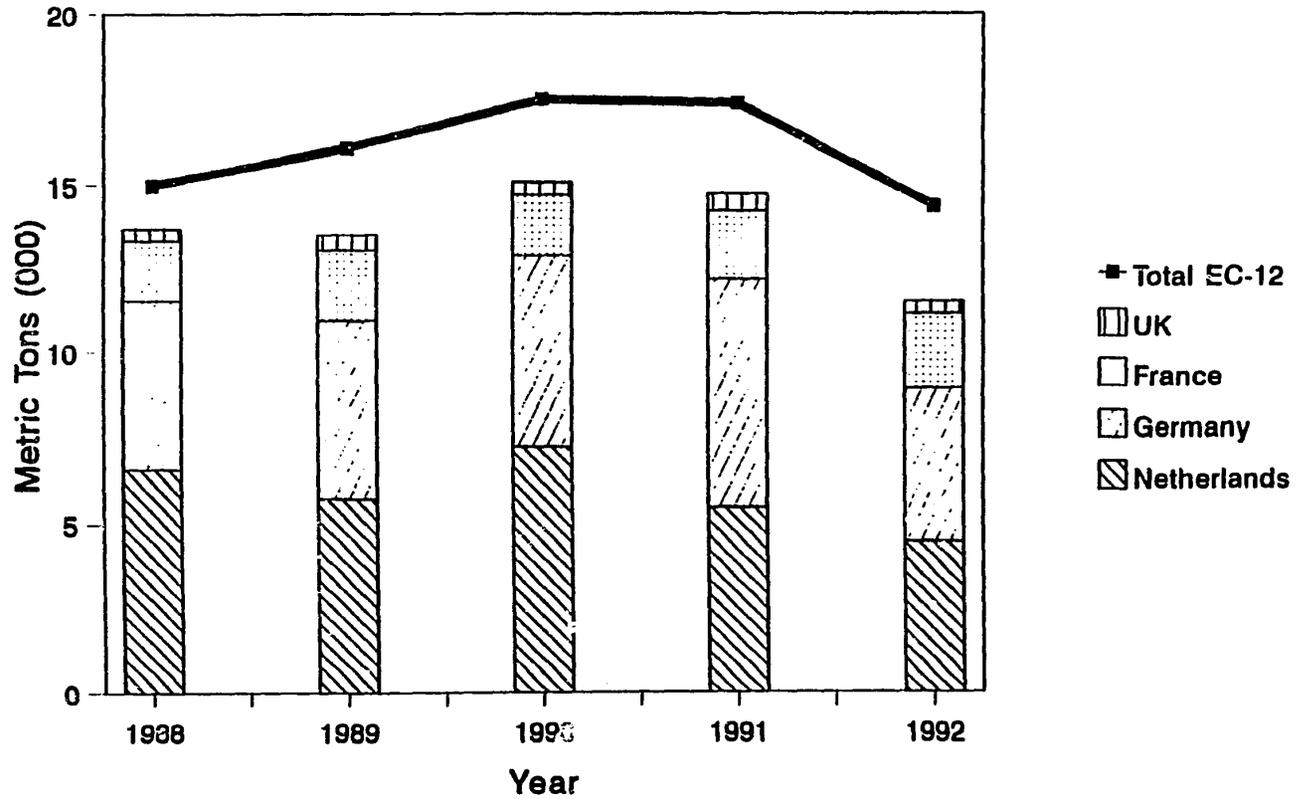
EC Imports of Exotic Fruits Fresh and Dried Guavas, Mangoes, and Mangosteens 1988-1992



Eurostat Trade Data Category 0804.50

Figure 2

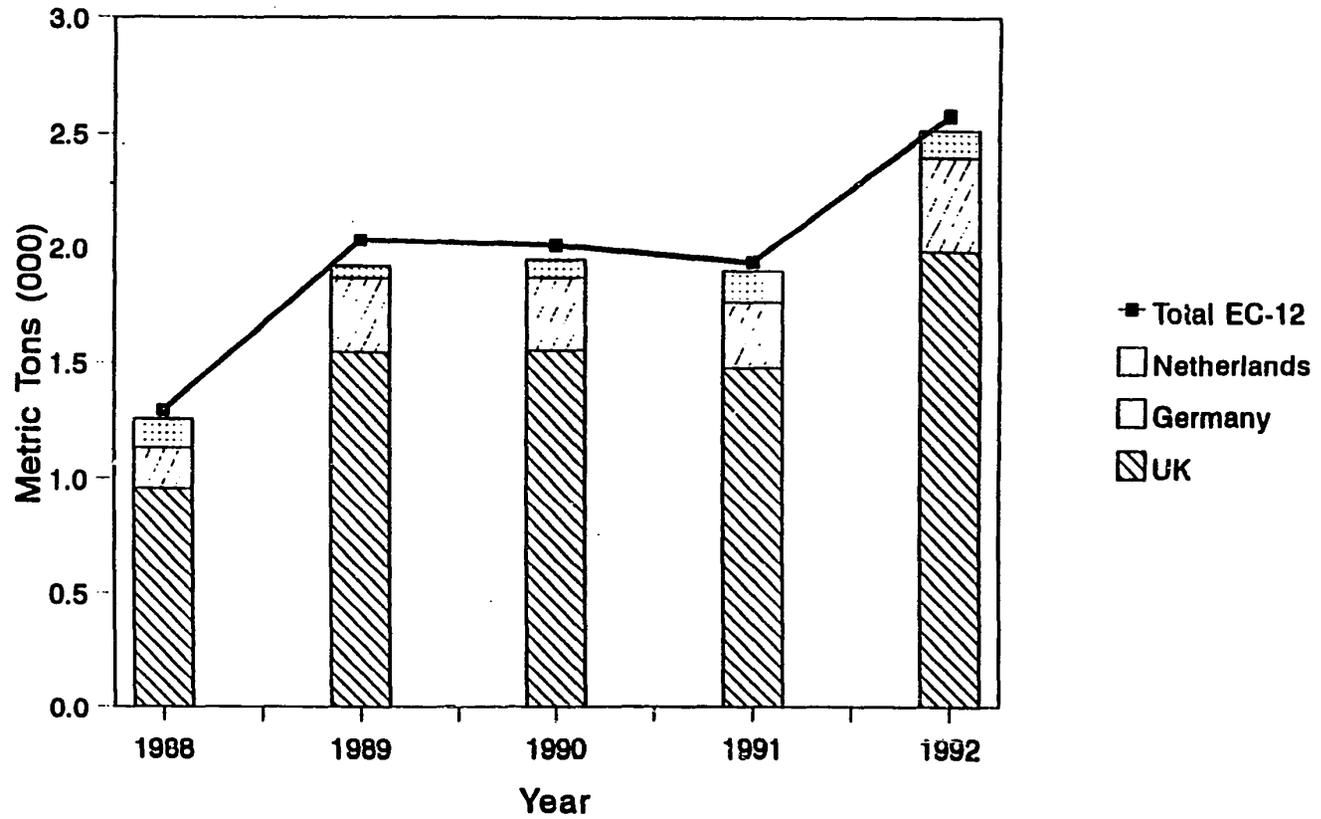
EC Imports of "Other" Fruit and Vegetable Juices 1988-1992



Eurostat Trade Data Category 2009.80-99

Figure 3

EC Imports of Mango Chutney 1988-1992



Source: Eurostat Trade Data Category 2001.90-10

Figure 4

4.4.3 Price Analysis

The fact that mango imports are not standardized complicates any price analysis. As the table of prices for May 1993, below, shows, the price data covers different varieties of product in different strengths and different forms of packaging. The data below do show how diverse the European market is. Last May prices ranged from \$630 per ton for single strength packed can purée from India to \$1,400 per ton for double strength concentrate from Kenya in aseptic packaging.

Table 2: World Market Prices for Mangoes (May 1993)					
Importer	Origin	Form	Brix	Pack	US\$/ton
Germany	Colombia	concentrate	25	frozen	1,250 fot ¹⁴ Netherlands
	India	concentrate	28	aseptic	1,050 c+f del. July/August
		single strength			700 c+f del. July/August
		Alphonso			1,200 c+f del. July/August
Netherlands	India	concentrate	28	aseptic	1,300 fot
	Brazil	concentrate	28	frozen	1,350 fot
	Kenya	concentrate	28	aseptic	1,400 fot
Switzerland	India	concentrate	28	aseptic	1,250 fot Netherlands
		single strength	15	hot packed	630 fot Netherlands
	Peru	single strength	16	frozen	1,085 fot Netherlands

Source: MNS Monthly Report May 1993

If prices of imported product destined for the beverage segment of the market are any indication, the market in Europe is soft. For those products for which sufficient data are available to plot a long term trend, prices are ten to seventeen percent lower on a constant basis

¹⁴ free on truck

than they were five years ago. However, as Figure 5 clearly indicates, prices have been stable for the last two years.

Due to differences in value-added taxes (VAT) among EC member countries, actual import prices vary. Additionally, the prices of processed fruits fluctuate according to quality, quantity, and season.

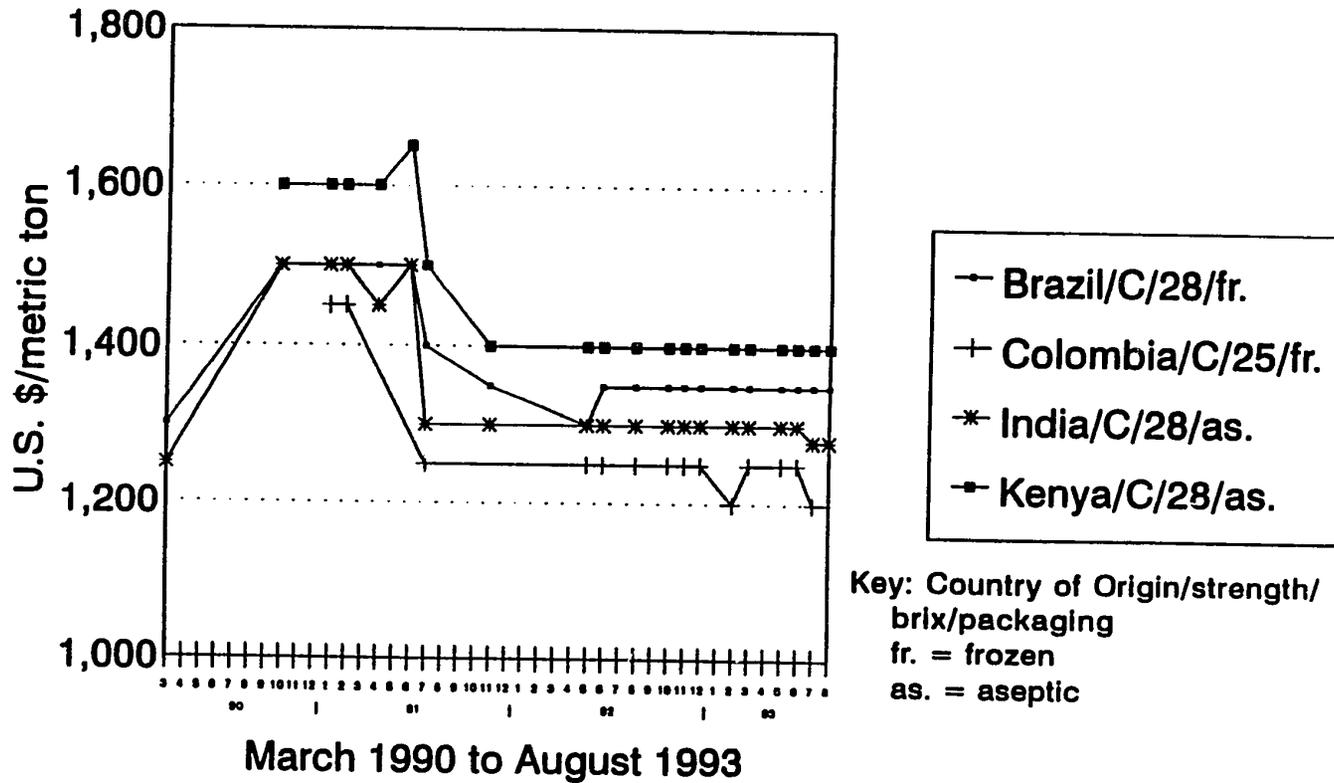
Table 3: Differences in Value Added Taxes		
Country	VAT (%)	Comments
Belgium	6.0	some export licensing requirements
Denmark	20.48	extra charge on some products
France	5.5	<i>droit de timbre</i> 2 percent, sometimes a <i>tariff forfaitaire</i> on imports
Germany	7.0	incoming goods checked for sanitary standards
Italy	9.0	sanitary certificate required
Portugal	8.0	sealrights 4.5 percent, clearing 0.9 percent
Spain	6.0	clearing 2.5 percent, sanitary certificate, import declaration required

4.5 Transportation Factors

The main difference between mango exports from Sub-Saharan Africa (SSA) and mango exports from the Americas is transportation cost. Sea freight is half the cost of air freight and is the best way to transport sizeable volumes overseas. However, good port facilities (complete with refrigeration) in Africa are limited, particularly in landlocked countries such as Mali and Burkina Faso. Côte d'Ivoire and Kenya have good port facilities.

According to the private shipping industry a 20-foot refrigerated container of frozen mango concentrate shipped by ocean freight from Abidjan to Rotterdam costs approximately US\$2850.00 plus US\$150.00 in forwarding cost, and a 40-foot container costs approximately \$4825. Ocean freight cost from Kenya and India are more expensive. Air freight is considerably more costly and not practical for a product such as processed mango, which is less perishable than fresh produce.

European Import Prices Mango Juice Concentrates and Purees



(\$/ton free on truck)

Figure 5

4.6 Regulatory Factors

The European community is harmonizing the custom duties and regulations that govern imports. Although harmonization of regulations is not yet complete and not expected to be completed for another five years or so, most EC-12 countries do follow the custom duties and regulatory factors established for the common market. There are however some differences in regulations governing the import of processed fruit, including mango products. This section will briefly outline the common regulations followed by most EC-12 countries and then identify some of the key regulatory differences.

4.6.1 Customs Duties

Customs duties vary according to type of fruit, form of preservation (degree Brix, density, processing, and packaging), and country of origin. Products from 68 African, Caribbean, and Pacific (ACP) countries which are signatories to the Lomé Convention, as well as from overseas countries and territories associated with the EC, are granted duty-free access for most products. Least developed countries (LDC) also enjoy duty-free access for most fruit juices and related products. The EC generalized system of preferences (GSP) is applied to some products and duty-free access is granted to LDCs for most products.

4.6.2 Import Levies

Under EC regulations, specified fruit juice items may be subject to an import levy or an additional duty on sugar according to certain conditions. If relevant, the import levy and the additional duty on sugar are applied whether the goods are duty free or not. The following table gives a brief summary of relevant duties for mango imports into the EC.

TABLE 4. Customs duties on Mango Juices and Pulp Imported into the EC in percent ad valorem

	Tariff	ACP	LDC	GSP
density > 1.33 g/cm ³ at 20°C	42%	Free	Free	8%
density ≤ 1.33 g/cm ³ at 20°C	21-22%	Free	Free	8%
Pulp-no sugar added				
Frozen	18%	Free	Free	6%
Canned	23%	Free	Free	6%

Source: ITC Market study of Fruit Juices 1991, Appendix on EC Customs Duties and Regulations

4.6.3 EC Regulations

In addition to national legislation of individual EC member countries, the production and marketing of fruit juices and similar products are regulated by various EC Council Directives. These directives range from defining fruit juice, nectars (minimum acid content, and minimum juice and/or purée content) and concentrates, to stipulating authorized processing and treatment, authorized addition of sugars, additives, etc., to labelling, presentation, and advertising. The Brussels-based Association of the Industry of Juices and Nectars from Fruits and Vegetables of the European Economic Community, commonly known as the European Fruit Juice Association, helps to standardize EC requirements.

Because most EC member countries adhere to the EC directives and regulations governing the imports of fruit juices and related products, this section only discusses those countries whose regulatory policies differ significantly from the EC general regulations, namely Switzerland, the Netherlands, and Germany.

Unlike the applicable EC regulations, Switzerland's customs duties are levied solely on the weight of the product imported and not on its value. Tariffs are quoted in Swiss francs per 100 kg gross. For most tropical juices and mixtures of these juices, the normal rate of duty is SwF 28 for juices not containing sugar or other sweetening matter and SwF 70 for juices containing added sugar or other sweetening matter.¹⁵ However, pineapple and other tropical fruit juices, mixtures of juices with a pineapple base and other tropical fruit juices, are not subject to duty, and preferential rates are available for certain items from developing countries. Imports of tropical fruit pulp from developing countries enter Switzerland duty-free. The regulations and directives concerning trade in foodstuffs do not affect imported bulk products directly.

¹⁵ Although not explicitly stated, it is assumed that mangos fall in the tropical fruit juice category.

The EC common customs tariffs are applicable in Germany. However, as the German fruit juice industry is responsible for ensuring that its end-products comply with national food regulations, it has strict guidelines and specifications (referred to as RSK values) governing the imports of fruit juices and nectars.¹⁶ RSK values have not been specified for mango juices and related products.

The EC common regulations governing the imports of tropical fruit juices and related products are a useful guideline for potential exporters. However, as each EC member country also has its own set of specific regulatory institutions and organizations governing the imports of tropical juices and related products, it is advisable that before engaging in trade with an EC member, the exporter examine further the specifications for that country.

The increasing health and environmental consciousness of many European consumers has an impact on the regulatory environment governing imports of processed mangoes into the EC.

There do not seem to be any specific international standards for trading mango juice or concentrates. However, the international point of reference for juices in general is the California industry, which has the world's highest standards. Mangoes are not commercially processed in the U.S. and thus no established standards exist.

¹⁶ Other EEC countries use the RSK system to evaluate whether a product is in accordance with trade practice and food laws.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This study concludes with a summary of conclusions and brief recommendations for both potential West African exporters and the USAID Missions that might support their efforts.

5.1 Conclusions

This study estimates that the total EC-12 market for processed mango products is 10,000–15,000 metric tons. At a current average value of US\$1,200–1,300 per ton, the value of the wholesale market is US\$12 million and \$20 million.

European consumers, however, demand high-quality products, and consequently importers require strict adherence to quality and reliability standards from their suppliers. There is a wide gap between the taste of fresh mango and processed mango products. As a result, in the juice segment of the market, there is probably more potential for mango as part of tropical blend than as a single fruit product. Demand for processed product is likely to grow as more consumers are exposed to and learn to appreciate the fresh fruit.

Additionally, consumer preferences are evolving, leading Europeans to demand healthier and more environmentally friendly products. All this suggests that potential exporters from Sub-Saharan African (SSA) must have the capacity to deliver high-quality products in a timely fashion at competitive prices.

Current market conditions in Europe are soft. This is as much a factor of general economic conditions as anything else.

Mango currently plays a minor role in the food and beverage industry in Europe. Manufacturers tend to rely upon a few suppliers with whom they have established a long term relationship and with whom they have developed a sense of trust.

There are several producers of processed mango products among developing countries, namely India and Brazil, who are currently able to meet the quality and reliability requirements of the EC market at competitive prices. This implies that potential exporters in SSA, especially those landlocked countries like Mali and Burkina Faso, face strong competition. These countries would need to depend on countries with adequate port facilities such Côte d'Ivoire and Kenya.

However, West African producers do have at least two advantages if they can deliver products of comparable quality to those currently imported by European buyers. As beneficiaries of the Lomé Convention, they are exempt from duties and tariffs. This translates into a cost advantage, all other factors being equal, of six to eight percent. In addition, West

African producers have an advantage in that their transportation links to the European market are shorter and less expensive than Asian and Latin American suppliers.

5.2 Recommendations

Without an understanding of and an ability to articulate the unique and distinguishing characteristics of the products they have to offer, potential exporters from West Africa will have a difficult time maximizing the competitive advantages they have. The development of the European market will require a long-term commitment. This is likely to be a costly and time consuming proposition. For the serious potential exporter, this report recommends he:

- Develop a thorough understanding of the agronomic characteristics of the various varieties of mango that proliferate in West Africa, including an understanding of varieties best suited for the fresh market and the various different segment of the processed market;
- Develop a better understanding of the European market's requirements, and how the major market participants operate by attending the major trade shows including ANUGA in Germany and SIAL in France;
- Contact importers of intermediate products (blenders and bottlers).
- Target bottlers and blenders in the Netherlands.
- Hire an agent to serve as his "eyes and ears" in the European market, who will look after his interests, and help establish long term relationships with importers, blenders, and food and beverage manufacturers.

As for USAID Missions in the region, this report recommends their effort to develop West Africa's potential as a mango exporter take a targeted approach. These efforts should focus on providing assistance to firms that have existing fruit processing capacity already installed and whose product line could be expanded with mango.

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APPENDIX A
STATEMENT OF WORK

34

To: Ernest Gibson

From: Shaul Horan@PSD@ABIDJAN

Date: Monday, June 14, 1993

Subject: Scope Of Work

As promised, following is the SOW for processed mango.

The SOW for the Portuguese market for agriculture products will follow soon.

Regards.

STATEMENT OF WORK: PROCESSED MANGO MARKET STUDY

1. Background

Many countries in West and Central Africa produce mango, of different varieties, including: Ameli, grafted colored varieties like Kent, Tomy atkins, Palmer, Haiden and others, and some local varieties with no familiar names. The crop is sold as fresh fruits in the local and export markets, and in many instances the market capacity is insufficient, and surpluses are created, that have to be destroyed. These surpluses are more likely to include Amily and local varieties, as colored varieties are more required in the markets for fresh mango.

It is possible that these surpluses can be processed and sold as juices, concentrates, pulps, dried mango and others, in regional and export markets. Presently the consumption in regional markets is marginal. In West Europe consumption has increased in the last years, but so did the competition. The largest supplier is india, who produces high quality at competitive prices, and it is doubtful if african countries can compete in this market.

USAID missions in the region are approached by farmers to help them by supporting the development of mango processing plants. In order to be able to formulate an appropriate strategy in this issue, the first question that should be answered is if the world market situation enables a profitable processing of mango in West African countries.

The question is presently relevant in Mali, Bissau and Guinea, and probably The Gambia, but it is very probable that other missions will face it as well. The two phases approach to this issue is:

- a. Identifying the parameters of the demand of the west european market as for quantities, specifications, prices, competition and trends.
- b. Evaluating the production and export possibilities in each of the producing countries, in a separate analytical work, that will use the outputs of phase (a).

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The purpose of this study is to cover phase (a).

2. Objective

The objective of this study is to identify the current and expected price levels, quantities, technical specifications, competition and trends in the west european market for processed mango products.

3. Statement Of Work

- a. The contractor will identify which products of processed mango (such as pulp, concentrates, juice, dried mango and probably others) are traded in West Europe.
- b. For each of the products identified in (a), the contractor will find out and report:
 - (1) Yearly quantities imported in the last 5 years (ending Dec 1992), by country of origin and country of destination.
 - (2) Current and historical prices, c.i.f. Europe, for the last five years.
 - (3) Specifications requested and preferred by the market, as for quality, concentration (in Brix terms), packaging, temperatures, varieties of the raw material, and any other details that traders regard as important.
 - (4) Attitude of traders towards new potential suppliers, or, an answer to the question "What does it take to enter this market as a new supplier?"
 - (5) Evaluation of the main current suppliers, including but not limited to:
 - Their transport cost from plant to port of destination.
 - Intentions to increase/decrease supply.
 - Tariffs and regulations they face in the EEC, compare to those applicable to WCA countries.
 - Any other information that will help evaluating the competitive position of an eventual production in WCA countries.
 - (6) Based on all the above, and on any other information available, an overall evaluation of:
 - Future prices expectations.
 - Over/short supply expectations.
 - Trends in introduction of new products.
 - (7) Trade contacts: a list of potential importers, brokers, etc..

4) Reports

The contractor will first prepare a draft report, in English, in 10 copies, to be reviewed by the missions (see below), REDSO and ARTS/FARA AID/W.

The final report will be prepared by the contractor in English, in 21 copies.

The contractor will distribute one copy of the draft report and three copies of the final reports to each:

- USAID Bamako
- USAID Conakry
- USAID Niamey
- USAID Banjul
- USAID Bissau
- REDSO/WCA/PSD Abidjan
- USAID/W- ARTS/FARA

5) Relationships and responsibilities

The USAID contact for clarifying technical and SOW issues is REDSO/WCA/PSD Agribusiness Advisor Shaul Horan.

The USAID contact for budget, payments and all other issues is AID/W ARTS/FARA.

6) Performance period

The draft report should be received by all addressees no later than August 30, 1993. The final report should be delivered no later than September 30, 1993.

7) Estimated work days

It is estimated that the requested output requires 15 work days of a market research specialist, as follows:

- Interviewing traders and other sources of information in Europe for 10 work days.
- Preparing the report, in the contractor office for 5 work days.

It is anticipated that the consultant will visit all or part of the following countries in Europe, for obtaining the requested information: Germany, Netherlands, France, U.K.

8) Estimated budget

To be prepared by ARTS/FARA.

APPENDIX B
INFORMAL INTERVIEW GUIDELINES

Informal Interview Guidelines

Date: _____

Name: _____

Company: _____

Address: _____

Overall Description of Company Activities:

What processed mango products are you currently importing?

Product specifications:

Concentration

Brix:

Packaging:

Where are you sourcing these products?

Countries:

Percent Supply:

Do you rely upon the same suppliers or change sources regularly?

What are the typical lead time for filling an order?

How far in advance do you book orders?

What is the normal transit time for shipments?

Are there minimum/maximum volume requirements/constraints?

How often do you place orders?

Do your orders vary over the course of the year?

If you only purchase seasonally, during which season?

Do you have multiple suppliers in each country of origin or generally rely upon a single supplier?

Do you make inspection visits often?

If so, how frequently?

If not, why not?

How do you find suppliers?

Are there any unique features about negotiating for and procuring mango products?

On what terms (FOB, C&F, CIF) do you purchase?

What are the typical financing procedures?

Letter of credit:

Open accounts:

Wire transfers:

Other:

What are the customs duties and other import taxes?

What are the phytosanitary regulations affecting the importation of these products?

What are the normal inspection procedures?

How volatile are supply and demand conditions in this market?

How does this effect pricing?

What are the current trends in

supply:

demand:

prices:

Where do you see the market headed over the

short term (next 12 months):

medium to long term (3 to 5 years):

In your opinion, what opportunities, if any, will there be for potentially new suppliers from West and Central Africa look forward to over the next one to three years?

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APPENDIX C
LIST OF PERSONS CONTACTED

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APPENDIX D
SUMMARY OF MARKET TRENDS

Date of Report

Market Summary

January 1991

Normal market with good demand. Offers from India and Kenya still extremely limited.

February 1991

Very good and increasing demand for mango juices. Markets well supplied thanks to good crops in Latin America.

July/August 1991

Due to good stocks still available in Europe and increasing offers from exporting countries in general and India in particular (having lost part of its Middle-East market for a certain time) prices are decreasing. Demand normal.

November/December 1991

Prices decreasing due to ample offers from India who has lost its USSR and Gulf countries markets. European markets over supplied, demand steady.

May 1992

European demand slow with offers from India still ample. new crop in July-August will set the new prices, expected to remain stable at best.

June 1992

Prices and market unchanged since last report. Demand slow, offers from India ample. It seems that the Middle East market is slowly but safely recovering, which might ease Indian selling pressure on European market.

August 1992

Prices and market situation unchanged. Offers from all origins ample but demand steady. Market situation in the Middle East still not clear.

October 1992

Very limited interest for this product for the time being. Offers much too ample for the steady demand.

November 1992

Very limited trade. Prices unchanged.

December 1992

Prices unchanged, trade very limited. All buyers awaiting Indian new crop next February/March.

February 1993

Prices unchanged, trade normal.

March 1993

Market calm with steady prices and demand.

Date of Report

Market Summary

May 1993

Demand and trade limited for this product at the moment. The Indian rupee has already lost about 15% of its value vs. the US dollar, since the introduction of the full convertibility some weeks ago. Therefore the new prices for prompt shipment delivery July/August have been drastically reduced.

June 1993

Active trade in practically all European markets. Prices for July shipment slightly decreasing due to ample offers from India.

July 1993

Prices stable demand slow.

August 1993

Very stable prices, slow demand, offers ample.

APPENDIX E
STATISTICAL TABLES

NS

**European Community Imports
Fresh and Dried Guavas, Mangoes and Mangosteens**

(metric tons)

	1988	1989	1990	1991	1992
World Total					
Belgium-Luxembourg	1,429	1,951	1,768	2,476	2,212
Denmark	215	343	261	311	386
Germany	4,834	5,507	6,358	8,448	9,090
Greece	56	53	62	68	40
Spain	74	58	102	256	312
France	7,171	8,889	8,252	10,004	10,589
Ireland	42	25	81	155	692
Italy	961	864	948	929	902
The Netherlands	6,061	7,466	9,323	9,920	14,044
Portugal	568	681	951	1,755	2,072
The United Kingdom	10,141	10,929	10,440	13,761	12,814
Total	<u>31,552</u>	<u>36,766</u>	<u>38,546</u>	<u>48,083</u>	<u>53,153</u>
Intra-EC					
Belgium-Luxembourg	314	319	444	779	699
Denmark	56	216	181	136	300
Germany	1,751	2,555	3,242	4,187	5,778
Greece	6	6	31	40	23
Spain	1	1	0	11	25
France	730	872	1,018	766	717
Ireland	42	23	73	154	691
Italy	310	222	373	333	352
The Netherlands	821	1,476	980	1,019	1,112
Portugal	6	101	112	427	412
The United Kingdom	171	751	489	732	593
Total	<u>4,208</u>	<u>6,542</u>	<u>6,943</u>	<u>8,584</u>	<u>10,702</u>
Extra-EC					
Belgium-Luxembourg	1,115	1,632	1,324	1,697	1,513
Denmark	159	127	80	175	86
Germany	3,083	2,952	3,116	4,261	3,312
Greece	50	47	31	28	17
Spain	73	57	102	245	287
France	6,441	8,017	7,234	9,238	9,872
Ireland	0	2	8	1	1
Italy	651	642	575	596	550
The Netherlands	5,240	5,990	8,343	8,901	12,932
Portugal	562	580	839	1,328	1,660
The United Kingdom	9,970	10,178	9,951	13,029	12,221
Total	<u>27,344</u>	<u>30,224</u>	<u>31,603</u>	<u>39,499</u>	<u>42,451</u>

Source: Eurodata

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**European Community Imports
of Mango Chutney**

(metric tons)

	1988	1989	1990	1991	1992
World Total					
Belgium-Luxembourg	11	13	5	15	31
Denmark	128	135	163	133	151
Germany	233	373	380	370	490
Greece	0	0	0	0	0
Spain	11	2	1	2	5
France	113	28	75	38	37
Ireland	62	56	35	37	49
Italy	2	2	3	16	4
The Netherlands	153	106	97	196	160
Portugal	3	5	3	5	5
The United Kingdom	1,219	1,650	1,673	1,513	2,051
Total	1,935	2,380	2,435	2,325	2,983

Intra-EC					
Belgium-Luxembourg	11	7	5	15	31
Denmark	90	70	104	95	88
Germany	61	52	65	84	76
Greece	0	0	0	0	0
Spain	10	2	1	2	5
France	113	27	72	36	36
Ireland	62	66	35	37	49
Italy	1	2	3	16	4
The Netherlands	29	11	17	62	44
Portugal	3	5	3	5	5
The United Kingdom	262	107	122	38	71
Total	642	349	427	390	409

Extra-EC					
Belgium-Luxembourg	0	6	0	0	0
Denmark	38	65	59	38	63
Germany	172	321	315	286	414
Greece	0	0	0	0	0
Spain	1	0	0	0	0
France	0	1	3	2	1
Ireland	0	0	0	0	0
Italy	1	0	0	0	0
The Netherlands	124	95	80	134	116
Portugal	0	0	0	0	0
The United Kingdom	957	1,543	1,551	1,475	1,980
Total	1,293	2,031	2,008	1,935	2,574

Source: Eurostat

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**European Community Imports
of Single Fruit of Vegetable Juices, Other**

(metric tons)

	1988	1989	1990	1991	1992
World Total					
Belgium-Luxembourg	79	3,531	4,017	4,774	5,308
Denmark	3,219	2,941	2,604	2,886	2,974
Germany	26,245	20,724	21,012	24,434	21,516
Greece	45	254	241	240	208
Spain	1,980	2,685	3,846	3,856	3,903
France	10,548	11,699	11,156	12,773	13,849
Ireland	1	2	106	58	99
Italy	1,386	1,768	2,395	3,003	3,910
The Netherlands	11,144	11,331	13,686	10,839	10,753
Portugal	206	376	287	395	405
The United Kingdom	1,968	1,903	1,789	2,041	2,341
Total	56,821	57,214	61,139	65,299	65,266
Intra-EC					
Belgium-Luxembourg	79	2,496	2,726	3,712	4,066
Denmark	2,556	2,396	2,352	2,592	2,684
Germany	21,241	15,493	15,325	17,731	17,102
Greece	41	197	175	206	182
Spain	1,818	2,444	3,339	3,238	3,085
France	8,760	9,603	9,323	10,724	11,612
Ireland	1	2	103	52	94
Italy	1,058	1,308	2,262	2,659	3,733
The Netherlands	4,553	5,618	6,489	5,383	6,287
Portugal	125	164	123	104	99
The United Kingdom	1,605	1,431	1,434	1,533	1,982
Total	41,837	41,152	43,651	47,934	50,926
Extra-EC					
Belgium-Luxembourg	0	1,035	1,291	1,062	1,242
Denmark	663	545	252	294	290
Germany	5,004	5,231	5,687	6,703	4,414
Greece	4	57	66	34	26
Spain	162	241	507	618	818
France	1,788	2,096	1,833	2,049	2,237
Ireland	0	0	3	6	5
Italy	328	460	133	344	177
The Netherlands	6,591	5,713	7,197	5,456	4,466
Portugal	81	212	164	291	306
The United Kingdom	363	472	355	508	359
Total	14,984	16,062	17,488	17,365	14,340

Source: Eurodata

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Price Data Sheet for Processed Mango Product Selected Months \$US/Metric Ton

Product Description												
Country of origin	Form	Brix	Pack-aging	Weight (kg)	03/90	10/90	01/91	02/91	04/91	06/91	07/91	11/91
Products delivered c+f Rotterdam												
Columbia	C	25	frozen	45	1,300	1,500						
Columbia	SS	15	frozen	40	1,000							
Guatemala	SS	16	aseptic	180	1,050							
India tota.	C	28	aseptic									
India tota.	SS											
India alphonso												
Kenya	C	28			1,300		1,550		1,550	1,550	1,400	
Products delivered fot Rotterdam, The Netherlands												
Columbia	C	25	frozen	220			1,450	1,450			1,250	
Colombia	P	15	frozen	180								875
Guatemala	SS	22	aseptic	200					1,390	1,300	1,250	1,150
India	C	28	aseptic	240								
India	C	28	aseptic	240								
India tota.	C	28	aseptic									
Peru	SS	15	frozen	180								
Brazil	C	28	frozen		1,300	1,500	1,500	1,500	1,500	1,500	1,400	1,350
Brazil	P	15								1,100		
India	C	28	aseptic		1,250	1,500	1,500	1,500	1,450	1,500	1,350	1,300
Kenya	C	28	aseptic			1,600	1,600	1,600	1,600	1,650	1,500	1,400
India	C	28	aseptic	220								
India	SS	15	hot pack									
Peru	P	16	frozen	200								
Products delivered c-f-f United Kingdom												
India alphonso	SS	15-16	frozen									
Kenya	C	28			1,300		1,550		1,550			1,300

Key: C = concentrate
P = puree
SS = single strength

Source: Market News Service
International Trade Center

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Product Description																
Country of origin	Form	Brix	Pack-aging	Weight (kg)	05/92	06/92	08/92	10/92	11/92	12/92	02/93	03/93	05/93	06/93	07/93	08/93
Products delivered c+f Rotterdam																
Columbia	C	25	frozen	45												
Columbia	SS	15	frozen	40												
Guatemala	SS	16	aseptic	180												
India tota.	C	28	aseptic										1,050			
India tota.	SS												700			
India alphonso													1,200			
Kenya	C	28														
Products delivered fot Rotterdam																
Columbia	C	25	frozen	220	1,250	1,250	1,250	1,250	1,250	1,250	1,200	1,250	1,250	1,200	1,200	1,200
Colombia	P	15	frozen	180												
Guatemala	SS	22	aseptic	200												
India	C	28	aseptic	240		1,300	1,300	1,300								
India	C	28	aseptic	240		1,300	1,300	1,300								
India tota.	C	28	aseptic											1,250	1,200	
Peru	SS	15	frozen	180	900											
Brazil	C	28	frozen		1,300	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350
Brazil	P	15														
India	C	28	aseptic		1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,280	1,280
Kenya	C	28	aseptic		1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
India	C	28	aseptic	220				1,200					1,250	1,250	1,230	1,230
India	SS	15	hot pack										630	630		
Peru	P	16	frozen	200				950	950				1,085	1,095	1,080	1,080
Products delivered c+f United Kingdom																
India alphonso	SS	15-16	frozen												1,050	1,050
Kenya	C	28										1,350				

Key: C = concentrate
P = puree
SS = single strength

Source: Market News Service
International Trade Center

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